WOMEN AND ADAPTIVE CAPACITY TO CLIMATE SHOCKS: A CASE OF SOCIAL PROTECTION PROGRAMMES IN MULANJE DISTRICT

MASTER OF ARTS (DEVELOPMENT STUDIES) THESIS

By

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DECLARATION

I, the undersigned, hereby declare that this thesis is my own original work which has not been submitted to any other institution for similar purposes. Where other people's work has been used acknowledgements have been made.

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CERTIFICATE OF APPROVAL

The undersigned certify that this thesis represents the student's own work and effort and has been submitted with our approval.

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DEDICATION

To my children Maziko Audrey and Mthunzi Othniel; the more you dream, the farther you get.

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ABSTRACT

In Malawi Social Protection is identified as one of the key instrument to address the endemic poverty and vulnerability caused by different factors including climate shocks. Social protection programmes are being implemented to support poor beneficiaries including women whose households' economic progress and welfare are constantly set-back by climate shocks, which erode their assets and resources. This study assesses the level of adaptive capacity of women to reduce household vulnerability to climate shocks when targeted in social protection programmes in Mulanje District. The study sought to seek the following objectives; how climate shocks have influenced household vulnerability, how women's participation in the social protection programmes promotes households adaptive capacity to climate shocks, and establish to what extent social protection programmes have built adaptive capacity of women to reduce household vulnerability to climate shocks. The study employed quantitative and qualitative data collected through Key Informant Interview, Focus Group Discussion and Household Survey. Data was analysed using content analysis and Statistical Package for Social Sciences. To determine levels of adaptive capacity the study adopted a composite index based on six adaptive capacity determinants namely economic resources, social capital, information and Awareness, technology, infrastructure and institutions. The study results found that social protection programmes are significantly building adaptive capacity of women to reduce household vulnerability to climate shocks. Women have moderate adaptive capacity level that is allowing them to reduce household vulnerability. The findings also found that in terms of adaptive capacity determinants, social protection programmes are promoting to women to access to economic resources, social capital, technology, and infrastructures. Conversely, information and Awareness, and institutions determinants had very low scores. Therefore, the study recommends full utilisation of the determinants that scored very low. There is a need for social protection programmes to focus on the involvement of the relevant institutions during and after beneficiaries' cycle as well as integration of climate information such as early warning messages.

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LIST OF ABBREVIATIONS AND ACROYNMS

ADB	Asian Development Bank
ADC	Area Development Committee
ASP	Adaptive Social Protection
COMSIP	Community Savings and Investment Promotion
DFID	Department for International Development
FDG	Focus Group Discussion
FISP	Fertilizer Input Subsidy Programme
GDP	Gross Domestic Product
GII	Gender Inequality Index
GFDRR	Global Facility for Disaster Reduction and Recovery
HACI	Household Adaptive Capacity Index
IHS	Integrated Household Survey
ILO	International Labour Organization
IPCC	Intergovernmental Panel on Climate Change
KII	Key Informant Interview
MASAF	Malawi Social Action Fund
MNSSP	Malawi National Social Support Programme
NSO	National Statistics Office

ODI	Overseas Development Institute
OECD	Organization for Economic Cooperation and Development
OPM	Oxford Policy Management
PACC	Paris Agreement on Climate Change
SDGs	Sustainable Development Goals
SFDRR	Sendai Framework for Disaster Risk Reduction
SPSS	Statistical Package for Social Science
SRM	Social Risk Management
T/A	Tradition Authority
UN	United Nations
UNDP	United Nations Development Programme
VSLAs	Village Savings and Loans Association
VPC	Village Protection Committee

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Globally, climate shocks have a disproportional impact on the poor and the poor have significant constraints in preparing for, responding to and bouncing back from such setbacks (World Bank, 2016). According to the assessment report from Intergovernmental Panel on Climate Change (IPCC) (2007), the frequency, size and duration of climate shocks are on the rise and many of these shocks are slow-net that emerges gradually overtime, and protracted- shocks that continue for too long . The term climate shock is defined as those events that outstrip or overtake the capacity of a society to cope with impact of natural disasters such as drought, floods or heat waves (Anderson, 2000). Traditionally, responses to climate shocks have been mainly through humanitarian and emergency assistance designed to save lives alleviate suffering and maintain human dignity in the aftermath of the shock. In absence of formal assistance, many communities in the developing countries have been responding to climate shocks by exclusive informal protection provided by families and social groups (Davies, Guenther, Levy, Mitchell, and Tanner, 2009).

Lately, there is a growing recognition of policy responses that aim at reducing the impacts of climate shocks such as poverty, deprivation, inequity and fragility thereby improving the resilience of individuals and families (Davies, Oswald, Mitchell, and Tanner, 2008). Social protection is one of the policy responses and is considered as having an appropriate role in reducing vulnerability of the poor people to climate shocks (McCord, 2009). In line with the long established definition by Norton, Conway, and Foster (2002), Social protection is defined as the set of public actions that enhance the capacity of poor and vulnerable groups to escape from poverty and better manage risks and shocks.

The main tools of social protection include cash, vouchers, social support services and fee waivers. As stated by the International Labour Organization report social protection programmes (safety nets, public works, cash transfers, etc.) are believed not only help to prevent individuals and their families from falling or remaining in poverty, but also contribute to economic growth by rising labour productivity and enhance social stability by identifying and addressing social problems, and providing customized services to meet the individual needs of target group (International Labour Organization, 2010).

According to the estimates of the International Labour Organization, 55% of the global population (around four billion people) remain without any social protection benefit, whereas the social protection coverage gap is the highest in Africa (82.2%), and Asia and the Pacific (61%)(International Labour Organization, 2017). Therefore, the expansion of social protection schemes is widely seen as necessary given the limitations of informal social protection arrangements to address chronic poverty, risk and vulnerability. In most cases, the causes of the limitations of informal social protection are due to the exclusion of the poor and marginalized, inadequate resources, and inability to deal with the shocks (Hoogeveen, Emil, Renos and Stefan, 2004).

Governments and development agencies are now mainstreaming social protection concept into climate change adaptation as a way of responding more efficiently and effectively to climate shocks (World Bank, 2013). Meanwhile, many low and middle-countries have established comprehensive social protection floors as nationally determined set of minimum basics social schemes which secure protection aimed at preventing or alleviating poverty, vulnerability and social exclusion (ILO, 2017).

In addition, linking social protection policies with climate change adaptation measures is increasingly considered by scholars as having essential strategic tool to help individuals and households that are hit by climate related disasters (Bene, Schwan and Yu, 2018;

Ulrich, Slater, and Costella, 2019). According to the World Bank (2013), countries that have social protection systems in place before a shock hits are better able to respond in particular if they have been designed to respond to climate change, as it has been demonstrated by Ethiopia's Productive Safety Net Programme (PSNP).

In strengthening resilience, social protection has extended its concept to "Adaptive Social Protection (ASP)" as created by Institute of Development Studies (IDS). This is as an approach that combines social protection, disaster risk reduction and climate change adaptation as a means to increase the livelihoods resilience of the poorest and most vulnerable people (Overseas Development Institute, 2010). According to Global Facility for Disaster Reduction and Recovery (GFDRR) report, adaptive social protection is aimed at building resilience of the households that are most vulnerable to shocks and increasing responsiveness of social protection programmes to adapt to and meet changed needs on the ground after the shocks have materialized (World Bank, 2010).

It is argued that, from a global perspective, the expansion of social protection in developing countries signals the emergence of new welfare institutions committed to achieving significant and sustained improvements in human development among disadvantaged groups, which is a key component of sustainable development (Barrientos and Hulme, 2009). To date, core international development frameworks have also affirmed the essential role of social protection in promoting sustainable development as demonstrated coherently in Sendai Framework for Disaster Risk Reduction 2015-2030, United Nations Convention to Combat Desertification (UNCCD) 2018-2030, Paris Agreement on Climate Change (PACC), and Sustainable Development Goals (SDGs) (Aleksandrova, 2019).

The Sendai Framework for Disaster Risk Reduction promotes the development of Social Protection policies as a tool for building resilience to disaster, and emphasizes the importance of safety net mechanisms for integrating disaster risk reduction with measures to reduce poverty, enhance livelihood, and improve access to health care and basic services (United Nation, 2015). The United Nations Convention to Combat

Desertification reflects the priority of parties to develop safety nets within their drought risk management strategies (United Nations Convention to Combat Desertification, 2017). The Sustainable Development (Goal 1 and targets 1.3 and 1.5), aim for a substantial increase in social protection coverage as well as the adoption of social protection policies to progressively achieve greater equality and resilience building of the poor and vulnerable. Whereas, the Paris Agreement on Climate Change calls for climate change adaptation action “to follow a country driven, gender-responsive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems,” (Holzmann, Gill, Hinz, Impavido, Musalem, Rutkowski, and Schwarz, 2003).

1.2 Women, Vulnerability and Social Protection Programmes in Malawi

Malawi’s development of social protection is a response to previous strategies such as Poverty Alleviation Programmes (PAP) and Malawi Poverty Reduction Strategy (MPRS), which failed to reduce the poverty situation and did not adequately reach the poorest and vulnerable population (Chinsinga, 2007; Slater and Tsoka; 2007, National Social Support Policy, 2012). According to Malawi National Social Support Policy, over half of the population in Malawi need social support. Poverty and vulnerability are widespread in Malawi with 51% of Malawians living below the national poverty line and 73 % of the population live below the international poverty line of 1.90 dollar per day (Henninger, 2017). Therefore, social protection exists to provide income or consumption transfers to the poor, protect the vulnerable against livelihood risks, and enhance the social status and rights of the marginalized (National Social Support Programme, 2012).

With this understanding, the Malawi National Social Support Programme (MNSSP) was developed to implement the NSSP by provides a wide-ranging framework for the development of the social protection system. The programme priority support pillars are provision of consumption support through cash or in-kind transfers (food), promoting resilient livelihoods and development of a shock-sensitive social protection that prepare for, respond to shocks and support recovery (Malawi National Social Support Programme II, 2018).

Furthermore, social protection programmes are also linked to climate change adaptation and considered to be among pro-poor policies that help the most vulnerable groups to adapt and thrive in years to come (Heltberg, Siegel, and Jørgensen, 2009). Malawi is one of the most exposed country due to historical climate distribution which is characterized by frequent shocks such as drought and floods (Chinsinga, 2012). A recent report from Integrated Household Survey (IHS 4-2016-2017) by the National Statistics Office (NSO) indicates that almost 99.9% of households in Malawi are affected by at least one type of shock. The report revealed that 67% of population in rural areas is affected by agric-climatic shocks compared to 23% in urban areas (National Statistic Office, 2017). On average over the past decades, Malawi has experienced annual losses to a value equivalent to 1 per cent of Gross Domestic Product (GDP) due to vulnerable to weather shocks (World Bank, 2016).

Social Protection programmes in Malawi are designed and implemented with attention to gender issues. Malawi follow suit with other countries worldwide to enhance efficiency of social protection for both men and women because gender inequality is the source of risk and vulnerability at household level (NSSP, 2012). When it comes to considering the gender-sensitivity of the design of social protection programmes, Molyneux and Thompson (2011) pointed out that it is important to differentiate between practical and strategic gender needs. Whereas the first set of needs comes from women’s practical experiences (which are defined by unfair systems of labour division based on gender), strategic gender needs arise from women’s structurally defined subordinate condition in relation to men.

Worse still, the impact of climate shocks are not distributed evenly across household, as women are anticipated to face disadvantages under climate shocks given that women particularly in developing countries have lower average earnings, fewer assets and less access to productive resources and technology compared to men (Antonopoulos, 2013).

In addition, Malawian women are greatly vulnerable to climate shocks because they have fewer resources to cope with the impact of shocks due to heavy reliance on climate-sensitive resources (Carr and Thomson, 2013).The combination of natural resources dependence and gendered difference in assets means that women are typically more vulnerable than men to climate change (Vincent, 2017).

It can be asserted that linking women in social protection programmes can enhance quality life for those suffering from poverty and improve resilience for those who are vulnerable to risks and shocks (World Bank, 2012; Food Agriculture Organisation, 2016; Ulrich, 2016; Tebaldi, Hoffman, and Gavrilovic, 2016). Ngwira (2014) also identified social protection as one area of the main development areas where women's participation has greater poverty returns. In Malawi women represent the larger proportion of the poorest people and are highly dependent on local natural resources. According to the Human Development Gender Inequality Index (GII 2017) report, Malawi has a high Gender Inequality Index value of 0.619 meaning there is more disparities between female and male in reproductive health, empowerment and labour market, and this affects households' resilience against shocks (United Nation Development Programme, 2018). Besides, women are more likely to be vulnerable to climate shocks and changes than men because of social and cultural contexts that determine access to resources and division of labour (World Bank, 2012).

Women are still lagging behind in many areas of development and men's contribution to change the situation is not fully harnessed. In Malawi, 51% of the country's population is women and 84% of the population lives in rural areas as indicated in 2018 national census report (Nation Statistics Office, 2018). The growing number of social protection programmes is encouraging, considering the fact that these programmes have a great potential for narrowing the gender gap in income and for redressing women's disadvantageous socio-economic situation (Tebaldi et al., 2016). In addition, Social protection programmes can support to strengthen the capacity for women to reduce household vulnerability to climate shocks (Hanna and Karlan, 2016).

In Mulanje District social protection programmes are implemented by different organizations including the government as response to climate variations that are positioning individuals and households at risks (Food and Agriculture Organization, 2014). Over the past decade the severe impacts of climate change have been noticeable in the district. According to the district state of the environment report Mulanje is a disaster prone district due to serious climate related catastrophes such as dry-spell, seasonal droughts, intense rainfall, floods and flush floods for the past decade (Environmental Affairs Department, 2002). Additionally, the recent trend of weather has shown that climate change is still happening in the district with unpredictable precipitation and temperature a development that puts vulnerable households at risks to climate shocks (Kachanje, Kasulo, and Chavula, 2016; Malawi Meteorological Services, 2018).

Currently the population of Mulanje district is 684,107 and 358,992 are female according to the 2018 Malawi population and housing census report (National Statistics Office, 2018). Women are part of the targeting group in Social Protection Programmes and they represent a higher number because they are not only just victims of adverse climate effects due to their vulnerability, they are also key active agents of change at household and community level (Savage and Umar, 2006). Women typically form strong social networks within their communities, which can foster collective management of household vulnerability posed by climate shocks (Carr and Thompson, 2013).

For the sake of this study, household vulnerability is defined as likelihood or risk of the household being poor or falling into poverty in the future (Twigg, 2015). Household vulnerability is also conceptualized as a function of household ability to recover once a shock has occurred (Fleeny, McDonald, Dawkins, and Posso, 2013). Shocks are complex events that result in losses at an individual or community level due to a combination of specific hazards as well as people's exposure and vulnerability (Twigg, 2015;). Therefore, the focus of this study is on covariate shocks, meaning shocks that affect large numbers of people or communities. Moreover, while shocks can be caused by natural or manmade hazards, the study's focus is on the impacts of shocks that are primarily triggered by climate variability. These can be slow-onset e.g. drought or fast-onset e.g. floods shocks, and predominantly affects rural populations.

Adaptive capacity will be defined as the ability of a natural or social system to adapt to climate change, to moderate potential damages, to take advantage of the opportunities, or to cope with the consequences (IPCC, 2007). The common features of the definitions imagine adaptive society as a system which is capable of self-organization and self-regulation, and is able to cope with the potential negative consequences of climate change (IPCC, 2001).

1.3 Problem Statement

An examination of literature suggests that social protection programmes are designed as public actions taken in response to vulnerability levels which are deemed socially unacceptable within a given society (Holzman and Jorgensen, 2000; and Sabates-Wheeler, 2008). It is urged that reducing household vulnerability to climate shocks builds people's resilience, capacities to anticipate, absorb and adapt to shocks, therefore, increases adaptive capacity (Malawi Government, 2012 and World Bank, 2016). According to Smit and Wandel (2006), adaptive capacity is particularly critical in sustainable development because it balances the dual role of supporting poverty alleviation while also addressing household vulnerability to climate shocks.

As a result, there is a growing recognition of the role of social protection programmes in addressing climate-related shocks and vulnerabilities as well as in creating more inclusive and sustainable development pathways (Bene et al., 2012; Davies et al. 2013). Additionally, some literature claims that linking rural women closely to social protection programs could substantially improve the welfare outcome and improve resilience at household level (Steffen, 2014; Ngwira, 2014, and Tebaldi et al., 2016). Scholars have demonstrated that women tend to have limited power to mobilize resources because of highest levels of poverty and inequalities. When women are supported through social protection programmes they are able to mobilize their limited assets to diversify households' livelihood activities and enhance adaptive capacity (Eriksen et al, 2005).

Nevertheless, little is known about the extent at which social protection programmes build adaptive capacity of women to reduce household vulnerability to climate shocks. Literature does not present definitive approach to understand how social protection programmes relates to determinants of adaptive capacity and at what levels influence women to reduce household vulnerability to climate shocks. As a result this can pose a problem to mobilise resources and design flexible and scalable social protection programmes potential to anticipate and respond to climate shocks in addition to sustainable adaptations.

1.4 Objectives of the study

The overall objective of the study was to assess adaptive capacity of women to reduce household vulnerability to climate shocks when targeted in social protection programmes in Mulanje District.

1.4.1 Specific Objectives

1. To investigate how climate shocks have influenced households' vulnerability in Mulanje district.
2. To find out how women's participation in the social protection programmes promotes households adaptive capacity to climate shocks.
3. To establish to what extent social protection programmes have built adaptive capacity of women to reduce household vulnerability to climate shocks.

1.5 Significance of the study

This study intended to assess the extent of adaptive capacity women have gained when they are beneficiaries of social protection programmes in order to reduce household vulnerability to climate shocks in Mulanje district. The significant role social protection programmes plays in reducing household vulnerability have been explained by many researchers. However, to address impacts of climate shocks, social protection goes beyond reducing high exposure to risks. There is need to support adaptive capacities and promote gender integration with focus on targeting the most vulnerable people such as women. Therefore, the findings from this study are anticipated to set the stage for vigorous advocacy by social protection programmes implementers in the district to introduce flexible programme design features to strengthen women adaptive capacity for long-term. This will ensure efficient programme delivery and its intended maximum benefits to reduce impacts of climate shocks. Similarly, it is hoped that the findings of this study will stimulate interest in other researchers to carry out similar studies on a larger scale.

1.6 Organization of the Thesis

This thesis has been divided into several chapters. Chapter 1 is the introduction of the study. It also states the problem and the study objectives. Chapter 2 discusses the literature review on social protection, household vulnerability, adaptive capacity, and women empowerment of previous studies and goes farther to discuss the theoretical framework. Chapter 3 discusses the research design and methodology of how the study was carried out. Chapter 4 discusses the research findings whilst chapter 5 provides the summary and concludes with recommendation.

CHAPTER 2

REVIEW OF RELATED LITERATURE AND THEORETICAL FRAMEWORK

2.1 Introduction

This section aims to provide a general understanding of social protection programmes, household vulnerability and climate shocks as well as adaptive capacity building on the brief introduction that has been given in chapter 1. The chapter also highlights some of the key findings by different scholars about social protection and adaptive capacity as a development issue, concept of vulnerability and targeting women in social protection programmes. In addition, the chapter also discusses the Sustainable Livelihoods Framework as the theoretical framework that guided this study. The framework serves primarily as programming to devise a set of integrated support of activities to improve the sustainable livelihood among vulnerable groups by strengthening the resilience of their coping and adaptive strategies.

2.2 The Concept of Social Protection in Development Context

There is a great deal of variation in the vision, objectives, approach, composition, and implementation of social protection programmes. Although the concept is generally defined as programmes and policies designed to assist very poor individuals, households and communities in addressing their poverty, specific definitions vary amongst practitioners and scholars (Elkins 2013; Gross, 2007; Norton et al, 2001). Several definitions of social protection can be found in the literature based on three schools of thoughts.

The first is neoclassical and it bases its case on the welfare losses associated with market failure and imperfect markets. Dercon (2011) urged that if there were perfect credit markets, individuals affected by adverse shocks would have an opportunity to access financial assistance to invest aiming at protecting consumption patterns from the impacts of shocks. Nonetheless, the poor are unable to access insurance markets to protect themselves against risk so much so that they make production and investment choices that result in low incomes and low returns (Alderman and Hoddinott 2009). Essentially, what this school of thoughts argue is that social protection derives to a larger extent from global reaction from various form of economic crisis leaving countries with less power to regulate conditions for relationship between internal markets and human development.

The second school argues that social protection is a human right and an entitlement against low standards of living. This provides a as theory of change for understanding macro-to micro of social protection as dimension of governance and rights. Jones and Shahrokh (2013) found that social protection has a potential to promote social justice outcomes for diverse marginalized group since they are recognized in the society. The research highlights that in order to tackle multidimensional vulnerability in a sustainable way, it is vital for social protection programmes to be designed and governed to promote social inclusion and accountability. In addition, there must be a consensus about the state role and the levels of risk and deprivation that are unacceptable within given society.

The third school bases its arguments for social protection on the need to address basic needs. There is evidence that social protection interventions by the state can contribute to a decline in the incidence of chronic poverty, reduce inequality, assist individuals and households in the accumulation of assets, increase productivity and enhance growth (World Bank 2012). In general, the arguments reflect the need for public interventions in reducing poverty amongst the poor and the need to address the vulnerabilities and risks that the poor are exposed to and experiencing.

In a similar way, social protection interventions are also conceived based on three conceptual approaches: the rights based approach, the risk approach and the pro poor economic growth approach. The rights based approach defines social protection as a human right and follows the tradition of organization such as the international Labour Organization (ILO) and United Nations (UN) that focuses on employment particularly decent work which extends rights to informal workers and promotes employment policies that guarantees universal social services and income security across all workers. This helps to promote sustainability, empowering beneficiaries (rights holders) and hold accountable those who have a duty to act (duty bearers) (ILO, 2016).

The risk based approach explains social protection as Social Risk Management (SRM). The poor are typically most exposed to diverse risks and they have the fewest instruments to deal with risks. For instance, Holzmann et al, 2003, argued that access to market-based instruments such as income support and insurance provide those exposed with an opportunity to gradually move out of poverty. The approach emphasises the need to employ a broad concept of social protection to reflect the variety capabilities and needs of particular groups.

The pro-poor economic growth approach defines social protection as promoting economic growth as it invest in human capital which increases capacities and the accumulation of productive assets such as livestock ownership, micro-enterprise activities, cash cropping (Barrientos, 2010). Social protection contributes to human capital either directly, by providing food, skills and services; or indirectly, by providing cash which enables households to invest (Browne, 2015). In general, Social protection is an essential instrument that makes growth more pro-poor by enhancing the ability of women and men to participate in, contribute to, and benefit from growth (Voipio, 2007).

Social Protection is also perceived as a framework that moves individuals closer to development goals (Ferreira and Robalino, 2010). According to Devereux and Sabates-Wheeler (2004) social protection has a broad framework that encompasses four measures.

The first is protective measures that provide relief from deprivation e.g. income benefits, state pensions to support access to basic and social needs. The second measure is preventive that seek to prevent the poor from sinking further into poverty and the non-poor from falling into poverty when they experience shocks, for instance, saving clubs and health insurance. The third measure is promotive that enhances income capabilities of individuals and households to engage in activities such as public works and input subsides. The fourth is the transformative measures that enhance social inclusion and equity through promotion of rights of the minorities and empowerment.

Based on literature presented here social protection is essential for development processes. The primary linkages are that social protection strengthens social cohesion, human development and livelihoods. Through these channels it helps to pursue social justice and equity, obligation to provide vulnerable citizen with minimum acceptable livelihoods and protection against risk and to make growth more efficient, equitable and sustainable.

2.3 Social Protection Programmes and Household Vulnerability to climate shocks

Understanding and analyse the concept of vulnerability falls broadly within two literatures. The first literature is based on participatory and ethnographic understanding of the nature of the poor people's realities and livelihoods (Norton et al, 2001). Emphasis is on poor people's own analysis of significance of different threat to livelihood. Vulnerability is analysed from the perspective of a variety of different social units and grouping i.e. individuals, households, communities, social groups by gender, status, just to mention a few. Literature focuses on a range of different forms of variation over time not only suddenly shocks but cyclical repeated elements of deprivation for instance seasonality and long term trends.

The second literature is based on empirical quantitative and conceptual economic analysis and vulnerability primarily analysed at the household level. Vulnerability for individual or household can be measured as probability that expected future consumption falls below some minimum levels (Holtzman and Jorgensen, 2000). The measurement emphasis on the significance of indicators of vulnerability to different shocks measured through household survey instruments and other quantitative measures. The literature emphasis is on the detailed analysis of different kinds of shocks, rather than repetitive, chronic elements of vulnerability.

Based on vulnerability concept various literatures have reasoned on the role social protection programmes have in reducing household vulnerability (Devereux and Sabates-Wheeler, 2004; Godfrey Wood, 2011; Davies et al, 2013, Coirolo et al, 2013). Although the causes of such vulnerability are multi-dimensional, they are primarily due to the wide spread poverty, food insecurity, recurrent droughts, overdependence of rain fed agriculture, etc. The literatures states that by understanding, planning for and adapting to climate change, social protection programmes give individual household opportunities to reduce risks associated with climate shocks. Basically, the major part of these literature focus upon how social protection interventions help the poor households to manage risk in the interest of human capital development and risk-taking necessary for long term poverty reduction and economic growth.

Other studies show that while many households escape poverty, others fall back into it because of shocks, making the net flow out of poverty negligible (Hallegatte, Bangalore, Bonzanigo, Rozenberg, and Vogt-Schlib, 2016; Holmes et al 2017). Moreover, households generally face multiple shocks over time, and each shock may affect the general livelihood and welfare status of the household (Hallegatte et al, 2016). As a matter of fact, when a shock occur these households resort to selling their productive assets or grain stocks, rely on food assistance, take children out of school or potentially migrate in search of work (Oxford Policy Management, 2016). Regularly, social protection programmes influences livelihood strategies as a major determinant of the degree of vulnerability at household level. Therefore, strategies that are adopted will depend on the household's resources and its ability to access savings, credit and insurance markets (Pieters, Guariso, and Vandeplas, 2013).

It is also argued that social protection programmes are effective in protecting poor people's income from hazards that affect individuals or households (idiosyncratic), as well as those that affect almost everyone in a community (covariate). According to the Organization for Economic Co-operation and Development (OECD) report in 2009, cash transfers to people living below the poverty line are important risk management tool in three levels: firstly, reducing vulnerability by absorbing the impact of shocks on livelihoods generally by stimulating economic activities such as capital to start business and invest in livestock or commercial farming., secondly, strengthen coping mechanisms for example, income source to stabilize consumption pattern, thirdly, reducing poverty by enabling households to meet their subsistence needs such as food, school fees, and access to healthcare services.

A review of impacts of cash transfers shows consistently positive, often significant, outcomes that can contribute to household resilience such as increased access to food, school attendance, and dietary diversity, (Bastagli, 2014). A recent evaluation from the "From Protection to Production" (PtoP) project, which is a multi-country impact evaluation of cash transfers in Sub-Sahara Africa found that cash transfers provide a cushion and strengthen the adaptive capacity to reduce the vulnerability of households to risks through increased household savings, productive assets, and inputs to livelihoods, livestock ownership, and livestock value (O'Brien, Scot, Holmes and Congrave, 2018).

Given the considerable role played by the social protection to protect household vulnerability, it should be noted that social protection interventions supports the participation of the poor in labour market, contributing to a broader employment and empowerment objectives. According to the OECD (2009), it is reported that labour market programmes, such as cash for work and cash transfers programmes facilitate employment for households as the major source of economic support while also strengthening community infrastructure. This demonstrates the extent to which the programmes not only protect poor households' income, but when designed with due consideration of climate shocks it reduces exposure and vulnerability of the entire community.

For instance, in South Africa, social cash transfer beneficiaries put more efforts diversifying their livelihood by doing petty businesses and growing cash crops than those comparable households not receiving these grants (OECD, 2009). Similarly, participants in Oportunidades – Mexican cash transfer program were associated with local economy impacts that improved asset accumulation and employment as they invested a portion of their social transfers in productive assets (livestock) and engaged in entrepreneurial activities that improved their potential for sustainable self-sufficiency (Gertler, Fernald, and Rubio, 2004).

The strength of social protection programmes can also be seen to lie in support to vulnerable households to manage risk. This is through social insurance from governments or development agencies. Social insurance refers to contributory schemes guarantee protection in the case of specific risks or contingencies, such as unemployment, climate shocks, sickness, disability, etc. In many cases, social insurance allow for a more equitable distribution of benefits, particularly for those with low incomes and limited contributory capacity (UNDP, 2016).

Other studies provide examples with regards to specific components social protection assist vulnerable households to manage risks. Costella and Ivaschenko (2015) and (UNDP, 2016) indicated that weather-index insurance which focuses on insuring crop or livestock losses by small farmers from disasters triggered by natural hazards strengthened residual risk management. Furthermore, social assistance program for example regular cash transfers, creates an enabling environment for prudent risk taking by poor household to increase and diversify their assets or income base.

2.4 Social Protection Programmes and Adaptive Capacity

Adaptive capacity is considered a fundamental determining factor of vulnerability in the sense that it determines the extent at which a system can cope with the external impacts and modify itself to adapt to new circumstance (Adger, 2003). Adaptive capacity is determined by different factors which are not independent or mutually exclusive but by combination they influence the capacity of the system. Adger (2003) identified two dimensions of what constitutes adaptive capacity, namely, the generic and impact-specific dimensions. While the generic dimension of adaptive capacity looks at the ability of the system to respond to the general climate change stimuli, the impact-specific dimension by its name denotes the ability of the system to respond to a particular climate change stimulus. Generic adaptive capacity of a system is determined by factors that influence the functioning of the system. These are economic development, education, technology, knowledge, infrastructure, institutions, equity and social capital as generic determinants of adaptive capacity.

In general, the concept of adaptive capacity signals the ability to adapt to multiple and long-term climate risks, as well as to learn and adjust after a disaster to reduce vulnerability to similar shocks in the future (Adger, 2003). Given the positive impact adaptive capacity has on household and communities, scholars have suggested linkage it with development interventions (Jones et al, 2010). It is assumed that failing to integrate adaptive capacity to development policy or interventions may result in distortion and inefficiency that threaten sustainability in the long term.

However, Jones et al (2010) pointed out that there is limited close linkage between adaptive capacity and development interventions. The concern has lead climate adaptation literature to argue that the concept of adaptive capacity design with development policy in mind influences households and communities' capacity to adapt to changing shocks and trends (Klein, 2010). This means that adaptive capacity address the riskiness of development choices as it provides a clear conceptual basis to elaborate development strategies aimed at supporting the welfare of vulnerable people to adverse shocks.

Therefore understanding and assessing adaptive capacity through social protection programmes is fundamental beginning how it can support wider development process. Looking at how social protection programmes contribute to adaptive capacity, a study by

African Climate Change Resilience Alliance (ACCRA) found that social protection programmes have five characteristics that promote adaptive capacity of vulnerable society (Browne, 2015).These are provision of key assets that allow household to respond to shock, promotion of institutions to allow for access basic resources even for marginalized group, strengthen community social and physical infrastructure and sustainable livelihood. This clearly shows that social protection identifies needs and allocates development resources to enhance a systems ability to adapt to shocks.
Furthermore, Davies et al, (2009), developed a concept of Adaptive Social Protection (ASP) to highlight the contribution social protection programmes promotes adaptive capacity to support people to climate change and reduce disaster risk. Johnson et al 2013 argued that social protection programmes plays effective role in increasing people ability to anticipate, absorb and adapt to shocks. ASP illustrates how conceptual as well as practical linkages between social protection, climate change adaptation (CCA) and disaster risk reduction (DRR) can maximize efforts to reduce people's vulnerability to short- and long-term shocks in a more integrated way (Béné et al., 2012; Davies et al., 2013; Vincent and Cull, 2012).

Jones et al, (2010) noted that good adaptive capacity at community or household level can lead to income stability, asset accumulation and retention over time despite being exposed to shocks. Social protection instruments acts as the vehicles for protecting those with low adaptive capacity from climate risks, preventing damaging coping strategies and promoting livelihood resilience. ASP aims at to move away from single-stranded approaches to addressing vulnerability by promoting cross-sector collaboration between social protection, DRR and CCA policies and practices (Ulrich, 2016).

Adaptive capacity is also connected with livelihood resilience. In terms of resilience, this increase productivity translated into more flexibility to engage in further adaptive strategies. Through Social protection programmes it builds resilience to climate change by increasing the adaptive capacity of households, strengthening their ability to manage risk, cope with the sequences of shocks when happening, and eventually reduce risk (McCarthy, 2001). Overseas Development Institute (2010) noted that adaptive capacity also encompasses the ability of people to adapt and diversify their livelihoods in response to long-term climate changes, and to take deliberate and planned decisions based on available and accessible climate information.

2.5 Social Protection Programmes and Women Empowerment

Empowerment refers to “the expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them” (Kabeer, 2008). With reference to women, and particularly rural women, this definition acknowledges a few key elements that are essential to the concept: choice and power. Women empowerment is also about expanding women’s assets and ability to participate in, negotiate with, influence, control and hold accountable the institutions that affect their lives (World Bank, 2001). By institutions, it refers to legal and policy structures, economic systems, market structures, marriage, inheritance and education systems (World Bank, 2001).

Targeting mechanisms in social protection programmes is very important because it maximizes the benefits for those in need of support and minimizes wastage and programme cost in the face of limited resources (Adato and Haddad 2001). Norton, et al (2001) identified targeting women in social protection as very effective in responding to natural disasters. Even the Malawi country assessment report (2010) similarly recommended women as integral part in the campaign to reduce levels of risk and deprivation, address poverty and vulnerability at household level, and improve financial sustainability (Robalino et al, 2012).

On categorical targeting depending on gender perspective, Slater and Tsoka (2007) emphasized that poverty and vulnerability have a clear integration of sex and gender analysis, hence social protection programmes and policies need to be built on gender evidence. Based on different scholars recommendations many social protection programmes target women as main beneficiaries. As such social protection extended to rural populations has a great potential of fostering rural women’s empowerment. Besides, social protection reduces gender inequalities and poverty and promotes economic empowerment amongst poor vulnerable women.

In their evaluation study of cash transfer programme, productive activities and labour supply in Southern Africa, Asfaw Davis, and Winters, (2014) argued that cash transfer enables women increase access to key assets and credit. They further said women have the potential to improve the formation of non-farm enterprises in rural area as a viable alternative for income source in the context where women face wage discrimination due to their sex in the labour market. Covarrubias, Davis and Winters, (2012) also pointed out that there are even more prevalent positive impacts when women are beneficiaries as they invest into small scale agriculture by owning tools and livestock as a part of empowerment.

Molyneux and Thomposon, (2011) found that there is empirical evidence that cash transfers increase women's decision making and social empowerment at household level as well as facilitates women's access to assets. In another study by Concern and Oxfam in 2011 on cash transfer and gender dynamics in Kenya, Zimbabwe, and Indonesia, the results found that men's perceptions about women's ability to manage cash as well as their role in contributing to household income had improved because of skills, information and self-confidence women are acquired in the programme. Similarly, the study on gender inequality, risk and vulnerability in the rural economy by Holmes and Jones, (2011), found that intra-household gender roles and labour allocation share with men were increasing as the result of women's empowerment through the cash transfer programme.

Studies on public works have correspondingly highlighted that social protection programmes enhances women economic empowerment because of their design and implementation features (Song and Maikel, 2011; Vincent and Cull, 2012; FAO, 2016). Public works addresses participation constraints arising from women's household and care responsibilities by providing more flexible work schedules (Subbarao, 2003; Antonopoulos, 2007; Kabeer, 2008). Public works programmes give an opportunity to women to access cash and other resources to ameliorate their plight. In the study on participation and impact of poverty oriented public works projects in rural Malawi, Chirwa, Dorward, and Jayne, (2001) found that despite wage rate set below the official minimum price as selective bias, the impact of public works programme increases gender (female) participation in the projects. Apart from participation, the study also found evidence that the programme give women freedom to choose other resources apart from cash i.e. in-kind payments such as food particularly during food deficit months. As the result they recommended on concentrating on policies that deepening social empowerment coverage, rather than those that widen coverage, as superior strategy to promote women in the long-term.

On economic empowerment, Holmes and Jones, (2013) found that micro finance/credit in rural areas promote women's economic empowerment, particularly when combined with other social protection schemes or used as part of the graduation strategy. These schemes aim at helping members to mitigate risks and manage climate shocks. In the assessment of the impact of drought in 2015-16 by Malawi Social Action Fund (MASAF) Devereux (2012) found that Community Savings and Investment Promotion (COMSIP) which evolved out of the Malawi Social Action Fund's public works programme encourages savings and investment. COMSIP is regarded as a key tool for its members to withstand sudden losses of income and food insecurity in areas often hit by climate shocks that impact agriculture and food production.

Social protection programmes have potential to create an enabling environment for women's economic empowerment (de la O Campos, 2015).Women participation in these programmes have ability and the power to make and act on economic decision thus able to succeed and advance economically, and having the power and agency to benefit from economic activities and opportunity to control their incomes (Robalino et al, 2012). Beyond economic benefits, social protection programmes also improve the well-being, health and nutrition of poor women, as well as enhances their self-esteem, increasing their involvement in social networks and enabling their community and political participation. Such programmes can also promote recognition of gendered economic and social risks linked to sociocultural norms, especially when such norms may prevent women's active engagement (Holmes and Jones, 2011).

Holmes and Jones, (2014) found that that targeting women in subsidy programme e.g. input subsidy can enhance rural women to adopt new farming technologies such applying fertilizer in their gardens and use improved seeds. In their study looking gender issues and household resource allocation arise in the Farm Input Subsidy Programme (FISP), Chirwa et al, (2011) found that there is less bias in intra-household use of subsidized fertilizer between plots controlled by female or male members. In the same way, Fisher and Kondiwa (2014) found that subsidy for both seed and fertilizer increases the probability of modern cultivation for female households and reduces gender gap. Gender gap in adoption of agricultural technologies is detrimental to the empowerment of women and it imposes real cost on societies in terms of untapped potential in agricultural output and food security (Ragasa 2012).

Based on the combination of empirical research and review of different studies of social protection programmes, the preceding discussions substantiates the actual and potential contributions social protection programmes provide in reducing household vulnerability to climate shocks, increase household adaptive capacity, and promote women empowerment. However, there is a knowledge gap when it comes to the extent of adaptive capacity women gain from social protection programmes in order to reduce household vulnerability to climate shocks. Therefore, this study was conducted to provide insights into how climate shocks are influencing household vulnerability, adaptive capacity activities women are employing to reduce household vulnerabilities and the extent social protection programmes have built women's adaptive capacity. All these are valuable inputs in designing development process and programmes as well as targeting beneficiaries.

2.6 Conceptual Framework

2.6.1 The Sustainable Livelihood Framework by Department for International Department (DFID) 1999

This study used the Sustainable Livelihood Framework in order to understand the scope of adaptive capacity of women to reduce household vulnerability to climate shocks. This framework is a useful tool as it can describe and visualize the livelihoods assets which are also incorporated in adaptive capacity as determinants are strengthened by social protection programmes against vulnerability context. In the figure below the SLF attempts to gain a realistic understanding of what shapes people's livelihoods and how the various influencing factors can be adjusted so that, taken together, they produce more beneficial livelihood outcomes (DFID 2007).

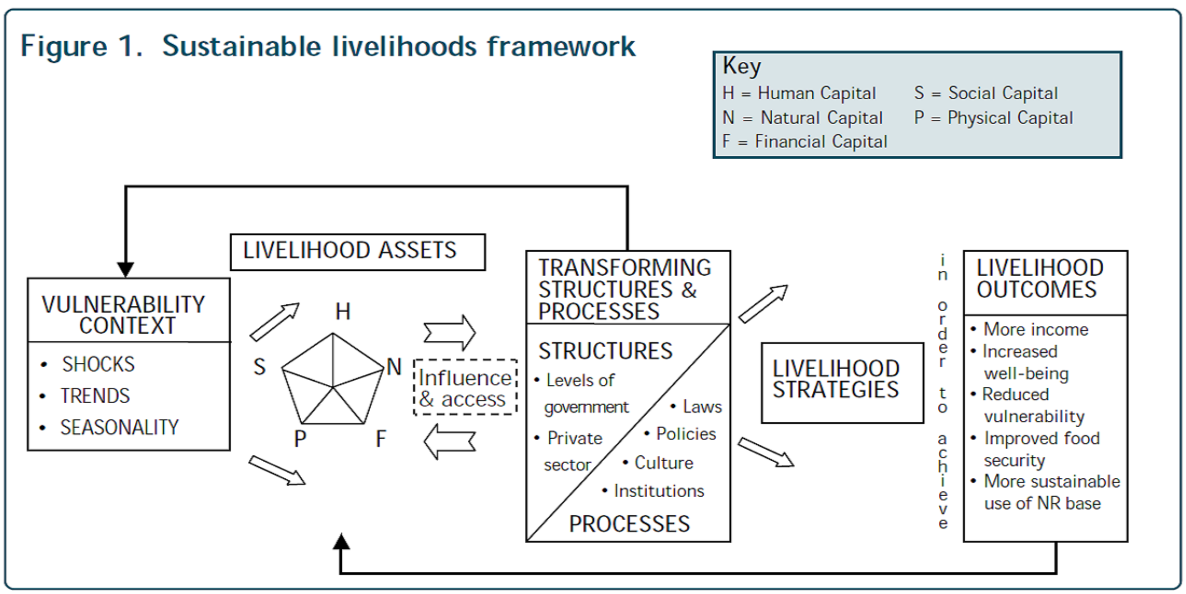

Figure 1: Sustainable livelihoods framework

Source: Adapted from DFID 1999

The concept of sustainable livelihood arose during the late 1990's as a reaction to changes in general thinking about development. It was characterized by a shift from an idea of development based on economic growth and top – down processes to one centred more on participation of local communities in the development effort (Solesbury, 2003). According to this approach, a livelihood comprises the capabilities, assets, and activities required for a means of living. It is deemed sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities, assets, and activities both now and in the future, while not undermining the natural resource base (DFID, 2001).

Conceptually, livelihoods imply the means, activities, entitlements and assets by which people make a living. Assets, in this particular context, are defined as not only natural/biological (i.e., land, water, common property resources, flora, fauna), but also social (i.e., community, family, social networks, participation, empowerment), human (i.e., knowledge, creation by skills) and physical (i.e., roads, markets, clinics, schools, bridges) FAO (2000).

The livelihoods framework is also closely linked with the features of adaptive capacity particularly when the focus is on assets and institution. The framework seek either to provide, protect or recover assets or to strengthen or create institutions at multiple levels; from this perspective, therefore, they have the potential to contribute towards adaptive capacity (Jones et al, 2010). The approach has proven useful for assessing the ability of households to withstand shocks such as epidemics. The framework is contingent on five core entities: the vulnerability context, livelihood assets, policies, institution and processes, livelihood strategies, and livelihood outcome as outlined in the framework below.

2.6.2 Elements of the Sustainable Livelihood Framework

Vulnerability context: The vulnerability context frames the external environment in which people exist. Critical trends as well as shocks and seasonality, over which people have limited or no control, have a great influence on people's livelihoods and on the wider availability of assets. Vulnerability emerges when human beings have to face harmful threat or shock with inadequate capacity to respond effectively.

Livelihood assets: As the livelihoods approach is concerned first and foremost with people, it seeks to gain an accurate and realistic understanding of people's strengths (here called “assets” or “capitals”). It is crucial to analyse how people endeavour to convert these strengths into positive livelihood outcomes. The approach is founded on a belief that people require a range of assets to achieve positive livelihood outcomes. Therefore the Sustainable Livelihood Framework identifies five types of assets or capitals upon which livelihoods are built, namely human capital, social capital, natural capital, physical capital and financial capital.

Policies, Institutions and Processes: The importance of policies, institutions and processes cannot be overemphasized, because they operate at all levels, from the household to the international arena, and in all spheres, from the most private to the most public. Policies inform the development of new legislation and provide a framework for the action of public sector implementing agencies and their sub-contractors. They effectively determine access (to various types of capital, to livelihood strategies and to decision-making bodies and source of influence), terms of exchange between different types of capitals, and returns to any given livelihood strategy (DFID, 2001). Institutions have been variously defined as rules of the game or standard operating practices, they are informal practices that structure relationships and make the behaviour of organization somewhat predictable. Policies, institutions and processes have a direct impact upon whether people are able to achieve a feeling of inclusion and well-being as well as determine access to assets and influence decision making processes.

Livelihood Strategies: Livelihood strategies comprise the range and combination of activities and choices that people make/undertake in order to achieve their livelihood goals. It should be understood as a dynamic process in which people combine activities to meet their various needs at different times. Different members of a household might live and work at different places, temporarily or permanent. (DFID, 2001) Livelihood strategies are directly dependent on asset status and policies, institutions and processes.

Livelihood Outcomes: Livelihood outcomes are the achievements or outputs of livelihood strategies, such as more income, increased well-being, reduced vulnerability, improved food security and a more sustainable use of natural resources. When thinking about livelihood outcomes, the aim of a particular group as well as the extent to which these are already being achieved has to be understood.

This chapter has presented literature review and theoretical framework. Literature review has presented a general understanding of social protection programmes, household vulnerability and climate shocks as well as adaptive capacity. The section has presented findings by different scholars about social protection and adaptive capacity as a development issue, concept of vulnerability and targeting women in social protection programmes. To understand adaptive capacity of women, Sustainable Livelihoods Framework has been introduced to describe and visualize the livelihoods assets as a set of integrated support of activities to improve the sustainable livelihood among vulnerable groups by strengthening the resilience of their coping and adaptive strategies.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter details the study's research methodology. It describes the research design, the study area, study population, sampling method, sample size, data collection methods, data collection, data analysis and calculation of adaptive capacity.

3.2 Research Design

This study used a mixed methods design - Quantitative and Qualitative approaches to understand a research problem more completely and answer the research questions. It was guided by convergent (or parallel or concurrent) mixed methods design which simultaneously collects both quantitative and qualitative data, merges the data, and uses the results to understand a research problem (Creswell, 2003). The rationale for mixing was that neither quantitative nor qualitative methods were sufficient by themselves to capture the trends and details of adaptive capacity activities women are employing to reduce household vulnerabilities and the extent social protection programmes have built women's adaptive capacity. When used in combination, quantitative and qualitative methods complement each other and allow for more complete analysis (Onwuegbuzie and Teddie, 2002).

3.3 Study area and study Population

The study was conducted in Mulanje District particularly in 5 Tradition Authorities (T/A), Mabuka, Njema, Nkanda, Nthiramanja and Chikumbu. The district was selected because of its geographical features namely mountain, rivers and dry plains that are prone to climate disasters and affects rural livelihood (Nangoma and Nangoma, 2007). Mulanje is divided two distinct topographic areas namely hilly and plain zones which experience different weather conditions (Mulanje District Council, 2017). The district also has high levels of poverty where women bear a disproportionate burden of household poverty (Government of Malawi, 2007). In 2017 Mulanje had 69.2% poverty incidence representing 403,000 poor people in the district (National Statistic Office, 2017). The unit of interest in this study were women who are beneficiaries of social protection programme. However, the study included other population of interest for which data was collected for the study as well. These were Village Protection Committee (VPC) members and Mulanje District Council officials particularly from Community Development department and Social Cash Transfer Office.

3.4 Sample Size and Sampling Procedure

The study adopted Cochran equation to determine the sample size. The targeted households were more than 13,210 with estimated members of 57,585 9 (Arruda, 2018). For populations that are large, the study developed the Equation 1 to yield a representative sample for proportions.

The formula is as follows;-

$$n_0 = \frac{z^2 \ \ p\,(1 - p)}{e^2} \tag{1}$$

Where $n_0 =$ Sample size

$z =$ Z value (1.96 for 95% confidence level)

$p =$ Estimated proportion of population (estimated to be 40%)

$e =$ Margin of error (assumed to be 0.07)

$$n_0 = \frac{1.96 * 1.96 * 0.40(1 - 0.40)}{0.0049}$$

$$n_0 = 180$$

Since the study employed mixed research method, the quantitative part adopted simple random sampling method where every member had an equal chance to participate in the study. The method was used to extract a smaller sample size from a larger population and use it to research and make generalization about a larger group (Neuman, 2012). In addition, the method was chosen because of its ease to use and its accurate representation of the larger group (ibid).

For the purpose of the qualitative part of the study, the sampling method was non-probabilistic purposive sampling. Participants were selected on the basis that they possess the necessary information needed to address the research questions. This implies intentionally selecting individuals only those who meet the purpose of the study to learn or understand the central phenomenon (Miles & Huberman, 1994). Therefore, the study consulted those individuals who are highly knowledgeable about social protection programmes in the district. This study selected 8 members for key informant interview (7 Community Development Facilitators, 1 Social Cash Transfer staff), and 10 Village Protection Committees for focus group discussion (representing approximately 100 members).

3.5 Data Collection Tools and Analysis

In this study, primary data was collected using 3 different interview tools which included Key Informant Interview questionnaires, Household Survey Questionnaire, and a Focus Group Discussion guide. These tools are described below:

3.5.1 Key Informant Interview

Key Informant Interviews (KIIs) are qualitative, in-depth interviews of people selected for their first-hand knowledge about a topic of interest (Creswell, 2003). Key Informant Interviews were done with the purpose of collecting accurate and specific information from a wide range of people and who are conversant with social protection programmes in the district. These included 7 Community Development Officers for T/A Mabuka, T/A Nkanda, T/A Njema, T/A Nthiramanja and T/A Chikumbu and Social Cash Transfer Officer for Mulanje District. Considering all have knowledge of social protection programmes, the key informants provided triangulation of data collected from the district. An interview guide with semi structured questions was used in conducting the interviews and allowed the researcher to follow up on relevant issues as they emerged during the interviews.

3.5.2 Focus Group Discussion

Focus Group Discussions were used to collect a shared understanding from several individuals as well as to get views from specific people (Creswell, 2003). The study conducted 10 focus group discussions with Village Protection Committee (VPC) members in 5 selected Tradition Authorities in the district. Through focus group discussions, views and insights of objective 2 on how women's participation in the social protection programmes promotes households adaptive capacity to climate shocks. The FDGs were guided by semi-structured interview guides. The groups comprised of non-beneficiaries women and men committee members of maximum 10 people.

3.5.3 Household Survey Questionnaire

A formal survey was conducted using a standard questionnaire. This tool was used to collect quantitative data for study objective 1 and 3. A survey is best suited to building descriptive data about a situation, rather than exploring how or why something has occurred. The questionnaire was administered to the female beneficiaries of social protection programmes in the district and was designed to capture information on social economic status of women, climate shocks vulnerability and their coping methodologies, social protection programmes and adaptive capacity. A sample of 180 respondents was interviewed.

3.6 Data Analysis

The data was analysed using different analytical methods depending on the type of data collected. On qualitative data, this study employed content analysis as a method of analysing data generated through KIIs and FGDs. Content analysis is a systematic and objective process of determining the content of published documents, written notes and other such information (Silverman, 2004). Data was grouped into categories deriving from specific objectives of the study. Then the data was examined, evaluated, compared, synthesized and considered under themes deriving from study objectives, namely; to investigate how climate shocks have influenced households' vulnerability in Mulanje district, to assess how women's participation in the social protection programmes promotes households adaptive capacity to climate shocks, and establish to what extent social protection programmes have built adaptive capacity of women to reduce household vulnerability to climate shocks.

On quantitative data, descriptive analysis was used to summarise the data and find patterns. Simple descriptive statistics like mean, mode, range, frequencies and percentages were employed to reveal socio economic profile, how climate shocks are influencing households' vulnerability as well as how social protection programmes are promoting adaptive capacity of the women in the District. SPSS software (SPSS-Version 20) was used to analyse the data. Data generated were also used to construct Household Adaptive Capacity Index (HACI) in order to establish the extent social protection programmes have built adaptive capacity of women to reduce household vulnerability to climate shocks in the district.

3.6.1 Design and Validation of Household Adaptive Capacity Index

3.6.1.1 Selection of Indicators

The women adaptive capacity to climate shocks was measured using a composite index. The study selected indicators that best linked to each adaptive capacity determinants after reviewing similar studies that assessed household adaptive capacity and vulnerability (Deressa et al, 2008; Armah et al, 2010; and Antwi-Agyei et al, 2012). The adaptive capacity was characterized using six determinants these were economic resources, social capital, technology, infrastructure, information and awareness, and institutions. The respective sets of indicators and their respective assumptions are illustrated below

Table 1: Determinants of Adaptive Capacity and their Indicators

Determinants of Adaptive Capacity	Indicators	Indicator Assumptions /Relevance
Economic Resources	Diversity of source of income	Household with more diverse of income sources has a higher adaptation capacity than household with less diverse source of income.
	Access to credit	Household with access to credit are more economically able to adapt to climate shocks than those with less access to credit
Social Capital	Participation in community groups	Participation in community groups (e.g. church group, farmers club) enhances social networking and increases social capital.
Information and Awareness	Acceptance information of climate change	Acceptance information of climate change and the need to adapt is an important step to adapt to climate change thus enhancing adaptive capacity.
	Access to climate information	Access to climate information increases adaptive capacity. Households that access information are more prepared to adopt climate shocks than those with no access to such information
	Access to extension services	Women's access to extension services enhances their knowledge and skills related to adapt climate shocks
Technology	Knowledge of improved agriculture	Women with knowledge of improved agricultural techniques are more capable of adapting to adverse impacts of climate shocks than those with less knowledge.
Infrastructure	Access to social services	Access to social services networks such roads, hospitals, markets enhances women's adaptive capacity
Institution	Disaster relief assistance	Women with access to disaster relief assistance have higher adaptive capacity in times of climate shocks and disturbances.
	Decision making	Women's ability to make decisions on adaptation strategies enhance their adaptive capacity
	Linkage to other development programmes	Access to other development programmes increases support, knowledge and skills for women

3.6.1.2 Ranking of indicator scores and standardization

The scores of each indicator were derived from the study questionnaire based on respondents' response. The indicator scores were then standardized in order to construct the sub-index of Household Adaptive Capacity Index. The best way to maintain the status quo and aggregate the indicators on an equal basis, the study adopted UNDP (2007) procedure of standardizing indicators for life expectancy index. This ensures that all indicators were comparable and normalized to have a relative position between 0 and 1, so that the highest value in the range equates to 1 and the lowest value in the range equates to 0 (Deressa et al, 2008; Armah et al, 2010; Antwi-Agyei et al, 2012 and Vincent, 2014).

$$Sub\ index\ indicator_t = \frac{Actual\ Value\ - Minimum\ Value}{Maximum\ value\ - Minimum\ Value} \qquad (2)$$

Where;-

$Actual\ Value = \text{Total scores of indicator}_t$
$Maximum\ Value = \text{Maximum score of indicator}_t$
$Minimum\ Value = \text{Minmum score of indicator}_t$

3.6.1.3 Weighting adaptive capacity determinants

Having normalized the indicators, the study weighted adaptive capacity determinants based on expert judgment on relative importance attached to each determinant (Egyir et al, 2015). The key informants were asked to rank the six most determinants which are economic resources, social capital, information and Awareness, technology, infrastructure, and institution that they considered to influence household adaptive capacity to climate shocks. This was deemed necessary to include their views as they have knowledge of adaptive capacity. The six determinants were rated using five point Likert scale (very low=1, low=2, medium=3, high=4, very high=5) and arithmetic mean was used to generate the weighting system. The following weights were assigned economic resources *0.25,* Social capital *0.20,* Information and awareness *0.15,* technology *0.18,* Infrastructure *0.10,* and Institution *0.12*.

3.6.1.4 Calculation of Household Adaptive Capacity Index

The adaptive capacity index of each household was calculated using the following equation:-

HACI= $\sum(e.E_w + s.S_w + a.A_w + t.T_w + i.I_w +$
$in.In_w)$ (2)

e =Economic resource sub-index
s =Social capital sub-index
is =Information and Awareness sub-index
t =Technology sub-index
i =Infrastructure sub-index
in =Institution sub-index
$E_{w=}$ 0.25
$S_{w=}$ 0.20
Is_w =0.15
$T_{w=}$ 0.18
$I_{w=}$ 0.10
$In_{w=}$ 0.12

This study computed the main determinants of adaptive capacity from sustainable livelihood framework to find out the level of adaptive capacity women have achieved as social protection beneficiaries. Using the sustainable livelihood analytical framework to measure adaptability allows for a multi-dimensional analysis which transcends those evaluation limited to analysing particular aspects of a system (Aguilar et al, 2019). To assess the level of adaptive capacity the adaptive capacity scores of each respondent was classified into three levels – low, moderate and high adaptive capacity. Since there is no general rule for classifying adaptive capacity levels, cut points were based on previous study by Antwi-Agyei et al, (2012). For the purpose of clear analysis and establish thresholds that will inform policy decisions about adaptive capacity of women the three levels adaptive capacity were as follows; low adaptive capacity AC< 0.33, moderate adaptive capacity ≥ 0.33, $\leq \ AC < 0.66$, and high adaptive capacity $\geq 0.66 \leq 1.0$.

3.7 ETHICAL CONSIDERATION

This study followed the research ethics as required by social research. Firstly permission was sought from Mulanje District Council as the study site falls under that jurisdiction. Consent forms were provided to the respondents to seek their consent to participate voluntarily in the study. During the data collection autonomy of all participants were highly respected to uphold their views, dignity, and confidentiality.

This chapter has presented a brief description of the study area, research design, sampling techniques employed in the study, data collection procedures, details on data analysis, calculation of adaptive capacity includes description of determinants and its indicators to be analysed and ethical consideration.

CHAPTER 4

RESEARCH FINDINDS AND DISCUSSION

4.1 Introduction

This chapter contains key findings of the study. In order to address the specific objectives of the study the section is divided into four sections. The first section provides the socio-economic profile of the sampled respondents. The second sub-section deals with how climate shocks are influencing household vulnerability in the district. The third part shows how women's participation in the programmes promotes households adaptive capacity to climate shocks. Fourth part is to determine women's adaptive capacity level with regards to reducing household vulnerability to climate shocks.

4.2 Socio-economic profile of sampled household

The socio-economic profile of the participants refers to the attributes of age, marital status, education level, employment status, and household size. In the context of vulnerability, these factors play an important role in determining how people prepare for, respond to and recover from climate shocks. Understanding how vulnerability is generated is crucial in reducing and preventing all different kinds of hazards at household and community level. In addition, household socio economic factors are significant in explaining the level of programme interventions and should be considered in any efforts that aim to promote adaptive capacity to climate shocks amongst poor women.

4.2.1 Participants Age

The study found out that 73% of the women in social protection programmes are adult age group. Figure 2 show that number of young age groups is at 16% while older age group is at 11%. Age is an important factor in determining adaptive capacity since vulnerability affects women differently depending on age bracket (Aguilar, 2009).

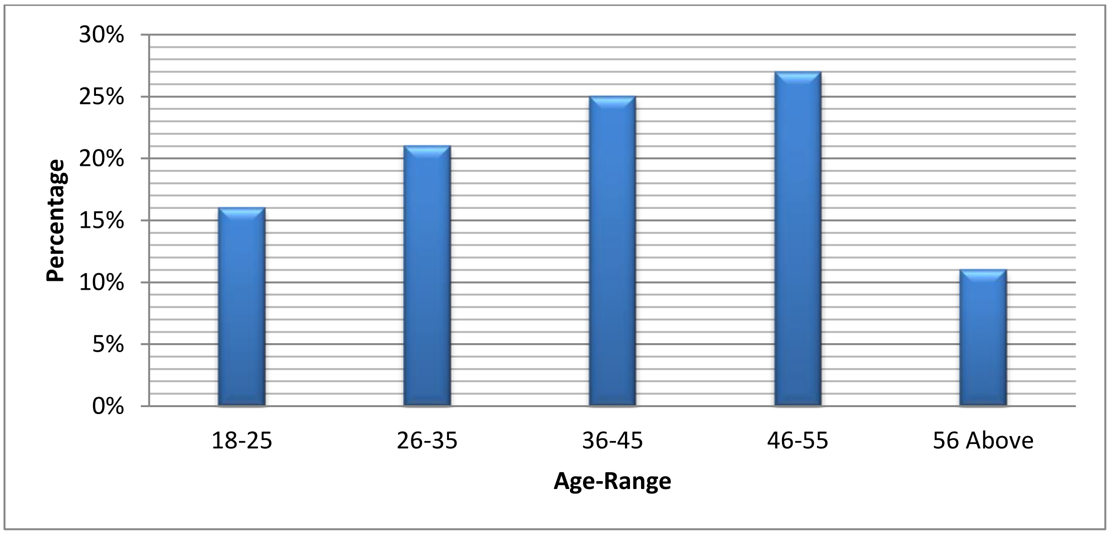

Figure 2: Age of the respondents
Source: Authors' field survey, 2019

These age ranges have a potential to influence on the women's choice of adaptation measures a household can make either to adopt new measures or not. The results demonstrated that women have ability to embrace innovations and new practices that social protection programmes promote. In addition, the age ranges of the women in this study results indicate that there is labour supply as the larger proportion of the women are active and resourceful. The results contributes a clear understanding that given economic resources from social protection interventions, these women can build their households' livelihoods stronger and more sustainable in the long-term. According to the International Labour Organization (2018), active populations are productive and more flexible to invest in productive assets and livelihood income-generating activities.

4.2.2 Marital Status

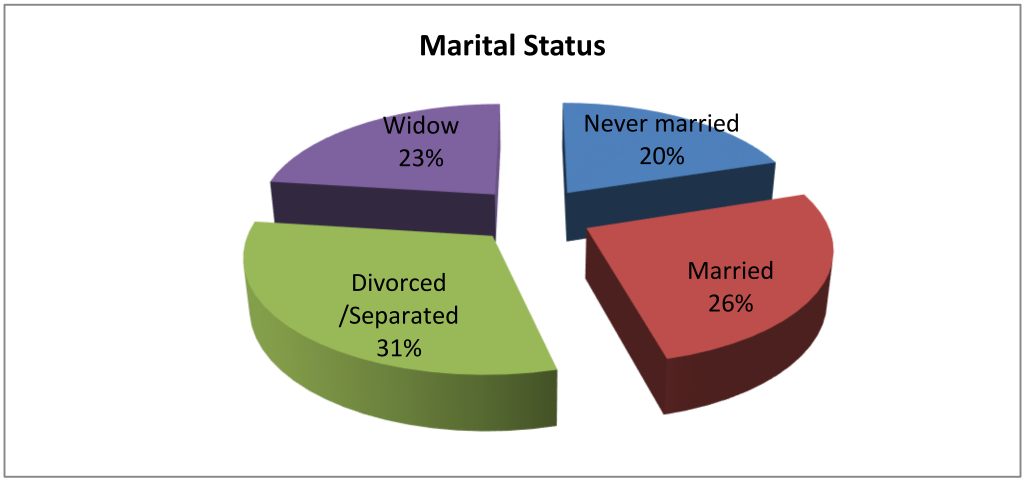

Figure 3: Marital status of the respondents

Source: Authors' field survey, 2019

The majority of the women were widowed, divorced / separated or never married (74%) while 26% were married. Marital status plays an important role when analysing women vulnerability to climate shocks and is an important factor in determining their access to adaptive strategies.

The results indicated that most women participating in the social protection programmes were household heads. The results have two implications; the first is that female headed households are more vulnerable to climate shocks than male headed household due to gender disparities in the labour market and higher dependency ratio in agricultural sector. Therefore, recognition of interventions that undertake relative more income-earning activities outside farming sector can improve households' welfare and economic status.

The second, there is less social constraints with regards to household decision making process. Scholars have argued that female headed households have less intra-household bargaining hence they are able to make a decision on their own regarding responding to climate shocks as well as the selecting adaptive strategies (Jones, 2010; Seebens, 2011;Antman, 2014). The greater power is held by the husband in the house the less control and decision autonomy woman can possess at household level (Jones, 2010).

4.2.3 Educational Level

The study findings show that about half of the women attended some primary education while 40% of the women were illiterate. Low literacy in the women in the district was attributed to poverty as the result women were forced to abandon education to seek for causal labour.

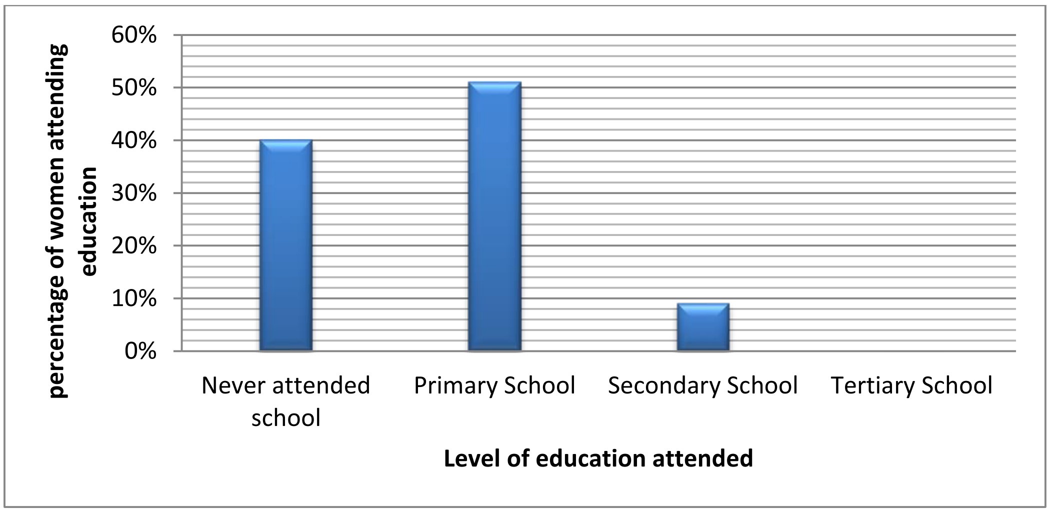

Figure 3: Level of Education
Source: Authors' field survey, 2019

Level of literacy is positively correlated with adaptive capacity since women with higher levels of education have increased potential to accept and adapt to climate shocks. High education can influence women to understand their risks and allocate resources in order cope with shocks than low literacy women. In line with previous study, Nabikolo et al (2012) found that those with formal education respond better to climatic shocks and thereby reduce their vulnerability as compared to those without formal education. Effect of low education level can result in poor cognitive skills for processing risk, low knowledge acquisition and usage, and lesser risk awareness. Studies have shown that high education level has a positive influence of household head's on the decision to adapt to climate change (Maddison, 2006; Deressa et al, 2008).

4.2.4 Household Size

This study found that out of the sampled 180 households, 115 households had 5-8 members in each household while 37 households have 1-4 members each as shown in the graph below;

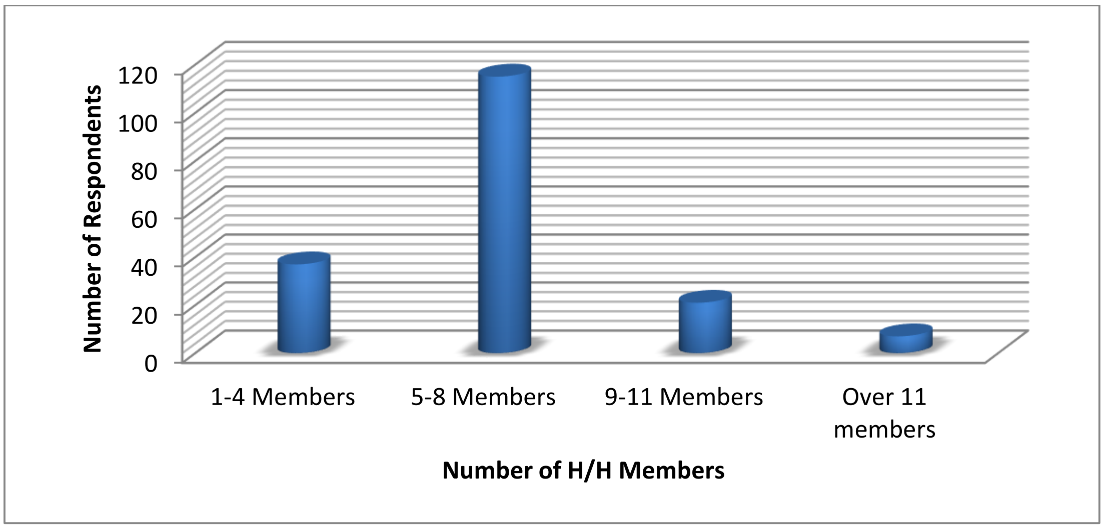

Figure 4: Household Size
Source: Authors' field survey, 2019

Large household sizes are likely heightening household vulnerability to climate shocks due to consumption pressure imposed by large families. Nonetheless, there is a positive outcome link as the large family size can boost the labour force in terms of high productivity. More access to family labour can enhance the social capital of the respondents' households. This falls in line with Yirga (2007) who observed that large families may be able to divert part of the labour force to off-farm activities in an attempt to earn more income in order to ease the consumption pressure imposed by a large family.

In addition, Croppenstedt et al. (2003) asserted that households with a larger pool of labour are more likely to adopt an agricultural technology and use it more intensively because they have fewer labour shortages at peak times. Given appropriate support, households are able to utilize their large labour pool in farm and non - farm activities to earn extra income thereby enabling them to cope with climatic extremes.

4.3 Prevalent Climate Shocks in Mulanje District (2014-2018)

The study captured information on covariate shocks that have happened in the district for a specific recall period from 2014 - 2018. The women were asked to mention the most prevalent shocks faced in their households in the past 5 years before or after they enrolled in social protection programmes. High temperature was reported as being the most prevalent shock experienced followed by erratic rainfall and then dry spell. The results of prevalent climate shocks are presented in the figure below.

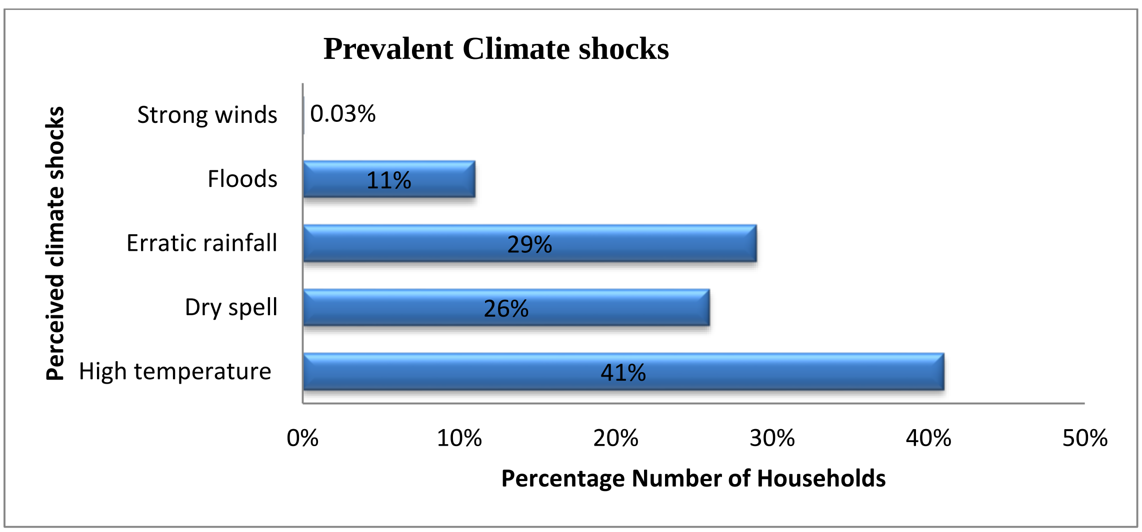

Figure 5: Prevalent Climate Shocks Occurred in Mulanje District
Source: Authors' field survey, 2019

In addition, this study found that on average, inconsistent and unpredictable trend of high temperature and heat wave would take almost 5-8 months, rainfall pattern 2-3 months, and dry spell 1-2 months every year since 2014. The respondents' answers in the survey were consistent with the meteorological records of increasing temperature, decreasing rainfall in general. According to Climate Change and Metrological Service at Mimosa weather station, temperature has been gradually increasing in the past 5 years. As for 2019 records, the station recorded temperature as high as 40 Degree Celsius during 10 day period in October. The findings of this study further reflects those of prior studies such as Kachaje et al (2016) who found that temperature is increasing in Mulanje by about 0.04 Degree Celsius every year. The results were also observed by Mittal and Vincent (2019) that currently there are around 40 days per year with temperature exceeding 35 degree Celsius, and this is likely to become 50-100 days by 2020.

The findings suggest high temperature undermines household adaptive capacity and increases household vulnerability particularly where 95% of the respondents rely on the agriculture sector as source of their livelihood. Effects of high temperature extend in growing season has drastic consequences on crop growth and productivity. In the same way, Jorstad and Webersik (2016) found that the climate change significant impact on women everyday life such as their food security, substance farming and livelihood after studying the experience of women fish-processing groups in the Lake Chilwa Basin.

While climatic shocks' influence on livelihood assets varies, the evidence gathered in this study established that financial capital in terms of agricultural economic activities are also affected by climatic shocks. As a result households' welfare in the district is disturbed and decreased respectively. Many households depend on on-farm income generating activities (casual labour and crop production) that are not reliable and they decrease when a shock strikes. As such the frequency and severity of changes in season patterns such as high temperature, dry spell or the onset and cessation of rainy season have impacts on food production and household income. The adverse effects of climate shocks on food insecurity and informal unemployment were also perceived by villagers in Focus Group Discussions. One participant complained that, *'Nyengo ikusitha. Masiku anu mvula ikugwa mochepa. Mvula ndi moyo, Popanda mvula ndiye kuti palibe chomwe tingachite chifukwa timadalira ulimi. (Weather is changing. There is less rain. Rain is life. Without rain there is nothing we can do because we mostly depend on subsistence agriculture)".* Woman FDG, Pangani village.

The perceived climate shocks have also influenced women to engage in negative coping strategies in order to meet the basic needs for instance. These include selling surplus or stored crops, adopting a skip consumption pattern, and borrowing money from loan sharks which always have high interest rates. As a result an opportunity to get out of poverty is compromised as the households face increasing threats to sustain income and consumption patterns, especially those households that depend on natural resources and rain-fed agriculture. During FGD in Namasalima village one participant complained that;

"*Mmene nyengo ikusithilamu ndipovuta pakhomo kukhala ndi ndalama zokwanira komanso chakudya chifukwa njira zonse zomwe timapezera ndalama monga ulimi ndi ma ganyu sizikumadalilika.(The way the climate is changing it is hard to have enough household income and to be food secure since farming and casual labour are unpredictable)"*

Village protection committee Chairperson, Namasalima village.

4.3.1 Severity of Climate Shocks in Mulanje District

The study found that most households were affected by the climate shocks in the past 12 months. According to the respondents 68% of them responded they were highly affected while 21% were very highly affected. The respondents who reported very high severity of climate shocks were elderly and from female single headed households. On the other hand, respondents who reported very low, low, and medium severity of climate shocks were households that had at least one family member working in tea estates hence they had reliable alternative source of income. Based on the respondents' information concerning severity of the climate experienced, this study found that Mulanje is still a disaster-prone district as the majority of the respondents perceived that the climates shocks are experienced often thus a threat for their livelihood activities.

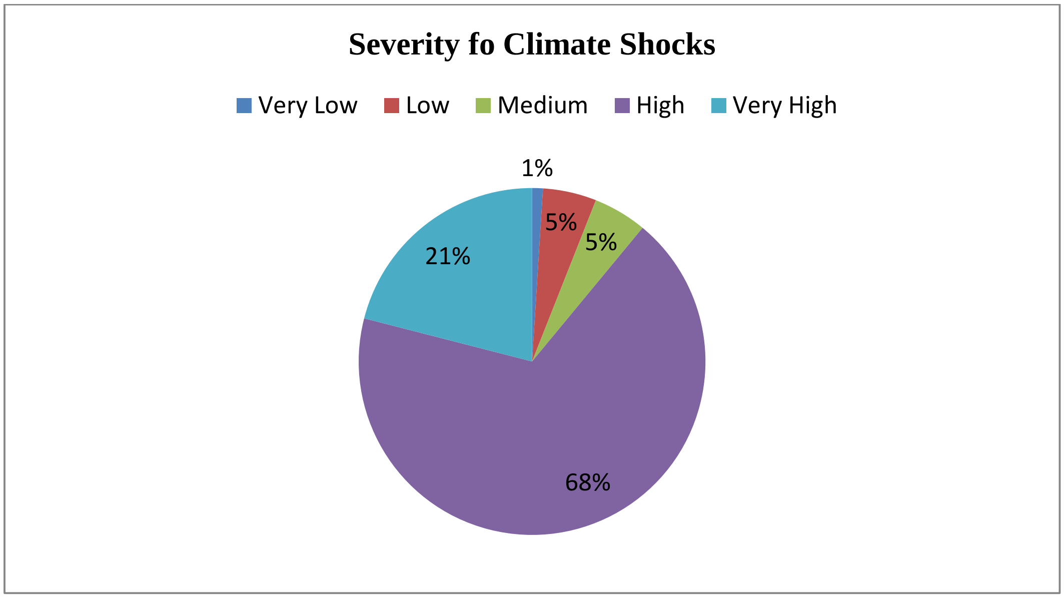

Figure 6: Severity of Climate Shocks in Mulanje District
Source: Authors' field survey, 2019

The sustainable livelihood framework sees trends as potential causes of vulnerability at households, and seeks to reduce vulnerability by building on the livelihoods assets of households. From the results found, protecting and enhancing women with a wide range of assets for coping with shocks will improve their capacity to adapt to the severity of climate shocks. Ngongondo et al (2011) observed that based on climate variability in the district; there is a need to integrate indigenous knowledge to understand climate patterns in order to increase adaptive capacity of people. It was observed from the results that households have lesser scope of livelihood diversity to cater for their families, as the result they depend more on agricultural sector which is climate- dependent. In this respect, there is low supply of food items on the market a development that triggers high prices therefore reduces their ability to purchase.

4.4 Social Protection Programmes and women's adaptive capacity to reduce household vulnerability to climate shocks

4.4.1 Social Protection Programmes in Mulanje District

Essentially, Mulanje district has a number of social protection programmes implemented by different organizations including the government. These institutions include Oxfam, Adventist Development and Relief Agency (ADRA), UNICEF, Irish Aid, World Food Programme (WFP) and United Purpose. Notable major social protection programmes that are implemented and give women an opportunity to participate are Social Cash Transfer, Public Works programmes, and Subsidy programmes. Selection criterion for Social Cash Transfer is dependency ratio and transfers are delivered directly to ultra- poor households who have no support. Public Work Programmes are labour market interventions that provide temporary work through building community assets and earn money in the process. Subsidy Programmes support poor household livelihood by providing agricultural inputs e.g. fertilizer and smoothening household consumption by providing food items during lean period. The table below illustrates the main social protection programmes in the district, their target groups, the interventions employed and objectives.

Table 2: Major Social Protection Programmes in Mulanje District

Programme	Target Group	Intervention	Objective
Social Cash Transfer	Chronically vulnerable and poor households who are unable to work	Transfer of cash	Alleviate poverty and hunger and to increase school enrolment
Public Works	Labour constrained poor households	Cash for work	Build / maintain community assets such as roads, community afforestation and flood controls
Subsidy programme	Poor and vulnerable households with less income to buy agriculture inputs or food items	Fertilizer subsidy Free input distribution General food distribution	Support families in dealing with vulnerabilities throughout their life cycle.

Results from Focus Group Discussion and Key Informant Interview showed that targeting women in social protection programmes is more important than any other family member at household level. Women are regarded to have the capacity to take care of their families because they easily trickle down the benefits realized from the programmes to every member in the house. A village member under group village head Fundi explained;

Kusankha amayi mu pulogalamu ya mthandizi ndi kwabwino chifukwa mayi amatenga zomwe wapeza kupititsa pakhomo pake ndipo banja lonse limathandizika. Pamene abambo akasakhidwa ndiye kuti uyiwale za chithandizo pakhomo chifukwa amathawa banja kukakwatira kwina (Selecting women is important because women are able to support their families. When men are selected they forget to provide support since they escape family responsibilities and get themselves a new wife)

In another FGD from Manolo village, participants concurred that selecting women in programmes such as public works programme is good not only for households to benefit but also for community development sake since women are hardworking and honest.

Amayi akakhala mu pulogalamu ya MASAF amalimbikira komanso ndi achilungamo amagwira ntchito mpaka kumathelo. Pamene azibambo mudzi muno ndi a ulesi komanso akangolandila ndalama pang'ono amathawa osamaliza nawo ntchito. (When women are beneficiaries in MASAF programme they are hard workers and honest they are able to finish the job. This is contrary to men in this village who are lazy and once they receive part of their cash they abscond the job).

4.4.2 Household Resilience

Resilience is recognised as an outcome of variable in many indicators. The study conceptualised household resilience as a capacity to deal with climate shocks. The study found that access to and use of resources gained from social protection programmes such as economic assets (biycles) public social infrastructures (markets), income diversification and agricultural technologies were influencing households' resilience to climate shocks. The results suggest that due to wide range of resources gained from social protection programmes there is low involvement of households selling their economic assets in order to deal with climate shocks.

To assess household resilience this study employed subjective resilience measure that relates to an individual's self-evaluation or their household's resilience capabilities and capacities to handle future events. This relates to Maxwell et al., (2015) who proposes the household livelihood resilience approach to evaluate resilience through subjective indicators for self-assessment. This provides a useful bottom-up tool for capturing the voice of beneficiaries'.

In addition, Béné et al. (2016) suggest that people's perceptions about their ability to handle future shocks affect decisions on short-term and longer term livelihood coping strategies and their willingness to engage in particular types of responses. The capacity used relates to household ability to prepare recovery and adapt climate shocks. The indicators assessed were access to income and food, access to public services such as markets, health facilities, assets accumulation; diversity of income sources and practising of coping strategies which include modern agriculture practices.

The results of the self-assessment were also complemented by the Key Informants Interview. The results showed that the programmes have important implications for people's well-being by preventing households from transitory shocks as well as leading to recovery of immediate loses after shock. Furthermore, social protection programmes are significantly promoting household resilience in terms of reducing potential risks and facilitating effective recovery as shown in the table below:

Table 3: Social Protection Programmes and are Strengthening Household Resilience

Household Resilience Indicators	**Social Cash Transfer**	**Public Works**	**Subsidy Programmes**
Reduce potential risk			
Enables increase in household savings to deal with climate change and disaster-related shocks and stresses	✓	✓	✓
Enables accumulation of productive assets	✓	✓	✓
Strengthens resilience of community infrastructure		✓	
Creates community assets that strengthen resilience		✓	
Provides input to resilient livelihoods			✓
Increases awareness on climate and disaster risk	✓	✓	✓
Facilitating effective recovery			
Smoothens consumption during lean times	✓	✓	✓
Enables post-disaster recovery of sustainable livelihoods	✓	✓	
Supports post-disaster recovery of resilient community infrastructure		✓	
Reduces chances of engaging in negative coping mechanism to deal with climate change and disaster-related shocks	✓	✓	✓

4.4.3 Livelihood Diversifications

Results showed that 50% of the beneficiaries were doing small businesses e.g. selling vegetables and home-based groceries; this was the most preferred source of income for the households followed by livestock rearing (28%) and backyard gardening (15%).

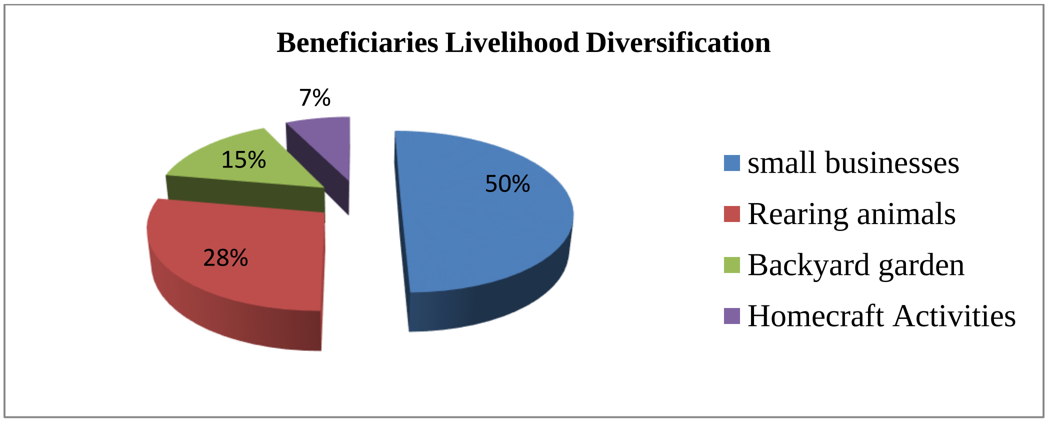

Figure 7: Livelihood Diversification Economic Activities
Source: Authors' field survey, 2019

A popular explanation of the diversification is that it is mostly measured by using income earned from different activities or sources (Barret et al, 2001).The results reveal that there is a shift in relying on non-farm activities and take advantage of synergies across different income generating activities as source of livelihood and this play an important role in their household income. However, the contributions of non-farm activities are in short term because the majority of the women invest in these activities using small capital.

Studies have shown that livelihood diversification can help household to manage shocks and is an important autonomous adaptation strategy to climate variability (Sebates-Wheeler et al, 2008, Weldegebriel and Prowse, 2012). These results tie well with previous literature suggestion that non-farm activities play a role in household wealth, poverty alleviation and development efforts (Barret et al, 2001). However, other literature has suggested a caution in assuming causality in this relationship. In general, literature is in agreement that more livelihood activities on non-farm activities are typical good for individual household and overall economic growth (World Bank, 2013).

In another focus group discussion in GVH Namasalima one participant pointed out that beneficiaries of social protection programmes particularly social cash transfer considered casual labour as a less important source of livelihoods because they have stable and predictable source of income.

"*Ganyu akupanga ndi omwe sali mu pulogalamu ya mthandizi, pano akulandira ndalama mwezi uliwonse ndiye samaona chifukwa chofunila ganyu. (Casual labour is now being done by non- beneficiaries. Those in social protection programmes don't see a need to look for casual work since they receive money every month)."*

Female participant, GVH Namasalima

Another participant in GVH Njedza added this view in the discussion by saying that;

"Pachiyambi amayi amenewa amachita ma ganyu ochapa zovala, kulera ana ndi kusamala pakhomo. Mtukula pakhomo wachepetsa zonsenzi. Pano akumakhala ndi ndalama zothandizira pakhomo komanso ziweto zomwe akutha kugulitsa, ena agulila njiga amunawo kuti azipanga kabaza. At first these women used to engage in more domestic causal labour activities such as washing clothes, child care services and house help. Cash transfer has lessened that and now they are having household income and livestock which they are able to sell. Others have bought bicycles for their husbands to start bicycle taxi business".

Male participant, GVH Njedza

Nevertheless, some respondents reported that programme beneficiaries who are still engaging in casual domestic labour are those participating in public works through Malawi Social Action Fund (MASAF) implemented by the district council. They engage in casual domestic labour as a transitory remedy while waiting for their payment. One participant lamented that;

Kuti upatsidwe ndalama ukagwira MASAF zimatenga nthawi yaitali kotero timafuna maganyu kapena kukatenga katapira kuti uzabweza ndalama zikabwera. (To receive money from public works (MASAF) programme takes long time hence we seek casual labour or get loan from loan-sharks and repay it later).

Female participant, GVH Chipoko.

4.4.4 Coping strategies

To counter the impact of climatic shocks in the district, this study found that almost 90% of women were practicing different coping strategies as specific efforts to manage or tolerate, reduce or minimize stressful experience from climate variations. It was found that women engage in different specific coping strategies which are either linked to agricultural practices or non-agriculture options to reduce the total loss in their households. Women who experienced erratic rains and dry spell applied agricultural practices such as use of hybrid seeds, applying fertilizer, and, planting drought resistant crops e.g. cassava and sweet potatoes. The findings is in line with the findings by Fisher et al (2015) who reported that household who were exposed to climatic risks were more inclined to adopt climate –shocks varieties. Higher use of drought-tolerant varieties by may be due to the impact of a long-term Farm Input Subsidy Programme (FISP) introduced in 2005–06 under which farmers/ households were provided with improved varieties, especially drought-resistance varieties (Fisher et al, 2015).

Whereas for non-agricultural strategies women have access to liquidity and they were able using savings from cash transfers / public works or, borrowing money from Village Loan and Savings to start business. Similarly Sanchez (2014) found that using savings or asking a loan are combined strategies used to cope with the lack of income and has macroeconomic benefit such that spending will boost local income, affect consumption and create other markets. Despite that savings are most widely used coping mechanism, it have more limited role for poor and rural households as it cannot always fund all short and medium –term measures (Ibid).

It was also revealed that Village Savings Loan Associations (VSLAs) is the most preferred as main strategy to mitigate the impacts of climate shocks after graduation from social protection programmes. Previous studies (Ksoll et al, 2013, on saving groups have shown that participating in savings group can increase access to capital and increase income-generating activities which may help households cope with climate shocks such as droughts and floods. Village Savings and Loans Associations led to significant improvements in financial inclusion among women and is also thought to support household empowerment particularly control over household business decisions and welfare expenses.

Table 4: Perceived Coping strategies after graduation

Coping Strategy	Frequency	Percentage (%)
Borrowing from VSLAs	117	65
Sell of livestock	16	9
Utilize agriculture technology e.g. irrigation	25	14
Sell durable assets e.g. chairs, radio	2	1
Secure temporary employment	7	4
Seek support from relatives or friends in the programme	13	7

4.5 Social protection programmes and adaptive capacity of women to reduce household vulnerability to climate shocks.

Assessment of adaptive capacity is an essential step in understanding household vulnerability to different drivers of change, including climate shocks, and the need to strengthen capacity to adapt to future expected change. This study applied an approach to assessing adaptive capacity involving identifying factors that contribute to women capacity to adapt, and their ability to use these when needed. To establishing the extent of women adaptive capacity level, this study used determinants which were largely based on the Sustainable Livelihood Framework which comprises five assets categories - human, social, natural, physical and financial capital. According to literature, economic resources are considered financial capital, technology and infrastructure are considered physical capital, social capital, information and Awareness, institutions, their contribution to well-being and productivity are attributes of human capital (Ellis, 2000, , Tinch, Jager, Oman, Harrison, and Danford, 2015).

4.5.1 Adaptive Capacity Level

The Household Adaptive Capacity Index (HACI) score for individual respondents was calculated using the survey results. The results show an uneven distribution of respondents under the various levels of adaptive capacity. The table below indicates that about two-thirds of the women interviewed belong to moderate adaptive capacity while 37% to low adaptive capacity and few women 4% high adaptive capacity.

Table 5: Levels of Adaptive Capacity of Women in Mulanje District

Levels	Scores Indices	Frequency	Per cent
Low Adaptive Capacity	0.1509 – 0.3249	67	37
Moderate Adaptive Capacity	0.3941 – 0.5372	106	59
High Adaptive Capacity	0.6716 – 0.8192	7	4
Total		**180**	**100**

The findings imply that more women beneficiaries in social protection programmes in Mulanje District had a moderate capacity to climate shocks. The study found that women who scored moderate level of capacity got good scores in economic resources, social capital, technology, and infrastructure. Most respondents 65% in this level were beneficiaries of social cash transfer and public works programmes that put emphasis on protecting and promoting livelihood portfolio and increase economic resilience. The beneficiaries were able to meet the basic needs, invest cash they received into other productive investment and increase asset base.

Low adaptive capacity level scores were women who got low scores in 4 out of 6 adaptive capacity determinants namely economic resources, information and awareness, technology, and institution. These respondents were mostly beneficiaries of preventative social protection programme that employs intervention such as free farm input distribution, fertilizer subsidy or general food distribution. In this category, social protection facilitates only short term recovery by smoothening consumptions during lean times, and reducing chances of engaging in negative coping mechanism to deal with climate shocks.

While high level of adaptive capacity scores were attained from women who got very good scores in all the determinants except institutions. Their households were capable of employing more adaptation measures for survival.

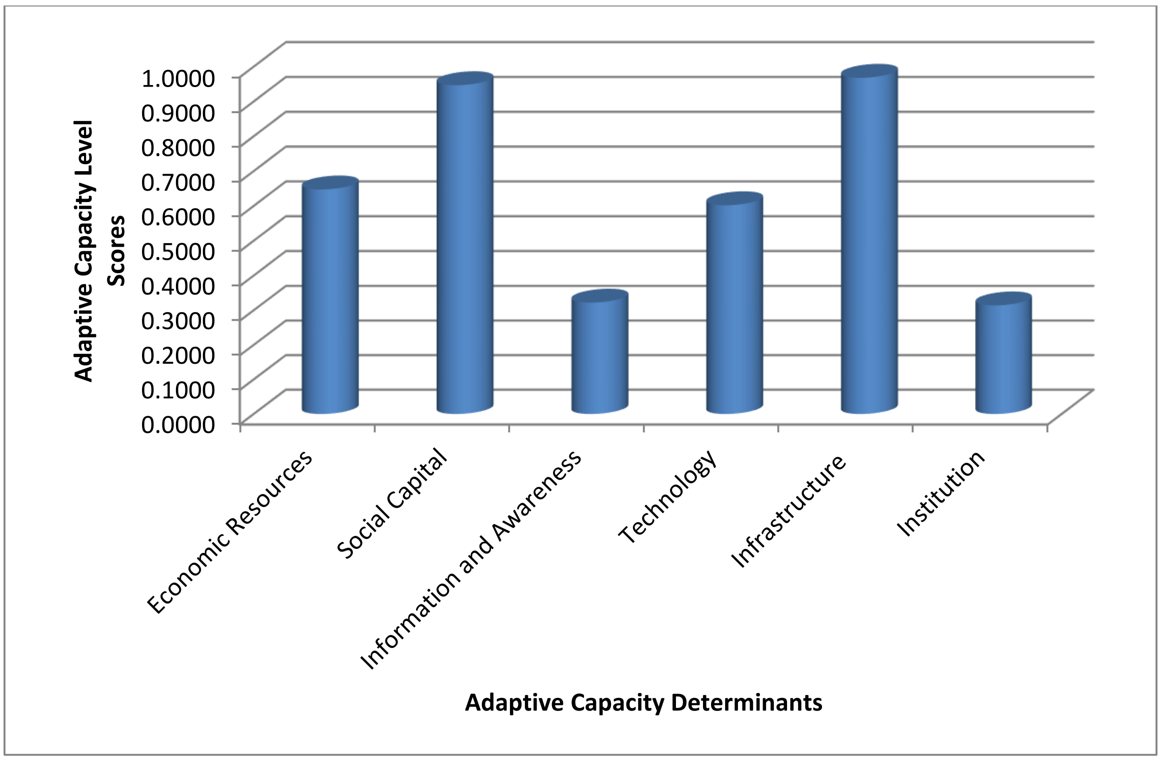

Figure 8: Average Determinants Adaptive Capacity Level Scores
Source: Authors' field survey, 2019

In terms of specific determinants scores, the study recorded that the highest scores in social capital and infrastructure determinants. This is because women through social protection programmes are able to participate in different networks including village loan and savings groups. The social capital gained is necessary to build community capacity for sustainable future. On infrastructure, there is good access to major social services in the district. The results show that through public works programme there is good network of roads and bridges so much so that people are able to access social services in the district such as hospitals, markets and schools. This is in line with the result of Deressa et al (2008) that infrastructure and social capital determinants influence the use of adaptation methods and facilitating access to resources by rural people.

In economic resources scores were attributed to financial assistance women get from social protection activities. Furthermore, access to informal credit through village savings loans and other economic engagements such as small scale business increased the respondents' household income. There is relationship between economic resources and adaptive capacity to climate shock, the higher the level of economic resources available to a household, the higher the level of their adaptive capacity. Likewise, Thathsarani and Gunaratne (2018) found that a household that lacks financial resources will adversely affect the household's ability to recover from catastrophes in terms of rebuilding and reinvesting in damaged areas. Similarly, Defiesta and Rapera (2014) justified that households having better financial standing signifies a higher ability to finance adaptation and coping measures and recovery mechanism to climate shocks.

In Technology determinants average scores were moderate, women were able to access fertilizer, and improved seeds through social assistance program, public works and social cash transfer. The technical know-how gained in the programmes can capacities women to use the livelihood asset for long term benefits rather than immediate gains at the expense of shocks. As such women are able to adopt new technologies/ techniques and that enabled them to cope with the varying climate shocks. Access to better farming technologies enables women to enhance their adaptive capacity since they are able to use the techniques in a sustainable way. This is line with previous study by Abdul-Razak and Kruse (2017) who found that limited access to technologies render women vulnerable and result to low adaptive capacity. The more the women are exposed to technology of adaptation, the more will be willing and trust to implement the techniques sustainably.

This study also found that information and skills have average low scores. Ironically, findings show that women were aware of climate shocks and they know that it was affecting their households. However, the challenge was accessing reliable sources of information because women reported that they generate information on climate change from friends, neighbours or relatives whom they don't trust sometimes. Although some social protection programmes are implemented as a response to climate change, it was found that the programmes rarely furnish the beneficiaries with comprehensive climate change information. Climate and production information as well as extension services increase awareness on vital adaptation information that would enhance households' production and climate adaptive capacity. In absence of access to adequate climate information denies decision makers including women who are farmers their intent, timing and direction for any climate adaptation plans and actions to be implemented as indicated by other scholars (Elum et al., 2017; and Alam et al., 2017).

Although institution is fundamental to facilitate adaptation to climate shocks and variability in the future (Fidelman, et al, 2017), the study results indicate that few women are linked to other programmes during their cycle or after graduation. The study found low average scores in institution determinants. It was discovered that only women in social protection program were connected to other programmes such as environmental conversation project by United Purpose where they receive energy efficient stoves. While women from other programmes reported that they do not receive complementary support nor are they offered explicit linkages into services offered by other institutions or sectors. The results have negative implication in efforts to promote adaptive capacity of women in the district. A well-connected network enhances communication, build social capital and foster innovation which is essential in dealing with issues concerning climate shocks (Carlsson and Sandstrom, 2008).

In conclusion, this chapter has presented and discussed the findings according to the outline of the specific objectives. With respect to socioeconomic profile, the study found that women are vulnerable to climate shocks as many of them belong to single headed households, have low education level, and have large household sizes. Social protection programmes are assisting households to cope with climate shocks in form of promoting household resilience, coping strategies and livelihood diversification.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a conclusion of the study findings. It also offers possible recommendations for practice and further research on the topic.

5.2 Conclusion

The study builds on literature on how social protection programmes promote the adaptive capacity of women to reduce household vulnerability to climate shocks. The analysis of this study found that social protection programmes are promoting women to adapt to climate shocks. This study has also provided evidence that most of the respondents' views social protection programmes strengthen households' ability to respond to and cope with climate shocks.

The first investigate how climate shocks have influenced households' vulnerability in Mulanje district. This study found that climate shocks have influenced households' vulnerability in Mulanje District. High vulnerability to climate shocks is experienced by households whose social economic profile is characterized by large family size, low education status of household heads, and female headed households. Based on empirical findings, Mulanje District is still experiencing climate variability which results in covariate shocks affecting households' economic growth and agricultural production. The evidence from this study indicated temperature is increasing while rainfall shortening and being erratic.

The second objective aimed at assesses how women's participation in the social protection programmes promotes households adaptive capacity to climate shocks. Key findings showed that social protections programmes are supporting to build household resilience as women to have a steady income and predictable income through direct cash and labour market, accessing social services through investing in community infrastructures, promote agricultural technologies, improve, and ownership of productive assets. In addition, social protection programmes are promoting livelihood diversification and help coping strategies. With this regard, women are able to manage risks as well as respond to and cope with climate shocks.

The third objective was to establish to what extent social protection programmes have built adaptive capacity of women to reduce household vulnerability to climate shocks. The findings indicated that on average women have moderate adaptive capacity levels. Most of these women are beneficiaries of protective social protection programme which emphasis on measures to prevent the poor from sinking further into poverty. However, the results of the study show that low adaptive capacity was characterised by women who are in preventive programmes measure that provides relief from deprivation.

Furthermore, this study has found information and awareness, and institution determinants are not fully utilised to enhance women adaptive capacity to climate shocks. Climate information and awareness gives women an opportunity to transform information into knowledge. This can allow them to modify their behaviour in adaptive ways and a better understanding of the kinds of resources and interventions that will be most useful to them to manage climate shocks at household level. Similarly, Institution should have ability perform functions that facilitate adaptive capacity of women. Institutions that promote climate adaptation must mobilise resources and concentrates human capital by interconnecting adaptive measures in order to deal with uncertainties and anticipate problems women beneficiaries can face during and after graduation.

5.3 Recommendations

In ensuring social protection programmes continue plays an effective role in increasing women's ability to adapt to climate shocks this study recommends the following;

i. Link social protection programmes to complementary services and programmes for example microfinance services, climate change conversation interventions, value-chain markets and introducing new agricultural technologies e.g. water harvesting. In adaptive capacity, collaborative capacity building is helpful in fostering the transfer, receipt and integration of knowledge across networks and building a long-term problems solving capacity (Weber and Khadennian, 2008).

ii. There is a need to increase public awareness at local level on climate change through early warning systems, and encourage information seeking abilities. This influence the adaptive capacity of the individuals and critical to very poor beneficiaries who do not access to modern communication channel. Given predictability in implementation, social protection programmes can support households to better manage risks and engage in more profitable livelihoods. In addition, women's ability to effectively make informed decision on how to respond to challenges of climate variability and change is determined by the quality of the information available to them and how easily they can access it.

iii. Promote environmental management interventions such as afforestation and biodiversity conversation activities to reduce climate variability impacts. By supporting communities to develop Community Adaptation Action Plans (CAAP) will enables them to determine their own priorities and well informed adaptation actions.

5.4 Area of Further Studies

This study mainly focuses on adaptive capacity determinants to assess the extent social protection programmes builds adaptive capacity of women to reduce household vulnerability to climate shocks. The focus of this study was mostly rural communities and agricultural sector. Further studies could be done to access women adaptive capacity by looking at urban areas. Urban population is facing different climate related risks and their exposure and vulnerability are conditioned by fundamental different factors such as population density, social diversity, and exposure to pollution (water, air, land).

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APPENDICES

APPENDIX 1: HOUSEHOLD SURVEY QUESTIONNAIRE

PART 1: IDENTIFICATION

Name of Interviewer: ________________________ Questionnaire Number: ___________

Name of Respondent: _________________________Village: _________________________

Date: _____________________________ District: ________________________

PART 2: DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENT

201. How old are you?

1. 18-25 years 2. 26-35 years 3.36-45 years 4. 46-55 years

5. 55 years old or above 99. Don't know

202. What is your current relationship status?

1. Single never married 2. Currently married 3.Divorced/separated
4. Widow/widower 5. In a committed relationship 6. Other (Specify)

203. What is the highest level of education you have completed?

1. Never attended school 2. Primary school 3.Secondary school
4. Vocation or higher tertiary education 99. Don't know

204: Are you the head of the family?

1. Yes 2. No

205. How many people currently live in your household in each of these categories?

1. Children aged 0-14 years _______ 2. Orphaned Children______
3. Youth aged 15-24 years______ 4. Adults aged 25-49 years_____
5. Adults aged 50 years and older______

206. What is the source of income your household have?
1. Subsistence Farming 2. Remittance 2. Gift 3.Small scale enterprise
4. Working in formal employment (full time or part time)
5. Others Specify____

PART 3: HOUSEHOLD VULNERABULITY INFORMATION

301. Mention one common climate shock which has occurred at your household in the past 5 years?
Drought ii). Dry spell iii) Erratic rainfall iv). Strong wind v).flood vi).High temperature vii). Earth quake

302. In the last 12 months how often has your household been hit by climate shocks you mentioned above?
1. Every day 2. Once or twice week 3.Once a month 99. Don't know

303. In the past 12 months what three most climate shocks that have occurred in your area?
i) Drought ii). Dry spell iii) Erratic rainfall iv). Strong wind v).flood vi).High temperature vii). Earth quake
1.____________________________
2.____________________________
3.____________________________

304. How severe was your household affected by the climate shocks you have mentioned above?
1. Very low 2. Low 3.Medium 4. High 5. Very high

305. What have been the main impacts of climate shocks on livelihood at your household?
1. Crop damage 2. Soil erosion 3. Water shortage
4. Crop failure 5. Decline in soil fertility 6 Pest infestation
7. Loss of productive assets 8. Loss of livestock

PART 4: HOUSEHOLD RESILIENCE AND ADAPTIVE CAPACITY INFORMATION

4.1 Social Capital

401. Are you participating in any social protection program from the government or any Non-Governmental Organization?
[A].Yes.... *(2)*
[B]. No (end of interview.)…. *(0)*
[C]. Don't know…. *(-1)*

402. If yes which programme are you participating?
[A]. Social Cash Transfer …. *(2)*
[**B]**. Public works …. *(2)*
[C]. Social assistance *e.g. input subsidy, food aid…. (2)*
[D]. Pension scheme …. *(2)*
[**E].** Social Fund *e.g. group loan or micro credit…. (2)*
[**F].** Don't know …. (-1)

403. For how long have you been in the programme?
[A]. Month – a year…. *(1)*
[**B]**. 2-3 years …. *(2)*
[**C].** 4-5years…. *(2)*
[**D].** Don't know …. (*-1)*

404. is the program able to connect you to other programmes or services with an aim to reduce household's vulnerability to climate shocks?
[A]. Yes …. *(2)*
[**B].** No …. *(0)*
If yes mention the programme or assistance___________________

405. Do you participate in other social networks in your community?
[A]. Yes …. *(2)*
[**B].** No …. *(0)*
If yes mention any group you are participating ___________________

4.2 Economic Resources
406. Since joining the programme, mention additional economic activities you are doing that is contributing to your household income?
[A]. Trading …. *(2)*
[**B].** Backyard garden…. *(2)*
[**C]**. Sewing …. *(2)*
[**D].** Animal rearing…. *(2)*
[E]. Temporary employment …. *(2)*
[F]. Others specify_____…. *(2)*

[**G].** No economic activity…. *(2)*

407. Did the program assist your household during climate shocks you mentioned above to access the following items to improve economic the status?

	Yes…. *(2)*	**No**…. *(0)*
[A]. Fertilizers	___	___
[B]. Improved seeds	___	___
[C]. Food items	___	___
[D] Cash	___	___

[E]. Others____________…. *(2)*

408. In your opinion, how has social protection programme contributed to address these shocks hence improving household economic status?

[A]. High…. *(2)*

[B]. Medium …. *(1.5)*

[C]. Low…. *(1)*

[D]. don't know…. *(-1)*

409. Since joining the programme where do you get loan to finance your livelihood activities?

[A] VSL group …. *(2)*

[B] Microfinance institution …. *(2)*

[C] Borrow from family members…. *(2)*

[D] Borrow from members in the programme…. *(2)*

4.3 Information and Skills

410. What skills have you gained from the programmes that can assist your household to deal with the effects of climate shocks?

[A]. Agriculture diversification skills …. *(2)*

[B].Construction skills …. *(2)*

[C]. Business skills …. *(2)*

[D]. Social networking skills …. *(2)*

[E]. Climate change and early warning systems …. *(2)*

[F].No skill gained…. *(0)*

411. After graduation from the programme, how will your household cope with the climate shocks?

[A]. Use savings from the programme…. *(2)*

[B]. Sell livestock…. *(2)*

[C]. Utilize agriculture technology e.g. dry season irrigation…. *(2)*

[D]. Sell durable assets …. *(2)*
[E]. Secure a temporary employment …. *(2)*
[F]. Start business…. *(2)*
[G]. Seek support from family and friends…. *(2)*
[H]. Temporary migration …. *(2)*
[I]. No coping strategy after graduation…. *(0)*

412. Do you use any other coping strategies to prepare for, mitigate or prevent impacts of climate shocks at your household?
[A]. Yes
[B]. No
If yes mention the strategy/ (ies) ________________________

413. Do you have access to weather information?
[A] Yes .... *(2)*
[B] No .... *(0)*

414. What kind of weather information?
[A] Rainfall .... *(2)*
[B] Temperature .... *(2)*
[C] Others.... *(2)*

415. From which medium do you receive the weather information?
[A] Radio .... *(2)*
[B] TV.... *(2)*
[C] Agriculture extension service.... *(2)*
[D] Family members or peer groups.... *(1)*
[E] I don't get any information .... *(0)*

4.4 Technology
416. Since joining social protection programme which improved seed variety do you use to encounter climate shocks?
[A] Early maturing variety.... *(2)*
[B] Drought resistance variety.... *(2)*
[C] Flood resistant variety.... *(2)*
[D] No variety.... *(0)*

417. Have you apply fertilizer in your farm in the last 2 farming season?
[A] Yes.... *(2)*
[B] No .... *(0)* skip to 419

418. How do you fertilize your farm?
[A] Chemical fertilizer application.... *(2)*
[B] Organic composting.... *(2)*
[C] Organic manure.... *(2)*
[D] Others.... *(2)*

4.5 Infrastructure

419. How accessible are social services (school, hospitals, markets, etc) in this community?
[A] Easily accessible.... *(2)*
[B] Not accessible.... *(0)*

4.6 Institution

420. Have you ever received disaster relief assistance when you were affected by the natural disaster since joining the programme?
[A]Yes.... *(2)*
[B] No .... *(2)* Skip to 423

421. What kind of relief assistance did you receive?
[A] Agricultural inputs.... *(2)*
[B] Food items.... *(2)*
[C] Construction material.... *(2)*
[D] Others.... *(2)*

422. From whom did you receive such assistance?
[A] Government .... *(2)*
[B] NGO's.... *(2)*
[C] Relatives.... *(2)*
[D] Church.... *(2)*

423. How are decisions and control over assets or income made at your household?
[A] I make the decision.... *(2)*
[B] My partner does.... *(0)*
[C] We decide together.... *(2)*

424. How easy is it for you to influence decision making concerning mitigating climate shocks at your household?
[A] Difficult.... *(0)*
[B] I don't know.... *(-1)* **[C]** Easy.... *(2)*

APPENDIX 2: FOCUS GROUP DISCUSSION GUIDE

1. Do you know any social protection programmes happening in Mulanje and in your area?

2. Mention the names of the programmes and which assistance does beneficiaries receive from each of the programmes

3. Do you think social protection programmes cover all population groups equally especially women?

4. Do you think social protection programme should be a priority to women as beneficiaries at household level?

5. What contributions do women make at household level when they are included in social protection programmes

6. What do you think are the impacts of targeting women in social protection programmes on reducing household vulnerability to climate shocks?

7. How does social protection programmes promote women knowledge and capacity to mitigate impacts of climate shocks at household level?

APPENDIX 3: KEY INFORMANT INTERVIEW GUIDE

1. What are the main types of social protection programs in the district?
2. Are there stand-alone social protection programme that explicitly target to mitigate climate shocks?
3. How social protection programmes are responding to climate shocks in the district? And describe how they are contributing to strengthen household resilience
4. Are there stand-alone social protection programme that explicitly target women?
5. Does targeting women in social protection programmes increased women capacities to adapt to climate shocks?
6. Explain whether women can access education or trainings from social protection programmes that assists them to mitigate climate shock?
7. What are the most important coping strategies in response to climate shocks that exist in the present social protection programmes that are helping women to reduce household vulnerability?
8. Mention graduation exit strategies that social protection programmes have and if they are meant for promoting adaptive capacity of women to climate shocks?

APPENDIX 4: VERBAL CONSENT FORM

My name is Mphatso Adamson Zalimba and I am a student pursuing a Masters of Arts Degree in Development Studies at Chancellor College University of Malawi. I am carrying out a research on assessment of women adaptive capacity to climate shocks: A Case of Social Protection Programmes in Mulanje District. I wish to get so much information from my interaction with you. I have obtained permission from Mulanje District Council.

Please you have been randomly selected in this interview because you are a beneficiary of social protection programmes / you are conversant with how social protection programmes works in the district. Please note that any information given is meant for academic purpose.

Do you have questions on what I have said? Yes/No
Are you willing to participate in the discussion? Yes/No

Name: ………………………………………………………
Signature: …………………………………………………..
Date: ……………………………………………………..