

# **ADAPTIVE CAPACITY: A DREAM FOR THE FEMALE-HEADED HOUSEHOLD**

Adaptive Capacity of Female-Headed Households to Climatic Shocks in  
Mulanje District, Malawi: Case of Tropical Cyclones

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## **ABSTRACT**

Malawi and other countries in the sub-Saharan Africa region continue to experience frequent and intense climate-related disasters yearly. The 2021 Global Climate Risk Index ranked Malawi at number five, among the ten most highly at-risk countries for climate-related disasters (Africa-Risk-Capacity, 2022). Tropical cyclones are particularly serious disasters causing adverse impacts in Malawi. Research indicates that the poor and other most vulnerable populations experience the worst impacts of disasters caused by Tropical Cyclones and this predicament is due to various challenges that they encounter. Such challenges influence their ability to adapt, cope and respond to disasters. Among these marginalized groups are women heading households and their families. Using the case study of Tropical Cyclone Ana (2021/2022), this study employed a grounded theory approach to investigate the contextual factors affecting this target population's adaptive capacity in Mulanje district, Traditional Authority (TA) Nkanda area, Malawi. The study further wishes to understand some of the women's adaptation mechanisms to disasters amidst the various challenges they face.

Therefore, Focus group discussions, Key informant interviews, and document analysis approaches were utilized to capture relevant information to inform this study. The target population was female-headed households affected by tropical cyclone Ana. The Feminist Political Ecological(FPE) framework brought the intersectionality aspect to the study and further guided the categorization of themes. At the same time, the matrix of domination theory was used to guide the analysis of results. The theory brought the perspective of how women are not naturally vulnerable to disasters but instead made vulnerable by various systems of domination, thus in the end, leading to low adaptation capability. Finally, from the analysis of the results, recommendations were made for the development of gender transformative policies and interventions that can address various factors affecting the adaptive capacity of women and their families to disasters, specifically tropical cyclones.

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**List Abbreviations**

AIP-Agricultural Input Programme

ADB-African Development Bank

COP- Conference of Parties

DODMA-Department of Disaster Management

FHH-Female Headed Household

IPCC- Intergovernmental Panel on Climate Change

MHH-Male Headed Household

FGD -Focus Group Discussions

KII-Key Informant Interviews

NAPA-National Adaptation Plan of Action

SCT- Social Cash Transfer

T.A- Traditional Authority

UNFCCC- United Nations Framework Convention on Climate Change

## **1 INTRODUCTION**

The scientific and non-scientific communities ascertain that the global community is facing the issue of climate change and variability. These changes negatively impact nations, communities, and individuals through climate-related shocks, including tropical cyclones, floods, and recurrent droughts occurring increasingly globally. Malawi has not been spared in this global ecological phenomenon. It has been experiencing unrelenting climate-related shocks, critical being tropical cyclones which included Cyclone Idai (2019), Ana and Gombe (2021/22), and recently cyclone Freddy in 2023. Dimitrov (2019) states that women and climate change issues are interrelated. The significant problems include indigenous population growth, natural resources, health, suburbanization migration, domestic composition, natural calamities, conflict, and violence (Dimitrov, 2019). Therefore, building up the resilience of women to cope with and adapt to climatic shocks is vitally essential for sustainable resilience and development.

Adaptive capacity (adaptation) is defined as the capability of systems, communities, or individuals to plan for risks (or adjust), build on opportunities, and respond effectively to dangers (Smit, 1993), (IPCC, 2007). Women with decreased adaptive capacity cannot diversify between opportunities and livelihoods and cannot access and control income and resources. This challenge leads to less resilience and continued devastation by climatic shocks.

Tropical cyclones are gender-neutral. However, their impacts are not. Men, women, boys, and girls are impacted differently (WEDO, 2009), (Dimitrov, 2019). This is due to social systems and structures limiting their access to recovery, rehabilitation, and reconstruction. Gender and patriarchy are part of a social system that influences the impact level, adaptation, mitigation, or recovery from a disaster. Research indicates that gender norms and patriarchal culture assign roles and responsibilities (division of labor) among men and women in societies, influence unequal power relations leading to unequal access and control of resources. These roles create vulnerability among rural, poor women, which decreases access and capability to adapt to climatic changes during disasters. Thus, various aspects of gender limit the adaptive capacity of different vulnerable groups, particularly women and girls. Inclusive to gender is intersectionality. Among the women, other women face multiple social and political identities and dominations, which increase their vulnerability to climate-induced disasters. Rural female-headed households are among such groups that are particularly vulnerable to climatic shocks.

In Malawi, despite efforts to include gender in climate adaptive strategies, reports by GoM (2022) indicated continued trends of differentiated gender impact and adaptation levels between men and women. This paper, therefore, will examine the status of the adaptive capacity of women to climatic shocks, specifically to the impact of tropical cyclones focusing on the case of Mulanje district in Southern Malawi. For the purpose of this study, female headed households shall mean poor, single women in rural areas.

## **1.1 Brief Background**

Climate change is the alteration of climate due to human actions and natural climate variability observed over a long period; these actions change the composition of the global atmosphere resulting in hazardous impacts on the planet (UNFCCC, 1992). Research shows that the poorest countries, including sub-Saharan countries, are bound to experience the worst effects of climate change (T. Kakota, 2011). This phenomenon is due to these countries' heavy reliance on ecosystem services (food and agricultural production, water, and energy sources). Projections on climate variability anticipated the occurrence of extreme and more frequent weather conditions in the Southern part of Africa. This prediction has become true in recent years.

As projected, Malawi has experienced unrelenting weather shocks in the past seven years. In 2015 a tropical cyclone affected 1,101,364 people. Drought in 2016, prolonged dry spells, and armyworms from 2017 to 2019 left 3.8 million people declared food insecure before the lean season. Severe floods, strong winds associated with tropical cyclone Idai in 2019 affected 975,600 people. Heatwaves, late onset of rains, and strong winds associated with tropical cyclone Ana in the 2021/2022 rainfall season affected 193 558 households (DODMA, 2022). The 2021 Global Climate Risk Index ranks Malawi at five among the ten most highly at-risk countries for climate-related disasters (Africa-Risk-Capacity, 2022). Therefore, this data forms the basis for increasing research to understand the level of exposure, sensitivity, and adaptive capacity of vulnerable groups. This information can help development of resilience strategies and interventions appropriate for vulnerable people.

Building on the United Nations Framework on the Convention on Climate Change (UNFCCC), the Paris Agreement adopted enhancement of adaptation and mitigation to handle climate variations. Being a signatory to the agreement, Malawi government adopted the same approach for resilience building. It thus advocated various climate-smart agriculture, energy production, and

water conservation technologies to augment resilience to climatic shocks through the National Adaptation Plan of Action (GOM, 2006). Some mitigation and adaptation methods include conservation agriculture, afforestation, and reforestation programs to control siltation and provision of fuelwood, energy serving stoves, food and water reserves, and access to flood zoning. Therefore, studies on understanding these climate-smart technologies have become a priority for most researchers to ensure their efficiency and effectiveness.

Gender-inclusive measures are articulated by researchers as the best ways to adapt to and mitigate the impacts of climate change (Sophie Robbe, 2021). Implementing Partners and the government should capacitate men, women, and the youth to be resilient to climate change shocks and stressors. Climate variability tends to have the most intense impact on the poorest populations, of which women - specifically, female-headed households - make up the majority (Eastin, 2018), (Chibowa T. K, 2020). WEDO 2009 also indicated that of the 3.3 billion people in poverty, 70% are women. This revelation magnifies their inability to be resilient to climate change. In addition to poverty, other factors exist, such as unequal power relations, cultural norms, social structures, gender stereotypes, and lack of access and control to resources. These factors make women more vulnerable to climate variability impacts and limit their ability to adapt and cope with consequences.

Women also primarily use natural resources such as land, firewood, and water. Their socially constructed triple roles (reproductive, productive, and community managing role) involve more use of the ecosystem, such as fetching water, firewood, and food. Women also produce 70% of the food in Malawi and offer 50% of the labor in the gardens (Chibowa T. K, 2020). Thus, the need for the development of gender inclusion in resilience approaches.

Despite the inclusion of gender in adaptation and mitigation methods to avoid gender-differentiated vulnerability, records indicate that the 2021/2022 storms had a gender-differentiated impact. For example, the Interagency rapid flood assessment report for Mulanje district explained that, out of 18,224 households that were affected, 13,307(73%) were female-headed households, and 4917 (26%) were male-headed households.

Therefore, this study aims to assess the extent to which the FHH were impacted, investigate the reasons behind such impacts, and the resilience and adaptive mechanisms and approaches both female-headed households and male-headed households employed, and precisely understand the

adaptive capacity of the women heading households. The research further builds upon existing knowledge studied by various researchers in gender and climate change and the differentiation of climate vulnerability between men and women.

## **1.2 Problem Statement**

The COP26 meeting of the UNFCCC in Glasgow in 2021 adopted a gender-inclusive approach to climate change adaptation. The approach has been accepted by governments and stakeholders worldwide (Lovell, 2021). Several programs on climate-smart adaptation and mitigation accommodate men and women to build resilience. However, maintaining an adaptive capacity to climate change among rural and poor female-headed households remains challenging in Malawi. With sequential and intensifying climatic stresses, levels of exposure remain high.

Social norms, unequal power relations, gendered division of labor, and unequal access and control of resources, have been advocated in several legal frameworks, including the National Resilience Strategy of 2018-2030 to be some of the main causes of low adaptive capacity of women. (GOM, 2018)

Nevertheless, the floods and strong winds that impacted Malawi in 2021/22 saw more women homeless, food insecure, and living in humanitarian camps. In Mangochi, out of 4,490 affected households, 41% belonged to men-headed households, while 58% belonged to females. In Chikhwawa, out of 84,106 affected homes, 36 % belonged to males while 64% to women, and in Mulanje district, 73% of the disrupted households belonged to females while 26% belonged to males (DODMA, 2022). Women continue to be some of the primary users of the ecosystem. Continuing this trend with successive and compounding weather shocks and little time to recover will lead to engaging in adaptation approaches which continue to make them less resilient and more susceptible to future weather shocks.

Less research has been conducted in the target study area of T.A. Nkanda, which follows the matrilineal marriage system. This area also experienced less media attention than other districts after tropical storm Ana and Gombe. Research is needed to determine the extent of the impacts on female-headed households and the factors influencing higher impact among FHHs than other women. The type of response and adaptation approaches and or mechanisms the gender-

disaggregated households utilized also require effective investigation. This study will also contribute to the knowledge gap on gender-differentiated climatic adaptation.

### **1.3 Research Objectives**

#### **Main Objective**

This research aims to analyze the adaptive capacity of female-headed households, socioeconomic issues affecting their vulnerability to climatic shock, and finally, inspect types of adaptation strategies adopted by the women.

#### **Specific Objectives**

1. To investigate the extent female-headed households were impacted by tropical storm Ana in Mulanje District.
2. To investigate the contextual factors affecting the adaptive capacity of female-headed households to climatic shocks such as tropical cyclones.
3. Explore effective methods of strengthening the capacity of female-headed households to build resilience towards climatic shocks like tropical storm Ana, based on the results of this study.

#### **Research Questions**

1. To what extent did climate change-related tropical storm Ana impact female-headed households compared to male-headed homes in the Mulanje district?
2. What contextual factors affect the adaptive capacity of female-headed households to climate change-related shocks?
3. What are some recommendations for ensuring the resilience of female-headed households to climatic shocks like tropical storm Ana?

### **1.4 Significance of Study**

This study will perform a gender analysis in a matrilineal and tropical cyclone-prone area. This will inform policymakers of the continued challenges impacting women that increase their

vulnerability to climate change. The study will also inform the policy makers and program designers how difficult it may be for female-headed households to adapt to the weather shocks that are occurring on a higher magnitude and in short spaces of time. Furthermore, the study is to isolate key recommended strategies that can strengthen female-headed households' adaptive capacity. This will be essential in future designs of resilience programs or interventions by relevant stakeholders. Therefore, policymakers and program designers will be able to design appropriate interventions to address these challenges and build the capacity of female-headed households to respond to climatic shocks. Lastly, the study will contribute to addressing and achievement of various international, regional and local frameworks on climate change related disasters and gender equality. For example, Sustainable Development goals, goal 13 on climate change, (targets 1, 2, 3 and 13), but also goal 5 on gender equality and empowerment of women and girls., UNFCCC Paris Agreement 2015, and the Malawi National Strategy on strategy 2018-2030.

## **2 THEORETICAL FRAMEWORK AND CONCEPTUAL FRAMEWORK**

### **2.1 Theoretical Framework**

The study employs a Feminist political ecology framework and the matrix of domination theory to understand adaptive capacity and factors that underpin the vulnerability of such households to climatic-related shocks.

#### **2.1.1 Feminist Political Ecology Framework**

According to Sunberg (2017), Feminist political ecology integrates feminist theory and political ecology and brings feminist theory, objectives, and practices to political ecology (how politics influence ecological justice). It is also an analytical framework that provides the basis for understanding ecological or environmental issues, such as climate-related shocks, about societal and political socioeconomic dynamics.

The theory depicts gender as one crucial variable concerning class, ethnicity, and power dynamics in society, among other dimensions in political ecology that include access to, control over, and knowledge of natural resources. In addition, research in feminist political ecology demonstrates how social identities are constituted in and through relations with nature and everyday material practices (Rocheleau D, 1996).



As an analytical framework and tool, Feminist political ecology emphasizes that the human environment or ecosystem, constitutes of institutional and technological structures, biophysical systems, and social structures. With respective socioeconomic network in its local context, the human environment is influenced by changes in political and institutional arrangements (that might determine access to resources and other shocks response mechanisms) (Sundberg, 2017). They are also influenced by climate variability and change (resulting in climatic-related shocks) and dynamics in economic and social structures (affecting people's response to climatic shocks, e.g., poor versus rich). Such interaction of the factors will determine the contextual vulnerability that further dictates how the community members will respond to climactic shocks in society, in this case, how female-headed households build adaptive capacity.

### **2.1.2 Black Feminist Theory of Matrix of Domination**

This theory was developed by Patricia Hill Collins and expounded in 2000 in her book *Black Feminist Thought*. The thesis explores oppression from interlocking systems, including gender, age, status, race, and other social classifications faced by disregarded or othered people (Collins, 2000), (Limpongog, 2016). The theory moves past intersectionality to explain how interlocking systems create vulnerability among particular groups of people. The approach assists in developing the understanding that women in their intersectionality are not born vulnerable but are made vulnerable by the matrix of dominations to maintain patriarchy and white supremacy.

The matrix of domination was categorized into structural, disciplinary, hegemonic, and interpersonal dominations of power. The structural and disciplinary categorized oppression originates from social institutions, policies, and institutions. These may come in the form of gender-blind policies or interventions instituted by the government, NGOs, and community structures which fail to address vulnerabilities and needs of gender groups in their intersectionality.

Hegemonic domination focuses on ideologies, cultural practices, beliefs, gender norms, stereotypes, gendered division of labor, accepted unequal power relations, and patriarchal culture, which are normalized in society (Collins, 2000). They are regarded as commonsense and ingrained in people's consciousness to maintain the oppression of marginalized people such as black, single, poor, and rural women (thus supporting patriarchy and other people with status). This type of oppression requires transformative approaches in gender to clear past knowledge and belief, build

autonomy, agency, adaptive capacity to climate variability and impacts, and sustainable empowerment of such oppressed women.

Lastly, interpersonal domination focuses on other women and men with privilege and how they utilize that privilege. This may include women in decision-making positions who disregard other marginalized women. They overlook their privilege to uplift other women (Collins, 2000). Sometimes they may even use their freedom to increase the oppression of others since they have different statuses. This privilege may also include other men in the same communities but privileged with patriarchy, thus imposing pressure on women and lowering their adaptive capacity.

## 2.2 Conceptual Framework

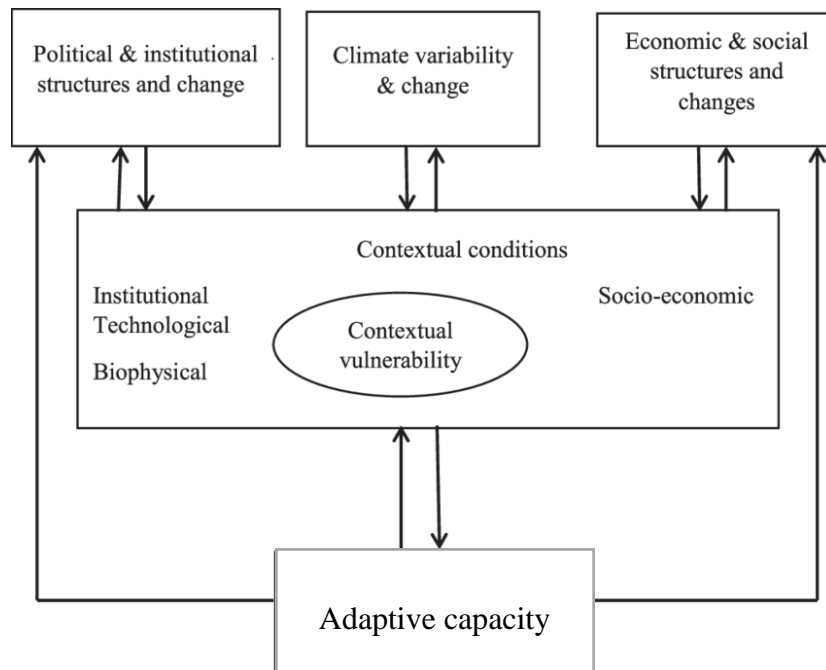


Figure 1 Feminist Political Ecological Framework

Adaptive capacity is "the ability of female-headed households to adjust to potential change, take advantage of opportunities, or respond to consequences" (IPCC, 2012, P4). According to research, human resource capacity, access and utilization of technology, ability to diversify income and assets, and access to information are some of the indicators of adaptive capacity (Asante, 2017), (Abdul-Razak M., 2017), (Balikoowa K., 2019). These indicators can be classified in the feminist political ecology framework as economic and social structures, political and institutional factors, contextual vulnerability, and climatic factors. Social networks, for example, contain socio-

demographic characteristics such as age, education, gender, and status. When these intersect, they enhance the exposure and sensitivity of people, including rural, single, poor, and elderly/ young women, thereby challenging adaptive building capacity. This framework, therefore, highlights the significance of socioeconomic and political structures for the adaptive capacity of women (system) (FAO, 2012). It further highlights the role of institutions, governance, and management in influencing the capacity to adapt to climatic impacts.

### **3 METHODOLOGY**

#### **3.1 Study Area**

This study was carried out in Mulanje District T.A Nkanda. The area was selected from the vulnerability assessment reports, where Mulanje ranks as one of the most vulnerable areas to climatic shocks (DODMA, 2022). The district is also among the most affected districts by tropical storm Ana, which occurred in the 2021/2022 crop season. The area of T.A. Nkanda is the second highest on the list of severely affected areas, with 18,224 homes and 33,514 households' crops and livestock being affected. The district experienced 150 mm of rain in 24 hours and extreme winds exceeding 80 km/hour. Most damages were experienced in the agricultural sector and shelter, disrupting socio-economic activities. Thus, more families (particularly from female-headed households) living in camps or the temporal shelters are allocated to those affected homes who lost their houses due to the impact of the cyclone. The people in the area also know climate-smart technologies as stipulated in the Mulanje District Development Plan (GoM, mulanje District Development Plan, 2017-2022). The people in this area also have access to response services from different stakeholders. Therefore, making the site is appropriate for this study.

## Map of Mulanje District

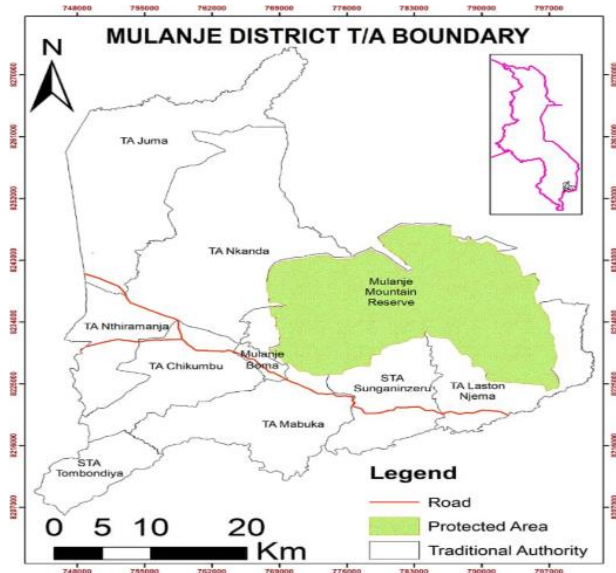


Figure 2 Map of Mulanje District

### 3.2 Study Population

The target population included community members in the areas that tropical cyclone Ana impacted in Mulanje District, TA. Nkanda. The study mainly focused on female-headed households regarded as rural, poor, and single women without an adult male in the home. The study included widowed, divorced, single, elderly, and younger women. The women had different livelihoods, but almost all relied on food from small home gardens, about a quarter of an acre or less. Key community informants, including relevant staff from the government and Non-governmental organisations who responded to Cyclone Ana were also interviewed. The study also solicited primary data from relevant government ministries, including the Department of Disaster Management (DODMA,2022).

### 3.3 Study Design

The study employed a grounded theory approach to respond to the research objectives. According to the grounded theory method, a theory is generated based on the collected and analyzed data. This approach uncovers social relationships and behaviors of study groups, in this case, the female-

headed households and their respective communities and relevant stakeholders in the context of climate vulnerability and adaptive capacity.

In collaboration with the grounded theory, this study employed a qualitative research design using an exploratory case study methodology. A qualitative case study design allows for an in-depth exploration of phenomena using the "what, why, and how" questions (Creswel, 2014). This approach promotes the investigation of phenomena. In this case, the adaptive capacity of female-headed households to climatic shocks within the socio-political and biophysical local context in Mulanje District using several different data sources, for example, the affected female-headed households as well as key informants in the area, to reveal the multiple dimensions of the adaptive capacity to climate shocks among female-headed families (Baxter P., 2008). In the case of study, a real-time phenomenon such as women's vulnerability and adaptive capacity is explored within its naturally occurring context of climatic variability and shocks of tropical cyclone Ana (Kaarbo J, 1999).

### 3.4 Data Collection Methodologies and Tools

Data Collection Method	Data Collection Instrument
Focus Group Discussions (2 focus group discussions.  - 5 women  -3 men from VCPC and ACPC	Checklist guide, voice recorders, notes pads, and pens
Key Informant Interviews- 2 Key Informant Interviews (key informant interviews)  -1 government officer	Checklist guide, voice recorders, notes pads, and pens
Document Analysis	Publications, public policies

*Table 1 Data collection methods*

Within the bounds of the grounded theory, the study used focus group discussions and key informant interview checklists, which were developed and piloted to check their relevance and applicability to the needs of the study. In December 2022, the researcher conducted two focus group discussions and one key informant interview with the focus group discussions checklist and key informant interviews checklist. The focus group discussions took 2 hours. while the key informant interviews took an average 1 hour 22 minutes, of Specifically, a voice recorder was used, as well as notepads alongside the interview checklists.

The Feminist Political Ecological Framework assisted in grouping themes in the results section. The framework expands beyond the relationship of nature and women, or gender, to understanding intersectionality in climate change and disaster management. It further assesses unequal power relations and social contexts (gender norms and stereotypes) and how they can influence adaptive capacity.

### **3.5 Data Analysis**

Based on the research design, the study analysis employed the grounded theory approach, which involved several systematic steps.

1. The first process is referred to as the formalization step. This process involved reading all notes and transcripts from focus group discussions and key informant interviews to gain an overview of the body and context of the gathered data.
2. The next step was open coding, highlighting sections of the gathered data (texts, phrases, or sentences). Labels or codes were developed to describe the content (Creswel, 2014).
3. After coding, the data was sorted into themes, identifying connections among themes, sub-themes, and categories.
4. The FPE framework was used to identify the connection among the themes.

The matrix of domination theory will be used to bring the perspective of how women are not naturally vulnerable to disasters but rather made vulnerable by various systems of domination. These dominations lead to failure to develop adaptive capacity and sustainable resilience. As such, the theory was used to elaborate the discussion section.

### **3.6 Limitations and Ethical Considerations**

Since primary research was utilized, research ethics were applied extensively to ensure that the research results were robust and harmless to respondents but also relevant. The research ethics principles used included informed consent, anonymity, and confidentiality. Informed consent involves providing the primary research respondents with an understanding of the research objectives and enabling the potential respondents to opt in or out of participating in the primary research. For anonymity, the details of the participants in the primary analysis were not included and will not be linked to any of the preliminary research results. Finally, for confidentiality, care was considered to identify the study participants to hide their identities.

Climate change adaptation work operates on different levels throughout Malawian society and across diverse groups. Acknowledgment is made that this study only focuses on the gendered climatic-related impact of tropical storm Ana within a narrow local area (TA Nkanda) in Mulanje District. Thus, a risk of generalizing the results to represent the Malawi scenario's climate change adaptation on an overall scale. However, since the targeted study area experienced the high impact of tropical storm Ana and encompassed most of the characteristics of a highly vulnerable as most Malawian districts, study findings will still indicate the possible recommendations to enhance a generated climate-related impact response in the future.

## **4 RESULTS**

This section will present the research study results from focus group discussions and key informant interviews. The results will be arranged following the research questions with themes identified from the grounded theory approach and reflection from Feminist Political Ecology Framework.

### **4.1 Climate and Disaster Context**

The climate and disaster context include the evidence of climate variability explained by women and men in focus group discussions and key informant interviewees. It will also present the effects of climate change and the impacts on the target population.

#### **4.1.1 Elements of Climate Change (Intensity and Frequency)**

Across the responding groups of the focus groups discussions and key informant interviews, it was observed that climate change and variability are manifesting in the study catchment area. Extreme variability is being reflected by changing rainfall patterns, heatwaves, droughts, increases in pests, and the emergence of frequent tropical cyclones. The study confirmed that in recent years since 2014, the area has been experiencing continuous, strong, stormy rainfalls coupled with strong winds (tropical cyclones). The key informant interviews and focus group discussions explained that due to these phenomena, floods, mudslides, and saturation of waters have become more frequent and rampant in the catchment area leading to disasters almost every year. The study revealed several climate-related effects related to hazards such as floods, recurrent drought, mudslides, and tropical cyclones. These various effects experienced by the communities were categorized as physical, social, and economic (agricultural).

#### **4.1.2 Physical and Social Impacts**

The focus group discussions and key informant interviews highlighted that the collapse and washing away of homes led to physical harm for the women. The women reported getting harmed while the houses were failing but also when trying to save their children and some food items. In addition, the falling of the houses rendered the women and their families homeless. They had to seek shelter from relatives or neighbors (single-roomed, congested spaces) or at nearby schools. Other women (FHH) were invited by so-called "well-wishers"; these men pretended to want to help but wanted to take advantage of the woman's vulnerability. In the end, some of the women were coerced into marriage. The study also observed that the aged and those with disabilities face



more challenges if floods or cyclones have destroyed their houses and they cannot build a house independently.

In the shelter spaces, the women experienced exhaustion due to poor sleeping arrangements, sexual abuse in washrooms, and lack of privacy during menstruation due to shared spaces. The roles and responsibilities also increased for the women since they had to prepare food at a community level (all people living on a camp or a shelter home), mopping, sweep in the rooms, and clean the bathrooms and toilets while at the base. While for the men, their jobs were once off, which included digging pit latrines and washrooms. The focus group discussions indicated that after helping at the camp, those who were energetic enough had to source income through wage labor or replanting in their gardens (younger women were more energetic than the older women). In contrast, the women in the MHH had their men doing the extra work of sourcing income.

*"Mmm, we get tired, thinking of how life has been disrupted, working and managing life at the camp, then forcing ourselves to go back to the garden or wage labor (ganyu); we get exhausted while our friends wait for their husbands or elder sons to do some of these things."* A woman from the focus group discussions explained.



*one of the women's houses affected by Tropical Cyclone Ana.*



*Women cooking at a humanitarian camp.*

*Figure 3 Impacts of Tropical Cyclone Ana.*

### 4.1.3 Economic and Agricultural Impacts

Apart from the destruction of shelter, tropical cyclone Ana created a food insecurity challenge among FHH and other community members. The focus group discussions and the key informant interviews revealed that soil erosion, washing away of crops and livestock and other household assets, was a major effect that destroyed their food source. The study showed that since crops were washed away, it was difficult to cultivate on their farms for a while due to water logging after the floods.

*"We have not had any good yield for the past three years. I don't know what is happening, but the floods wash away the crops; if it's not the floods, the crops are infested by armyworms; right now, if you move into our gardens, you will see the army worms, which means we won't have any yield, we are helpless at this point"* one women in the focus groups discussions explained.



*Maize infected by armyworms.*



*Garden, completely washed away by floods.*

Figure 4 Agricultural Impacts of Tropical Cyclone Ana

"The other problem with this area is the closeness to Thuchira river and that it's a dambo area (wetland), people grow rice and other crops which do well with saturated soils but, once the floods come, they wash away all the crops. Due to the soil type, it is difficult to plant again after the floods until the water completely disappears, which takes some time. And for the homes eeeee, the soil fills up with water, and they realize the houses are crumbling down." Government officer as key informant interviewee correlated.

On possibilities of relocating to safer places, the women indicated that such an alternative land could not be granted to them as the local chiefs prefer to sell other than give it for free.

TYPES OF IMPACTS	IMPACTS
Physical impacts	Physical injuries, Death, Collapse of houses, Collapse of bathrooms and pit latrines, Poor sanitation, and hygiene
Economical and Agricultural Impacts	Crop damage, soil erosion, washing away of livestock, washing away of livestock Loss of livelihoods
Social Impacts	Relocation to camps and decongested shelters, sexual exploitation, psychological problems, increased roles, and responsibilities

Table 2 Categorisation of Impacts

## 4.2 Political & Institutional Structure

### 4.2.1 Community Structures

The study established the existence of several relevant structures related to the management of disasters, which includes local leaders and their respective support staff, Village Civil Protection Committees (VCPCs), Area Civil Protection Committee (ACPCs), and the District Civil Protection Committee (DCPCs). These structures include ensuring that people are at low risk and protected from hazards, harm, and abuse. They generate response and recovery plans and provide early warning information and adaptation advice. Representation of men and women is at 50% each, and leadership respects gender balance, i.e., chair as male or female and vice versa. However, low incomes among women render the initiatives of the VCPC unfruitful.

In any disaster, the DCPC, which closely works with VCPC, directs where different items should be distributed depending on gender equality and equity. Nevertheless, the chiefs sometimes bulldoze the VCPC and control distribution. After disasters, land redistribution is not done to compensate those whose land is more exposed to disasters.

#### **4.2.2 Roles and Responsibilities**

The study also followed up on how a day is spent in the life of a family in the targeted community. Firstly, the women heading households attend to the farm early morning, then do household chores, including drawing water, cleaning the house, preparing food, caring for children, in the afternoon attending community meetings, and later continue working on the farms. Usually, boys above 18 years assist their mother on the farm while girls attend to the farm and do household chores. The study also observed that the women sometimes construct houses and latrines on their own, although fragile and shallow.

In the community, men primarily engage in valuable productive work, for instance, construction work, carpentry, cash crop farming, and more. Regarding reproductive roles, the men's roles include digging pit latrines and constructing bathrooms. Thus, productive work is mainly done by men than women. The study registered several changes in the gender roles over time as men now can cook and take kids to the hospital though it has been a gradual process and happens as a assistance to the women. Despite this, regarding productive work, farm owners and small-income employers prefer to employ men than women, thus a disadvantage for the women.

#### **4.2.3 Land Ownership**

With respect to control and ownership of land, both women and men have access to land and other critical community assets. However, it was observed that based on the matrilineal system, women own land and have complete control while the men have full access but with limited power. The husband cannot decide what to do with the land since relatives of the wife, specifically her uncles, observe who is controlling the land. In addition, the women's land is mostly less than an acre, producing less than five bags per harvest. The study also revealed that women have less access and control over inputs. Since women are engaged in low-paying, productive work, buying farm inputs becomes difficult.

In addition, programs such as Affordable Inputs Program (AIP) are not easily accessible to women. The study revealed that only a few people have access to coupons to access AIP inputs, and issues of intersectionality are not considered. Furthermore, individuals stand for long hours (days and nights) to access fertilizer and do not access it in most circumstances (this is mainly because the women go home to continue with reproductive roles at home, gender stereotypes that women control women's night movements, and fear of sexual abuse). All the women in the focus group discussions revealed not having benefited from AIP. Registering beneficiaries is also not transparent and lacks proper sensitization to all community members.

*"I have some coupons, but to get access to the fertilizer is not easy; there aren't any depots to buy, and it takes time; we stand in the lines day and night waiting for fertilizer to come, then when it arrives, we are told it is finished before we can buy."* One woman in the focus group discussions revealed.

The initiative collected names from development intervention clubs and registered people. Only 20 people could register for each club, meaning many were left, particularly those not part and parcel of the clubs. The implication is that many did not have access to the needed fertilizer to boost soil fertility, leading to low yield hence food insecurity. Furthermore, it was established that of those not accessing the fertilizer, women were more than men. These implied that despite having land as women, they could not produce the needed food due to a lack of access to fertilizer. The women indicated that they could not use manure as it still demands to have synthetic fertilizer. The study further established that those on social cash transfers could not access the Affordable Inputs Subsidy Program.

#### **4.2.4 Other Assets for Adaptive Capacity**

In addition to land ownership and farm inputs, other assets owned by people in this study's catchment area included radios, bicycles, and livestock (goats and chicken). These assets are essential for different reasons. The radios are used to access information on climate issues and impending disasters. While the bicycle is used to travel to piece works, collect firewood, and transport to markets. On the other hand, the livestock is kept for food but mainly for sale during an income crisis. These assets, including land, are also considered a sign of prestige. The people who own all these items are accorded a higher status than those who do not. Above all, these assets

can be sold for survival after disasters. However, according to the Focus group discussions and key informant interviews, these assets are owned mainly by men in the community.

It was also discovered that women fail to access financial capital due to limited collateral. Some women venture into Village Savings and Loans (VSL) groups. However, it depends on their income level. Most women cannot afford to join such groups as they only have the income to sustain food availability at home for the family's survival. Small-scale businesses or petty trading is another crucial occupation among women, including selling tomatoes and rice and ordering and selling food items.

*".....with VSL (Village Savings and Loans), you invest K2,000 (\$1.97), you may need to borrow 10 000 (\$9.77) to start a business, but since kids are crying at home for food, u prioritize buying food, that means u have lost your capital, but still, you have interest that is pilling from that 10,000 ....the money may rise to 100,000 (\$97.67)..... For VSL, we can't participate without having any business to invest in; with nowhere to invest the vsl money, they may grab our kids as collateral. They may even sell the small farmlands we have." A woman in the FGD explained.*

### **4.3 Economic and Social Structures and Changes**

#### **4.3.1 Socio-Demographics**

One of the crucial issues captured by this study was socio-demographics and how they influence the adaptive capacity of the women under investigation. This included age, education, tribe affiliation, and religion. Age and education were the most dominant aspects. The focus group discussions revealed that younger and educated women showed agency, willingness, and comprehension to try new climate-smart technologies, i.e., manure production. They also exuded energy to diversify assets and livelihood activities to adapt and cope with disasters. The younger women were also engaged in social groups in the community where they had access to some information about climate change, although not reliable.

The study indicated that the dominant religions in the study area were Christianity and Islam, with Christianity having the highest following. From the study, religion did not have any implications for the adaptive capacity of women. In terms of culture, the area is occupied by the Lomwe and Yao. These tribes practice the matrilineal marriage system, whereby inheritance and power are mainly on the woman's side of the family. This system means women own land and children.

According to the study, this practice increases divorce cases, increasing female-headed households.

### **4.3.2 Occupation and Livelihoods**

Smallholder farming is the main occupation of women, and men in the community. Women mostly grow food crops while the men grow cash crops. Thus, men manage to have cash crops and food crops, while women only manage to produce food crops. In addition, men and women also engage in wage labor, where they engage in everyday farming piece work and earn an average of USD1.94 per day. However, the study revealed that women are disadvantaged as they cannot go far to fetch well-paying casual farming labor as men do, since they need to take care of children and attend to household chores. Equally, on nearby farms, women are given lesser work than men because they are considered weaker than men. Among the women, the youth are favored for employment over older women. Men also migrate to other areas, i.e., Mozambique, to seek employment. They likewise gain more income from charcoal selling, carpentry, and construction, which are deemed masculine jobs for men other than women.

In continuation with the community's livelihoods, picking firewood from the mountains and selling it, is another economic activity done by both men and women. However, women in the focus group discussions complained that men have started dominating this activity since it began to fetch more income.

### **4.3.3 Support from Stakeholders**

The study established that several government departments such as Gender and Development Affairs, Social Welfare, Community Development, Agriculture and Disaster Management Affairs, Non-Governmental Organizations (NGOs) such as Plan International Malawi (PIM) and Catholic Development Commission (CADECOM), Red Cross, UNFPA provide support to the communities before and during disasters in the form of materials as well as capacity building. These included the provision of climate-smart farming practices such as manure-making, proper ridging, and reforestation as disaster preparedness mechanisms.

The focus group discussions disclosed that most of these activities are good. However, the women did not feel empowered enough to adapt to impending disasters. The women elaborated that the recovery interventions target very few people, and the capacity building offered often requires

starter packs and continued supervision that are not provided. In the end, the women have knowledge but no means to implement them (and only a few women attain it, older women and other more vulnerable, i.e., children living with disabilities, are mostly exempted from the programs)

*"Organizations come to teach us all sorts of things, they taught some of us how to survive after the disaster, new methods of farming, climate-smart crop varieties, manure making, materials needed for construction of strong houses, how to protect ourselves from sexual abuse, banki nkonde (Village Savings and Loans), but mmmmm, how can we do most of these things without money or hand holding guidance.... it's hard."*

#### **4.3.4 Access to Information and Utilization of Information**

According to the Focus Group Discussions, limited people can access information regarding early warnings of impending disasters. The women in the focus group discussions attested to not owning some necessary technologies, i.e., radios and mobile phones, to access such relevant and accurate information on disasters. It was also observed that most women heading families are not discussing such pertinent information in social groups. In the past, there used to be local signs such as unique black birds migrating away from the area or ants storing food, but recently, this ceased. Sometimes the women may hear from their married neighbors, but such issues are like random stories which are difficult to take seriously.

However, through the VCPC (with advice from DCPC), the communities are capacitated with knowledge on how to adapt to prevent being heavily hit by disasters that are common in the area. Such advice includes constructing substantial houses by raising the foundation or using burnt bricks and cement, thatching with plastic papers, and planting trees around homes. They are also advised to move to higher grounds, to grow specific crops after disasters, such as sweet potatoes, and to use manure in combination with fertilizer, to mention a few. Nevertheless, as much as the women would wish to utilize such information, they lack the financial means to adopt most of these methods.

*"We do; they tell us different ways how we can be prepared in case of disasters, but the challenge is, any preparedness requires money; in our case, we are told to look for grass and plastic papers to cover the walls of our house, but since money is limited, we can't waste money*



*on buying papers instead of buying food. It's difficult to implement all the plans discussed with the VCPC because we don't have money."* one member of focus group discussions elaborated.

#### **4.3.5 Sexual Reproductive Health Decision-Making Power**

Based on the focus group discussions and key informant interviews, despite this area being affiliated with the matrilineal tradition, issues of patriarchy and gender stereotype endures since men decide on the number and when to have children. The study revealed that many women are divorced in the area due to their insistence on family planning practices. Sometimes women secretly access family planning without the husband's knowledge, if they know that the husband will not allow it (as most men believe that contraceptives reduce their strength in bed). However, the moment the husband finds out, he terminates the marriage.

*"True, my marriage ended because I decided to stop having kids at 4; he left me and married another woman; he told me that he was not done having kids."* A woman from the focus group discussions revealed.

*"We may agree to tubal ligation (kutseketsa), but later he changes his mind and start wanting a woman who can have children, leaves you with your four kids, and gets four more kids with another woman to have eight kids. Most women are being divorced because of such cases."* She continued.

Related to this, the key informant interviews confirmed that the area registers a high rate of unstable marriages due to the matrilineal culture, which does not give power to the husband as head of the family. Due to this, the husbands do not get attached to their families and leave whenever they wish, thus leaving most families single-parent and female-headed, hence vulnerable.

#### **4.3.6 Sexual and Gender-Based Violence (SGBV)**

One key aspect of research interest was understanding the occurrence of SGBV in the catchment area that would affect the adaptive capacity of FHH and other community members. The focus group discussions and key informant interviews captured that women are abandoned by their husbands after disasters due to less access to conjugal rights at the camp or in other shelter homes. In other cases, most men decide not to live at a humanitarian center while pushing the women to

live in the base to access relief items. While the woman is in there, the man sometimes remarries. Thus, women are disrupted mentally, emotionally, socially, and economically; which may take them a while to find their ground to develop adaptive capacity.

In other instances, the women are exploited by men, who prey on their vulnerability and offer to construct substantial houses for them in exchange for sexual intercourse or marriage.

The key informant interviews and focus group discussions also captured that in other cases, women are bystanders, letting their husbands defile their own biological or stepchildren for fear of the husbands divorcing them for younger women. These instances are private and never reported (accessed randomly in community awareness meetings). Often women fail to report these defilements because they don't want to have the breadwinner arrested. In most instances, the older women in the community report such cases during community meetings. Sexual exploitation is usually kept secret in humanitarian camps, and the study noted that most people do not report such issues.

#### **4.3.7 Decommissioning of Camps**

Another critical aspect discovered by the study was the strategies for decommissioning camps. The focus groups discussions and key informant interviews revealed that, during decommissioning of humanitarian camps after tropical storm Ana and Gombe, the families, including FHH, were sent off without any starter packs (foodstuffs, hygiene packs, kitchen utensils, and reconstruction packs) as compared to the past decommissions. Thus, the women complained about starting over life from the basics, unlike moving forward to engaging in productive work to sustain the families. Reconstruction proved costly, and rebuilding items were deemed more expensive and difficult to access.

*"In the past, they would give us a lona (), to make a tent and live in, but in this recent case of tropical cyclone Ana and Gombe, nothing has happened. We were just sent home with nothing, that we should go and live with our extended families; we thought we would be called back, but no, up to now, nothing. So where do we start from...."* A woman in the focus group discussions explained.

*"FHH have difficulty adapting; when their houses collapse, they have no one to help them rebuild; thus, they spend most of their time trying just to reconstruct their houses; in Mulanje, items for*

*rebuilding a strong house are expensive and found in hard-to-reach areas, far from their houses (grass, plastic papers for thatching). So, they spend every little they find paying wage laborers to build and buy materials. However, around most of these villages, you would notice that the houses that women head are constructed poorly and are mud houses compared to burnt brick houses by MHH."* key informant interviews explained.

#### **4.3.8 Media Coverage**

Another vital aspect discovered by the study was the inadequacy of media coverage in the study catchment area. The key informant interviews revealed that the site receives less media coverage during and after disasters by tropical cyclones than other districts in the lower shire (Chikwawa and Nsanje). These districts experience tropical cyclones with excess flooding, which draws more attention. In contrast, the study area experiences flash floods, continuous rainfalls (non-stop rains for more than one week), and strong winds, which excessively damage houses and field gardens. However, the areas that attain more visibility attract donors and focus on government agencies, making it difficult for NGOs to access funding for these areas

## **5 DISCUSSION**

The study's key objective was to analyze the adaptive capacity of women and socioeconomic issues affecting women's vulnerability to climatic shocks and stress and further inspect the adaptation strategies adopted by female-headed and male-headed households. The matrix of domination theory will be utilized to understand the limited adaptive capacity of women in FHH to climate shocks like tropical storm Ana in Mulanje, as observed by the results.

### **5.1 Structural and Disciplinary Domain of Power**

From the study, women have difficulty adapting to disasters; tropical cyclones are rummaging the study area almost yearly. Various factors are limiting the development of their capacity, as shown in the results section. Some of these factors can be classified as the structural domain of power. This domain was explained by Collins (2000) as the design or organization of social institutions that create vulnerability for groups of people. These social institutions may be policies, laws, interventions (AIP, SCF), community structures (DCPC, VCPC, ACPC), and NGO interventions in disaster response management that are gender blind or neutral. The study shows that most institutions are gender-blind or aware, and intersectionality is not considered. Customary laws on land tenure and land holding size, are among the institutions that marginalize women. Women own small-sized lands where production of crops is not enough. With the disasters, farming is done for survival than subsistence.

The administration of AIPs and SCT does not indicate understanding that some women are single, ultra poor, old or young. Thus, do not provide for them, considering their roles and responsibilities or gender stereotypes in society. The women fail to have access to Affordable Inputs or Money from social cash transfers, thus failing to produce good yields or venture into productive small businesses that would build their adaptive capacity.

Programs, policies, and interventions that are not gender-responsive and do not cooperate with intersectionality may increase women's vulnerability to disasters and affect their adaptive capacity (UNESCO, 2021), (Sophie Robbe, 2021). Therefore, it is encouraged to consider gender transformative approaches to attain sustainable resilience. Gender transformative practices are

essential because they address deep-rooted stereotypes and practical and strategic gender needs of all genders in their intersectionality.

As observed from the results of this study, women failed to access reliable early warning information, which is an essential component of adaptive capacity development. Yet, there are structures such as the DCPC, VCPC, and ACPC. Furthermore, since the ACPC and VCPC include the 50/50 quota and consider women in decision-making positions, the assumption is that all needs of specific groups of women are addressed. However, as shown in the study, is not the case. In addition, decommissioning camps without proper support leaves the women more vulnerable and helpless. Thus, the requirement to develop solid and gender-responsive institutions that address specific vulnerabilities of groups of people in their intersectionality.

## **5.2 Hegemonic Domain of Power**

One of the leading indicators of adaptive capacity is the ability of a system or individual to switch to another source of income or livelihood when one is affected by climate change or its impacts (flexibility). The hegemonic domain of power helps to show how particular ideologies, cultural norms, and gender stereotypes (normalized) oppress women to fail to develop this flexibility for adaptive capacity. Collins (2000) defined this domain as creating popular common-sense ideas to maintain patriarchy and continue the oppression of different groups of people (Collins, 2000). Over the years, some gender normative codes have been ingrained in men and women which oppress women, particularly single women. In this study, coping and life skills, such as carpentry and construction (which secure high wages during piecework), were revealed to be specific for men and not women; thus, the women do not even attempt to develop such skills.

Migration to other areas in search of income as an alternative source is also mostly done by men than women. Because women are hegemonically reduced to home managers and children's carers, they are not eligible to move to other areas. If a single woman tries to leave their children and migrate for livelihood, she is regarded as uncaring and sometimes a prostitute. Equally, women are not supposed to spend night hours standing in lines to access Affordable Inputs Program items; otherwise, if sexually harassed, society blames them. As such, they do not even attempt to access AIP items. A study conducted in Ghana also found that gender dimensions, normalized in society, increase exposure and sensitivity to climatic risks among women farmers (Asante, 2017). The

study further singled out single and older women as most vulnerable to climatic shocks and least to develop adaptive capacity.

The matrilineal marriage system makes women believe they oversee valuable assets in a household in the study area. However, studies show that, despite having access to land, women still have no control over what to plant in the small gardens due to a lack of access to inputs and credit loans to improve the production of valuable crops. Mulanje Social Economic Profile, 2017-2022, stipulates that being matrilineal, women are custodians of farmland (out of 185,251 farming households, 125,910 are female-headed households, 59,341 are male-headed households); however, women have less access to and control over inputs and financial capital (GoM, Socioeconomic Profile Mulanje, 2022) thus, challenges to develop adaptive capacity.

*"Empowerment in this context is twofold. Gaining the critical consciousness to unpack hegemonic ideologies is empowering. Recognizing that one need not believe everything one is told and taught is freeing for many Black women."* (Collins, 2000, P286)

Based on this study, black women are the females heading the household. Understanding these patriarchal gender normative codes in adaptive capacity may help the development of gender transformative interventions and policies which address such vulnerabilities. Such policies and interventions, over time, assist the development of new knowledge and consciousness among women and men and thus breaking gender stereotypes, norms, and designated gender roles and responsibilities.

*"The true focus of revolutionary change is never merely the oppressive situations which we seek to escape, but that piece of the oppressor which is planted deep within each of us"* (Lorde, 1984, 123) (Collins, 2000).

### **5.3 Interpersonal Domain of Power**

One aspect of adaptive capacity is the will, drive, and power within oneself to find capabilities to establish adaptive capacity. This facet includes the self-efficacy to organize all aspects of domination and try to build adaptive capacity. This is called agency and is related to the interpersonal domain of power. The agency may be required to choose alternative livelihoods for survival to plan for the near future to build resilience. From the study, women indicated less agency as most felt helpless and failed to plan or implement their plans.

*It's challenging to find ways, to protect ourselves from disasters or to support ourselves after the disasters. Everything we do doesn't seem to work; farming in our small gardens is not working, forests to pick firewood are moving further and further away, and we cannot compete with men; for these past three years, it's like the devil has sat on our backs.* Women in FGD explained

There are various aspects in the domains of the matrix of domination that impact women's self-efficacy to build adaptive capacity. These include gender norms, increased triple roles due to being the sole provider; stereotypes, and unequal access to financial capital. A study by Torre-Castro, (2022) also recognized that women fail to develop adaptive capacity due to lower agency. Various gender dimensions in the matrix of domination impact the subordinate agency. (Torre-Castro, 2022).

Another critical aspect of the interpersonal domain of power is how particular women and men in society attain some privilege but do not utilize this privilege to assist other, more vulnerable women. According to this study, some women elected in the VCPC, ACPC, or other decision-making structures have direct access to adaptive capacity through training or information on impending disaster. However, they do not target vulnerable people, such as women in poor female-headed households, with this kind of information. They are ultimately contributing to the low adaptive capacity of such women. Some men, on the other hand, use patriarchal privileges to sexually exploit single women in exchange for relief items or the reconstruction of their houses. This challenge continues to create oppression for the women in FHH and thus reduces adaptive capacity.

In conclusion, the matrix of domination assists in the identification of various ways in which women in female-headed households face oppression by multiple systems. If not addressed singularly, then as interlocking systems, may continue to prevent the development of adaptive capacity. Interventions require first conducting gender analysis in target areas because each locality has its challenges, which may not be similar to another one.

## 6 CONCLUSION AND RECOMMENDATIONS

This research aimed to analyze the adaptive capacity of female-headed households, socioeconomic issues affecting their vulnerability to climatic shock, and finally, inspect types of adaptation strategies adopted by the women. The specific objectives addressed by the study include understanding the impacts of the cyclone. The impacts help in the analysis of the vulnerability. Following the impacts, the study sort to investigate the factors that affect the adaptive capacity of the target group and their adaptive strategies despite the factors preventing their adaptive capacity.

The results analysis reflects DODMA's (2022) claim about the occurrence of climate-related disasters in the study catchment area. The study results revealed the occurrence of floods, recurrent drought, mudslides, and tropical cyclones in the study catchment. In general, the study also revealed a range of destructive physical, agricultural, and social impacts.

The study catchment area is exposed to disasters from floods and strong winds due to presence of the Mulanje mountain, Thuchira River, clay soils, and deforestation. Stormy rains fill up the river leading to flooding; water runs down the mountains washing away crops, livestock, and houses along its path, clay soils retain water which affects homes and crops, and deforestation cuts down the windbreaks leading to massive destruction. The focus group discussions revealed that the women and other community members are aware of climate variability and its impacts. However, due to poverty, and other gender dominations, they fail to build adaptive capacity.

As observed from FGDs and key informant interviews, another study by Molosoni (2022) also observed that gender-differentiated vulnerability continues to exist in disaster-prone areas (Molosini B, 2022). Furthermore, this study revealed that tropical cyclones affect female-headed households more than male-headed households. Women usually have poorly constructed houses, leading to more house damage and physical harm, forcing them to seek shelter from humanitarian camps or neighbors and relatives. (At the time of focus group discussions, other women were still living with relatives). Policy, program makers, and implementers must develop reallocation projects for people from these disaster-prone areas. Construction of disaster-resistant houses may also be another consideration, (considering the most vulnerable populations). There should also be the training of women to conduct vulnerability and risk assessments, safe building techniques,



routine maintenance of homes, and climate-smart agriculture to build adaptive capacity (Ginige, 2008).

The study also revealed that the women experienced sexual exploitation and abuse after settling in the camps. However, reporting of such cases is very minimal. According to UN WOMEN (2019), 10 percent of women reported feeling unsafe in shelters. After the 2015 floods, the organization (UN Women) observed that reporting of gender-based violence (GBV) was underestimated. The UN Women study also revealed the prevalence of GBV in Malawi (41 percent of women reported experiencing physical or sexual violence in 2011). Evidence from other disaster reports suggests that GBV rates were likely higher after the 2015 and 2019 events (UN-Women, 2019). Such situations hegemonically increase the feeling of inferiority for the women, which then affects their adaptation. There is also a need to develop strong protection and safeguarding structures and committees in humanitarian camps. Capacity building and awareness of sexual reproductive health and rights and sexual and gender-based violence rights should be offered to both men and women before, during, and after disasters.

Other impacts included loss of livelihoods due to crops and livestock destruction. This affected the food security of the households. Implementing gender-responsive climate-smart agriculture may assist in preventing increased vulnerability for the women under study.

The study observed various factors that affected the women's adaptive capacity leading to continued heavy impact by future cyclones. FPE guides these factors and later classified into the matrix of dominations. Depending on the results of this study, women are included in decision-making structures at the community level. However, this does not mean that the challenges of vulnerable women are considered. This prevents female-headed households from addressing challenges in disaster management (E Coleman, 2015). The study also discovered that the women have access to land, but the landholding sizes are less (less than an acre).

In addition, the women have constricted access to farm inputs, financial capital, credit, and early warning information. Gender-blind interventions such as AIP, social cash transfer, and poor decommissioning of camps increase women's vulnerability and, thus, difficulty developing adaptive capacity. Facilitating affirmative actions for vulnerable women (FHH) to access and

control loans, social cash transfers, and affordable inputs to strengthen livelihoods may help to build adaptive capacity.

Poverty is also high among the FHH due to literacy levels, lack of financial capital, and lack of proper skills (entrepreneurship, business management, carpentry, or construction). This challenge is due to gender stereotypes that classify these skills and abilities as masculine and not for women. A study in Ghana and another in India also revealed that women with low socioeconomic status had increased vulnerability to climate change and its impacts thus, less adaptive capacity (Asante, 2017), and (Kantamaneni, S., Sudha Rani, & Palaniswamy, 2022). The UN Women study of 2019 also revealed that the livelihoods of women (FHH) are less resilient than men's (MHH). Women are particularly sensitive and vulnerable to climatic shocks and thereby pushed into poverty. The UN Women study further observed that poverty in Malawi is gendered, with women earning an estimated 50 percent and 71 percent of what men earn in the informal economy and from smallholder agriculture, respectively.

Due to time limitations and resources, the study could not consider an in-depth comparative analysis of the resilience methods adopted between FHH and MHH. Instead, the study did document the various adaptive strategies employed by MHH and FHH by reflecting on the gaps between the two groups and further understanding the implications on the adaptive capacity of women.

Despite various challenges, the study found that the women heading households engage in other strategies to adapt to the impacts of tropical cyclones. Both men and women in the study area almost engage in similar adaptive systems, although men have the upper hand. The women try to engage in wage labor and petty trading, such as selling picking and selling firewood, selling vegetables. However, depending on the age, the younger and more energetic ones are the ones who engage in this. In addition, women are challenged since men are starting to dominate in these same petty businesses but also possess different skills to grab better piecework, leaving women in headed households vulnerable and with a low capacity to adapt. Establishment of male engagement sessions and community gatekeeper meetings to address harmful norms and stereotypes. Launching community education and awareness-raising initiatives on disaster response and recovery to reinforce resilience, mainly targeting women and girls in rural communities.

Facilitating capacity building in entrepreneurship skills and business management for women, including FHH, may help to build sustainable adaptive capacity.

Another way of adaptation adopted by the FHH is through NGOs that impart knowledge on climate-smart agriculture (planting improved seedlings, using artificial fertilizer, planting trees, making backyard gardens, and making manure). Despite all this, the women complained of difficulty implementing most of these climates' smart agriculture approaches due to low income and continued guidance by the organizations. Thus the women in the FGD asked for organizations or extensive workers to continue close monitoring after capacity building on climate smart technologies, to ensure effective utilization of the knowledge. A study in Ghana also attested to women employing similar adaptation methods. However, still being affected by gender norms and unequal power relations to develop actual adaptive capacity (Asante, 2017). MHH have more adaptive strategies such as migration, later sending remittances to their families, and selling off other assets such as radios and livestock.

Africa Development Bank (ADB) emphasized the need for response interventions to view risk as a factor of hazard (Cyclone Ana), exposure, and vulnerability, and the need to identify the root causes of risk affecting the sector or group of individuals is paramount. The study also echoed the need to capture the perspectives of both women and men. Evidence shows that women have a deeper understanding of vulnerability, mainly due to their role in households and the wider community (ADB, 2020).

According to Africa Development Bank (2020), the provision of interventions that enhance incremental improvements alone is no longer sufficient, but rather interventions that aim at creating a transformational change. In this case, transformational change refers to actions and behaviors that challenge existing standards and general paradigms (and disrupt old path dependencies) to increase women's resilience. ADB emphasizes the need to move away from "considering women as victims of climate change and disasters to acknowledging structural inequalities (and their drivers) that impede women's capacities to actively build their resilience along with that of their family and communities (ADB, 2020). The results from this study support the ADB study findings as it observed that current response interventions from various

stakeholders lack an element of creating transformational change and building sustainable adaptive capacity among FHH.

Further recommendations that would assist in developing the resilience of female-headed households would include the following;

1. Lobby/advocate for gender-responsive policies, plans, budgets, and disaster response and recovery management projects.
2. Institute early warning systems and communications that are gender sensitive and accessible to all vulnerable groups.
3. Organizations should ensure instituting gender-responsive objectives, outcomes, and quantitative and qualitative indicators for gender-responsive monitoring and evaluation.
4. Other institutions, such as the media, should employ gender responsiveness and include intersectionality to address specific vulnerabilities of different groups of people in society.
5. Development of recovery interventions that enhance increasing FHH income levels so that they can be in a position to invest and or buy assets or venture in income generation activities or businesses plus joining the VSLs. Such assets will enhance their adaptive capacity

This study captured data on women's adaptive capacity and discovered some contextual factors that prevent their resilience to climatic shocks like Tropical cyclone Ana. However, there is a need to carry out extensive qualitative and quantitative studies in areas following matrilineal culture targeting both FHH and MHH to understand the gender differences in adaptation and develop appropriate interventions. Furthermore, the study discovered cases of defilements to prevent divorce in the study area. Thus, another study gap that require extensive ethnographic study to understand the in depth of this problem and its impact on women and children.

Lastly, tropical cyclones and related disasters have become rampant in Malawi. Just this year, 2023, the country was hit by tropical cyclone Freddy causing enormous damage in the country's southern region (the study area included), which is the most vulnerable. Women, particularly in female-headed households, are most heavily impacted by these cyclones due to various normative patriarchal atrocities. These atrocities are the matrix of dominations that keep women oppressed

and fail to develop adaptive capacity. These create information on structural, hegemonic, and interpersonal dominations of power. Because of the oppression, women are stigmatized and thus lack access to disaster management capacity training, early warning signs, VSLs, and many more to make them resilient. Because of this, women tend to have less adaptive capacity. Without incorporating a gender lens when managing disasters, communities will never gain sustainable resilience, as such, loss of monetary funds and development of a nation.

*“We have to move beyond the lip service of gender mainstreaming, into concrete actions.....it is important to place well-defined, convention -specific strategies on gender with achievable indicators and objectives and to support government in their efforts to implement and comply with the gender provisions of the Conventions”- Christina Figueres, UNFCCC Executive Secretary.*

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**ANNEXES**  
**ADAPTIVE CAPACITY OF FEMALE HEADED HOUSEHOLDS TO CLIMATIC SHOCKS**  
**FOCUS GROUP DISCUSSIONS CHECKLIST**

**Interviewers name**.....

**FDG location:** .....

**Date and time:** .....

**Number of Participants: Males** .....**Females** .....

**Age of participants, and level of education**

Woman 1 \_\_\_\_\_

Woman 2 \_\_\_\_\_

Woman 3 \_\_\_\_\_

Woman 4 \_\_\_\_\_

Woman 5 \_\_\_\_\_

**Community committee members**

**Name of Committee:** \_\_\_\_\_

**Position held in the committee :** \_\_\_\_\_

**Set A. Essentials (Broader Context)**

**A1. Climate and disasters context**

- What weather extremes (temperatures, precipitation, cyclones, floods, droughts, etc.) are considered normal, and has this changed?
- What changes in the climate and weather have people observed over decades and over recent years?
- Which hazards occur in the area as a result of climate change and when,
- How often and how strong are they?
- Have changes been observed in the occurrence of these hazards (frequency, intensity, etc.)

**A2. Social context**

- What are the most important livelihood resources to different groups within the community?
- Who are the better off and worse off in the community between men and women?



- Who are wealthy between men and women in this community?
- What are the different ethnic and religious groups in this community?
- What is the main occupation for women in this community?
- What is the main occupation for men?

## **Set B. Underlying Causes of Vulnerability**

### **B1. Access to and control over assets and services**

- Which assets (e.g. land, sea, rivers, other natural resources, livestock, etc.) and services are key for the ability of men and women to buffer shocks and adapt to changes?
- What degree of access to and control (i.e. decisionmaking power) over these do women and men have?
- Which of these assets and services come under most stress from climate variability and disasters?
- How have gender inequalities in access to and control over these assets and services changed in the past or are currently changing, and why?

### **B2. Decision-making and participation**

- How do local planning processes work?
- Who is involved in, or influences decisions at the community level?
- Whose interests are represented externally, e.g. towards local government?
- In what ways do women and men participate or make sure their interests are represented in local decision-making?
- When climate variability and change affect people's lives and livelihoods, who makes decisions over changes in resource distribution and practices?
- Who tends to benefit from these decisions, and who does not?
- Who influences and decides how natural resources such as land and water are allocated?

### **B3. Division of labour, use of time**

- Who (women, men, boys, girls in what circumstances) is allowed or expected to do certain types of work, complete certain tasks?
- What specific sets of opportunities, constraints and status do these specific types of work and duties mean for individuals of different gender and age groups?
- How much time do women, men, boys, and girls spend engaging in these different duties?
- How have labour division and time use changed over time and why?

- What happens to people's roles and time use under changing climatic circumstances, for example when floods and droughts become more frequent and intense?

#### **B.4 Control over one's body**

- To which degree are women, men, boys and girls in control over their own bodies and sexuality, decisions on marriage, family planning and freedom from abuse and exploitation?
- What factors affect decisions over marital status, marital partner or family planning?
- What threats jeopardize women's, men's, boys' or girls' control over their bodies, and what factors drive these risks?
- Have there been any changes in these dynamics and why?
- What impacts do climate variability and disasters have on this or how is climate change and disasters influencing women and girls' control over their own bodies?

### **Set C. Climate resilient livelihoods**

#### **C.1 Livelihoods**

- Which livelihoods are most vulnerable to climate variability and disasters?
- How are they affected by them?
- Whose livelihoods are they (women or men)?
- Which livelihoods are least affected and why?
- How are the livelihood strategies of women and men at different stages in their lives (adolescent / adult/ elderly, unmarried/ married/ divorced/ widowed etc.) evolved?
- Who is changing them and why?
- Are men and woman adapting differently?
- How female headed household are adapting?
- Do households (male headed, and female headed) have diversified livelihood strategies?
- Does this include non-natural resource based of nonfarm strategies?
- Do livelihoods strategies involve working away from the community? If so, who does that and when, for how long and with what effect, on whom?

#### **C.2 Coping and adaptive strategies**

- What strategies are currently employed to deal with shocks and stresses to the livelihoods of women and men?
- How are women and men in different social situations managing risk, planning for and investing in the future?
- Who generates and who makes use of climate information for planning?

- Are women and men headed households employing climate-resilient agricultural practices and if so, which households do so (socio-economic situation, male or female headed households etc.)?

### **C.3 Hazards and changes (Disaster Risk Reduction)**

- What are the most important climate related hazards and other hazards the region and/or ecological zone faces?
- How have these hazards changed in recent decades and years, and how are they currently changing?
- How do they affect different groups within the community, which groups are most vulnerable to which hazards and why?
- Within each group, how are women affected these hazards and how are men affected? Why?

### **C.4 Disaster risk information**

- What disaster risk information do local institutions, men, women, boys and girls have access to and how useful is it?
- What early warning systems in place and how well are they working?
- Who (among women, men, boys and girls in different social situations) has access to them and makes use of these and who does not?

### **C.5 Response and risk management strategies**

- How do women, men, boys, girls protect themselves and their assets in the event of a disaster?
- Who has protected reserves of food and agricultural inputs, secure shelter, and mobility to escape danger, and who does not?
- Who can seek support?
- What are the response interventions the various stakeholders undertake in this community?
- Who are the key stakeholders that implement these response interventions?
- Do the response interventions enhance the adaptive capacity of women and men in the community?
- Between men and women who does benefit much on these response interventions?

### **Local and community capacity**

#### **C.7 Knowledge, information and innovation**

- What distinct knowledge do women and men hold in their livelihood activities?

- What knowledge do they hold of expected future changes?
- Who has the knowledge, skills and resources to employ innovative strategies to support adaptation?
- What innovative strategies are available to women and men to adapt to changes in the climate and disasters context?
- Who can take advantage of them and who receives institutional support to do so – and who does not?
- Who makes decisions on innovations?

### **C.8 Flexible and forward-looking decision-making**

- How are predictions made about the future when, for example, deciding which crops to plant or when to sell seeds, yields, animals or other assets?
- Among women and men in the community, who makes these predictions and whose opinions are considered in these decisions?
- What weather and climate forecasting information is available and
- how are they disseminated to women, men, girls and boys in different social settings?
- Among them, who has best access to it, who makes use of it and who does not?

## ANNEX 2

### ADAPTIVE CAPACITY OF FEMALE HEADED HOUSEHOLDS TO CLIMATIC SHOCKS

#### KEY INFORMANT CHECKLIST

Name of Interviewer:.....

KI location: .....

Date : .....

Position of KI: .....

#### Set A. Essentials (Broader Context)

##### A1. Climate and disasters context

- What weather extremes (temperatures, precipitation, cyclones, floods, droughts, etc.) are considered normal, and has this changed?
- What changes in the climate and weather have people observed over decades and over recent years?
- Which hazards occur in the area as a result of climate change and when,
- How often and how strong are they?
- Have changes been observed in the occurrence of these hazards (frequency, intensity, etc)

##### A2. Social context

- What are the most important livelihood resources to different groups within the community?
- Who are the better off and worse off in the community between men and women?
- Who are wealthy between men and women in this community?
- What are the different ethnic and religious groups in this community?
- What is the main occupation for women in this community?
- What is the main occupation for men?

#### Set B. Underlying Causes of Vulnerability

##### B1. Access to and control over assets and services

- Which assets (e.g. land, sea, rivers, other natural resources, livestock, etc) and services are key for the ability of men and women to buffer shocks and adapt to changes?
- What degree of access to and control (i.e. decisionmaking power) over these do women and men have?

- Which of these assets and services come under most stress from climate variability and disasters?
- How have gender inequalities in access to and control over these assets and services changed in the past or are currently changing, and why?

## **B2. Decision-making and participation**

- How do local planning processes work?
- Who is involved in, or influences decisions at the community level?
- Whose interests are represented externally, e.g. towards local government?
- In what ways do women and men participate or make sure their interests are represented in local decision-making?
- When climate variability and change affect people's lives and livelihoods, who makes decisions over changes in resource distribution and practices?
- Who tends to benefit from these decisions, and who does not?
- Who influences and decides how natural resources such as land and water are allocated?

## **B3. Division of labour, use of time**

- Who (women, men, boys, girls in what circumstances) is allowed or expected to do certain types of work, complete certain tasks?
- What specific sets of opportunities, constraints and status do these specific types of work and duties mean for individuals of different gender and age groups?
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- What threats jeopardize women's, men's, boys' or girls' control over their bodies, and what factors drive these risks?

- Have there been any changes in these dynamics and why?
- What impacts do climate variability and disasters have on this or how is climate change and disasters influencing women and girls' control over their own bodies?

## **Set C. Climate resilient livelihoods**

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- How are they affected by them?
- Whose livelihoods are they (women or men)?
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- Who is changing them and why?
- Are men and woman adapting differently?
- How female headed household are adapting?
- Do households (male headed and female headed) have diversified livelihood strategies?
- Does this include non-natural resource based of nonfarm strategies?
- Do livelihoods strategies involve working away from the community? If so, who does that and when, for how long and with what effect, on whom?

### **C.2 Coping and adaptive strategies**

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- Who generates and who makes use of climate information for planning?
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