



Ecosystem-Based Approaches, Gender Inclusivity and their Impact on Economic Development:
A Case of Southern Malawi

Mini-thesis submitted in partial fulfilment of the requirements for the MA
Degree in Development Studies

For

The Institute for Social Development, Faculty of Economic and Management Sciences

University of the Western Cape

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October 2024

Plagiarism Declaration

I, Maziko Kalumbu Phiri, hereby declare that this master's mini thesis, entitled "Ecosystem-Based Approaches, Gender Inclusivity and their Impact on Economic Development: A Southern Malawi Case Study" is my own work, and that I have received no other assistance than the stated sources and citations.

Maziko Kalumbu Phiri

October 2024



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Acknowledgements

First and foremost, I would like to express my deepest gratitude to God for His unwavering guidance, strength, and blessings throughout this journey. Without His grace, none of this would have been possible.

I am immensely grateful to my parents, Wezi and Gideon, your endless love, encouragement, and support have truly driven me. Your belief in me has been the foundation of my success, and I am forever indebted to you for all the sacrifices you have made to ensure I reached this milestone.

To my friends Charity Kamwendo, Bitu Nakanga, Tika Mulamba, Eden Jacobs, and Hakeem Mohamed, thank you for being my pillars of strength. Your unwavering support, friendship, and constant motivation have been invaluable during the highs and lows of this journey. You have inspired me to persevere, and I am fortunate to have you in my life.

I would also like to extend my heartfelt appreciation to my supervisors, Professor Mohamed Sayeed Bayat and Prof. Abdulrazak Karriem, for their wisdom, guidance, and constructive feedback. Your mentorship has shaped this thesis, and your commitment to my academic growth has been a source of great motivation. I am incredibly fortunate to have worked under your supervision.

Additionally, I would like to express my deep appreciation and belief in the women of Malawi, whose strength, resilience, and potential are limitless. This work is dedicated to you, and I hope it contributes to the progress toward gender equity and empowerment. I believe in all that you are capable of and the vital role you play in the sustainable development of our nation.

Lastly, I would like to acknowledge the many individuals and communities who have contributed to my understanding of ecosystem-based adaptation and gender equity. This work is a reflection of their insights, experiences, and struggles, and I hope that it contributes in some small way to the ongoing efforts toward a more equitable and sustainable world.

Thank you all.

Abstract

This thesis explores how ecosystem-based adaptation (EbA) strategies can become more effective and equitable when they incorporate gender inclusivity, with a specific focus on Southern Malawi. As climate change continues to disproportionately impact women and marginalized groups, the study looks at how gender-sensitive approaches to adaptation can help address these deep-rooted inequalities. The research looks at how gender affects both vulnerability to climate change and the success of adaptation initiatives utilizing frameworks such as ecofeminism, intersectionality, and the capacity approach.

Through interviews and fieldwork conducted in Southern Malawi, the thesis investigated current EbA initiatives that aim to protect and restore ecosystems while helping communities adapt to climate-related risks like floods and droughts. However, it was found that while these programs are well-intentioned, they often overlook the critical role women play in natural resource management and community resilience. In many cases, women—who are typically the primary users of natural resources—are excluded from decision-making processes, limiting the effectiveness of these adaptation strategies and perpetuating gender inequalities.

The case studies presented in this thesis show that when women are involved in adaptation planning and leadership, the outcomes are far more sustainable. Communities become more resilient, resource management improves, and governance structures are strengthened. The research highlights the importance of breaking down barriers that prevent women from participating fully, whether these are cultural norms, lack of access to education, or limited economic opportunities. It was also found that when gender-responsive policies are integrated into EbA frameworks, they lead to more equitable resource distribution, better access to climate finance, and improved adaptive capacities for both individuals and communities.

This thesis calls for a rethinking of climate adaptation policies in Malawi, advocating for approaches that place gender equity at the center. Sustainable development, as argued in this research, cannot be fully realized unless women's voices and leadership are prioritized in addressing climate change. The study concludes with practical recommendations for policymakers and development organizations to enhance gender inclusivity in EbA initiatives, ensuring that women are not just beneficiaries but key actors in building a climate-resilient future for Malawi.

Abbreviations and Acronyms

EbA – Ecosystem-based Adaptation

UN – United Nations

UNDP – United Nations Development Programme

IPCC – Intergovernmental Panel on Climate Change

SDGs – Sustainable Development Goals

HDI – Human Development Index

NGOs – Non-Governmental Organizations

CO₂ – Carbon Dioxide

GHG – Greenhouse Gas

CEDAW – Convention on the Elimination of All Forms of Discrimination Against Women

M&E – Monitoring and Evaluation

FAO – Food and Agriculture Organization

ILO – International Labour Organization

REDD+ – Reducing Emissions from Deforestation and Forest Degradation

EBAFOSA – Ecosystem-based Adaptation for Food Security Assembly

SOPs – Standard Operating Procedures

SDG 13 – Sustainable Development Goal 13: Climate Action

UNFCCC – United Nations Framework Convention on Climate Change

IUCN – International Union for Conservation of Nature

WEDO – Women’s Environment and Development Organization

DRR – Disaster Risk Reduction

GHRD – Global Human Rights Defence

GDP – Gross Domestic Product

GCF – Green Climate Fund

CBA – Community-Based Adaptation

SDG 5 – Sustainable Development Goal 5: Gender Equality

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1. Introduction

1.1 Background and contextualization

Climate change is defined as long-term shifts in the world's temperature and weather patterns (Salas et al., 2024). Such swings can be naturally caused by large-scale volcanic eruptions or changes in the sun's activity, but they may also be caused by human activity (Salas et al., 2024). Human activity has been the main contributor to the ongoing climate change since the beginning of the industrial revolution (Peters et al., 2022). In 2022, the global average temperature rose by around 0.91 degrees Celsius compared to the previous century. Global temperatures have often been among the hottest on record in the last decade. The spike in surface temperature is causing more severe weather, flooding, and drought in addition to a decrease in arctic ice and an upward trend in sea level (Peters et al., 2022). This is mostly due to the fact that greenhouse gas emissions retain solar heat in the atmosphere, creating an additional layer that raises temperatures (Peters et al., 2022). Climate change is not just a threat that has to be handled; it is a reality that has an impact on every region of the world. From harsh weather and rising sea levels to disruptions in agricultural productivity and biodiversity loss, the repercussions are wide-ranging and interconnected (Peters et al., 2022).

Africa is commonly regarded as one of the continents most vulnerable to the effects of global climate change, despite having the lowest greenhouse gas emissions (Attfield, 2020). Between 1884 and 2020, Africa produced approximately 48 billion metric tons of CO₂ emissions (Alahacoon et al., 2021). On the other hand, the globe released over 1.7 trillion metric tons of CO₂ between the start of the Industrial Revolution in 1750 and 2020 (Alahacoon, et al., 2021). Africa has made a relatively small contribution to the global carbon footprint; as of 2020, the continent contributed less than 3% of the world's total CO₂ emissions. On the other hand, the biggest polluters globally have been the US, Europe, and China (Attfield, 2020).

Climate change is expected to have a significant impact on small-scale farming in Africa due to rising temperatures, greater frequency of droughts and floods, and more erratic rainfall (Kerr et al., 2018). Finding workable strategies to help rural residents adapt to climate hazards and offer climate resilient solutions is crucial in light of these projections (Kerr et al., 2018). The term resilience is becoming more and more common in the jargon related to climate change. Because climate change is a global as well as a hyper-local problem, severe weather conditions have

demonstrated the importance of resilience as an element of any complete strategy to address the matter (Timpfane-Padgham, et al., 2017). However, the research has paid relatively little attention to the political and social processes surrounding information and knowledge sources about climate change adaptation among small-scale farming groups (Kerr et al., 2018).

Recently, there has been an increased focus on solutions that use nature as inclusive, regret-free methods in the fields of disaster risk reduction and climate change adaptation. Smallholder farmers in sub-Saharan Africa who mostly rely on rain-fed farming methods face significant challenges and risks as a result of climate change (Nalau, Becken, and Mackey, 2018). By mitigating the consequences of climate change, promoting resilience, and tackling environmental degradation, ecosystem-based adaptation (EbA) can contribute to the attainment of the objectives delineated in the 2030 Agenda, Paris Agreement, and Sendai Framework (Nalau et al., 2018). EbA's apparent strength originates from the notion that, given their interdependence and the threat posed by climate change, adaption strategies must simultaneously address ecosystems and livelihoods (Nalau et al., 2018).

EbA is widely seen as a promising response option, primarily because of its numerous ecosystem-service benefits, according to semi-structured interviews conducted with policymakers in Central Vietnam at the regional and provincial levels (Pham and Saner, 2021). The perceived effects of climate change and natural catastrophes were major factors in the push for EbA regulations. Key implementation barriers for disaster risk reduction were found to include time lags in effectiveness and inadequate perceived response efficacy (Pham and Saner, 2021). Projects implemented using a bottom-up method are generally made easier by national policy, strategy, and—most importantly—financial resources allocated by governments to support the local-level execution of adaptation initiatives (Pham and Saner, 2021). The majority of national adaptation plans are implemented locally, and local adaptation action plans must be created from international adaptation commitments as well as national adaptation plans (Pham and Saner, 2021).

1. 2 Contextualisation of the Study

1.2.1 Contextualisation of Ecosystem-Based Adaptation

By making sure that growth promotes ecosystem services and, consequently, improves human welfare, ecosystem-based adaptation strategies may be one strategy to mitigate the adverse social and ecological effects of climate change and unplanned, rapid expansion (Zari et al., 2020). EbA is essentially the process of enhancing biodiversity and ecosystems to aid in human adaptation to the consequences of climate change. It is based on the idea that we can enhance ecosystems' health and the amount of ecosystem services they provide by preserving, cleaning up, or regenerating them. This will enhance human growth, well-being, and resilience to climate change (Zari et al., 2020). The environment is negatively impacted by the intensive agricultural practices used in many African countries, which result in increases in greenhouse gas emissions, soil degradation, water pollution, biodiversity loss, and disruption of the carbon sink (Shah et al., 2019). Although there is growing recognition of the importance of promoting ecosystem-based adaptation techniques in smallholder agriculture, not much is known about the EbA strategies that these farmers already employ or the factors that influence their adoption (Shah et al., 2019). New strategies that capitalize on ecological processes within the agricultural system must be created if agricultural output is to continue to be high in the future (Shah et al., 2019). Prior research studies conducted in many parts of the world have shown that land degradation and environmental pollution can be managed by improved crop management approaches that include the exploitation of ecosystem services and biodiversity (Shah et al., 2019). Ecosystem-based adaptation is a term used to describe the application of agricultural management practices that utilize or benefit from biodiversity, ecological processes, or ecosystem services at the plot, farm, or terrain level in order to help improve the capacity of crops or livestock to adapt to climate variability (Shah et al., 2019). Zari et al. (2020) assert that ecosystem-based adaptation techniques can simultaneously boost agricultural output. Due to the concentrated impacts of global climate change, local government structures will be more accountable for preparedness and local responses (Williams et al., 2020). Representatives of local governments rarely have access to relevant climatic data or a thorough comprehension of how ecosystem functioning aligns with sustainable development objectives (Williams et al., 2020). Therefore, the use of ecosystems in this fashion is limited by the lack of understanding about the places where ecosystems have the greatest potential to assist humans in adapting to climate change. The global environment is changing as a result of interactions between

climate pressures, poverty, inequality, bad governance, population expansion, inadequate infrastructure, and haphazard, market-driven development (Williams et al., 2020). Locally, a community's vulnerability to different risks and hazards, like global warming, depends on how resources, such as wealth, natural assets, infrastructure, education, and municipal services, are distributed and accessible (Williams et al., 2020). Rural and peri-urban communities, who rely more heavily on ecosystem services than urban residents, may see major changes to their environments as a result of such interactions.

1.2.2 Contextualisation of Ecosystem-Based Adaptation and Gender Inclusivity in Malawi

Current global problems threaten ecosystems and rural livelihoods worldwide, posing serious risks to humankind (Huyer et al., 2020). Pandemics, widespread migration, climate change, and environmental degradation are some examples of these crises. The poor suffer disproportionately, particularly the most impoverished people (Huyer et al., 2020). It is anticipated that climate change will exacerbate pre-existing socioeconomic disparities, particularly with regard to gender inequality (Huyer et al., 2020). Therefore, creative and equitable approaches to climate adaptation and mitigation will be needed (Huyer et al., 2020). More than 55% of newly developed agricultural land was generated at the expense of natural forests, making tropical forests the new threshold for agricultural conversion (Kehoe et al., 2017). An excellent illustration of this trend is Malawi, a developing country experiencing fast population growth. More than 36% of Malawi's natural forest cover has been destroyed in just 40 years (Pullanikkatil et al., 2020). Furthermore, according to Banda (2022), Malawi remains among the countries with the lowest Human Development Index (HDI) values with an HDI score of 0.512 in 2022, it fell well short of the low HDI country average of 0.518 and significantly below the average sub-Saharan African score of 0.547 (Banda, 2022).

1.3 Background of the Research Area

Agriculture is the main source of subsistence for almost half of the labor force on the African continent, working along the entire value chain (Phiri et al., 2021). Industry is especially vulnerable to climate change since it has a big influence on the biophysical and socioeconomic environments (Phiri et al., 2021). The importance of social inclusion in agricultural development has led to a rise in interest in gender-intentional varietal cultivation and distribution among donors and research institutions (Asongu and Odhiambo, 2020).

Over time, concerns regarding fairness and gender relations have moved from being a niche issue of feminist economics to becoming a major focus of agricultural development (Cornwall and Rivas, 2015). The narrative generally agrees that boosting women's economic engagement will benefit society in a number of socioeconomic ways (Asongu and Odhiambo, 2020). These externalities include things like poverty reduction, innovation, consumer choice, and the preservation of the environment (Middleton et al., 2021). It is essential to place the issue of gender exclusion in Malawi as a way to support the reasoning for this study. Deeply rooted unjust laws, traditions, and practices that restrict women's and girls' access to opportunities, resources, and power are the cause of gender inequality in Malawi (Middleton et al., 2021). The nation's low performance on many gender-disaggregated socio-economic development indicators demonstrates that the persistence of unequal gender roles and power dynamics between men and women in every aspect of society leads to various forms of discrimination against women (Middleton et al., 2021).

1.4 Rationale of the Study

The discussion surrounding gender, disaster risk reduction, and climate change adaptation over the last 15 years indicates that there are significant gender-specific sensitivities and repercussions related to climate change (Angula et al., 2021). These disparities could be caused by a variety of factors, including educational attainment, cultural norms that hinder flexibility, and an unequal distribution of jobs, resources, and authority (Angula et al., 2021). In order to mitigate and adapt to the effects of climate change, gender inclusion is essential because it is not gender-neutral (Phiri et al., 2022). Africa has the highest rate of poverty among women worldwide (Asongu and Odhiambo, 2020), and according to Efobi et al. (2018), women's involvement in the formal economy promotes socioeconomic development in a number of ways, such as lowering poverty, strengthening structural labor market transformation, and protecting the welfare of women. The challenges facing the SDGs also serve as a backdrop for this study's perspective on gender inclusion. Although many organizations working with local communities to improve climate change resilience recognize the importance of gender, it is unclear how much gender is really taken into account in climate change initiatives (Bryan et al., 2018). Most women in developing countries find it extremely difficult to survive when agricultural technology utilization is notably low because of their inadequate capacity to adapt to climate change (Onwutuebe, 2019). In many African countries, such as Malawi, the situation is considerably worse. There, the agricultural

sector is still mostly undeveloped, heavily dependent on rainfall, and plagued by the absence of almost any agricultural machinery (Onwutuebe, 2019).

In general, poverty and a heavy dependence on climate-sensitive livelihoods render women more vulnerable to climate change than men (Onwutuebe, 2019). The alternative approach of ecosystem-based adaptation may be more inclusive of groups often considered to be more susceptible, including women and the impoverished (Hagedoorn et al., 2021). As stated by Mataya et al. (2020), the Malawian government recognizes the importance of adaptation in its long- and medium-term development goals, which include Vision 2020 and the Sixth National Development Plan, as well as through various policies and initiatives, including the Malawi National Climate Change Management Policy. The government as well as development partners have been supporting this objective to enhance capacity for climate change adaptation by allocating funds for various education and training initiatives (Mataya, et al., 2020). But as of yet, no study has been conducted to critically assess the circumstances in which this kind of training can improve an individual's capacity for adaptation (Mataya et al., 2020). The study is to ascertain the extent to which gender inclusion has been taken into consideration in climate change policy and the approaches that have been or ought to be created to address disaster risk management and adaptation.

1.5 Problem Statement

Malawi faces persistent challenges in integrating gender inclusivity into ecosystem-based adaptation (EbA) initiatives, despite the critical role women play in environmental management and climate resilience. Structural inequalities, policy gaps, and sociocultural barriers continue to limit women's participation in decision-making, restricting the effectiveness and sustainability of adaptation strategies (Ogbeide-Osaretin & Efe, 2022). Although efforts to mainstream gender in climate governance exist, they often fail due to weak institutional frameworks, inadequate financial support, and the exclusion of feminist perspectives from policy development (Farhall & Rickards, 2021). The marginalization of gender considerations in EbA planning reduces the impact of adaptation projects and hinders long-term community resilience. Additionally, limited access to capacity-building programs and financial resources further exacerbates gender disparities in climate adaptation efforts. This study critically examines these structural challenges and explores strategies for integrating gender-responsive frameworks into Malawi's climate adaptation policies,

ensuring that women and marginalized groups actively contribute to and benefit from sustainable adaptation measures.

1.6 Research Objectives

This study aims to ascertain the effect of reducing the gender gap on climate change mitigation.

1.6.1 Specific Objectives

- To examine how climate change impacts social, cultural and political factors
- To scrutinise the extent to which gender inclusion in green activities impacts economic growth.
- To analyse the cost-benefit results of green fiscal policy implementation.

1.7 Research Questions

1. What policies exist to promote gender inclusivity in climate change adaptation, particularly within Malawi's environmental governance framework?
2. How effective are ecosystem-based approaches in enhancing economic development and climate resilience in Malawi's climate-affected regions?
3. In what ways do climate change dynamics and political structures influence gender inclusivity in environmental decision-making within Malawi?

1.8 Case Study Area: Southern Malawi

1.8.1 Geographic and Ecological Significance of Malawi

Malawi is a landlocked country in Southeastern Africa, positioned within the Great Rift Valley, a major geological formation that extends from the Middle East down through Eastern and Southern Africa. The country's topography is characterized by highland plateaus, river valleys, and extensive lake systems, with Lake Malawi being its most defining natural feature. As the third-largest lake in Africa, Lake Malawi covers nearly 20% of the country's surface area, providing freshwater, fisheries, hydroelectric power, and biodiversity conservation opportunities. It is home to over 1,000 species of fish, many of which are endemic, making it one of the most biologically diverse freshwater ecosystems in the world. This ecological richness plays a critical role in ecosystem-based adaptation (EbA) efforts, as the lake and its surrounding wetlands contribute to natural flood control, carbon sequestration, and climate resilience.

Given its geographical location within the Great Rift Valley, Malawi holds strategic ecological and economic importance in Sub-Saharan Africa. It serves as a key member of the Southern African Development Community (SADC), contributing to regional food security, transboundary water resource management, and environmental conservation. The Shire River, Malawi's largest river, flows from Lake Malawi into the Zambezi River in Mozambique, making it a crucial water source for agriculture, energy generation, and domestic use. However, climate change, deforestation, and land degradation threaten the sustainability of these natural assets, exacerbating vulnerabilities among communities that depend on them.



Figure 1 Map of Malawi

1.8.2 Southern Malawi as the Case Study Area

This research focuses on Southern Malawi due to its high vulnerability to climate change, dependence on ecosystem-based livelihoods, and ongoing gender disparities in climate adaptation efforts. The region is the most densely populated in the country, with major urban centers such as Blantyre, Zomba, and Mangochi, alongside vast rural areas dominated by smallholder farmers and fishing communities. According to the National Statistical Office (NSO, 2019), Southern Malawi accounts for approximately 40% of the country's population, with many households relying on rain-fed agriculture, fisheries, and informal trade. These livelihoods are highly sensitive to climate variability, making adaptation strategies essential for economic stability and food security.

The region is prone to extreme weather events, including droughts, floods, and cyclones, which undermine development efforts and disproportionately affect marginalized groups, particularly

women. The Lower Shire Valley, home to Chikwawa and Nsanje districts, frequently experiences severe flooding due to the overflow of the Shire River, resulting in displacement, destruction of crops, and loss of livelihoods. Conversely, districts in upland areas suffer from prolonged droughts, soil erosion, and land degradation, further threatening agricultural productivity and food security. These environmental stressors exacerbate socio-economic inequalities, as vulnerable communities struggle to cope with climate-induced resource scarcity.

Given these challenges, EbA interventions have been introduced in Southern Malawi to enhance resilience through natural resource restoration, climate-smart agriculture, and sustainable land management. However, the effectiveness of these adaptation measures is often hindered by structural barriers such as weak policy frameworks, financial limitations, and gender inequalities. This study examines these challenges while exploring how gender-responsive EbA strategies can improve climate resilience and sustainable development in the region.

1.8.3 Linking the Case Study to the Research Objectives and Questions

This research is grounded in the need to investigate how gender inclusion is affected by climate change and the effectiveness of EbA strategies in addressing these challenges. The choice of Southern Malawi aligns directly with the research objectives and research questions, as it provides an opportunity to assess how climate adaptation policies, ecosystem restoration efforts, and gender mainstreaming intersect in a highly vulnerable region.

One of the primary research questions seeks to determine what policies exist to promote gender inclusivity in climate change adaptation within Malawi's environmental governance framework. This is particularly relevant in Southern Malawi, where women play a significant role in agriculture and resource management but are often excluded from decision-making. By examining existing policies and their limitations, the study explores opportunities for integrating gender-responsive adaptation frameworks into national and local strategies.

Another research question focuses on how effective EbA strategies are in enhancing economic development and climate resilience in Malawi's climate-affected regions. Southern Malawi presents an ideal case for evaluating the successes and shortcomings of EbA interventions, as the region has witnessed both successful community-led adaptation projects and failed adaptation attempts due to inadequate funding, policy gaps, and socio-cultural barriers. The study assesses

how EbA practices—such as wetland restoration, agroforestry, and sustainable fisheries management—contribute to long-term resilience while identifying factors that hinder their scalability and sustainability.

Finally, the research explores how climate change dynamics and political structures influence gender inclusivity in environmental decision-making within Malawi. In Southern Malawi, entrenched gender norms, unequal access to resources, and limited representation in governance structures make it difficult for women to engage in climate adaptation planning. The study investigates how institutional barriers and policy shortcomings reinforce these inequalities and examines potential policy interventions that could support gender-equitable climate adaptation.

Case study area – Southern Region, Malawi

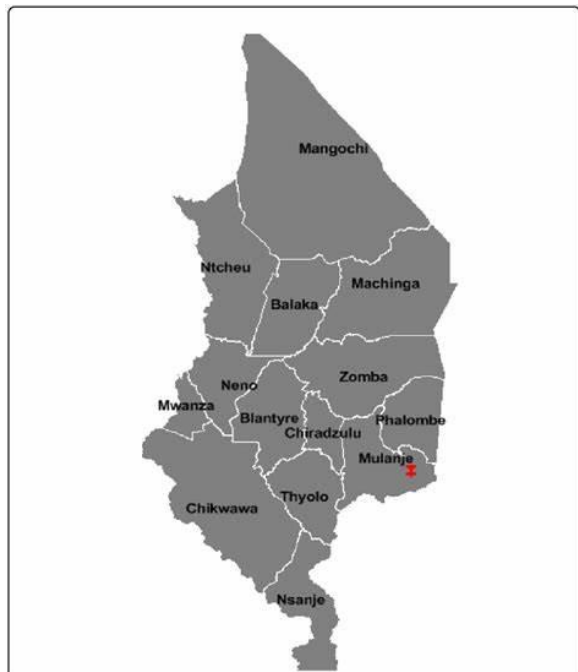


Figure 2 Map of Southern Malawi

1.9 Structure of the thesis

This research study is made up of 6 Chapters.

Chapter one introduces the study, its background and contextualisation, significance and case study area.

Chapter two focuses on the literature reviewed pertaining to development, ecosystem-based management and inclusivity challenges.

Chapter three covers the Theoretical Framework of the ecofeminism, intersectionality and capability approaches which have been applied to this study. The approaches were analysed in line with this study to facilitate an understanding to the research problem.

Chapter four details the research methodology employed in the undertaking of this study. This chapter explains the chosen mixed methods approach with the chosen data collection tools used to form the building blocks which support the parameters of the study.

Chapter five covers the data analysis to the study. The details of the findings of the research as well as the data derived is discussed and presented.

Chapter six details the conclusion as well as further recommendations to this study, based on the findings of the current study.

1.10 Conclusion

In conclusion, Chapter 1 has outlined the key concepts of this study, highlighting the pressing need for ecosystem-based adaptation (EbA) methods to address the challenges posed by climate change, particularly in vulnerable regions like Malawi. The chapter has emphasized that while Africa contributes minimally to global greenhouse gas emissions, it remains disproportionately affected by climate change, particularly in rural communities dependent on agriculture. EbA offers a critical solution by fostering resilience through ecosystem services, but its success is deeply intertwined with gender inclusivity. The need for integrating gender-responsive strategies into climate adaptation efforts is evident, as women and marginalized groups are often the most affected by climate-related disasters. By framing the research objectives around gender equity and sustainable development, this chapter has established the foundation for the study, which aims to assess the effectiveness of gender-inclusive policies in improving climate resilience and development

outcomes in Malawi. The next chapters will explore the theoretical frameworks, methodologies, and findings that support this investigation.

2: Literature Review and Theoretical Framework

2.1 Introduction

With its serious threat to both human well-being and the ecological balance of the world, climate change has come to be recognized as the central concern of the twenty-first century. Its complex effects go beyond natural limitations, upending economies, escalating social injustices, and disproportionately harming people that are already vulnerable. This chapter explores the complex interrelationships of ecosystem-based approaches to gender equality, economic development, and global climate challenges. The first section of the assessment outlines the scope of the global climate change challenge and explains how inadequate implementation of gendered climate change policies has increased development stress and gender inequality. Ecosystem-based approaches will be discussed, including their justifications in varying economies followed by a summary of the pertinent literature in Malawi.

The study will next discuss its findings in the literature on other approaches to gender intersection and climate change adaptation that have been used nationally, internationally, and regionally. In reference to the latter, the market, the demographics targeted by the implementation of this gendered policy, the impacted communities and their adaptation strategies, and the negligible risks and difficulties resulting from the absence of civic education regarding gendered climate change adaptation will all be discussed. This study is justified and will include an overview of Malawi's climate change evolution, its societal repercussions, and its historical background.

2.2 Global Climate Challenges

The scientific community is in complete agreement that human activity is causing an unprecedented rise in global temperatures, and that this warming is having a detrimental domino effect (Abbass, Qasim, Song, Murshed, Mahmood and Younis., 2022). The frequency and severity of extreme weather events including heatwaves, wildfires, droughts, and floods increase in response to rising temperatures (Adediji, 2014). These occurrences cause large economic costs by uprooting populations, damaging infrastructure, and disrupting agricultural production (Adediji, 2014). Sea levels are increasing as a result of melting glaciers and the thermal expansion of the ocean, endangering coastal towns and allowing saltwater to seep into freshwater supplies (Adediji, 2014). This puts food security in danger and interferes with coastal regions' ability to conduct

business. The damage caused by climate change has enormous financial costs. According to Franczak (2024), there are estimates that by 2030, climate change might force over 100 million people into poverty, disproportionately affecting the most vulnerable and impoverished populations.

Climate change's effects are not gender neutral. Social injustices already in place make people more vulnerable, especially women who, in many areas, frequently have restricted access to financial, water, and land resources (Pearse, 2017). Women's livelihoods and food security are disproportionately affected by the increased disruption of these resources caused by climate change consequences like droughts and other disasters which put more of a strain on women to perform household tasks like gathering food and water (Gender and Alliance, 2016). This time commitment restricts one's ability to learn, earn money, and participate in decision-making. Particularly in areas where there is a high risk of conflict, resource scarcity and relocation brought on by climate change may make women and girls more vulnerable to violence (Pearse, 2017).

Although there are many obstacles associated with climate change, there are also many chances for economic growth. Investments in environmentally friendly technologies, renewable energy infrastructure, and sustainable resource management techniques are necessary to make the shift to a low-carbon economy (Dannevig, et al., 2022). These initiatives can stimulate economic diversification, generate new employment opportunities, and stimulate innovation. Creating a future that is climate resilient, according to Varayudej (2015), requires a two-pronged approach. Long-term climate stability depends on initiatives to cut greenhouse gas emissions through the switch to clean energy sources and the promotion of energy efficiency (Varayudej, 2015). To further prepare for the unavoidable effects of climate change, investments in systems for early detection, resilient agriculture, and improved infrastructure are crucial (Glemarec, 2022). Economic development plans must, however, also be equitable and inclusive; a "green economy" shouldn't exacerbate existing disparities or abandon underprivileged groups (Dannevig, et al., 2022). A more resilient and equitable future may be created for all by including women's perspectives, knowledge, and abilities into climate solutions (Asongu, Messeno and Guttemberg., 2022).

2.3 Ecosystem-Based Approaches to Climate Change

The globe is at a turning point in its efforts to combat the several issues facing humanity, the most urgent of which is climate change (Ritchie, Clarke, Cox and Huntingford., 2021). However, the effects of climate change differ significantly throughout nations and demographic groupings especially where the number of fatalities and the overall impact on investment and the economy are concerned, the nations with the fewest resources are likely to pay the price (Newell, Srivastava, Naess, Contreras and price., 2021). According to Rozenberg and Hallegatte (2015), 74 of the lowest-income nations contribute only 10% of global greenhouse gas emissions, yet they bear the brunt of the consequences of climate change. They have already had around eight times the amount of catastrophic weather events in the last ten years as they did in the 1980s (Rozenberg and Hallegatte, 2015). Left unattended, climate change might drive more than 200 million people to migrate across their own countries by 2050, resulting in an impoverished population of up to 130 million people and the collapse of decades' worth of arduously earned development gains (Rozenberg and Hallegatte, 2015).

There is currently a growing interest in adopting a novel strategy known as Ecosystem-based Adaptation (EbA), which makes the claim that it can prevent social exclusion and marginalization, get past adaptation problems and inadequate attention to biodiversity, as well as enhance the social component of adaptation efforts (Huq, et al., 2013). The goal of EbA is to integrate the basic, yet seemingly incompatible, components of the current adaptation policy into a sustainable framework for climate change adaptation (Huq, et al., 2013). With its emphasis on ecosystems and biodiversity in adaptation, growth amid adaptation, and long-term resilience building, the Ecosystem Based Approach (EbA) holds great potential to improve the functionality of present adaptation approaches and yield numerous socio-economic advantages (Huq, et al., 2013).

EbA is defined by Donatti et al. (2020) as the application of ecosystem services and biodiversity in a plan to aid in human adaptation to climate change. Girot et al. (2012) emphasized that one of the fundamental ideas of EbA that improves the efficacy of adaptation is the preservation of natural resources. EbA is a strategy that increases community resilience and lessens their susceptibility to climate change (Pérez et al., 2010). In light of climate change, it lays particular focus on the environmental services that support human well-being with the basic premise that by conserving

ecosystems and offering ecosystem services to society at large, ecosystem-based solutions can help address climate change adaptation (Price and Boulle., 2023).

2.3.1 Justification for EbA in Climate Change

Ecosystem-Based Adaptation (EbA) has emerged as a critical strategy for enhancing climate resilience by leveraging natural systems to mitigate the impacts of climate change while simultaneously supporting sustainable livelihoods and biodiversity conservation (Price and Boulle., 2023). Despite its growing recognition, EbA remains a relatively new approach that has not yet been fully integrated into mainstream climate adaptation policies and development planning (Huq et al., 2017). The integration of EbA into national, regional, and local policies requires a participatory, ecosystem-based, and spatially integrated approach to planning, ensuring that adaptation strategies are both context-specific and scalable (Huq et al., 2017). However, transitioning from pilot projects and experimental models to fully institutionalized policies remains a challenge (Babel, Gunathilake and Jha., 2021).

One of the key advantages of EbA is its ability to provide multiple co-benefits beyond climate adaptation (Akamani, 2021). Unlike conventional adaptation measures that often rely on infrastructure-heavy solutions, EbA harnesses ecological processes to build resilience in a way that also promotes biodiversity conservation, enhances ecosystem services, and supports sustainable livelihoods (Akamani, 2021). The multinational EbA South initiative, formally known as the “Ecosystem-based Adaptation through South-South Cooperation”, has demonstrated the tangible benefits of ecosystem restoration and adaptive management in different ecological and socio-economic settings (Mills et al., 2020). Through projects implemented in Mauritania, Nepal, and the Seychelles, EbA South restored mountain, dryland, and coastal biodiversity, demonstrating how targeted ecological interventions can strengthen climate resilience in vulnerable communities (Mills et al., 2020). The insights gained from these diverse ecosystems offer valuable guidance for scaling up EbA efforts in other climate-affected regions, including Malawi.

The vulnerability of Malawi to climate change, largely driven by reliance on rain-fed agriculture, deforestation, soil degradation, and erratic weather patterns, highlights the urgent need for adaptive strategies that go beyond traditional development models (Demissie and Gebrechorkos., 2024). EbA offers a sustainable and cost-effective alternative by restoring degraded landscapes, improving water retention, increasing agricultural productivity, and reducing exposure to climate-

induced disasters such as floods and droughts (Price and Boule., 2023). By promoting the rehabilitation of forests, wetlands, and grasslands, EbA enhances the ability of natural ecosystems to regulate water flows, prevent soil erosion, and maintain carbon sequestration, all of which are crucial for long-term resilience (Mills et al., 2020).

The EbA South project also emphasized the importance of knowledge-sharing and cross-country collaboration in implementing successful adaptation strategies (Mills et al., 2020). Through regional networks in Africa and Asia, the initiative facilitated the exchange of resources, including key planning tools such as “ALiVE: Adaptation, Livelihoods, and Ecosystems” (UNEP-IEMP & IISD, 2018), the “Ecosystem-based Adaptation Handbook” (Swiderska, King-Okumu, & Islam, 2018), and various research guidelines and video documentaries that provide evidence-based best practices for EbA implementation (EbA South project team, 2019). These resources serve as valuable guides for policymakers, researchers, and practitioners seeking to design and implement EbA initiatives tailored to their specific ecological and socio-economic contexts (Mills et al., 2020).

Incorporating EbA into national and local policies requires careful planning, financing, and institutional support to ensure long-term sustainability. As noted by Agol et al. (2014), exit strategies for EbA projects are essential to maintaining the ecological infrastructure created during project implementation. The financial and operational sustainability of post-project maintenance varies depending on the social, economic, and ecological characteristics of each site (Mills et al., 2020). Given that these contexts are often unpredictable at the outset of a project, flexible and adaptive governance structures must be established to allow for continuous monitoring and revision of exit strategies (Mills, Tan, Manji, Vijiapan, Henriette, Murugaiyan, Pantha, Lafdal, Soule, Cazzetta, Begat, Vlieghe, Lavriotte, Kok and Lister, 2020).

The limited global adoption of EbA can largely be attributed to policy fragmentation, insufficient funding, and a lack of mainstreaming within national development plans (Rawlins, Monteith, Kalaba and Clements., 2023). To maximize the potential of EbA, it is critical to increase stakeholder participation in climate adaptation planning, ensuring that local communities, policymakers, researchers, and private sector actors are actively engaged in designing and implementing sustainable solutions (Huq et al., 2017). In the case of Malawi, where women and marginalized groups are disproportionately affected by climate change, EbA provides an

opportunity to integrate gender-responsive strategies that empower communities through sustainable resource management and equitable access to climate adaptation resources (Demissie and Gebrechorkos., 2024).

By recognizing the long-term benefits of EbA and embedding it within national climate adaptation frameworks, Malawi and other vulnerable nations can build more resilient ecosystems and societies while addressing the root causes of environmental degradation and socio-economic inequality (Demissie and Gebrechorkos., 2024). The transition from pilot projects to large-scale EbA implementation requires sustained investment, cross-sector collaboration, and strong governance mechanisms to ensure that ecosystem-based approaches become a standard practice rather than an experimental alternative (Rawlins, Monteith, Kalaba and Clements., 2023).

2.3.2 Justification for Women in Climate Change Adaptation

With the above in mind, there is still hope for Sub-Saharan Africa, therefore hope for Malawi, to develop resilience in spite of the obstacles. Wetlands and forests, for example, can act as natural barriers against coastal erosion, flooding, and droughts by being preserved and restored (Sono, et al., 2021). There is a claim that policy makers in the cities of Sub-Saharan Africa are not well-informed on how to effectively forge connections between the objectives of SDG 11 which is sustainable cities and SDGs related to the environment and natural resources, like SDG 13 which is climate change action and SDG 15 which is life on land (Chirambo and Mutezo, 2023). Similar to this, the execution of SDG 15 in Africa's rural and urban contexts is marked by insufficient resources that are making losses in ecosystem services and biodiversity more dangerous (Chirambo and Mutezo, 2023).

Sub-Saharan Africa is a global hotspot for climate change vulnerability, according to the Intergovernmental Panel on Climate Change (IPCC, 2022). The region is already suffering greatly from extreme weather events like droughts and floods, unpredictable rainfall patterns, and rising temperatures and it is predicted that Sub-Saharan Africa will see temperature increases faster than the global average, which could have disastrous effects on human health, agriculture, and water resources (IPCC, 2022). In addition, reduced rainfall in some regions and more intense storms in others will disrupt agricultural production, increasing the risk of food insecurity and malnutrition (IPCC, 2022). Food security can be improved by putting into practice water-saving irrigation methods, drought-resistant crops, and sustainable land management strategies and communities

can reduce damage and better prepare for catastrophic weather occurrences by investing in early warning systems (Sono, et al., 2021). Ultimately, granting women the opportunity to participate in the processes of decision-making and resource allocation enables them to adjust and contribute to solutions (Schanes et al., 2018).

Women frequently experience a disproportionate amount of the negative effects of climate change. Their vulnerability is increased by gender disparities in land ownership, resource access, and decision-making authority (Dankelman, 2010). Sub-Saharan Africa's food production is heavily dependent on women, however their inability to maintain food security for their family and adjust to shifting weather patterns is hampered by their lack of access to land, water, and credit (Dankelman, 2010). Droughts make collecting water more time-consuming and labor-intensive, which means that women may have less time for education or other activities that provide revenue (Dankelman, 2010). Further, women and children are disproportionately affected by migration and relocation brought on by climate change. In camps for the displaced, they are more susceptible to abuse, exploitation, and poor sanitary conditions (Oxfam, 2021).

Sub-Saharan Africa faces many challenges because of climate change, including those related to food security, water resources, health, relocation, and social structures therefore it is imperative to comprehend the distinct vulnerabilities encountered by diverse groups, especially women, in order to devise constructive adaptation tactics (Dickerson, Cannon, O'Neill., 2022).

Robust ecosystems, such as wetlands, mangroves, and forests, serve as storm-, flood-, and drought-resistant barriers that shield agricultural land and infrastructure (World Bank, 2023). The implementation of EbA strengthens local economies and diversifies sources of income by generating jobs in green tourism, ecologically sound resource management, and conservation (CBD, 2020). Rehabilitation and conservation-focused EbA initiatives support species variety and habitat safeguarding, which contributes to a robust and healthy ecosystem (IUCN, 2021). When considering the decreased maintenance costs, EbA solutions might end up being more cost-effective in the long run than traditional infrastructure expenditures (UNEP, 2020).

The World Bank (2022) states that because women often lack access to land, water resources, financial capital, and education, they frequently face challenges to economic engagement and climate change adaptation. Due to a lack of resources and experience, women farmers typically

produce less than men do in the agricultural sector, which raises food insecurity (FAO, 2021). As a result, research shows that having more women in the workforce and decision-making processes improves child welfare, reduces poverty, and boosts GDP growth (UN Women, 2020). Women can be encouraged to respond to climate change and support growth in the economy through strategies that take into account their unique needs and knowledge (UN Women, 2020). EbA initiatives that involve women in their development, operation, and reaping of benefits enhance sustainable resource management and foster a sense of collective ownership (IUCN, 2023). Some examples of these tactics are securing women's land rights and providing instruction in environmentally friendly farming methods (UN Women, 2020). The UNDP (2023) claims that EbA initiatives can provide women with employment opportunities in eco-tourism, seedling management, and planting trees, thereby increasing their income and economic power. The findings demonstrate how gender equality, economic development, and EbA are all intertwined therefore, women can be empowered, climate resilience can be developed, and a more sustainable future can be created for all by advocating gender-inclusive EbA initiatives (UNDP, 2023).

A successful EbA project in Senegal that taught women mangrove restoration techniques is highlighted by (Hiraldo and Böhm 2020). By selling sustainable mangrove goods, this enterprise not only improved coastal conservation but also gave women new avenues for income (Hiraldo and Böhm 2020). Additionally, a watershed management-focused EbA project in Ethiopia is described by IUCN (2017), the project enhanced food security and livelihoods for women-led households by giving them training in sustainable land management techniques and including them in decision-making processes.

2.4 Climate Change and its Impact in Southern Malawi

As discussed above global development is seriously threatened by climate change, and sub-Saharan Africa is one area that is especially susceptible to its disastrous repercussions. For the purpose of this study the landlocked country of Malawi in Southeast Africa will be examined.

Malawi ranks 174 out of 189 countries and territories in terms of HDI in 2019, placing the country among the less developed countries and below the average for Sub-Saharan African nations (0.483 vs. 0.547) (UNDP, 2021). As a result, it counts toward the least developed nations (LDCs) in the globe. With an overall length of 900 km and a breadth of roughly 250 km, Malawi's total area of

118 484 km² is rather small when compared to its neighboring countries. Of this total area, 47% is cultivated for agricultural purposes (NSO, 2019). Because of this, the agricultural industry employs more than 80% of the workforce and adds about 30% to the GDP of the country (World Bank Development Indicators, 2021). The tropical continental weather of Malawi is typified by lower temperatures in the highlands (Government of Malawi, 2021). Twenty percent of the state is made up of surface water bodies, the largest of which being Lake Malawi, which is situated on the eastern border (FAO, 2006). According to Asfaw and Maggio (2018), there is a strong period of rainfall between November and April, and then a dry season from May to October. There are four distinct topographic zones in Malawi: the southern highlands of Mulanje, Zomba, and Dedza; the central and northern plateau; the rift valley escarpment; and, finally, the rift valley plains that run along the shores of Lake Malawi, known as the Upper and Lower Shire Valleys (FAO, 2006).

Through semi-structured interviews with 1582 Malawian households, Abid, Ali, Rahut, Raza and Mehdi., (2020) were able to gather data that indicated the majority of rural farmers had experienced multiple long- and short-term climate shocks over the previous ten years. Over two-thirds of the families reported experiencing a drought at least once during this period, with one-fourth of the respondents indicating a frequency of three to five times (Abid, Ali, Rahut, Raza and Mehdi., 2020). The regional prevalence of droughts, which mostly affect Malawi's north and south and less so its center regions, is also significant (Abid, Ali, Rahut, Raza and Mehdi., 2020). The majority of farm households surveyed reported experiencing socio-economic challenges, citing a sharp rise in the cost of food and agricultural inputs and, consequently, higher overall household expenditures (Abid, Ali, Rahut, Raza and Mehdi., 2020). These households are further impacted by unfavorable market conditions, which are reflected in lower output prices and less profit. Similar effects of unstable socioeconomic conditions are found by Botha, Nkoka and Mwumvaneza (2018), who point out that losses in the agriculture sector account for roughly 30% of Malawi's GDP and that a drop in production following climate shocks raises average prices and feeds inflation. Amadu, McNamara and Miller (2020) and Ubilava (2017) have also referenced increased commodity prices as a result of natural disasters like the El Niño drought.

According to Joshua, Ngongondo, Monjerezi, Chipungu, Liwenga, Majule, Stathers and Lamboll (2016), many (social) practices had to be abandoned due to poor or nonexistent crop yield caused by climate change and its aftereffects, such as famine. These practices included making free beer

for the entire village, activities for kids (such as nomi/masanje, where field scraps are cooked following the main harvest), games for good health (like chipako or suluma/ndidze), and local maize production in favor of hybrid varieties (Joshua, Ngongondo, Monjerezi, Chipungu, Liwenga, Majule, Stathers and Lamboll., 2016). Stringer, Dyer, Reed, Dougill, Twyman and Mkwambisi (2009) and Mkwambisi (2008) discussed additional social impacts of climate change, describing how droughts prevented districts in Kasungu and Mchinji from accessing water for domestic use. Consequently, as adaptation strategies, young girls were compelled to work around the house and support their families (Mkwambisi, 2008). These actions might worsen poverty by expanding the gap among those who can afford “ganyu” labor and those who rely on it,” as well as promote the use of child labor and other exploitative practices like ganyu, meaning casual rural labor trade (Mkwambisi, 2008).

Due to its significant reliance on rain-fed agriculture, the nation is particularly vulnerable to catastrophic weather events like floods and droughts (Kerr, Nyantakyi-Frimpong, Dakishoni, Lupafya, Shumba, Luginaah and Snapp., 2018). These modifications impair food security, disturb agricultural productivity, and deepen already-existing economic disparities (Kerr, Nyantakyi-Frimpong, Dakishoni, Lupafya, Shumba, Luginaah and Snapp., 2018). According to the World Bank Group (2011), maize accounts for 52% of all agricultural cropland and is regarded as a staple grain. Munthali et al., (2019) estimate that 80% of people who live in rural, and peri urban areas are entirely dependent on natural resource endowments, making them extremely vulnerable to external climate shocks. According to Munthali, Nankwenya, Nyirenda, Chilora, Chiwaula, Chirombo and Troosters (2019), Malawi is experiencing a rise in deforestation and forest degradation due to several factors such as the expansion of agriculture, development of infrastructure, illicit charcoal production, urbanization, population growth, and alterations in farming. Furthermore, connected to deforestation, desertification, and soil erosion is biomass, the primary energy source for the majority of Malawians. Due to the relatively limited coverage of electricity, there is a large production of fuelwood and charcoal (Munthali, Nankwenya, Nyirenda, Chilora, Chiwaula, Chirombo and Troosters 2019).

2.4.1 Gender Integration in Climate Change in Southern Malawi

All Malawians are challenged by climate change, but women are disproportionately affected by its effects, this discrepancy is exacerbated by social and economic inequality (Kerr, Nyantakyi-Frimpong, Dakishoni, Lupafya, Shumba, Luginaah and Snapp., 2018). Even though governmental

and non-governmental organizations work nonstop with communities to tackle the underlying causes and effects of this vulnerability, their efforts are ineffective because of inadequate organizational capacity, particularly at the district and sub-district levels, which leads to poor integration and delivery (Phalira, Nagoli, Kayambazinthu and Chiotha., 2018). Women's ability to adapt to climate change is hampered by their frequently restricted access to land, water resources, and financial capital. Furthermore, women are typically responsible for ensuring the food security of their households due to conventional gender roles, which leaves them especially vulnerable to crop failures and interruptions in food production systems (Mwase, Jumbe, Gasc, Owiyo. Manduwa, Nyaika, Kwapata and Maonga., 2014). Temperature shocks do, in fact, have a gender-specific influence, according to Asfaw and Maggio's (2018) study of over 3.000 families in Malawi between 2009–10 and 2012–13. As a result, the welfare of households headed only by women suffered more, with daily calorie intake, food consumption, and consumption all declining (Asfaw and Maggio, 2018). Furthermore, research indicates that women are less susceptible to shocks in areas known as matrilineal districts, where they have historically had more solid property rights (Asfaw and Maggio, 2018).

Research concentrating on female fishermen living at Lake Chilwa, which is highly exposed to temperature and precipitation fluctuations and is consequently prone to drying out, could demonstrate the effects of climate change on women in particular (Manyungwa-Pasani, Hara and Chimatiro, 2017). According to Jørstad and Webersik (2016), this has an impact on the closed drainage lake's fish population size, which can then increase women's income. Furthermore, the area adjacent to the lake is also affected by the drying up, which could lead to crop failure and food instability. The common tactic at that time is to turn to ganyu, or casual daily wage labor, however while it can be a fallback during lean times, it is not a consistent source of income particular (Manyungwa-Pasani, Hara and Chimatiro, 2017). Studies have demonstrated that socially constructed gender norms frequently result in women experiencing lower levels of schooling and job prospects than men, and as a result, they are more reliant on smallholder agriculture particular (Manyungwa-Pasani, Hara and Chimatiro, 2017). The link between gender equality and climate change susceptibility has been established. For example, the lack of funding makes it impossible to guarantee the implementation of climate-smart activities (Timilsina, 2021). At this stage, Henriksson and Kullberg (2021), Shackleton (2019), and Djoudi, Locatelli, Vaast, Asher, Brockhaus and Sijapati (2016) emphasize that social global warming consequences require

an intersectional approach because social power obstacles frequently prevent actions to adapt to or reduce the impacts of climate change.

In response to climate change, ecosystem-based adaptation, or EbA, offers a practical means of promoting resilience and sustainable development (Huq, Stevenson and Zorzini., 2013). To strengthen natural defences against climate extremes, ecosystem restoration, management, and protection are the main goals of EbA (Huq, Stevenson and Zorzini., 2013). By absorbing rainfall, healthy ecosystems can lessen the impact of flooding, prevent erosion along coastlines, and promote sustainable resource management (Huq, Stevenson and Zorzini., 2013). In addition to enhancing environmental resilience, this nature-based strategy has the potential to boost the economy by producing jobs in sustainable resource management and conservation (Donatti, 2020). Gender inclusivity is essential for EbA to be really effective and sustainable. It is imperative that gender issues are incorporated at every stage of the project, from planning and execution to monitoring and assessment (Oloukoi, et al., 2014).

In addition to promoting equal access to benefits and ensuring that men and women participate equally in decision-making processes, this also gives women the power to use their knowledge and expertise to help create climate resilience (Oloukoi, et al., 2014). The significance of gender-inclusive methods is emphasized, and the potential of EbA as a tool for climate adaptation is reviewed. The goal of this study is to aid in the creation of successful EbA projects that support gender equality and sustainable development in Malawi by critically evaluating previous studies and identifying knowledge gaps.

2.4.2 EbA Implementation in Malawi

According to Mataya et al. (2020), the Malawian government acknowledges the value of adaptation in a number of policies and initiatives, including the Malawi National Climate Change Management Policy, in addition to its long- and medium-term plans for development, Vision 2020 and the Sixth National Development Plan. Although efforts are being made to mainstream climate change adaptation into policy creation and strengthen a foundation of technical human resources, most sub-Saharan countries are not fully adapting to the effects of climate variability and change, and the execution of those strategies is only partially successful. Additionally, the Malawian government is pursuing a new pluralistic extension policy aimed at helping farmers overcome

obstacles to raising productivity and adjusting to changing climate conditions; yet, up to now, synchronization among extension workers has been comparatively lacking.

Suggested as a potential catalyst for scaling up EbA, positioning EbA approaches as a component of a composite solution to decrease inefficiencies along Africa's agricultural value chains and work toward attaining SDGs is noteworthy (Munang and Mgendi, 2017). Through multistakeholder, reciprocal, and complementary collaborations being promoted under the Ecosystem-based Adaptation for Food Security Assembly (EBAFOSA) policy action framework led by the UN Environment, the continent is actualizing this strategic trajectory (Munang and Mgendi, 2017). Positioning EbA as an option in a holistic approach to optimize the productivity of Africa's agricultural value chains and climate-proof them is EBAFOSA's plan for scaling up EbA. An alternative approach to addressing climate change would be to view EbA as an independent strategy that is only carried out as a climate obligation and is not linked to any direct social and economic action (Munang and Mgendi, 2017). This would seek to guarantee that the economic advantages of food security, jobs, income, and macroeconomic growth are generated alongside climate resilience and improved ecosystems, thereby stimulating the achievement of multiple SDGs (Munang and Mgendi, 2017).

The cornerstone of EBAFOSA's EbA business model is establishing EbA in this manner, which aims to encourage business-driven initiatives to scale up EbA. Stakeholders have worked with the Malawi Bureau of Standards through EBAFOSA Malawi to create quality standards for sesame, a valuable crop that is resistant to drought (Munang and Mgendi, 2017). Through this relationship, sesame's marketability is being improved, crop revenues are rising, and the crop's widespread growth is being encouraged. Together, these outcomes are battling food insecurity and poverty (Munang and Mgendi, 2017).

2.5 Potential Gaps in Literature

Sub-Saharan African landlocked nation of Malawi is confronted with serious climate change issues that disproportionately affect women. Even while research is being done on these topics, there are still a number of gaps that prevent practical adaptation techniques from being developed (Munroe et al., 2012). This section examines these gaps in knowledge and identifies areas that need more research. There aren't many initiatives offering long-term data and lessons learned on EbA because it's a relatively new method, therefore methods employed in one project might not be applicable

in another due to the multidimensional nature of EbA, which has a wide range of applications in many ecosystems and occurs at a wide variety of times and places (Mills, et al., (2020). It also takes years, if not decades, for EbA projects to yield meaningful results, which slows down the pace at which information about how to apply EbA effectively is developed (Mills, et al., (2020). Additionally, it can be difficult to evaluate the entire socioeconomic impact of EbA on communities because the benefits of EbA are frequently hard to measure (Mills, et al., (2020). Therefore, thorough documenting of the achievements and failures of EbA programs is required.

Gender-disaggregated statistics on the particular effects of climate change on women in Malawi are typically lacking from existing research. Data on women's land ownership, access to credit and other resources, and involvement in climate change adaptation decision-making processes are necessary to fully comprehend the complexities of their susceptibility (Dankelman, 2010). Although qualitative study provides insight into women's experiences with climate change, more investigation is necessary to fully comprehend their knowledge systems, coping mechanisms, and adaptation tactics (Schanes et al., 2018). Previous studies frequently fail to include the ways in which gender interacts with socioeconomic position, age, and disability to influence climate change susceptibility therefore developing inclusive adaptation methods requires a more nuanced knowledge (Alber & Ayers, 2020). There is a shortage of research on the effects of climate change on intra-household dynamics, specifically on women's capacity for negotiation in families and communities (Carney, 1998). To add, in Malawi, women typically have coping strategies and traditional knowledge to deal with climate variability. In order to create culturally appropriate and successful adaptation techniques, further study is required to catalogue and comprehend these indigenous knowledge systems (Nyong et al., 2007).

There is a lack of research on the efficacy of current climate change measures and how much gender issues are considered and so to close the gap between policy and practice, it is imperative to comprehend these elements (Huyer et al., 2018). Ecosystem-based Adaptation (EbA) techniques are promising, but there is still an absence of data on how well these programs in Malawi incorporate gender considerations. Research is required to evaluate the ways in which EbA initiatives support gender-equitable development, empower women, and strengthen their capacity for adaptation (WEDO, 2020). Longitudinal studies are necessary to comprehend how the long-term effects of climate change on women in Malawi alter over time and to guide long-term

adaptation plans, as there is a deficit of research on this topic (Leal Filho et al., 2018). There have been notable advancements in research on gender, development, and climate change in Malawi. There is still a lack of sufficient knowledge, though, on the long-term effects of climate change, the effectiveness of current policies and initiatives, and the unique vulnerabilities faced by women. Closing these disparities is essential to creating successful adaptation plans that support Malawi's sustainable development and gender equality.

2.6 Theoretical Framework

The relationship between climate change and gender discrimination can be better understood through theoretical frameworks like the capabilities approach (Robeyns, 2006), the intersectionality approach and the ecofeminist perspective (Kings, 2017).

2.6.1 Intersectionality Approach

Intersectionality is described by Gutterman (2022), as an important framework used to understand the unique experience and resilience of different individuals and how multiple systems have influenced them. These systems can take the form of patriarchy, white supremacy, heterosexism and capitalism (Gutterman, 2022). These systems do not often take place individually and have greater sum effects than they would in isolation (Gutterman, 2022). This approach highlights how multiple factors intersect with gender discrimination and shape the experiences and vulnerabilities that women and girls are exposed to due to climate change (Kaijser and Kronsell, 2014). Globally, women are more severely impacted by climate change, which can worsen already-existing disparities or put them at risk of gender-based violence (Gillespie, et al., 2023). We can comprehend how and why certain groups of women are more affected than others by utilizing intersectionality (Lotfata and Munenzon, 2023). We can offer women a voice in the climate problem and spur significant action by comprehending intersectionality. One of the biggest advantages in reducing the effects of climate change and ensuring that any measure taken will truly assist is including different points of view, from individuals who understand how the phenomenon is impacting them and the most vulnerable individuals around them (Lotfata and Munenzon, 2023).

The effects of the environmental crisis on women's well-being are widespread and range from minor setbacks in terms of their availability and productivity to an increased risk of gender-based violence during emergencies (Lotfata and Munenzon, 2023). If the issue of climate change is not adequately handled, these problems could become more entrenched and widespread, for example

by widening the gaps in education and the economy (Gillespie, et al., 2023). Women already frequently hold disadvantaged positions in the economy from the United States to Africa, with many working in resource-based or climate-sensitive industries (Lotfata and Munenzon, 2023). Considering the fact that only 12.6% of women own land worldwide, even though 43% of women in developing nations are employed in the agricultural sector, reveals that these women are left with little protection or recompense in the event that climate disasters negatively impact their

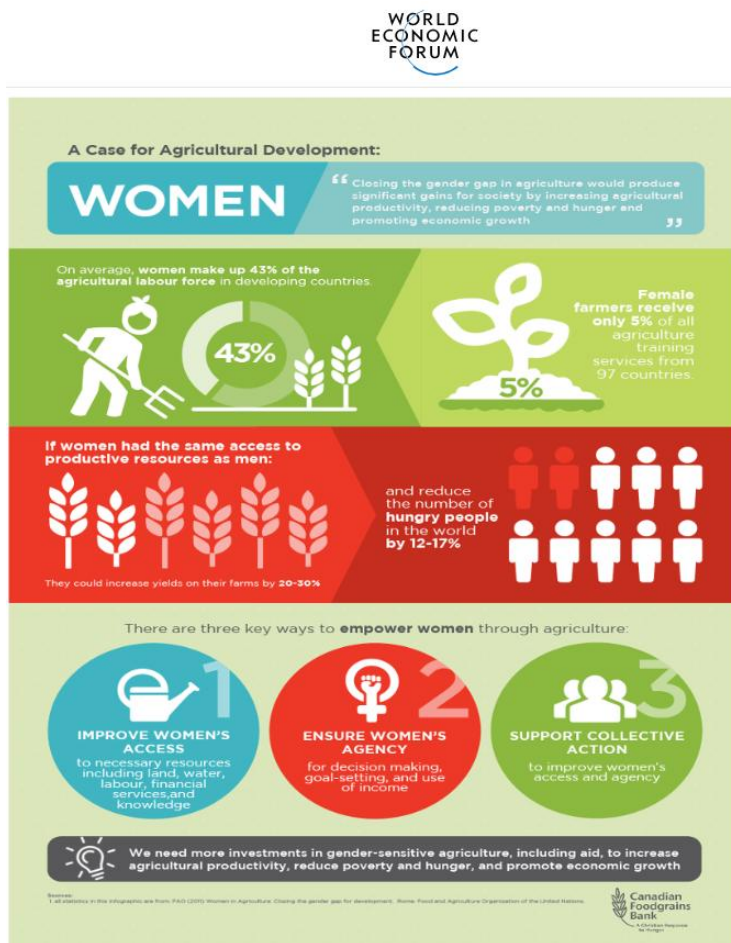


Figure 3 Canadian Foodgrains Bank

livelihoods (Lotfata and Munenzon, 2023). It is anticipated that this disparity would grow as the frequency of climate-related disasters rises. The expectations placed on women by social conventions and gender roles to provide for their families can exacerbate the disparities between domestic work and paid labour (Lotfata and Munenzon, 2023).

The picture makes the point that women's empowerment and assistance in agriculture are essential to the sector's advancement and to the economic success of a country.

2.6.2 Critiques of Intersectionality

Although intersectionality provides a useful framework for comprehending intricate social issues, there are criticisms of its application to climate change and EBA. Pearse (2017), contends that by neatly classifying people according to identification markers like gender, ethnicity, or class, intersectionality can lead to the oversimplification of complex circumstances. This may ignore how different and flexible each group is, as well as how they have dealt with EBA and climate change.

It might be difficult to translate theoretical notions of intersectionality into useful initiatives and regulations. Determining particular interventions that cater to the distinct requirements of people who are juggling several identities can be difficult and resource intensive (Ravera, et al., 2016). Setting some groups above others based on the ways in which their identities overlap might cause problems with the distribution of resources and even create rivalry amongst vulnerable groups (Ravera, et al., 2016). Whether one type of tyranny is fundamentally more serious than another is a topic of debate which makes it challenging to decide which overlapping identities to prioritize for projects addressing climate change (Ravera, et al., 2016). Kaijser and Kronsell (2014), argue that intersectionality only concentrates on personal experiences, disregarding more extensive structural and systemic elements that lead to disparities and susceptibilities.

It's critical to keep in mind that intersectionality is a dynamic framework for comprehending and correcting social inequalities rather than a static ideology (Kaijser and Kronsell, 2014). Its application to complicated challenges like climate change and EBA can be strengthened by recognizing and addressing its limitations, which will guarantee more equitable and practical solutions for a variety of populations.

2.6.3 The Capabilities Approach

The capabilities approach proposes that people should have the freedom to do and be what they value (Sigurðarson, 2020). Achieving well-being should be understood in terms of people's social and physical environments as well as their capabilities (Sigurðarson, 2020). For women in low and middle-income countries, agriculture is the key form of employment, during periods of climate crisis such as erratic rainfall or drought, women work harder to find income and a food source for their households (Women, 2022). There is added pressure on girls to assist with providing for their households and this often sees a decrease in female school participation to alleviate household

burdens (Women, 2022). The capabilities framework highlights how climate change has disproportionate impacts on women because of their limited access to social and political resources (Suckall, Fraser and Forster, 2017).

Because of preexisting disparities, marginalized groups—women in particular—are disproportionately affected by the effects of climate change. A comprehensive strategy that takes into account human welfare as well as environmental sustainability is needed to address these issues (Wasito, 2023). This is the point of convergence for gender analysis, ecosystem-based adaptation (EbA) techniques, and the capability approach.

The capability approach, developed by Amartya Sen, emphasizes people's freedom to accomplish meaningful "beings and doings" (Robeyns, 2021). It places equal emphasis on having access to resources like money and assets as well as the capacity to transform those resources into worthwhile functioning further referred to as capabilities, such as safe employment, sound health, or an education (Robeyns, 2021). According to Wasito (2023), this approach is especially pertinent to gender and climate change because droughts can make it more difficult for people to turn resources into valuable functioning's, such as food supply and agricultural output. They increase women's vulnerability to the effects of climate change by further limiting their accessibility to resources and abilities (Wasito, 2023). EbA provides natural alternatives for mitigating and adapting to climate change as it fosters sustainable land management techniques, strengthens community resilience, and maintains and repairs ecosystems (Chong, 2014). EbA can give women the opportunity to utilize resources, leadership opportunities, and education in managing biodiversity and carrying out EbA projects by incorporating a gender lens (Chong, 2014). By taking into account the needs and viewpoints of women, it can also ensure that EbA initiatives are more equitable and environmentally conscious by reducing gender disparities in decision-making and accessibility of resources (Chong, 2014).

Eventually, a viable route to a future in which women are enabled agents of beneficial developments rather than passive targets of climate change is provided by combining the capability approach, gender analysis, and EbA (Leach, et al., 2016). All people can benefit from a more sustainable and just society if equitable and successful climate action is taken (Wasito, 2023).

2.6.4 Critiques of the Capabilities Approach

Notwithstanding its advantages in examining freedom and well-being in relation to climate change and equitable development for everyone, the capability approach is not without its critics. The emphasis on personal potential may obscure more pervasive institutional injustices and power imbalances that limit women's autonomy and decision-making (Qizilbash, 2011). It's possible that community-driven initiatives and group efforts are underestimated.

It can be difficult to measure and compare capabilities accurately across different circumstances and people. The impartiality of the technique may be limited by subjective interpretations and potential biases in data collection (Qizilbash, 2011). The wide emphasis on skills can miss the unique vulnerabilities that women with disabilities and those living in extreme poverty face in Malawi, it is therefore essential to adapt the strategy to particular situations (Greco 2013). Although people's demands and abilities can vary over time owing to climate impacts or other circumstances, the strategy might not fully account for the dynamic nature of capacities (Qizilbash, 2011). As a result, ongoing monitoring and adaptation are necessary. It might be challenging to turn theoretical ideas into real-world treatments that increase capabilities as it is possible to neglect the institutional and policy changes required to overcome systemic power hierarchies and gender inequality (Qizilbash, 2011).

Through recognition of these criticisms and targeted research and implementation tactics, the capability approach can continue to be an effective means of advancing gender parity and well-being in Malawi through climate change adaption and equity by design (Greco, 2013).

2.6.5 The Ecofeminist Approach

The ecofeminist perspective demands for the dismantling of oppressive patriarchal power systems and increased recognition of how women are impacted more severely by environmental issues (Rodriguez-Busto, 2022). This approach argues that gender inequality and masculine power systems are interlocked with environmental degradation and climate change, therefore addressing these gender imbalances is key to achieving sustainable development (Rodriguez-Busto, 2022). Gender inequality has forced women to bear a large burden of the effects of climate crisis by navigating extreme weather patterns such as drought and floods which result in periods of food scarcity (Rodriguez-Busto, 2022). Ecofeminism strives for a positive relationship with nature through the preservation of the planet's biodiversity and sustainable use of the environment

(Rainard, Smith, and Pachauri, 2023). Essentially, the approaches should be used in unison to better address the complex nature and intertwined issues between climate change and gender discrimination (Kings, 2017). When the unique experiences of girls and women are considered in the context of climate change then more just and equitable solutions can be drawn when tackling adaptation and development plans for climate change (Kings, 2017).

Throughout history, women have maintained intimate ties with their surroundings and have frequently been integral to sustenance and resource management methods in various societies (Rainard, Smith, and Pachauri, 2023). In order to address issues related to the environment, ecofeminism appreciates the knowledge and viewpoints of women and acknowledges this innate relationship. Women are disproportionately affected by climate change and ecological deterioration, mainly because of gender disparities in social safety nets, decision-making authority, and resource availability (Rainard, Smith, and Pachauri, 2023). Recognizing and correcting these disparities in climate and environmental policy is what ecofeminism promotes. According to ecofeminism, the main causes of today's environmental issues are patriarchal structures that place a high value on controlling nature and exploiting it, which frequently mirrors the exploitation and subjugation of women (Kings, 2017). It is imperative to tackle these underlying factors in order to attain environmental justice.

To guarantee that their needs and views are addressed, EbA initiatives should proactively incorporate women and underrepresented communities in the preparation, execution, and evaluation stages (Rainard, Smith, and Pachauri, 2023). This is consistent with ecofeminist values, which place an emphasis on community empowerment and the value of different expertise. EbA programs ought to be created with the goal of empowering women by addressing current gender disparities and providing them with fair access to resources, possibilities for leadership, and skill development (Rainard, Smith, and Pachauri, 2023). This can increase the efficacy of the project and guarantee that women benefit from resilience building and climate adaptation.

In addition to emphasizing environmental results, EbA projects ought to support more general objectives of equitable treatment and gender parity which is consistent with ecofeminist conceptions of a future that is sustainable in which nature and humans coexist together (Raimi, et al., 2019). It can be challenging to question deeply rooted beliefs about how women should interact with the environment. The challenge for ecofeminist approaches is to advocate for systemic change

while opposing entrenched power dynamics therefore integrating ecofeminist ideas into EbA and climate change plans requires cooperation with regional communities, environmental organizations, and legislators (Raimi, et al., 2019). Ecofeminist methods must be continuously improved by considering the realities of different contexts and learning from them in order to be effective and culturally appropriate.

2.6.6 Critiques of the Ecofeminist Approach

The ecofeminist method has flaws and is subject to criticism, but it provides insightful information about the connections between gender, climate change, and equity and poverty in Malawi. One criticism of the ecofeminist approach is that it might force a Western feminist viewpoint on non-Western cultures (Ruether, 1997). It is imperative to take into account the variations in gender roles and relationships with nature among Malawian communities and make sure the applicability of the method is tailored to particular circumstances (Ruether, 1997).

Critics contend that ecofeminism has the ability to essentialize nature and women by presenting them as innately related and nurturing, thereby ignoring the intricacies of social and environmental issues (Ottuh, 2020). It is important to acknowledge the complexity of women's experiences and to refrain from oversimplifying them. Some contend that ecofeminism puts the interests of the environment above human concerns, possibly ignoring people's urgent needs and vulnerabilities—particularly those of oppressed groups like Malawian women who are experiencing the effects of climate change (Ottuh, 2020). The goal is striking a balance between social fairness and ecological concerns.

Foster (2021) explains the difficulty of implementing ecofeminist ideas in large-scale EbA programs by turning them into specific actions and policies. It is still difficult to create useful frameworks and instruments for incorporating ecofeminist viewpoints into project planning and execution as ecofeminism draws attention to gender disparities, but it may not adequately address the larger economic and power structures that fuel environmental deterioration and vulnerability (Foster, 2021). It is essential to connect this method with critical interpretations of capitalism, colonialism, and other oppressive institutions.

Notwithstanding these criticisms, the ecofeminist approach has the potential to greatly advance our comprehension of the intricate relationships that exist in Malawi between gender, climate change, and EbA. Ecofeminism may provide insightful analysis and direct the creation of

genuinely transformational solutions for a more equitable and sustainable future by addressing these constraints through ongoing discourse, cultural sensitivity, and a nuanced awareness of local settings (Foster, 2021).

2.7 Key Approach

For the purpose of this research, the capability approach has been chosen as the key theoretical approach. The capability approach is a good framework for outcome-oriented analysis because it aims to broaden the scope and meaning of acknowledged development outcomes while also separating them from the pathways that are intended to reach them (Forsyth, 2015). The theoretical notions of capabilities developed by Amartya Sen and Martha Nussbaum serve as the foundation for human development since they offer a normative framework for evaluating social results, public policies, and individual well-being (Fukuda-Parr and Cid-Martinez, 2019). Standard recommendations in a wide range of domains, including social, macroeconomic, political, ecological, and cultural arenas, are challenged by the model of human development when it methodically and consistently applies the capability approach in the empirical assessment of socioeconomic progress and in the assessment of policy alternatives (Fukuda-Parr and Cid-Martinez, 2019). It is sometimes misunderstood as a platform for social ventures and welfare initiatives. The Human Development Index, which solely takes into account income, education, and a respectable level of living, confines the rich and nuanced idea of human progress (Fukuda-Parr and Cid-Martinez, 2019).

Regarding ecosystem-based adaptation, this study expands the capability approach to consider the link between pathways and results. The capabilities approach looks for opportunities for improvement in addition to recording disparities. It can be analysed how EbA initiatives can support innovative approaches that tackle gender inequality and climate change, resulting in ongoing positive change for Malawian women, by concentrating on enhancing women's skills (Jain, 2020).

In 2020, Kjellberg and Jansson published a study summarizing the results of a scoping review on the application of the capability approach to social work research. They found 17 peer-reviewed journal papers that addressed social work practice and actively employed the capability approach. Examining the connections between social work research and social justice methods, policies, and practices in relation to the application of the capacity approach was the goal. The capability

approach had been shown to have four key applications: assisting social workers in their practice; investigating the subjective feeling of well-being; addressing structural social inequities; and assessing social practices (Kjellberg and Jansson, 2020). The capability approach was presented as being in line with social work goals and as a challenge to social workers to advance human dignity, social justice, and wellbeing. Another discovery was a strong correlation between employing a capability approach and empowerment, which is primarily thought of as a strategy used by social workers to support peoples' strengths (Kjellberg and Jansson, 2020).

The capability approach places a higher priority on an individual's freedom and well-being than traditional development strategies, which focus on resources or revenue (Robeyns, 2021). This is a fantastic fit for Malawi's complicated scenario, where gender inequality and the effects of climate change can severely limit women's opportunities for happy, full lives. By making use of the capability approach, there is the opportunity to examine how gender disparities in capacities are impacted by EbA initiatives, going beyond simply tracking changes in income or resource availability (Robeyns, 2021). The efficacy of EbA programs and sustainable climate change adaptation depend on the agency and engagement of women (Jain, 2020).

The capability approach is perfect for examining how EbA initiatives enable women to take part in decision-making and control their own lives in the face of climate issues since it emphasizes people's capacity to operate and make freely chosen decisions (Robeyns, 2021). The capability approach, in contrast to universalistic methods, appreciates a range of experiences and needs and acknowledges the significance of context (Robeyns, 2021). In Malawi, where there are a variety of cultural customs and gender roles, this is extremely important. Beyond tangible poverty, gender inequality is made worse by climate change, women frequently have barriers to social involvement, activity, education, and health (Jain, 2020). By using the capability approach, according to Jain (2020), there can be an examination of these more comprehensive aspects of well-being and an assessment of how EbA initiatives can help women deal with the complex issues they confront in light of climate change.

A community-based initiative known as the MaiMwana Project was created to organize women's groups in Malawi's remote areas (Greco, 2013). Women brainstormed, created, and put into practice solutions to address challenges related to mothers and newborns during the sessions. This intervention brought together expertise from several sectors, empowerment, and capacity building

with social strategies and placed a focus on community engagement and participation-based health promotion initiatives that try to modify the behaviour of healthy persons (Greco, 2013). A cluster randomised controlled trial design was used to assess MaiMwana's efficacy in terms of maternal and newborn mortality rates. However, the intervention's effects extended beyond health to include other facets of women's welfare therefore possibly making the intricacy of community-based initiatives like the MaiMwana Project too difficult for traditional economic evaluation methods to fully address (Greco, 2013). Sen's capabilities framework application might offer a suitable solution to deal with this weakness. Sen's approach makes the important claim that people's freedom to live the kind of life they have reason to value constitutes wellbeing and that people's capacities should be the goal of social programs, therefore requiring a policy to be deemed effective if it increases people's capability (Greco, 2013).

2.8 Theoretical Framework Table

	Theory	Key variables	Measurable Indicators	Claimed Causality or Association	Limitations
1	Capability Approach	The relationship between educational institutions and its liberation and accessibility to minority to attain desired skills.	Human Development Index Basic Needs Satisfaction	UNDP, The World Bank and ILO have adopted the capability approach to attain freedoms that achieve well-being	Subjective and a wide range of data, especially in emerging or underdeveloped areas, may not always be easily accessible for measuring capabilities.

2	Ecofeminism Approach	The relationship/connection between rural women and climate change policy makers/officials.	Gender-Responsive Environmental Policies Economic Empowerment	Women's Environment and Development Organisation (WEDO) and Women's Earth Alliance advocate for climate justice and gender equality.	Neglects the intersectionality of other forms of oppression such as race, class, sexuality, and disability and disregards masculinities
3	Intersectionality Approach	The relationship between individuals and the different social categories they exist in that can be advantageous or disadvantageous	Access to Social Services Social Exclusion and Discrimination	UN Women emphasise on the need to break structural barriers and inequality in order to attain development goals	Involves the complex interaction of several identities and experiences

2.9 Gaps in capabilities approach literature and the Malawian Context

Although gender, EbA, and the capabilities approach have a lot of potential to work together in Malawi, there are still big gaps in their relationship that prevent effective implementation. Comprehensive empirical data regarding the real effects of EbA initiatives in Malawi on the capacities of individual women is lacking (Chibowa, et al., 2020). To learn more about how particular project elements—like participation tactics and resource distribution—affect women's agency, autonomy, and well-being, more study is required. Furthermore, the varied needs and

experiences of women in Malawi are frequently ignored by the research that is currently in place (Chibowa, et al., 2020). It is imperative to investigate the ways in which women's capacities regarding EbA are influenced by age, ethnicity, disability, and socioeconomic situation in conjunction with gender when developing inclusive interventions.

It is still difficult to scale up EbA strategies that effectively empower women and improve capacities, despite encouraging experimental programs (Maher, 2018). To identify the institutional impediments to mainstreaming gender-inclusive EbA, such as financial shortages, insufficient capacity building, and policy gaps, research is required. Sometimes the capability approach ignores the larger structural and cultural elements that limit women's potential in favour of concentrating only on individual agency and choices therefore to understand how patriarchal institutions and power dynamics interact with EbA on a local and national level, as well as how interventions can address these systemic inequities, more research must take place (Musa, et al., 2024).

EbA project monitoring and assessment systems now in use frequently overlook metrics pertaining to gender equality and women's capabilities. To determine the real effect of EbA on women and make sure their demands are satisfied, it is essential to build strong gender-sensitive M&E processes (Musa, et al., 2024). Researchers, legislators, practitioners, and community members must work together to close these gaps. There may be progress made toward actualizing the transformative potential of EbA for women's empowerment and well-being in Malawi by carrying out further research, improving theoretical frameworks, and putting gender-inclusive methods into reality (Musa, et al., 2024).

2.10 Conclusion

This chapter has explored the complex relationship between gender inequality, climate change, and ecosystem-based adaptation (EbA) through the application of three theoretical perspectives: intersectionality, the capabilities approach, and ecofeminism. The intersectionality approach highlights how multiple socio-economic and cultural factors, such as patriarchy, capitalism, and heterosexism, intersect to shape women's experiences and vulnerabilities in the context of climate change. This perspective is particularly relevant in Malawi, where women engaged in resource-dependent industries face compounded challenges due to structural inequalities that limit their participation in climate adaptation. The capabilities approach, rooted in Amartya Sen's work, underscores how climate change exacerbates gender disparities by restricting access to opportunities and essential resources, thereby limiting women's ability to build resilience. When viewed through a gender lens, this approach suggests that EbA efforts can be transformative by empowering women, enhancing their decision-making capacities, and improving their skills to better adapt to climate variability. Lastly, the ecofeminist perspective argues that patriarchal institutions are intrinsically linked to environmental degradation, emphasizing the need for inclusive climate governance that prioritizes women's leadership and participation in decision-making.

However, this chapter also acknowledges the criticisms of these theoretical approaches, including the challenge of applying intersectionality in policy implementation and the risk of ecofeminism imposing Western feminist ideals onto non-Western societies. Despite these limitations, the combined application of these frameworks provides a comprehensive lens through which to examine the gendered dimensions of climate change in Malawi. The literature review has also demonstrated that climate change disproportionately affects vulnerable populations, particularly women, due to their dependence on natural resources, limited access to financial and institutional support, and socio-cultural constraints. With a particular focus on Malawi, this chapter has examined the links between gender equality, EbA, economic development, and global climate challenges, emphasizing that sustainable development cannot be achieved without integrating gender-sensitive climate adaptation strategies.

Climate change has far-reaching consequences, including increasing extreme weather events, biodiversity loss, and environmental degradation, which threaten both livelihoods and ecosystem health. The EbA approach has emerged as a key strategy for enhancing community resilience,

promoting biodiversity conservation, and fostering economic stability, particularly for women in resource-dependent sectors. Case studies from Mauritania, Nepal, Senegal, Seychelles, and Ethiopia have demonstrated how EbA projects can empower women, improve food security, and strengthen adaptation capacity when effectively implemented.

As Malawi continues to face escalating climate-related challenges, including frequent droughts, unpredictable rainfall, and environmental degradation, it is imperative to adopt inclusive adaptation policies that account for the specific vulnerabilities of women and marginalized groups. The literature underscores that gender-responsive EbA initiatives, coupled with strong policy frameworks and participatory governance models, are essential for building long-term resilience. Moving forward, research must explore how these strategies can be better institutionalized within Malawi's climate governance framework, ensuring that women are not only beneficiaries but active participants in shaping adaptation policies and practices.

3. Research Methodology

3.1 Introduction

According to Mishra and Alok (2011), research methodology refers to the systematic strategy used to tackle research problems, it is an academic discipline that examines the methods used in research methodically. This chapter outlines the methods used in this study, utilising a qualitative approach supported by secondary data. The objective is to capture rich, narrative descriptions and contextual information to offer a comprehensive view of women's interactions with ecosystem-based adaptation (EbA) projects in Southern Malawi.

The combination of semi-structured interviews and secondary data analysis ensures that the findings are robust, reliable, and grounded in both empirical insights and existing knowledge. This study investigates how gender-sensitive inclusion can be optimised within EbA initiatives, taking into account climate resilience and economic empowerment. The chapter proceeds by detailing the research design, sampling strategies, data collection tools, and analysis procedures, ending with a reflection on the ethical principles adhered to in the study.

3.2 Research Design

Research design is the framework that outlines the methodologies and strategies used to answer the research question successfully. It serves as a blueprint for data collection, analysis, and interpretation, ensuring the study's objectives are met effectively (Abbot and McKinney, 2013). The choice of research design significantly impacts the validity and reliability of findings, making it a critical phase in the research process (Hassan, 2024).

This study employs a qualitative research design with a mixed-methods approach, predominantly focusing on qualitative data collection. This design was chosen because it enables an in-depth understanding of women's experiences with EbA projects. The qualitative approach facilitates the collection of detailed, personal accounts of engagement, benefits, and challenges in these initiatives, which would not be adequately captured through purely quantitative methods. By incorporating secondary data, the study enhances its analytical depth, offering broader contextual insights and reinforcing the qualitative findings.

3.3 Qualitative Research Methodology

Alasuutari (2010) explains that in the 1960s, qualitative research gained popularity as a social research approach as social scientists learned they needed to go much further into understanding complicated societal issues than they had when they depended solely on quantitative methods. When conducting research, qualitative researchers view the social context from the viewpoint of their participants, in contrast to quantitative researchers who typically put their own framework on the data (Haq, 2015). Creswell (2007) explains that assumptions, a worldview, the potential use of a theoretical lens, and the examination of research topics that delve into the significance that individuals or groups assign to a social or human problem are the first steps in the process of conducting qualitative research. According to Berg and Lune (2011), qualitative research primarily looks for solutions by analysing different social contexts and the people who live in them. It is believed that the areas of human organization and setting, as well as how people make meaning of their surroundings through social roles, practices, social norms, and symbols, are of particular interest to qualitative researchers (Berg and Lune, 2011).

In this study, qualitative data was gathered through **semi-structured interviews** with two key leaders from prominent organizations closely linked to ecofeminism. These organizations play a critical role in addressing the intersection of gender, environment, and social justice, making them valuable sources of insights for understanding the broader impacts of ecosystem-based adaptation (EbA) initiatives on women in Southern Malawi. Semi-structured interviews provide open-ended inquiries, which empower women to express their distinct experiences and viewpoints concerning EbA initiatives. Rich data on gender roles, decision-making procedures, and the ways in which these aspects affect rewards and participation are provided by this (Ruslin, et al., 2022). Interviews can go into great detail about the particular setting of EbA initiatives in Southern Malawi. Participants might talk about how the projects were designed, carried out, and how successful they thought they were at addressing issues of gender and economic opportunity (Ruslin, et al., 2022). Through open-ended talks, issues or unforeseen repercussions pertaining to gender or economic growth within EbA initiatives can be discovered thus making it possible to comprehend the project's impact in more detail.

While the sample size is limited to two interviews, it is important to note that these leaders represent organizations that engage with a broad spectrum of women across various demographics,

including age, socioeconomic status, and geographical location. The purposive sampling technique employed in selecting these interviewees was intentional and strategic, ensuring that the insights gathered were rich in context and relevant to the study's objectives. Purposive sampling, though it may result in a smaller sample size, allows for the selection of participants who are particularly knowledgeable about the subject matter (Rai and Thapa, 2015). In this case, the two leaders interviewed offer deep, informed perspectives on how ecofeminist principles are operationalized in practice, particularly in the context of climate and energy justice. These organizations' broad engagement with diverse groups of women enhances the representativeness of the findings, despite the small number of interviews conducted.

3.4 Data Collection Methods

This study employed two primary data collection methods:

Semi-structured Interviews: Two key leaders from ecofeminist organisations were interviewed due to their extensive involvement in gender and environmental justice. The semi-structured format allowed flexibility in exploring emerging themes while ensuring consistency across interviews. Questions focused on project implementation, gender inclusivity, economic impacts, and climate resilience. The interviewees were selected through purposive sampling to ensure expert insights relevant to the research objectives.

Secondary Data Analysis: This involved reviewing project reports, organisational documents, and existing literature on EbA initiatives in Southern Malawi. Secondary data provided historical and contextual background, validating primary findings and enabling triangulation to enhance research credibility. Secondary data served as a critical component of this study by corroborating qualitative insights and offering broader contextual information. Organisational reports and previous studies on EbA provided background information on policy frameworks, project outcomes, and gender participation trends. This method ensured that primary data from interviews was not evaluated in isolation but was supported by documented evidence from reputable sources.

3.5 Sampling Strategy

Purposive sampling was used to select participants who were highly knowledgeable about ecofeminist principles and EbA projects. The leaders chosen represented organisations that engage with diverse groups of women across various demographics. While the sample size was limited,

the strategic selection ensured in-depth, expert perspectives that significantly contributed to the study's objectives.

3.6 Data Analysis

Data analysis was conducted in two phases:

- Qualitative data from the interviews were coded thematically, identifying recurring themes and patterns related to gender roles, participation, and economic outcomes. Word's transcription software was used to support this analysis.
- Secondary data were analysed to corroborate the findings from the interviews and to provide additional insights into the broader context of EbA initiatives in Southern Malawi.

3.7 Triangulation

Triangulation was employed to enhance the credibility and reliability of the study's findings. This involved cross-verifying data from different sources:

- Semi-structured interviews: Provided firsthand insights into gender-sensitive EbA initiatives.
- Secondary data: Verified trends, challenges, and successes identified in interviews.
- Existing literature: Placed findings within broader academic discussions on ecofeminism and climate resilience. By integrating these sources, the study ensured that the findings were not influenced by biases inherent in a single data collection method, thereby strengthening the validity of conclusions.

3.8 Ethical Considerations

Ethical principles were strictly followed throughout the study, including:
Ethical Clearance: Approval was obtained from the university.
Informed Consent: Participants were provided with detailed information about the study's purpose, risks, and confidentiality protocols before voluntarily consenting to participate.
Confidentiality and Participant Protection: Identifying information was anonymised, and interview recordings were securely stored. Participants had the right to withdraw at any stage without any repercussions.

3.9 Limitations

One of the key limitations of this study is the small sample size in the qualitative component, with only two interviews conducted. This constraint naturally limits the generalizability of the findings. However, the use of purposive sampling mitigates this drawback by ensuring that the individuals interviewed have extensive experience and influence within the ecofeminist movement, thereby providing valuable and targeted insights.

The organizations represented by these leaders have a far-reaching impact, engaging with women from various demographic backgrounds across Southern Malawi. As such, while the sample size is small, the depth and relevance of the data collected are significant, offering critical insights into the experiences of women involved in EbA initiatives and the broader implications for gender-sensitive climate justice.

3.10 Conclusion

This chapter detailed the research design, methodology, data collection, and analysis procedures adopted for this study. The qualitative approach, supported by secondary data, enabled a rich exploration of gender-sensitive inclusion in EbA projects. Despite the limited sample size, purposive sampling ensured relevant and insightful findings. The integration of secondary data and triangulation further strengthened the study's reliability. Ethical considerations were strictly adhered to, ensuring the credibility and integrity of the research. This methodology provides a solid foundation for understanding ecofeminism's role in climate and energy justice, contributing valuable insights to the discourse on inclusive climate resilience strategies.

4. Data Analysis

4.1 Introduction

The data analysis is centred on the incorporation of ecosystem-based approaches into community-oriented projects, exploring the obstacles, achievements, and gendered aspects of these endeavours. The information obtained from interviews with important stakeholders within community organisations offers a comprehensive grasp of the management, financing, and execution of these projects, particularly in Malawi where issues pertaining to culture, finances, and policies are common.

4.2 Data Presentation, interpretation and analysis

The researcher employed qualitative methods to analyse the gathered data. Additionally, the respondents' qualitative data was categorized into significant themes. This provided the researcher with the chance to think more deeply about and comprehend the information gathered. The obtained data was thematically recorded and transcribed by the researcher using the content analysis technique. The results surrounding challenges posed and their possible solutions are presented tabular format.

4.2.1 Funding and Resource management

Securing and effectively managing funding for ecosystem-based adaptation (EbA) initiatives remains a significant challenge, particularly in Malawi. A key finding of this study was the inconsistency in how organizations interpret and implement EbA strategies, potentially leading to inefficiencies in resource allocation. One participant noted that their organization struggles with defining EbA approaches, which suggests a broader issue where EbA is applied in practice without a formalized framework. This gap makes it difficult to evaluate project success, secure long-term funding, or replicate best practices.

However, another participant demonstrated a comprehensive understanding of EbA, indicating that organizations with a clearer strategy are more effective in securing funding and implementing sustainable projects. The literature supports these findings, emphasizing that a structured, well-articulated EbA framework improves financial sustainability and project scalability (Huq et al., 2017). The challenge of underfunded critical infrastructure, such as accounting systems and human resources, was also highlighted, reinforcing previous research that suggests long-term financial planning is essential for sustaining EbA efforts (Mills et al., 2020).

4.2.2 Gender-Responsive Approaches

The study found that gender-responsive approaches remain a critical yet underdeveloped aspect of EbA implementation in Malawi. Participants emphasized that women and other marginalized groups are disproportionately affected by climate change due to socioeconomic vulnerabilities and limited decision-making power. One participant discussed the organization's use of needs assessments to ensure that projects address gender-specific concerns. However, the participant also noted that existing policies in Malawi provide insufficient guidance on integrating gender-responsive strategies, echoing findings from Farhall and Rickards (2021), which highlight the policy gap in gender-mainstreaming efforts. The reliance on project-based funding further exacerbates this issue, making it difficult to sustain gender-focused interventions. Donor expectations, particularly the administrative and financial burdens they impose on smaller organizations, were identified as another barrier. These challenges align with research by Ogbeide-Osaretin and Efe (2022), which suggests that restrictive donor frameworks can limit the impact of gender-responsive climate initiatives.

Resistance at the local level due to entrenched gender norms was another key finding. One participant noted that societal expectations often hinder women's participation in EbA projects, despite strong institutional commitments to gender inclusion. These insights are consistent with ecofeminist literature, which argues that structural inequalities and cultural barriers must be addressed alongside environmental interventions for gender-inclusive adaptation to be successful (Swiderska et al., 2018). The findings also suggest that strengthening legislative support and ensuring equitable benefit distribution are crucial for sustaining progress in gender-responsive adaptation.

4.2.3 Participatory Approach

A participatory approach emerged as a key theme, reinforcing the importance of involving local communities in all stages of EbA projects. One participant described how their organization integrates community input from planning to execution, ensuring that adaptation measures align with local needs. This finding is supported by studies demonstrating that participatory approaches enhance the sustainability and effectiveness of climate adaptation initiatives (Huq et al., 2017).

However, the study also highlighted the challenges of this approach, particularly in terms of time and resource intensity. The second participant elaborated on the importance of empowering

marginalized groups, particularly women, through decision-making processes. The literature on participatory environmental governance supports these findings, emphasizing the role of local agency in successful adaptation (Mills et al., 2020). This is especially crucial in Southern Malawi, where women are both major change drivers and also suffer the burden of environmental deterioration.

4.2.4 Cultural and Policy Challenges

Cultural norms and policy gaps were identified as significant barriers to effective EbA implementation. One participant explained that existing policies lack specific guidelines on gender-responsive adaptation, making it difficult for organizations to align their efforts with national strategies. This finding aligns with research highlighting the policy fragmentation that often undermines climate adaptation efforts in developing countries (Ogbeide-Osaretin & Efe, 2022). These challenges reflect broader issues in Malawi's environmental governance, where national laws often fail to fully support gender-inclusive adaptation measures. Studies have shown that overcoming these barriers requires both policy reform and community engagement strategies that challenge entrenched social norms (Huyer et al., 2020).

Another participant noted that societal norms frequently restrict women's participation in decision-making, further complicating the integration of gender-sensitive approaches. Numerous obstacles were noted, such as scarce resources, cultural differences, and the difficulty of coordinating environmental objectives with community requirements. The participant pointed out, however, that cultural conventions can occasionally prevent women from fully engaging in EbA initiatives, which can reduce the projects' efficacy. It was emphasized that in order to guarantee the longevity and expandability of EbA projects, there is a greater need for policy backing. A point was made that long-term success is hard to achieve in the absence of clear policies that support environmental preservation and gender equality. This section highlights how important policy frameworks are in determining how successful EbA projects are. To maintain the beneficial effects of EbA, these frameworks must be strengthened in Southern Malawi, where policy support may be insufficient or erratic.

4.2.5 Intersectionality and Climate Change

The study underscored the importance of an intersectional approach to climate adaptation, acknowledging that different demographic groups experience climate change impacts in distinct

ways. One participant emphasized the need for targeted programs that address multiple vulnerabilities, such as gender, age, and economic status. The literature supports this perspective, indicating that intersectionality is crucial for designing effective adaptation strategies that leave no one behind (Farhall & Rickards, 2021). Without an intersectional lens, adaptation initiatives risk excluding the most vulnerable groups, reducing their overall effectiveness.

Another participant concurred, pointing out that initiatives run the risk of ignoring the most vulnerable groups if an intersectional approach isn't used. The participant gave insights on the ways that EbA initiatives have improved the lives of women in their local area. This included more prospects for economic growth, better access to resources, and more resistance to climate change. The participant emphasized how EbA has the potential to support gender equality and environmental sustainability by emphasizing the advantages of these projects. The study also found that women who participated in EbA programs benefited from increased economic opportunities, better access to resources, and improved resilience to climate shocks. This aligns with research demonstrating that gender-inclusive adaptation enhances both social and economic outcomes (Mills et al., 2020).

4.2.6 Sustainability and Long-Term Impact

Sustainability emerged as a critical concern, with participants emphasizing the need for long-term strategies beyond short-term project cycles. One participant highlighted the importance of developing revenue-generating activities. They mentioned how important it is to make sure that projects are sustainable over the long term in addition to being beneficial in the short term. This entails developing revenue-generating ventures that sustain the community long after the project is completed. In order to maintain project continuity beyond the initial funding term, the participant emphasized the use of sustainability plans, participatory approaches, and income-generating activities like tree nurseries. This strategy guarantees that the community can sustain the initiatives on its own, which is crucial for the long-term viability of EbA programs. Nonetheless, these programs' fragility in the event that such support is unavailable is further highlighted by their reliance on outside alliances and financial sources. This finding is consistent with research showing that financial independence is key to ensuring project longevity (Swiderska et al., 2018).

Another participant stressed the importance of capacity-building efforts to equip local communities with the skills needed to manage and maintain EbA interventions. Strengthening

local expertise and securing long-term funding were identified as essential components of a successful sustainability strategy. This forward-looking viewpoint emphasizes how cognizant the person is of the chances and difficulties that lie ahead. It also emphasizes how crucial long-term planning and capacity-building are to making sure EbA projects in Southern Malawi are successful. These findings align with broader discussions in the literature on the need for policy coherence and investment in adaptive capacity to ensure that EbA initiatives have lasting impacts (Agol et al., 2014).

Table 1: Categorisation of Challenges and Solutions Discussed

Challenge	Solution
Funding Restrictions	Diversify funding sources to include unrestricted funds
Cultural Norms	Incorporate community education and awareness programs
Policy Gaps	Advocate for specific gender-responsive policies
Sustainability of Projects	Focus on capacity building and income-generating activities

4.3 Conclusion

This chapter has explored the key challenges and opportunities associated with funding, gender responsiveness, participatory approaches, cultural and policy challenges, intersectionality, and sustainability in the implementation of ecosystem-based adaptation (EbA) initiatives in Malawi. The findings suggest that while some organizations have developed structured frameworks for EbA implementation, others struggle with resource management and defining their approaches, leading to inefficiencies. Gender inclusion remains a significant challenge due to policy gaps, cultural norms, and funding limitations, despite efforts to integrate gender-responsive strategies into climate adaptation.

The discussion further highlights the importance of community participation in adaptation efforts, with participatory approaches emerging as a critical factor in the long-term success of EbA projects. However, the time-intensive nature of these approaches presents a challenge for organizations with limited resources. Similarly, cultural and policy barriers continue to restrict women's participation in decision-making, limiting the broader effectiveness of EbA initiatives. The chapter also emphasizes the need for an intersectional approach to ensure that adaptation strategies benefit all demographic groups, particularly the most vulnerable populations. Lastly, the sustainability of EbA initiatives is largely dependent on long-term funding mechanisms, capacity building, and policy support, factors that require urgent attention.

In light of these findings, it is evident that addressing funding limitations, strengthening gender-inclusive policies, fostering participatory planning, and enhancing sustainability measures are crucial for the success of EbA projects in Malawi. Moving forward, targeted policy interventions and continued research will be necessary to refine and improve the implementation of these initiatives.

5. Conclusion and Recommendations

5.1 Conclusion

Climate change presents multifaceted challenges that demand innovative and inclusive solutions. This study has demonstrated the critical role of gender-responsive strategies in climate adaptation and economic development. Despite efforts to implement ecosystem-based adaptation (EbA) strategies, gender disparities persist, limiting the effectiveness of these interventions. Women and other marginalized groups remain underrepresented in decision-making processes, hindering their ability to influence climate policies and resource management. Addressing these gaps requires a commitment to embedding gender considerations into national and local climate policies. Integrating gender into Malawi's National Adaptation Plans and Nationally Determined Contributions would ensure that climate resilience strategies prioritize inclusivity.

A key recommendation is the need for stronger institutional frameworks that promote gender-responsive climate governance. Government agencies, non-governmental organizations, and international development partners must work collaboratively to create policies that empower women as key stakeholders in climate adaptation efforts. Financial and technical support should be expanded to ensure that gender-inclusive EbA programs receive sustained funding. Without adequate financial backing, many of these initiatives fail to reach their full potential, leaving communities vulnerable to climate-related challenges. Aligning national policies with international frameworks such as the Paris Agreement, the UNFCCC Gender Action Plan, and the Sustainable Development Goals would also enhance opportunities for funding and technical assistance.

Furthermore, there is a need to establish comprehensive monitoring and evaluation mechanisms to assess the effectiveness of gender-inclusive adaptation policies. Without proper tracking and evaluation, it is difficult to measure progress and identify areas that require improvement. Equally important is the integration of local knowledge into EbA strategies. Traditional and indigenous knowledge systems play a vital role in adaptation and should be recognized in climate governance frameworks. Shifting social norms that restrict women's participation in environmental decision-making is also crucial. Awareness campaigns and community engagement initiatives can contribute to changing perceptions and encouraging greater inclusivity in climate policies and programs.

Building climate resilience must also include promoting economic diversification to reduce dependency on climate-sensitive sectors. Encouraging alternative livelihood activities such as eco-tourism, sustainable agriculture, and renewable energy-based enterprises can enhance community resilience and provide economic security. The use of technology in climate adaptation, such as drought-resistant crops, water-efficient irrigation systems, and climate information platforms, should be expanded to ensure that women and other marginalized groups have equal access to these resources. Addressing these challenges holistically will contribute to creating a more just and climate-resilient society in Malawi.

The study was structured as follows:

- Chapter 1 introduced the research by providing an overview of the problem, objectives, and significance of the study. It established the central premise that women, particularly in rural communities, are disproportionately affected by climate change and often excluded from decision-making processes within ecosystem-based adaptation initiatives.
- Chapter 2 offered a comprehensive literature review, examining the intersection of gender, climate change, and ecosystem-based adaptation. This chapter critically analyzed existing scholarly work on the topic, highlighting the gaps in gender-sensitive approaches within current adaptation policies and practices.
- Chapter 3 presented the theoretical framework, employing ecofeminism, intersectionality, and the capability approach to analyze the gendered dimensions of climate adaptation. These frameworks were essential in understanding the multifaceted vulnerabilities women face and how these can be addressed through inclusive adaptation strategies.
- Chapter 4 detailed the research methodology. A qualitative approach was used, incorporating interviews and case studies to gain insights into the lived experiences of women involved in EbA initiatives. The methodology allowed for an in-depth exploration of the challenges and opportunities women encounter in participating in climate adaptation efforts.
- Chapter 5 discussed the findings of the research, identifying the structural, cultural, and financial barriers to women's full participation in EbA. The analysis revealed that while women are key actors in managing natural resources, they are often sidelined in policymaking and implementation processes. The chapter also highlighted successful

gender-inclusive projects that demonstrated the potential for more equitable and effective adaptation strategies when women are empowered to lead.

- Finally, chapter 6 presents the study's conclusions and offers recommendations for future policy and practice. The research has shown that addressing gender inequalities within EbA frameworks is not only essential for achieving gender equity but also for enhancing the effectiveness of climate adaptation efforts.

5.2 Recommendations

1. **Strengthen Policy Support for Gender-Inclusive EbA:** Stakeholders and governments alike should improve policy frameworks to specifically address gender issues in measures for climate adaptation. This includes creating gender-responsive policies that facilitate women's involvement in EbA projects and deal with the particular obstacles that they encounter.

2. **Strengthen Training and Capacity Building:** Funding for programs that give women the know-how and abilities to participate in EbA initiatives is essential. Training ought to be customized to meet the various requirements of women from various socioeconomic backgrounds and ought to emphasize giving them the tools they need to assume leadership positions in efforts to adapt to climate change.

3. **Encourage Community-Centered Approaches:** One of the main goals of EbA efforts should be to involve the community, especially by including women in all phases of project design and execution. Because the interventions are based on the local knowledge and experiences of those most affected by climate change, this participatory approach guarantees that the programs are resilient and appropriate.

4. **Increase Finance for Gender-Responsive EbA Projects:** To carry out gender-responsive EbA projects successfully, sufficient finance is required. Investments in initiatives that exhibit a strong commitment to gender equity and diversity should be given top priority by donors and funding organizations. This involves offering flexible financing that makes it possible to incorporate gender considerations into the planning and implementation of projects.

5. **Address Social and Cultural Barriers:** It is important to tackle and alter cultural attitudes that prevent women from taking part in environmental decision-making. Programs for raising

awareness in the community that support gender equality and emphasize the importance of women's contributions to climate resilience can help achieve this.

6. **Leverage Partnerships for Broader Impact:** The success and reach of EbA efforts can be increased by cooperation between governmental and non-governmental organizations, community organizations, and international agencies. These collaborations can promote more thorough and well-coordinated efforts to address the gender aspects of climate change by combining resources and expertise.

7. **Incorporate Climate and Gender Data into Decision-Making:** Robust data collection and analysis that incorporates climate and gender information is required. This information can be used to monitor the effectiveness of gender-responsive strategies and to guide focused interventions. In order to better meet the needs of women and other vulnerable groups, policymakers should use this data to modify and improve policies and programs.

5.3 Future Research Directions

While this study has contributed to understanding the role of gender inclusivity in climate adaptation, further research is needed to examine the long-term effects of gender-inclusive EbA initiatives on livelihoods and community resilience. A longitudinal study could provide insights into how these programs evolve over time, highlighting the factors that contribute to their sustainability. Comparative studies across different climatic and socio-political contexts, both within Malawi and across Sub-Saharan Africa, would also be valuable in identifying best practices for integrating gender considerations into climate adaptation strategies.

Another area that requires further investigation is the intersectionality of gender with other social characteristics, such as age, disability, and economic status. Examining how these factors influence access to climate adaptation resources would provide a more comprehensive understanding of the challenges faced by different groups and inform the development of more inclusive policies. Additionally, research that quantifies the economic benefits of gender-responsive EbA programs could strengthen the case for increased investment in such initiatives. A more data-driven approach to evaluating the financial sustainability of these programs would encourage greater participation from the private sector and international donors.

Future studies should also focus on scaling up successful gender-inclusive adaptation models. Many small-scale initiatives have demonstrated significant impact at the community level, but their expansion to regional and national levels remains limited. Research that examines the institutional, financial, and governance factors necessary for successful policy implementation and scaling could provide valuable guidance for policymakers and development practitioners. Addressing these knowledge gaps will contribute to strengthening gender-equitable climate adaptation strategies in Malawi and ensuring that climate action is both inclusive and sustainable.

As the global community continues to navigate the climate crisis, it is essential to recognize the interconnectedness of environmental sustainability, economic development, and gender equity. Research and policy must work hand in hand to create adaptation strategies that leave no one behind. By prioritizing inclusive, evidence-based approaches, Malawi can enhance climate resilience, empower vulnerable communities, and build a more sustainable future for all.

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Appendices

Appendix A: Turnitin Report



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Appendix B: Interview Guide/Questionnaire



Interview questionnaire - Maziko Phiri 6303133.pdf

Appendix C: Consent Forms



Consent form Participant 1 interview .pdf



Consent form Participant interview _2_.pdf

Appendix D: Information Letter



Information letter for Participants _1_.pdf

Appendix E: Transcripts



Participant 1 Transcript.pdf



Participant 2 Transcript.pdf