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RESEARCH PROJECT

ENHANCING RESILIENCE BUILDING INITIATIVES AMONG VULNERABLE HOUSEHOLDS IN GWANDA DISTRICT, ZIMBABWE.

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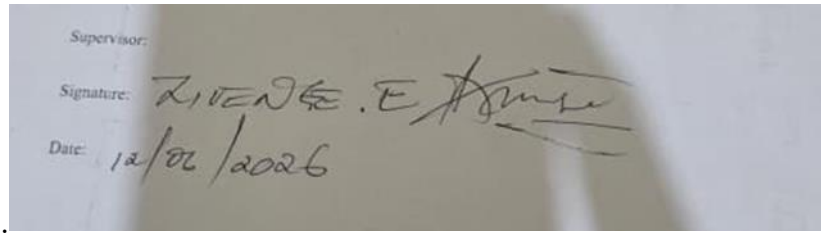
Signed …

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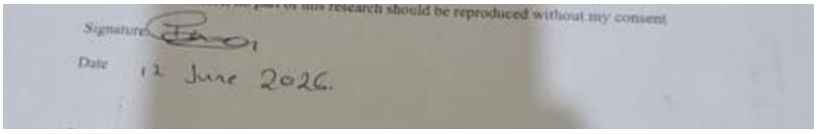
SIGNED: 

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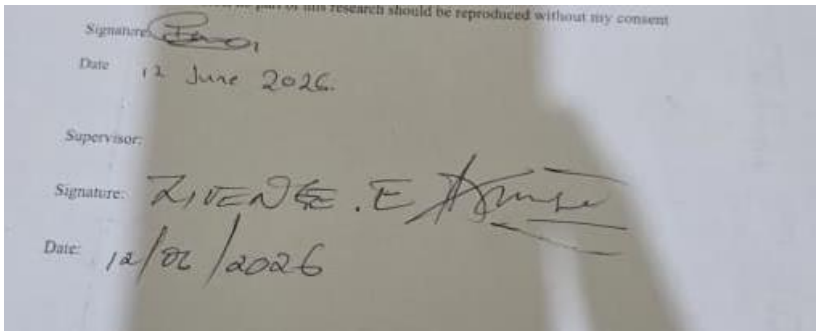

DEDICATION

This study is dedicated to my parents Mr and Mrs Mutimukru, Hardlife Sibanda, Sithengisiwe Sibanda, Thabani Mathews Siziba, Nkosinathi and Ruvarashe Mutimukru. Your love and support will always be cherished. You have been my strength and anchor in this journey.

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Abstract

This study assessed resilience-building initiatives among vulnerable households in Gwanda District, Zimbabwe, focusing on Ward 11 in agro-ecological regions IV and V. The district is characterized by recurrent droughts, erratic annual rainfall of 250–450 mm, and persistent food insecurity exacerbated by the 2023–2024 El Nino-induced drought. The study was guided by the Sustainable Livelihood Framework (SLF) and Socio-Ecological Resilience (SER) Theory, providing an integrated lens for examining how household asset endowments and socio-ecological dynamics influence resilience outcomes.

Four objectives were pursued, to characterize resilience-building projects, to assess household participation challenges, to evaluate project impact on revenue generation and economic empowerment, and to analyze factors affecting resilience. A mixed-methods design combined structured questionnaires, key informant interviews, and focus group discussions. Using Yamane's (1967) formula on a target population of 172 households, a sample of 120 was drawn 60 beneficiary and 60 non-beneficiary households supplemented by 10 key informants and 3 focus group discussions. Of these, 89 usable questionnaires were returned (74.2% response rate). Data were analyzed using descriptive statistics, independent samples t-test comparing beneficiary and non-beneficiary, and a multiple linear regression model estimating a composite Household Resilience Index from the SLF's five capital categories.

Findings showed that dominant initiatives included Village Savings and Lending Associations (76.4%), Pfumvudza /Intwasa conservation agriculture (68.5%), capacity-building programmes (64.0%), and small grain promotion (60.7%). Key challenges included drought (mean severity 4.52/5), limited input access (4.47), high input costs (4.31), and lack of credit (4.21). Despite these constraints, programme participation significantly improved monthly household income by USD 57.35 ($p = 0.001$), increased income sources by 1.15 ($p = 0.002$), and improved asset ownership ($p = 0.005$). Regression model demonstrated strong explanatory power accounting 71.7% of variance in the resilience index (R-squared= 0.717 adjusted R-squared=0.661; $F=12.847$, $P<0.001$) with all OLS diagnostic test including VIF and Durbin Watson confirming model validity.

The study concludes that resilience-building initiatives improve livelihood outcomes when well-coordinated and resourced. Government and development partners are recommended to strengthen extension services, improve input access, expand financial inclusion, and enhance coordination to deepen household resilience and food security in Gwanda District

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LIST OF ACRONYMS

Acronym	Full Meaning
ACAPS	Assessment Capacities Project
AFSRTS	Agri-Food Systems and Rural Transformation Strategy
AGRITEX	Agricultural Technical and Extension Services
CA	Conservation Agriculture
CGAP	Consultative Group to Assist the Poor
CIMMYT	International Maize and Wheat Improvement Centre
DFID	Department for International Development (UK)
DRF	Disaster Recovery Framework
ERVIS	Enhanced Resilience for Vulnerable Irrigation Smallholders
FAO	Food and Agriculture Organization of the United Nations
FEWSNET	Famine Early Warning Systems Network
FGD	Focus Group Discussion
FS	Food Security
GCF	Green Climate Fund
GFDRR	Global Facility for Disaster Reduction and Recovery
GoZ	Government of Zimbabwe
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
JICA	Japan International Cooperation Agency
KII	Key Informant Interview
MASAP	Markets and Seeds Access Project -
MLAFWRD	Ministry of Lands, Agriculture, Fisheries, Water and Rural Development
NDS 1	National Development Strategy 1 (Zimbabwe, 2021–2025)
NDS 2	National Development Strategy 2 (Zimbabwe, 2026–2030)
NGO	Non-Governmental Organisation
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OLS	Ordinary Least Squares
PSNP	Productive Safety Net Programme
RI	Resilience Index
SADC	Southern African Development Community

SER .....Socio-Ecological Resilience
SL ..... Sustainable Livelihoods
SLF..... Sustainable Livelihood Framework
SPSS..... Statistical Package for the Social Sciences
UNDP..... United Nations Development Programme
UNEP .....United Nations Environment Programme
UNICEF .....United Nations Children's Fund
VSLA ..... Village Savings and Loan Association
WASH..... Water, Sanitation and Hygiene
WFP .....World Food Programme
ZEFP ..... Zimbabwe Emergency Food Production Programme
ZIM-SHEP ..... Zimbabwe Smallholder Horticulture Empowerment and Promotion Project
ZimLAC.....Zimbabwe Livelihoods Assessment Committee
ZIMSTATS .....Zimbabwe National Statistics Agency
ZRBF.....Zimbabwe Resilience Building Fun

CHAPTER 1: INTRODUCTION.

1.0. Background of the study.

Agricultural subsistence farmers in rural Zimbabwe have to deal with a number of challenges, as a result of the environmental, social and economic conditions. Severe dry spells and occasional droughts in Zimbabwe have negative consequences on food production, resulting in food insecurity and livelihood loss of many households (Salunkhe et al., 2025). Even with an El Nino effect drought in 2023/2024, the impact was severe as it is reported that the drought has impacted the food production and income generation capacities of rural communities (FAO, 2024; GoZ, 2024). Furthermore, this crisis required immediate humanitarian assistance for some 7.6 million people (OCHA, 2024).

Poverty alleviation and resilience building activities should be scaled up to enhance community resilience in Gwanda and address all types of disaster. The district's extreme vulnerability, ill health, economic dislocation and natural disasters like drought (Mbereko et al., 2018) must be noted. This concern gave the impetus for this study. To adopt sustainable livelihood approach starting from developmental perspective with focus on livelihoods is necessary (Natarajan et al., 2022) The impacts of poverty are wide and deep and associated with many hazards that have long reach impacts (World Bank, 2020).

Some projects focus on resilience which are designed to strengthen the ability of households to withstand shocks and stresses, including droughts and economic shocks, by tackling the vulnerabilities (UNEP, 2025). Most of these programs tend to be on household vulnerabilities to increase their coping and resilience to face and overcome the challenges (UNEP, 2025). Through the execution of the National Development Strategy 1 (NDS 1) and (NDS 2) the Zimbabwean government has developed resilience-building measures to address the issues faced by vulnerable and impoverished smallholder farmers on one of its thematic working groups which is food security, climate resilience and environmental protection. This study aims to contribute towards the improvement of the resilience building programmes of the vulnerable households in Gwanda District with this in mind.

There have been several sustainable livelihood (SL) programmes which have been put in place in Zimbabwe to improve food security (FS) resilience to help alleviate the impact of hunger to some degree. Despite these efforts, food insecurity issues are happening in an unprecedented manner (UNDP, 2024). In 2023/24, an estimated 5.9 million people were food insecure in rural

Zimbabwe during the EL Nino induced drought while 3.8 million people which included Gwanda District residents were food assisted (ZIMLAC, 2024).

The study area is Gwanda District in agro-ecological regions IV and V, which is the most vulnerable district in which to conduct activities to build resilience. Gwanda receives less than 500 mm of rainfall annually and rain-fed farming is only productive four out of five years (Ndlovu et al, 2020). This, consequently, means that the smallholder farmers are facing low incomes, poor nutrition, lack of housing and limited access to health facilities (Nyathi, 2024). The government and NGOs support small grain (millet, sorghum) production as an adaptive small-scale response to food insecurity, but the lack of inputs to support small grains production further contributes to food insecurity (Ndlovu et al., 2020). Dryland farmers remain stuck in a vicious cycle of poverty and food insecurity while irrigated farmers are not (Muoni et al, 2025).

In this context, resilience building efforts should enhance the ability of households to resist, anticipate and adjust to shocks like droughts and economic volatility (UNEP, 2025). Trends are worsening, even though the Government of Zimbabwe and NGO funding have been spent on sustainable livelihood (SL) programs, food insecurity has been on a downward trend (FAO, 2023; UNDP, 2024). The national drought response for 2023–2024 was 429.3million of which 143.1million was deemed critical for the period of January to April 2025, to support the needs of 3.1million people affected by the drought, including in Gwanda (OCHA, 2025).

Therefore, this study aims to explore how sustainable livelihood interventions impact food security and food resilience of vulnerable households in Gwanda district from 2018 to 2030 with a specific focus in promoting of small grains. Results will feed into the adaptation and improved resilience strategies.

1.1. Problem Statement.

Food insecurity and vulnerability remains a problem in Gwanda District in agro-ecological regions IV and V, Zimbabwe owing to frequent droughts, irregular rainfall and inadequate productive resources (Chitongo, 2020). It has had many high frequency droughts in a short time, resulting in a high level of community stress. This was particularly true during the serious drought in 2019/20 that led to massive crop failures and livestock deaths in the region (ZimLAC, 2024: FEWSNET, 2024) and during the extreme El Nino induced drought of 2023/24 (ZimLAC, 2024: FEWSNET, 2024).

Economic instability experienced in the country and also exacerbated by climate shocks which include currency volatility, inflation and unemployment off the farm (Moyo & Phiri 2023). They also suffer from water pollution by illegal miners, degradation and biodiversity loss that exacerbates the situation and resulted in a complex situation between families in the area (Moyo, 2024). Thus, vulnerabilities have been created year-round, as households are not able to feed themselves to their daily calorie needs for much of the year, resulting in perpetual reliance on food handouts from the Government and Humanitarian agencies, which is not sustainable and is the problem of vulnerability itself. This is evident in the high poverty rates in Gwanda where many households are living below the poverty datum line, thus limiting their access to invest in assets or in alternative livelihoods (World Bank, 2021).

This has resulted in householders increasingly turning to negative coping strategies, while existing initiatives to build resilience do not seem to have a direct positive economic impact. Specifically, lack of sustainable income generation opportunities associated with these projects has resulted in dropping out of school, especially by children, particularly girls, as they are withdrawn from school to help with household chores or earn income, because school fees can't be paid (Mhembwe & Mapurisa, 2022). More severely, the non-functioning resilience programs have led to negative coping mechanisms among Gwanda community members such as prostitution, and other forms of illegal migration of community members to cross the borders in search of informal trade as well as informal labour, and increasing the number of school dropouts which affects long term development and social cohesion in the community (Mukodzo et al., 2025). Negative coping skills are signs of poverty as well as the fact that attempts to create resilience have not provided economically viable, legal and sustainable alternatives.

The Government and Development partners started some resilience building programmes like sustainable livelihood programmes, climate smart agriculture, donor funded programmes, but there is uncertainty on the impact of these programmes on the resilience of the household, economic empowerment and food security (Chitongo 2021). Interventions are described in the literature, but not in detail how interventions are designed; the economic constraints that prevent households from participating; or the impact that interventions have measuredly in terms of livelihoods or the reduction in negative coping mechanisms. This lack of understanding can make it much more difficult for policymakers and practitioners to create action plans based on evidence and sustainability principles that tackle climatic and economic drivers of vulnerability.

The research problem in this study was the lack of systematic evaluation of the resilience building projects in Gwanda District and limited awareness of the effect of the resilience building projects on mitigating household vulnerability, enhancing their food security and development of legal coping strategy to negative coping strategies among rural households.

1.2.0. Objectives of the Study.

1.2.1. Main Objective.

To enhancing resilience building initiatives among vulnerable households in Gwanda District, Zimbabwe.

1.2.2. Specific Objectives.

The Specific Objectives of the research topic are as follows

I. To characterize the resilience building projects implemented in Gwanda District.

II. To assess the challenges faced by vulnerable households participating in resilience building projects in Gwanda District.

III. To evaluate the impact of resilience building projects on revenue generation and economic empowerment on vulnerable households in Gwanda District

IV. To analyse factors affecting resilience for vulnerable households in Gwanda District.

1.3. Research Questions.

I. What are the characteristics of the resilience-building projects implemented in Gwanda District?

II. What challenges do vulnerable households face when participating in resilience-building projects in Gwanda District?

III. What is the impact of resilience-building projects on revenue generation and economic empowerment among vulnerable households in Gwanda District?

IV. What factors affect resilience for households in Gwanda District?

1.4. Hypothesis.

I. Resilience-building projects in Gwanda District are predominantly focused on drought-tolerant agriculture, income diversification, and community-based capacity development.

II. Vulnerable households in Gwanda District face significant challenges such as limited access to resources, inadequate technical support, and climate variability, which constrain the effectiveness of resilience-building projects.

III. Resilience-building projects significantly improve household income, economic empowerment, and livelihood diversification compared to households not participating in such initiatives.

IV. Household resilience in Gwanda District is significantly influenced by socio-economic status, access to drought-tolerant crops, institutional support, and participation in community-based initiatives.

1.5. Significance of the Study.

This is a very important study as it has empirical evidence on effectiveness and enhancing resilience building interventions in Gwanda District. The findings will help inform the good practices to design and implement sustainable livelihood programmes of the policy makers, NGOs and development partners. Evidence will support advocacy and resource-mobilizing activities, that will feed into investments in actions that build resilience. The study also highlights broader socio-economic considerations of resilience, highlighting agri-cultural, health and education links. The research is related to AFSRTS 2 and NDS 2 and contributes to the global agenda setting for food security and sustainable livelihoods as well as supporting the National development goals.

1.6. Scope of the Study.

The study has been conducted on the vulnerable households of Gwanda District whose characteristics are poor access to resources and low income. It's based upon a survey, discussions in interviews and focus groups and looks at activities to build resilience in the past 5 years. Economic security, food security, sustainability and access to basic needs are some key indicators. Policy and regulatory frameworks that impact resilience outcomes are also analysed.

1.7. limitations of the study.

The results of this study are subject to several limitations that can potentially impact interpretation and generalisation of the findings. The first one is that the research is mostly based on primary data gathered from household's survey and interviews. This information can also be skewed: the person may exaggerate his or her response to please the interviewer or may have a more positive or negative reaction than he or she actually had to the situation because

he or she had difficulty recalling the events. Secondly, the sample size is limited, and so the power of the analysis is limited and the results are not generalizable to a wider population. Finally, the socio-economic and environmental context of Gwanda District is unique and results are therefore context specific. Thus, the results do not necessarily apply to other districts and regions with varying ecological, cultural, and institutional contexts.

1.8. Delimitations of the study.

The study is limited in several aspects for the focus and manageability. It is specific to the Gwanda district, and does not include other districts in Zimbabwe which may be experiencing vulnerabilities in resilience. The research is also limited to the specific interventions in resilience building, namely for Improving food security, income generation and economic stability of vulnerable households. In this paper these interventions are targeted to explore the potential resilience strategies. Moreover, only projects that have been put into practice during the past 5 years will be included in the study time frame. This delimitation allows to focus on the most recent experiments and on the current situation, but will also exclude older programs which might have had long-term effects on households' resilience.

1.9. Definition of terms.

1.9.0 Resilience.

Resilience is the capacity of a person, community, or system to adjust, bounce back, and grow back stronger in response to adversity, challenge, and/or high stress (UNDP, 2023). An ability to overcome negative experiences or traumatic events, or setbacks, without giving up hope or optimism, and to move on with life.

1.9.1. Vulnerable Households.

Households are vulnerable households which have limited adaptation capacity and are highly exposed and susceptible to multiple stressors (FAO, 2024). These are households that are more likely to suffer unfavourable consequences or are more vulnerable to the detrimental effects of numerous circumstances are considered vulnerable. These households are more vulnerable than the other households in their community due to the lack of resources, financial difficulties or specific situations. Vulnerability may be expressed in different ways and can relate to social, health, environmental or economic issues. Below are some examples of houses that are in danger:

1.9.2. Building Initiatives.

Building initiatives are strategies, projects, plans or activities aimed at the strengthening or building of programs, with a specific objective, primarily to strengthen or develop the capacity, resilience and sustainability of agricultural food systems (D'Ostuni et al., 2022). These projects may involve community development, educational, health, infrastructure, environmental sustainability, and other initiatives.

1.9.3. Resilience Building Initiatives.

They are intentional and planned programmes, projects and strategies to build the capacity of an individual, community or a system to adapt, recover and respond to a challenge, shock or stressor (WFP, 2024). Resilience is being the strength of a person or community that enables them to endure and respond to crisis by providing them with tools, resources and supports. They bring about a setting in which individuals can heal from difficult situations and proceed with a positive attitude.

1.10. Summary.

The background of the study on the enhancement of resilience building activities within vulnerable household in Gwanda District Zimbabwe, statement of the problem, research questions, research objectives and assumptions of the study and definition of key terms have been outlined in this chapter. Also, the delimitations and limitations of the study have been also included in this chapter. This will then be followed by the review of related literature which would include the theoretical frameworks, conceptual framework and the gaps in the literature that this research is filling, in Chapter two of this research. Trailing Chapter 2 is the Methodology, chapter 3 which will take us through the geographic location of the district, its locational map, how this study was conducted the research methods used, how the sample size for both qualitative and quantitative methods used was determined

CHAPTER TWO: LITERATURE REVIEW

2.0. Introduction

This chapter reviews both theoretical and empirical literature on how the resilience-building efforts of vulnerable households in Gwanda District, Zimbabwe can be improved. It combines key theories, frameworks and empirical studies to provide a coherent foundation for study. The review is structured in the manner of logics and consists of three sections: theoretical perspectives, conceptual frameworks and empirical evidence.

2.1. Theoretical framework

2.1.0. Sustainable Livelihood Framework (SLF)

The Sustainable Livelihood Framework (SLF) was developed in the late 1990's as an important part of the UK Department for International Development (DFID) poverty elimination strategy (Solesbury, 2003). It is based on the concept of a livelihood developed by Chambers and Conway (1992) as the ability, resources and processes that people use to make a living. The concept of sustainable livelihoods had been made a policy priority in the White Paper on International Development (1997), in the UK government's policies "to promote sustainable livelihoods of the poor" and "to advance human development" and "to protect the environment". DFID took the framework as a holistic people-centred analytical instrument for understanding the livelihoods of the vulnerable populations in the context of adversity (Carney, 1998; Ellis, 2000).

The SLF makes the following assumptions: households hold a portfolio of five interrelated capital assets (human, social, natural, financial and physical), and operate in a dynamic vulnerability environment consisting of shocks, trends and seasonal pressures. Existing policies, institutional and processes affect the availability and/or modification of these assets which affect livelihood outcomes. This approach shifts the focus from access to resources to the manner in which households' access, combine and transform their asset portfolios to achieve positive outcomes (Scoones, 1998). SLF offers a structure to consider resilience building activities in the context of the Gwanda District. The typology is introduced for the first time in the five-capital typology for systematic categorisation interventions based on the assets targeted. Most drought-tolerant small grains projects (including ZEFP, ERVIS and MASAP) enhance natural capital, while also providing opportunities to build human capital

through agronomic training. The two-foci approach is essential in Gwanda because precipitation in this region is insufficient to support rain-fed agriculture and thus does not yield a harvest every five years (Ndlovu et al. 2020). Collective action and income diversification efforts, including Village Business Units, ward drought mitigation centres and joint irrigation schemes, are targeting financial and social capital, resulting in economic instability, which further increases the vulnerability of the household (IFAD, 2024). The SLF then enables the overall mapping of the landscape of interventions in the district in all five asset categories.

Second, the vulnerability context, including shocks (e.g., 2023/24 El Nino drought) and trends (e.g., rising input costs), as well as hunger periods (cyclicality), is explicitly included, which directly supports analysing the challenges/barriers to households' participation in resilience activities (ZimLAC, 2024; OCHA, 2024). In addition, the attention given to policies, institutions and processes helps to bring attention to the issues of institutional gaps in the SLF, such as poor technical extension services, and unreliable input supply chains which could restrict participation and project effectiveness (Mapiye et al., 2025).

Thirdly, SLF understands positive livelihoods outcomes to be 'higher income, lower vulnerability and higher well-being'. The outcome approach gives a clear indicator whether the initiatives for resilience in Gwanda push for an increased capacity of the household to tangibly implement project assets that increase income and economic empowerment and thus reduce dependence on humanitarian food assistance (Makanza, 2022). The SLF can be seen as a structure of categories of capital endowments that can be used to break down household resources and discern which ones are the most likely to influence household resilience. This helps to identify the most critical areas of capital deficit, and most effective pathways to building assets for strengthening the ability of the vulnerable households in Gwanda to buffer and adapt to shocks.

2.1.1 Socio-Ecological Resilience Theory.

The Socio-Ecological Resilience (SER) theory is a systems approach with a dynamic perspective needed to understand resilience in Gwanda District, which is a complex environment. This theory was developed by Holling (1973) and further developed by Folke (2002) and further defines resilience in terms of a dynamic capacity of entangled social and ecological systems to absorb shocks and stressors, adapt, and in response to major shocks or stressors, transform their processes and structures while at the same time maintaining their

basic functions and identity (Folke et al., 2010). The theory's analytical contribution is the ability to differentiate Absorptive, Adaptive, and Transformative capacity.

The paradigm is very relevant to Gwanda District because livelihoods of the households are closely tied to a vulnerable geographic condition of erratic rainfall, land degradation and contamination of water resources by illegal mining activities (IMAs) (Moyo, 2024). Adaptive capacity – the capacity of the system to react to stresses and control potential damages (Bousquet et al., 2021) and Cross-scale interactions – interconnectedness of changes across temporal and spatial scales, ranging from choices made by a single household for their cropping to the national climate adaptation policy (FAO, 2012).

SER theory sees resilience as an emergent property of the whole socio-ecological system, at the household level. In addition to household characteristics, there are biophysical variables that also influence resilience, including the predictability of rainfall, soil health, water quality, and social-institutional structures such as community-based seed banks, gender relations, acceptance and action based on early warning systems, and land tenure security (Folke et al., 2002). The framing is of a systemic nature which is important to understand the effect of ecological and institutional environments on the resilience of the households of similar asset portfolios in Gwanda.

The theory also poses an important analytical question regarding the contribution of resilience-building projects – do they ease the impact of shocks in the short term, or do they boost adaptive capacity in the longer term, by helping households to restructure their livelihoods and prepare for shocks in the future? It becomes particularly relevant in the context of interventions that are expected to engender behavioural and systemic change, rather than just address current issues, such as the implementation of diversified irrigation or training for climate-smart agriculture (Dube & Manik, 2025). Moreover, SER theory can provide insight into the complex relationships between scale which are part of the problems of the vulnerable households in Gwanda. The fluctuations of the national economy can threaten the involvement of the project, because the national economy can cause a decrease in household purchasing power for agricultural inputs. Micro-climatic drought effects can be exacerbated at the community level due to deforestation. These combined stressors form a complex of stress which can lead to a chain of negative coping mechanisms such as child marriage, irregular migration or school dropouts (Nyahunda & Tirivangasi, 2019). To design interventions to address root causes instead of symptoms of vulnerability, it is important to understand these cross-scale dynamics.

2.2. Synthesis: An integrated Theoretical Framework.

Socio-Ecological Resilience theory was applied together with the Sustainable Livelihood Framework which gives a multi-level analytical lens that is suitable in the context of the Gwanda District's complex realities. The SLF is an asset-based people-centred toolkit that can be adapted to describe resilience projects by the capital assets they will focus on; can be adapted to characterise participation challenges as a barrier to access to capital assets; and can be adapted to describe the economic empowerment outcome of resilience projects by mapping how supporting people's access to capital assets will lead to sustainable livelihoods. SER theory, however, gives a dynamic systems perspective on the resilience of a household as emerging from a complex mix of socio-ecological variables instead of as a pre-existing part of the household (Folke et al., 2002). It is crucial to consider it when trying to understand the many dimensions of resilience, and when evaluating the potential of projects for supporting project coping, or for really contributing to long-term adaptive capacity (Walker et al., 2004; Folke et al., 2009).

The micro-level lens, understanding household livelihood strategies and livelihood configurations of assets is provided by the SLF, and the macro-level lens, understanding of broader environmental and institutional systems through which the livelihood strategies play out, by SER theory. (Ostrom, 2009) It is this dual perspective that makes the study a comprehensive effort to explain the functioning of the resilience initiatives at household level and the success or failure of these initiatives in Gwanda's particular and challenging socio-ecological context, leading to robust and context-specific recommendations for strengthening resilience of vulnerable households in the study.

2.3 Conceptual Framework.

The conceptual framework is a systematic arrangement of theories, concepts and ideas that provide the focus for a research inquiry. It can be used as a blueprint to depict the relationship among the different variables or constructs that are studied in a study (Adom et al., 2018). Miles and Huberman (1994) describe it as a tool that can be utilized to "synthesise results" and "to develop a coherent explanation of the phenomena under study", whereas other authors describe scaffolding as support in the entire research design (ATLAS, 2026). This study uses a conceptual framework that encompasses the Sustainable Livelihood Framework and the Socio-Ecological Resilience Theory to organise variables that are used to explore the initiatives being taken to increase the resilience of vulnerable households in Gwanda District.

The framework includes three types of variables: independent – factors that can be used to improve the resilience, such as nature and type of interventions and contextual conditions that can influence the way in which the interventions are applied and executed; mediating – factors that can influence the applied interventions, and the way they will influence the results of the intervention, such as challenges, conditions of institutions, etc.; dependent – factors that can be expected to become affected by a successful example of resilience building, such as results of the intervention, expected benefits, outcomes, etc. These are linked with each other with the help of two theoretical lenses that underlie the study.

2.3.1. Independent Variables.

These independent variables are the interventions implemented for resilience building in Gwanda District and the attributes of the interventions. These are organised according to the assets that they aim to tackle under the SLF's 5-capital typology. Physical capital interventions include irrigation scheme rehabilitation, water infrastructure development and watershed management, and natural capital interventions include drought-tolerant small grain promotion (sorghum, millet) and agroecological tailoring for Regions IV and V, as well as agronomic training, climate-smart agriculture extension and capacity building programmes. Examples of social capital interventions are collective action platforms like joint irrigation schemes, ward drought mitigation centres and community seed banks. Financial capital interventions are those such as Village Savings and Loan Associations, Village Business Units and input subsidy programmes. In addition, the participation of a household in these interventions as a beneficiary or non-beneficiary is a significant independent variable to aid comparative impact assessment.

This classification can then be extended with the Socio-Ecological Resilience theory that situates these project level variables in the wider socio-ecological context, which recognises multiple scales of intervention, from the household scale to the landscape scale.

2.3.2. Mediating Variables.

Mediating variables are variables that get in the way of the relationship between the resilience building activities and the results of the households. The first set of problems that affect vulnerable households in their participation in projects are: limited access to financial resources, poor infrastructure, low literacy rates, and limited access to information and markets. Second, institutional factors including the effectiveness of extension services, and the stability of the input supply chain and agency coordination can impact project effectiveness. Third, there is a socio-ecological context in which interventions are implemented, such as rainfall, soil

health, water quality due to illegal mining and security of land tenure. Fourth, household-level resilience determinants like socioeconomic status, access to climate information, natural resource management regimes, and social network strength influence households' capacities to buffer, react to, and adjust to shocks. The SLF's attention to the vulnerability context and a focus on transforming structures and processes, as well as SER theory's focus on cross-scale interactions and adaptive capacity, inform these mediating variables.

2.3.3. Dependent Variables.

Dependent variables are indicators of outcomes of resilience-building activities. These are: better capacity of the household to resist and adapt to climate and economic shocks and stress (e.g., better coping capacity, better household food security); better household income generation and economic empowerment (e.g., diversified income sources, improved market access, less dependence on food aid); and reduced susceptibility to climate and economic shocks and stress (e.g., better household food security, diversified livelihoods, fewer negative coping strategies such as dropping out of school, selling assets). The outcome variables reflect the conceptualisation of the sustainable livelihood framework (SLF) and the emphasis on sustainability outcomes (income, vulnerability and wellbeing) as well as the difference between absorptive coping and adaptive transformation of SER theory.

2.3.4. A causal pathway diagram.

The conceptual framework is depicted below as in Figure 2.1. The flow depicted in the diagram is from independent variables (resilience building initiatives based on SLF capital assets and participation status) to the mediating variables (challenges, institutional factors, socio-ecological conditions, and household resilience factors) to the dependent variables (enhanced resilience capacity, revenue generation and economic empowerment, and reduced vulnerability). The double headed arrows for independent and mediating variables signify that design influences the challenges and context of the study, and design implementation influences the challenges and context of the study. The micro-level logic of the construction and development of household assets is provided by the SLF, while the macro-level logic of the systemic socio-ecological dynamics is provided by SER theory. Both of these factors contribute to the fact that the framework incorporates mechanisms at the household level, and contextual factors that influence the outcomes of resilience in Gwanda District.

2.3.4.1 The conceptual framework diagram

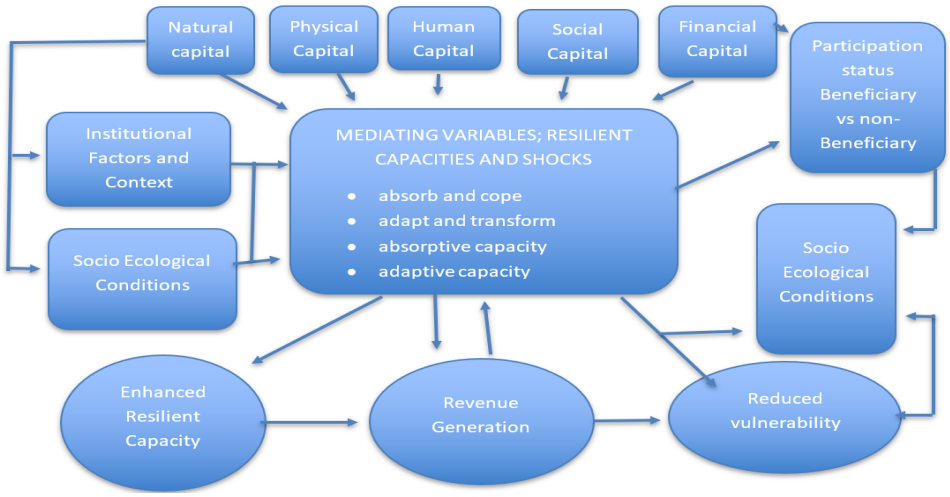

Figure 2. 1 conceptual framework for enhancing resilience building initiatives among vulnerable households in Gwanda District

This framework guides the research design by clarifying the causal pathways under investigation, aligning data collection with the study's four objectives, and providing a coherent structure for analysing how resilience-building initiatives influence outcomes among Gwanda's vulnerable households and transforming them into Resilience households.

Table 2. 1 Dependant and independent variables in enhancing resilience among vulnerable households

The table below summarizes the relationship between the independent variables representing resilience-building initiatives and the dependent variables reflecting the household outcomes this study seeks to explain, as operationalized within the integrated theoretical framework.

Independent Variables (Resilience-Building Initiatives)	**Dependent Variables (Household Outcomes)**
• **Project Characteristics**	• Enhanced resilience household capacity

• **Challenges Faced by Households**	• Increased revenue Generation and economic empowerment
• **Resilience Factors (SFL) five capitals**	• Improved livelihood and food security diversification
• **Participation Status (Beneficiary vs non-Beneficiary)**	• Reduced vulnerability to environmental shocks

2.4 Empirical Review

2.4.1 Characteristics of Resilience-Building Initiatives among Vulnerable Households.

Characteristics of a resilience building program are heavily dependent on the type of environmental, economic and social issues that it aims to address. These programmes have the same aim of improving the adaptive capacity of households but as for the main focus, implementation modalities, and livelihood resources they address, they vary. This section explores evidence from the wider to the local world, culminating in features that are relevant to Gwanda District.

2.4.2 Global Context of Characteristics of Resilience-Building Initiatives among Vulnerable Households.

In the Global South, resilience building programmes are characterized by an interlinked climate adaptation and resilience element which is embedded in a wider development programme (UNDP, 2024). The most prominent characteristic for drought prone regions of South Asia is community based natural resource management (NRM) (Chandrasekara et al., 2021). In both countries participatory watershed management is documented and rainwater harvesting structures built, as well as stress-tolerant crop varieties being promoted via community seed banks and improving ecological health and food security (Haque et al., 2020; Maharjan & Maharjan, 2018). Cultural integration of indigenous knowledge and agroecology (Lindemann & Graziano, 2022) stands out as a unique feature of resilience practices in Latin America, particularly that of the Andes. On agroforestry systems, growing crops with resilience, namely native species like quinoa and amaranth, and reinforcing land governance, Peru and Bolivia research programmes highlight that resilience is being linked to cultural identity and biocultural

heritage (Lindemann & Graziano, 2022; Haque et al., 2020). While of value as part of their contexts, they arise from ecological and socio-cultural contexts different from those of Southern Africa.

2.4.3. Sub-Saharan African Context on Characteristics of Resilience-Building Initiatives among Vulnerable Households.

It is generally done in Sub-Saharan Africa in a sequential manner, a social protection measures first followed by an asset building measure, and a link between climatic and economic shocks (World Bank, 2022). In the Sahel context, large-scale cash-for-asset or food-for-asset programmes are likely to involve the deployment of goods and services by the community to establish physical environmental restoration infrastructure, such as Zai pits and stone bunds in exchange for cash or food (Berrang-Ford et al., 2021; United Nations, 2021). One distinctive aspect of the Horn of Africa is the inclusion of safety nets, like the Ethiopia Productive Safety Net Programme (PSNP) (World Bank, 2024). This can facilitate predictable transfers to gain some buffer for consumption needs and can also help mobilise labour for public works that can contribute to long-term development, while at the same time catering to humanitarian needs, such as irrigation schemes, terraces and road construction (IFPRI, 2021). Examples of a top-down approach to managing resilience, based on watersheds, and incorporating mandatory terracing of hillside and integrated livestock transfers in Rwanda's 'Girinka' programme, are also present.

2.4.4. SADC Regional Context on characteristics of Resilience-Building Initiatives among Vulnerable Households.

In the SADC region the features of the resilience building programmes are indicative of adaptation to recurrent cyclical droughts and tropical cyclones (SADC, 2020). One of the key features of this is the linkage of conservation agriculture with input subsidy programmes and Village Savings and Loan Associations, with the aim of tackling issues of soil fertility, input availability and financial liquidity simultaneously, in Malawi (Dougill et al., 2017). The Zambian efforts, which seek to increase smallholder farmers' response to climate information, tend to involve collaboration with the private sector to provide climate information services and drought-tolerant varieties (CIMMYT, 2024). One of the strengths of the resilience building approach in Mozambique is the focus on DRR, evident in the fact that, for example, early warning systems, flood-proof agriculture, and coastal ecosystems restoration are introduced into livelihood programming (GFDRR, 2019).

2.4.5. Zimbabwean context on the Characteristics of resilience building initiatives for vulnerable households.

The key features of resilience building programmes in Zimbabwe are rooted in the national policy, the Agri-Food Systems and Rural Transformation Strategy, guided by climatic stresses that have been ongoing. A key feature is the promotion of conservation agriculture, which in the main is the Pfumvudza/ Intwasa programme, for Regions IV and V, where Gwanda District is located, and agroecological tailoring of small grains as a cornerstone strategy for small grains in semi-arid areas (Mavesere & Dzawanda, 2022). This is complemented by input support schemes and rehabilitation and revitalisation of the irrigation schemes. Another is the aspirations to diversify livelihoods, such as nutrition gardens, small livestock farming (goats and poultry), on-farm enterprises and community seed banks (IFAD, 2024).

Moreover, Consortium based approaches as deployed under the Zimbabwe Resilience Building Fund (ZRBF) refer to the planning programmes that aim to couple community planning, DRM and various livelihood activities in one coordinated programme at the ward level (ZRBF, 2023). Besides these initiatives, WASH programming leads to better water and sanitation services. The national level characterisations, however, fail to capture the nuances and context-specific factors of a semi-arid district such as Gwanda, where agro-pastoral livelihoods, alongside chronic water stress and climate variability, and institutional and market-specific issues, impact outcomes of resilience in ways that are not captured by nationally aggregated analyses. This is the complexity that is localised that is the focus of the present study.

2.5.1. Challenges faced by vulnerable households participating in resilience building initiatives.

There are several multi-dimensional and compounding problems that face poverty-stressed households which limit their meaningful participation in the resilience-building programs. These are financial, institutional, informational, infrastructural and socio-cultural challenges. Awareness of these barriers is critical to assess why households are not participating in a project to promote household resilience. This section provides an overview of the evidence from the global to local context.

2.5.2. Global Context on challenges faced by vulnerable Households participating in Resilience Building initiatives.

Based on the global experience, certain key challenges are identified, such as access to finance, agricultural input, weak local institutional structures, market linkages, social exclusion and short project life cycle. Community resilience programmes in Latin America and the Caribbean (LAC) can often enhance infrastructure and early warning systems, but do not always benefit the poorest households due to a lack of local funds, weak input supply chains and low levels of community involvement (FAO, 2023; Cavatassi & Gemessa, 2021).

The problems are compounded by poverty and vulnerability to compound shocks in South Asia. Households continue to participate in projects, but also lack time and/or resources to dedicate to new projects because of the impacts of conflicts, flooding and earthquakes they are experiencing (Behrer et al., 2024). High interest rates and demanding collateral requirements prevent poor households from accessing micro-credit (Khan et al., 2022), and limited financial inclusion is a crucial challenge.

2.5.3. Sub-Saharan African Context on Challenges Faced by Vulnerable Households Participating in Resilience Building initiatives.

Poverty rates, poor infrastructure and climate change in Sub Saharan Africa adds to the challenges (Henri Aurélien, 2025). Fragmented financing and continuous flooding in the Niger Delta coupled with desertification in the north, have been systematically challenging adaptation projects in Nigeria (Bang & Fanama, 2024).

Poor value chain integration and limited institutional support for value chain integration of smallholders to profitable value chain are major features of the Rwanda situation (Niyonzima & Ndamsa, 2023). Despite the fact that it is not easy to transport the crop, and that the price gap between producers and consumers is being exploited by the middlemen, in the context of resilience programmes, the promotion of drought-tolerant crops has been recommended in Ghana. Despite the challenges of infrastructure and the ability of middlemen to exploit the price gap between producers and consumers, in the context of resilience programmes, drought-tolerant crops have been promoted in Ghana.

2.5.4. SADC regional context regarding the issues faced by vulnerable households engaged in resilience building initiatives.

The challenges are perceived differently in various countries in the SADC region depending on the livelihood systems and climatic exposures of the countries. Relying on subsidised inputs has resulted in unsustainable production systems and poor extension services have been a hindrance to adopting climate-smart agriculture in Malawi (FAO, 2020; World Bank, 2018). Sustainability problems are experienced by the donor-funded irrigation schemes in Zambia due to poor maintenance, e.g., the low level of community ownership (Choruma et al., 2025).

Infrastructure such as irrigation schemes and seed banks are also being at risk by recurrent cyclones, and will be rebuilt following each cyclone event, which is affecting physical resilience (ACAPS, 2025). For example, livestock-based livelihoods are typically neglected when discussing resilience projects in Namibia, as the focus is on crops and excluding pastoralist communities as a result (Shikangalah, 2020). Overall, these results demonstrate the need to tailor resiliency programmes to local livelihoods and climate.

2.5.5. Zimbabwe National Context on Challenges Faced by Vulnerable Households Participating in Resilience Building initiatives.

It has been noted that there are issues of participation at district level in Zimbabwe. Some district specific participation issues have been observed in empirical studies in Zimbabwe. The frequent droughts and water shortages in the districts of Masvingo and Matabeleland South province mean that irrigation-based projects do not provide services for much of the year. Irrigation schemes in Masvingo and Matabeleland South provinces are not effective for considerable periods due to persistent drought and water scarcity (Nhliziyo et al., 2025; Mwadzingeni et al., 2022). Households in Mutoko (the horticulture dominated area) face highly volatile markets for inputs and outputs and low producer prices for horticulture products, as well as high costs of fertiliser, which reduces the benefits of the project (Mhona et al., 2025). Human-wildlife conflict (HWC) and lack of market access have made it difficult to achieve the resilience goals in Mbire District (Sibanda et al., 2024; Food and Nutrition Council, 2022). In some cases, NGOs and government also fail to coordinate the work being carried out at the institutional level leading to the duplication of work and the failure to implement the project in others Cabonga (2016) and Tirivangasi et al (2023).

2.5.6. Gwanda context on the challenges faced by vulnerable households engaged in resilience building initiatives.

The situation of vulnerable households in Gwanda District is characterised by issues common to the country, but also having local specificities. A restriction is the financial, physical and infrastructural resources. Households lack access to adequate roads, water and storage facilities which limits their ability to access inputs to implement recommended resilience actions (UNDP & GoZ, 2017; World Bank, 2019).

Lack of knowledge and awareness is another limiting factor in participation. Many of the homes that are vulnerable are not aware of the existence, benefits and the specific needs of the resilience building programs (Ndlovu et al., 2020). This is compounded by low literacy levels which affect how project guidelines, technical instructions and the long-term benefits of recommended practices are understood (Mbereko et al., 2018). When information to the very vulnerable is not reaching them or is presented in an inaccessible format, they are unable to make informed decisions about project opportunities, and unable to participate in programme activities (Clark et al., 2025).

Thirdly, households' capacity and skills are restricted to implement and sustain resilience building activities. Agronomic knowledge, entrepreneurial skills and natural resource management skills are essential for the success of the project, but they are often lacking in the household, especially in rural households (Chitongo, 2019). This calls for specific capacity building activities, including training sessions, farmer field schools and enterprise and water management mentorship, to ensure the resilience benefits of project activities continue beyond project cycles (Fraser et al., 2019).

The overall results, however, do not take into consideration specific areas of capacity gaps that are common in the Gwanda District where agro-pastoral livelihoods dominate and skills on small grain agronomy, value addition, for drought-tolerant commodities are not addressed in the standardised national training curriculum. This study therefore examines the specific weaknesses in the capacities of the people that hinder the effectiveness of the resilience projects in the specific socio-ecological context in Gwanda.

2.5.7. Research Gap on the difficulties faced by vulnerable households participating in resilience building initiatives.

There is a considerable amount of information available on participation problems with a great deal still missing in the case of Gwanda District. Most of the research in Zimbabwe is done on crop-based systems, either maize or horticulture or cash crops, but Gwanda's livelihood is mostly agro-pastoral, livestock being a significant household resource. Various factors like livestock health management, lack of feed during drought and cattle markets are not sufficiently discussed and encountered in the nature of the context. Additionally, the effects of contaminated water due to illegal mining on household water security and livestock health has not been empirically researched well (Moyo, 2024).

While market access constraints have been identified, the impact of the value chain disconnections on the small grains and livestock value chains for Gwanda with an arid environment on the value chains performance and the dynamics of cross-border trade with South Africa are not sufficiently researched. This study seeks to fill these gaps by incorporating a fine-grained district level analysis of the issues faced by vulnerable households that are undertaking resilience building projects in the study's site of Gwanda, in order to make the recommendations made in the study a relevant issue in the socio-ecological and economic context of Gwanda.

2.6.1. Global Context on the impact of Resilience Building initiatives on Revenue Generation and Economic Empowerment.

A study was carried out by Dupuis et al., (2022) on the community-based adaptation projects on integrated homestead farming systems with fish, poultry and vegetables in Bangladesh. The strategy did achieve some measure of income stability, but the real impact was in giving women some control over marketing and the profits when they were in a position of women's collectives. This process was experienced in the areas where it took place, where a subsistence activity became an independent livelihood and a genuine decision-making power. Those who did not, continued to have to contribute the labour, those who did not, had to contribute the proceeds. The lesson is not "farming" per se, but "purser".

A cornerstone of Canada's agricultural system is its institutional safety net, which is provided by the government via crop insurance and income stabilisation programmes, that shields against catastrophic loss and allows for risk taking (Ricart et al, 2022; Ker & Biden, 2021). There are few similarities between these environments and Gwanda District where there is

under-resourced and poorly coordinated institutional support which makes it difficult to be resilient in the absence of the same. For Gwanda, this points to the need for an assessment of the capacity of local institutions (extension, access to inputs, community governance) to provide household resilience if external project funding and technical assistance is removed.

2.6.2. Sub-Saharan African Context on the Impact of Resilience-Building initiatives on Revenue Generation and Economic Empowerment.

The Sub-Saharan evidence corroborates the important finding that agricultural productivity increases are not necessarily accompanied by automatic economic empowerment. The determining intervening variable is market access. A study in the country of Malawi on the impact of the integration of legumes in the SBP (Sustainable Agricultural Production Programme) showed farmers in the programme achieved 30% higher yield of soybeans and 30% higher yield of groundnuts. The 35% that did have formal buyer contracts were the ones to experience a significant rise in income. The others, with less impact, benefited mainly from the local markets that were still up and down, and in many cases even lowered the local prices (Romina & Cavatassi, 2022).

From this, there is a specific implication with a focus on Gwanda. The cases for Malawi and Zambia are based on conditions of functional input markets, access to credit and proximity to buyers which is much weaker in the south of Zimbabwe. In Malawi, households may experience a substitution effect between consuming the homegrown food and purchasing the food, which is not the case for many of the households in Gwanda which are subsistence producers or beneficiaries of food aid. The risk is very high that the project infrastructure will remain empty if there is no form of subsidy or effective microfinance.

2.6.3. SADC Regional Report on the implications of Resilience Building initiatives on Revenue Generation and Economic Empowerment.

This theme of the SADC region was that if value chains are not working, productivity gains will not be economic. The risk is compounded by the recurrent impacts of cyclones on Mozambique's physical assets, which include project operations and impact returns based on the asset base and before they can be realised (ACAPS, 2025). But most of the projects are geared towards crop production thereby neglecting the economic component of resilience, which is the most important for pastoralist livelihoods in Namibia. The economic aspect of resilience is also not considered by many of the projects as the majority of pastoralist livelihoods are based on livestock production (Shikangalah, 2020).

This is a clear warning, from the regional evidence that emerges, “do not judge project impact only based on agricultural production”. The issue is not just how much higher yields go up, but if they can be raised in a way that will translate to an income for the households that is reliable and sustainable.

2.6.4. Zimbabwean context on impact of resilience building initiatives on revenue generation and economic empowerment.

Results from the Zimbabwe study are highly dependent on the agro-ecological conditions and design of the projects. In an important resilience project, involving both UNDP and GoZ, Mujeyi et al., (2021) noted that the project had an impact on asset accumulation, which had been considerable especially in the livestock sector among the project beneficiaries. Growth of assets is one of the measures of resilience. But the transformation of these resources and any agricultural overhang into regular cash earnings was low.

The study indicated this could be because there was a high emphasis on the production of the project itself and not on value chain development for drought-tolerant crops. The balance of the harvests was in excess in the households, and the marketable outlets were not very many. Matabeleland South Province is even worse. In Matabeleland South, while irrigated gardens provided small incomes, households did not have strategies to boost their profit, further deepening their poverty status owing to irregular electricity pricing, post-harvest losses and exploitation by market intermediaries (Kaitano et al., 2021).

Based on the synthesis evidence of the two districts of Mudzi and Guruve, the successful approaches are identified. Outcomes with economic changes that could be measured were seen in programs explicitly using an entrepreneurial perspective to combine conservation agriculture with market linkage activities, for example, by Aggarwal & Johal (2021), Chigavazira & Zandamela (2021), and Moyo & Zimusi (2024). Distinction was not about the ag tech, but built environment of financial services and market linkages.

2.6.5. Gwanda District Context on the Impacts of Resilience Building initiatives on Revenue Generation and Economic Empowerment.

UN Development Programme (UNDP) and the Government of Zimbabwe have recorded interventions in the district under the theme of resilience which include livelihoods diversification, social protection and DRR. FAO records (FAO, 2025; UNDP & GoZ, 2023) indicated that 631 women headed households and 1091 livestock farmers attended different trainings on fodder production, drought mitigation, livestock nutrition and hay and silage

making. The tone of the reports is positive, and the households involved in the reports exhibit an increased economic and social resilience.

The ZIM-SHEP project offers more detail. It was assessed at the end of 2024 in 24 districts (parts of regions IV and V) and found that, for the majority of the farmers, the income from horticulture rose. The group cohesion enhanced and the money raised through vegetable sales was used to support the irrigation infrastructure, which is important in arid countries (JICA, 2024).

2.6.6. Research Gap on the impact of Resilience building Projects on the generation of revenues and economic empowerment.

Overall, literature indicates that the extent of economic benefit and impact of resilience projects is not being realised and is significant in Gwanda district. National and regional studies indicate that in general, there are constraints like weak markets, high input prices, and access to credit. But no study has been done at the granular and district level to understand how the constraints are operational in Gwanda specifically. Previous studies have used Gwanda in conjunction with other provinces or countries (Masunda & Chawhanda, 2025), or relied on documents of the programme that were not produced for comparative impact assessment. There are three absences that stand out.

There is no study that maps all the resilience projects being implemented in Gwanda and to understand the economic expectations of each project. ZEFP manages the various projects in the district dealing with small grains and livestock, as well as the Practical Action's solar irrigation project, but there is no good information yet regarding the complementarity, or conflict, between any of the projects. Within Gwanda, where drought events are not an exceptional occurrence, the connection between lowered vulnerability and continued economic activity is at the heart of the serious consideration of the impact of resilience projects. They are all present in the district and some are in the same wards as small grain promotion. These are all part of the district, and some in the same wards as small grain promotion. There is no published literature, however, documenting which approaches are best, when, or if some of the mixtures are better than others.

2.7. Factors that affect resilience for vulnerable households' resilience.

2.7.1. Global Context: Factors affecting Resilience of Vulnerable Households.

A systematic review of literature from 2002 to 2025 was carried out by Ullah et al., (2025) to gather evidence from Asia, Africa and Latin America, finding remittance flows as one of the factors influencing adaptive capacity of households. Households that received regular remittance payments were much more resilient, having an ability to cushion the impact of consumption expenditures during crisis, to have their productive assets restored and to buy drought-resistant agriculture technology. The same review, however, noted continued worries over dependency threats, gender and income inequalities, and volatility of remittance flows that could undermine the transition towards transformation from coping to transformation.

The importance of social capital was brought to the fore in Haiti after the 2021 earthquake, which occurred amidst an ongoing political crisis. Informal rotating saving association was the most prevalent resilience determinant in informal households in the city. Kinship networks were found to buffer effectively without the need for negative coping strategies, although there were definite limits of saturation where the collapse of the system was observed. In Kingston, the researchers discovered that pre-hurricane housing quality and secure tenure were the most significant factors affecting adaptive capacity for low-income households in the area, before the hurricanes. There is no specification by household characteristic concerning being structurally exposed to lack of resilience in house-holds in informal settlements (Jaupart et al., 2023).

2.7.2. Sub Saharan Context on Factors affecting Vulnerable Households' Resilience.

The study of household resilience in Sub-Saharan Africa has become much more rigorous since 2021, using principal component analysis, resilience capacity indexes, and propensity score matching methods to determine causal factors. The Sahel is the most dynamic. Two-thirds of households in Burkina Faso, Chad, Mali, Niger, and Senegal experience at least one significant shock annually, and 43% experience two or more types of shocks. Climate shocks, in particular drought, as well as idiosyncratic shocks, such as illness (16%) and death of family members (12%) are significant resilience constraints, while analysis of harmonised household surveys in the region in 2021-2022 found that they were impacting 28% of the population (World Bank, 2019). The poor households were much more vulnerable to shocks than important households, requiring a greater percentage of negative coping mechanisms to cope with shocks, and

consequently, poor households had lower long-term wellbeing than the important ones (Muriuki et al., 2024).

Muriuki et al. (2024) carried out an econometric analysis of household resilience in Uganda and Malawi that yielded an economically important paper. They used principal component analysis (PCA) on information from the Household Living Standards Measurement Survey (HLSMS) to create composite Resilience Capacity Indices, divided into five components: education, asset ownership, dwelling characteristics, water access, and sanitation facilities. The results indicated quite marked regional variations throughout the country. Education of the household head had the highest contribution to food security resilience in Malawi. Water was identified as the biggest issue in Uganda. Specific shocks were also analysed to see how different facets of resilience reduced the impact of those shocks.

The role of water access resilience on food security from exposure to conflict was moderate, the sanitations reduced the impacts from flooding and the improved dwelling materials (roofing and wall) reduced the impacts from drought (to a lesser extent). Ownership of livestock assets (especially livestock) protected against drought impacts, and sanitation resilience reduced conflict exposure's negative food security impacts in Uganda. The main message is that resilience is not a single entity, but a set of parts and each part has its relative importance at the country or sub-national level.

Detailed information was provided by Sekibaala et al., (2025) in their research on community bull breeding programmes. Education, literacy, local government support and previous community consultation prior to bull's introduction had a positive relationship with breeding bull survival. The number of female cows owned, having improved cattle breeds and using the 'tether' grazing method were, however, all positively associated with the ability of the bull to produce offspring. Timely reminder of the fact that the determinants of resilience can be very specific to the livelihood activity concerned, as in this study.

2.7.3. SADC Regional Context Factors that affect Resilience of Vulnerable Households.

Across SADC, there are some trends and country-specific differences with regard to resilience determining factors. Water security is the most critical resilience resource identified by a study carried out in South Africa. The 2016 – 2017 drought has had a long-term effect on livelihood disruption in the Eastern Cape provinces, with the impact still being captured in the current vulnerability profiles of households (Apraku et al., 2023).

Smallholder maize farmers' capacity to cope with drought in the Msekera Catchment Area was affected by income, education, land security, credit access and access to institutional support (co-operatives and extension). Modern technology was used by better-off and more educated farmers that have access to better technologies and financial resources, while low-cost technology was used by less well-off, less educated farmers, accessing early planting and mulching technology. Other constraints affecting women were the lack of land rights and exclusion from credit and training programmes. Weak institutions, institutional dis-coordination and low level of extension services continued to hamper farmers' ability to adopt sustainable farming practices (Zulu & Taranhike, 2026).

The above findings also show the importance of education for building resilience in Malawi, as each additional year of education of the head of the household is associated with a positive increase in food diversity scores in periods of shock. The result confirms the SADC trend of human capital building being a resiliency determinant that takes longer to build than asset transfers, but is more lasting. Households with a sense of security in their land tenure and access to multi-peril crop insurance were more likely to invest in a permanent cropping system compared to others in a study of recovery from Cyclone Idai in Sofala Province, Mozambique. In tenure insecure households, it was found that households did not invest in perennial crops, even in favourable agro-ecological conditions (Muriuki et al., 2024).

2.7.4. Zimbabwean context on the factors affecting resilience for vulnerable household.

For Gwanda District which falls under agro-ecological regions IV and V in Zimbabwe, evidence shows that resilience constraints, which are likely to be structurally determined, exist and persist. In 2023-2024, had a significant impact on livelihoods due to drought related to El Niño. As at August 2024, 4% of rural boreholes had completely dried up, with concentrations in Matabeleland South and Masvingo provinces and there were more than 6,000 boreholes that were not functioning (UNICEF, 2024). Access to improved water is generally low and in rural Zimbabwe, only 81% of households have access, with many having to walk for long distances under unsafe conditions and putting them at risk of child exploitation, school dropouts, or early marriage (UNICEF 2024). Water is the root of resilience and serves as a foundation for all other livelihood assets – nutrition, health, and education – that otherwise would be weak or lacking. (UNICEF, 2024; Wang et al., 2022).

There is some added dimension from neighbouring districts. Research conducted in Chivi District demonstrates that small grain promotion (specifically sorghum and millet) can be

successfully used as a climate adaptation strategy because maize is only produced every 5 years. Studies in Chivi District show that small grain promotion, specifically for sorghum and millet can be a climate adaptive measure when maize is grown four times out of five (Phiri et al., 2019; Sakadzo & Kugedera, 2020). The successful implementation of the input supply chain is, however, jeopardizing these efforts and farmers are unable to plant improved varieties of small grain crops despite the government's intent to serve their needs for agro-ecological specialization. The findings from the Zaka District evidence that the main coping mechanism for the South African migrants' household is receiving remittances, while the second vulnerability is the South African labour market. (Sakadzo & Kugedera, 2020)

Situation of food security in the worst affected agro-ecological zones of Mwenezi and Chiredzi districts is described as chronic food insecurity and inculcation of food aid as a social norm where households have learnt dependency trajectories which make their transition to productive livelihoods difficult (Muzerengi et al., 2023). The neighbouring cases are used to provide insights on constraints of resilience that have also been relevant to the Gwanda District and have not been sufficiently studied in this context. Gwanda has the same agro-ecological challenges as Chivi and Mwenezi in addition to water pollution from illegal artisanal mining, a livelihood system dominated by livestock, and other livestock feed and market problems during drought and cross border economic challenges that differ from those faced by Zaka. The importance and uniqueness of the district-specific particularities requires a specific investigation which cannot be extrapolated from neighbouring contexts and which this study directly addresses.

2.7.5. Gwanda District Context Factors that are Affecting Resilience among Vulnerable Households.

Household resilience factors are complex and interrelated in Gwanda District. One of the important factors is access to information and knowledge. Households that can access reliable climate and weather information can forecast extreme events (droughts, storms, floods) and plan when to plant and manage water, as well as protecting their livestock (Zvobgo et al., 2023). Information on the market is also a very important enabler as farmers will be more able to choose their crops, as well as to prepare their production and marketing plans, which will improve their incomes and enable them to adjust their production to economic fluctuations if necessary (IFAD, 2019). The use of mobile allows households to have access to climate information, market prices, and emergency assistance, thus improving their adaptive capacity (Triki et al., 2019). Socioeconomic status is a cross cutting determinant because those with

higher income would have more resources to invest in more resilient infrastructure, and a larger number of livelihood activities for them to diversify into as they would have less to lose if one of them fails (Chitongo, 2019).

One of the three important aspects is natural resources management. Incorporation of terracing, contour ploughing, agroforestry and other sustainable land management practices prevents soil erosion and promotes soil fertility and water holding capacity, providing productive agriculture even during drought and heavy rainfall seasons (Ndlovu et al., 2020). Water harvesting techniques include building ponds and tanks to catch and store rainwater during dry periods for household and farming purposes (FAO, 2025). Empowering local communities through CBNRM has proven to be beneficial and has boosted the resilience and sustainable development of natural resources (Junaid Iqbal & Saeed Nasir, 2026; Nyathi et al., 2025).

2.7.6. The research gap on factors affecting Resilience of vulnerable Households.

The empirical literature does not have answers to the following important questions in Gwanda District. First, although there is a large body of evidence of biophysical and economic constraints of agro-ecological regions IV and V, there has been no systematic study that determines which resilience factors are the most critical in Gwanda's context. The water access, ownership of livestock, and social networks, and climate information, are significant factors elsewhere that have not been empirically tested in the district. Second, there is no published study that has created an HRI at the household-level for Gwanda and it is hard to differentiate between absorptive, adaptive and transformative capacities to see whether current interventions are leading to sustained resilience.

Third, there has not been any investigation on the link between participation in the resilience project and negative coping strategies like prostitution, crossing illegally or school drop out, child marriage in Gwanda context. If these behaviours are not known to be reduced by existing interventions, then there is insufficient evidence upon which to inform policymakers whether or not to invest in these interventions into the future.

2.7.8. Chapter Summary.

This Chapter discussed the theoretical framework of two most relevant theories for this study, namely, socio ecological resilience theory and sustainable livelihood theory. Conceptual framework, independent variables, mediating variables and the dependant variables were also discussed. The last part of this chapter covered the empirical review which covered all the four

objectives individually starting with the global context, sub-Saharan context, SADC context, Zimbabwean context, Gwanda Context and the research gap which this study is addressing.

CHAPTER 3: RESEARCH METHODOLOGY

3.0. Introduction

In this chapter, the research methodology will be discussed which was applied on this research. This chapter will contain description of the study area, which is the Locational map of the Gwanda District. Also, it will include research design, target population and sample size with determination of the sample size. Adding on This chapter will also include the tools which were used to collect data, data presentation and lastly the data analytical framework.

The area of study is described in terms of the work that can be done in Class 3.1.

In Matabeleland South Province (Zimbabwe). The study area was Ward 11 of Gwanda District which is in the south-western part of the district in the hottest and driest area in the country (Matabeleland South Province) ecological sub-areas 4 and 5 of Zimbabwe (Mbereko et al., 2018). The district is also characterized by low and irregular annual rainfall of between 250 to 450 mm according to Ndlovu et al (2020). The district borders Bulilima District to the north, Plumtree to the North-west and Matombo District to the east, Zvishavane to the North-east with Botswana lying to the west and Mwenezi to the South-east (Chitongo, 2019b). According to the map of the drought risk classification, the district has two (2) Agroecological zones (zone IV & V) with 24 wards each and all are vulnerable to drought. In the district millet, sorghum, and cowpeas are the main crops grown as they are drought tolerant crops, which are grown in non-favourable soil and climate conditions.

In Zimbabwe, Gwanda District is one of the rural districts where food security and standard of living is largely reliant on subsistence rain-fed agriculture. However, normal droughts have posed problems in sustaining production of climate change adaptive (CCA) agricultural products and livelihoods (N. Moyo & Phiri, 2023). The conditions that would make this study relevant to resilience building and house-hold vulnerability.

3.2. Gwanda District MAP

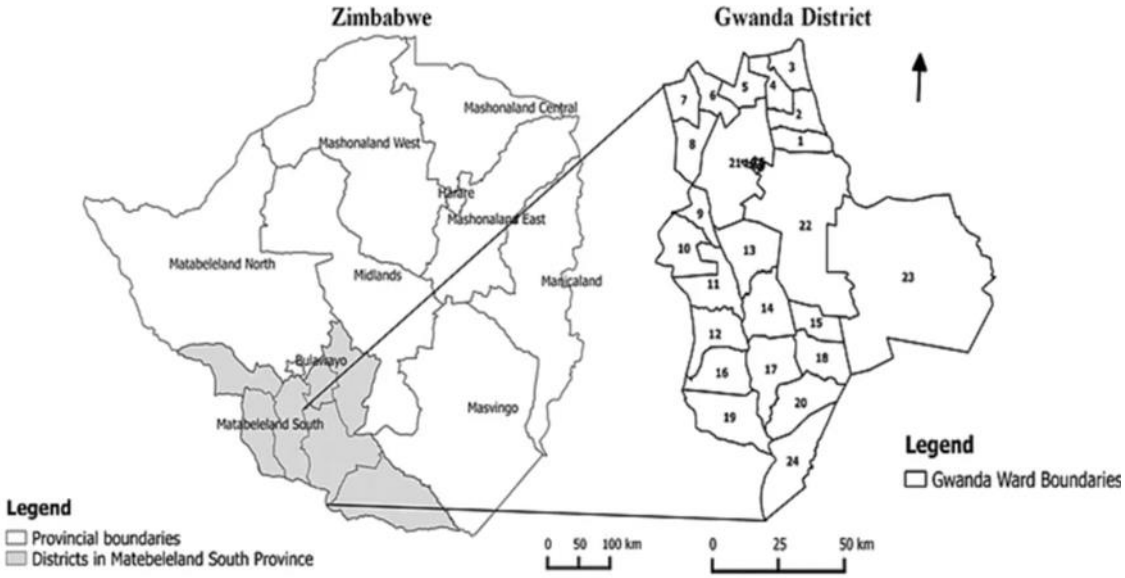

Figure 3.1. Gwanda District Locational Map.

Source: Zimstats 2022

3.3. Research Design

In this study, the method used was the mixed methods approach, consisting of quantitative and qualitative methods. The research strategy that will be useful is a mixed methods design, which will allow gathering numerical data on the conditions of the households and at the same time getting detailed information from the interviewees. The use of such a methodology will provide a broader understanding of the interventions already taken to build resilience in vulnerable families in Gwanda District.

3.4 Target Population.

The target population were vulnerable households that have been attending the resilience building programmes for the past 5 years in the Gwanda District and the key informants who are attended the resilience building programmes. They were representatives of local government, farmers' agricultural extension officers and from development organisations. A total of 172 households were targeted for all the research in Ward 11 in Gwanda District.

3.5 Sampling Procedure.

Both purposive and random sampling method was used. Purposive sampling was employed to select key informants to ensure they have the required information of the activities and also had first hand experiences of the ongoing resilience building programmes in Gwanda District. Random sampling of respondents within the households was made to ensure that the results of the quantitative approach were representative of the general population, and to minimize selection bias. A sample of 120 households was calculated using Yamane's formula (1967) with an estimated target population of 172 households in Ward 11. From the 120 households, 60 beneficiary and 60 non beneficiary households were selected using stratified random sampling and they were given the structured questionnaire, 10 key informants and 3 FDGs were selected purposively.

3.6. Sample Size.

Using Yamane's (1967) formula:

Equation 3.1 Yamane's formula

$$N = \frac{n}{1 + nx^2}$$

Where:

n = sample size

N = estimated household population in selected wards

e = margin of error (0.05)

Therefore, the sample size calculations were as follows

$$N = \frac{172}{1+172\ (0.05)2}$$

N=120

A sample of 120 households was selected:

- 60 beneficiary households
- 60 non-beneficiary households

Additionally:

- 10 key informants
- 3 focus group discussions

3.7. Achieved Sample Size and Response Rate

From the target sample of 120 households, a total of 89 completed and usable questionnaires. The response rate was 74.2% indicating that it was within the acceptable range of 65 – 80% in social science research in rural Zimbabwe (Chitongo, 2019; Ndlovu et al. 2020).

Households with incomplete questionnaires (n=18), households who answered less than 50% of the questionnaires, household head was absent after 3 attempts to visit (n=8) and refusal to participate (n=5) were the reasons why the remaining 31 households were not included in the target sample.

- 3 focus group discussions (with 8-10 participants each)

3.8. Data Collection Methods.

Questionnaires, interview and focus group discussion were used in collecting the primary data. The data on household participation in the project, income, food security and difficulties faced by the households was collected through questionnaires. Key informants and community members were interviewed and focus group discussed will provide deeper understanding.

3.9. Reliability and Validity

The research instrument was pre-tested in a pilot study sample of 10 households in another nearby ward prior to the main data collection exercise for reliability and validity. The pilot gave feedback on the wording, sequencing and the clarity of each question to ensure that it is clear and directly linked to the objectives of the study. The staff enumerating the questionnaire were trained to apply the same procedure in administration of the questionnaire and standard procedure was followed during all data collection. Construct validity was supported by using the Sustainable Livelihood Framework and Socio-Ecological Resilience Theory as a basis for all the variables, meaning that the instruments covered the construct that they were intended to measure. The validity and completeness of the study results were obtained by triangulation of data sources, including the use of three instruments (structured household questionnaires, key

informant interviews and focus group discussions) so that the results of the data from the three instruments could be triangulated.

3.10. Ethical Considerations.

This study was carried out according to the ethical standards for research with human subjects. The data were collected with informed consent of all respondents. All participants were briefed on the aims of the study, the voluntary nature of his participation and the possibility of his withdrawal from the study without any consequences or in violation of his rights. The information provided by the individuals was ensured to remain anonymous and confidential, and only used for academic research. The final data-set did not contain any personal identifying information. Verbal consent was clearly obtained and requested prior to the beginning of focus group discussions and key informant interviews. The respondents of a close-knit community were anonymous because their responses were recorded in individual questionnaires which were kept safe and only accessed by the researcher and supervisor. There were no experimental interventions, no physical risk and no deception of subjects or no financial inducement offered. An introduction letter was obtained from Bindura University of Science Education was obtained before data collection.

3.11. Data Analysis.

For quantitative data analysis, SPSS was used for descriptive statistics such as frequencies, percentages, mean and cross tabulations were used. Thematic analysis was used to analyse the responses obtained from the interviews and focus group, where themes and ideas were identified. The results obtained from both the methods were subsequently used in combination to have a comprehensive understanding of results.

Table 3.1 Data collection methods

Specific Research Objective	Data Concepts & Variables	Data Collection Methods/Tools	Respondents/Subjects
1. Characterize resilience-building projects in Gwanda District	Project type; implementing agent; duration; type of support received; coverage	Structured household questionnaire (Sections B1–B6); Key Informant Interviews (KIIs)	89 households (60 beneficiary, 29 non-beneficiary); 10 key informants (AGRITEX, NGOs, UN)
2. Assess challenges faced by households in resilience projects	Resource, knowledge, environmental, market/institutional, and social constraints	Household questionnaire (Section C1–C5); Focus Group Discussions (FGDs)	89 households; 3 FGDs (8–10 participants each) from Ward 11 community members
3. Evaluate impact of projects on revenue generation & economic empowerment	Monthly income; number of income sources; savings; asset ownership index; ability to meet basic needs	Household questionnaire (Section D1–D7); KIIs; an independent samples t-test was done among beneficiary and non-beneficiary.	89 households (beneficiary vs non-beneficiary comparison); 10 key informants
4. Analyze factors affecting resilience for vulnerable households	Human, Social, Natural, Physical, Financial Capital indicators; composite Resilience Index (RI)	Household questionnaire (Sections E1–E5); Multiple Linear Regression Model	89 households; quantitative regression analysis using SPSS/statistical software

Table 3. 2 Data analytic framework

Objective	Variables	Analytical tool
1) To characterize the resilience building projects implemented in Gwanda District	Project type (Pfumvudza, small grains, VSLA, irrigation, WASH, livestock); implementing partner; duration; support type	Descriptive statistics: frequencies, percentages, cross-tabulations by village/ward
2) To assess the challenges faced by vulnerable households participating in resilience building projects	Resource constraints (water, inputs, land, credit); knowledge/skill gaps; environmental shocks (drought, rainfall); market/institutional barriers; social exclusion	Descriptive statistics: frequencies and percentages; mean severity ratings (Likert scale 1–5)
3) To evaluate the impact of resilience building projects on revenue generation and economic empowerment on vulnerable households in Gwanda District	Dependent: monthly income, income sources, savings, asset ownership, ability to meet basic needs. Independent: participation status (beneficiary vs non-beneficiary)	Inferential statistics: independent Sample T-test (beneficiary and non-beneficiary household comparison)
4) To analyse factors affecting resilience for vulnerable households in Gwanda District	Dependent: Composite Resilience Index (RI) from SLF five capitals. Independent: income, education, credit access, irrigation access, VSLA participation, asset ownership, climate shocks, market access, land size, age, sex, household size	Inferential statistics: Multiple Linear Regression (OLS); significance at $\alpha = 0.05$

3.10. Model Specification (for Objective 4)

A multiple linear regression (OLS) model was estimated to examine the socio economic, institutional and environmental factors that determine household resilience. A Household Resilience Index (RI) was the dependent variable.

The Resilience Index (RI): This was developed using a composite score of the five capitals of the SLF. First, indicators for each of the capitals (income, education, group membership, land size, asset ownership) were scaled to z scores. Then, the RIs were calculated as the sum of these z-scores for each household.

RI=Human Capital z + Social Capital z + Natural Capital z + Physical Capital + Financial Capital z

The higher the RI, the higher the resilience and the lower the RI, the lower the resilience.

The regression model is given as:

$RI = \beta 0 + \beta 1\ (age) + \beta 2\ (sex) + \beta 3\ (household\ size) + \beta 4\ (income) + \beta 5(Education) + \beta 6\ (credit\ access) + \beta 7\ (irrigation\ access) + \beta 8\ (VSLA\ Participation) + \beta 9(extension\ access) + \beta 10\ (asset\ ownership) + \beta 11(climate\ shocks) + \beta 12\ (market\ Access) + \beta\ 13\ (land\ size + \varepsilon$

Statistically significance was accessed at $\alpha = 0.05$, multicollinearity was checked using Variance Inflationary factor (VIF). With VIF > 10 indicating problematic multicollinearity. Model fit was evaluated using R-squared, adjusted R-squared and the F statistics.

3.11. Chapter Summary.

This chapter highlighted the methodology deployed to study the efforts to build resilience of vulnerable families in Gwanda District. It explained the research design, population, sampling, data collection, data analysis and ethical issues. The data analytical approach was also introduced in this chapter. The next chapter include the results of the study.

CHAPTER FOUR: RESULTS DISCUSSION AND ANALYSIS

4.1 Introduction

The results presentation, analysis and discussion are presented in this chapter. There was a 74.2% response rate with 89 (74.2%) household questionnaires analysed from the 120 targeted household questionnaires. The results are based on these 89 respondents It begins with the demographic characteristics such as age, sex, educational qualifications and primary occupation. This is followed by results on the characterisation of resilience building activities; challenges faced in the implementation of resilience building initiatives followed by effects of the resilience building initiatives on income and empowerment and lastly on the factors affecting resilience building initiatives.

4.2 Demographic Characteristics.

4.2.1 Sex.

The results of figure 4.1 above indicates that most of the respondents were male (58.4%) with females making up (41.6%). This is a reflection of the culture that prevails in rural areas in Zimbabwe where males dominate in most community related activities in this case, resilience building. The findings indicate that the patriarchy is so entrenched among the rural communities and that men are the majority in most developmental and community programmes as claimed by Chitongo (2019).

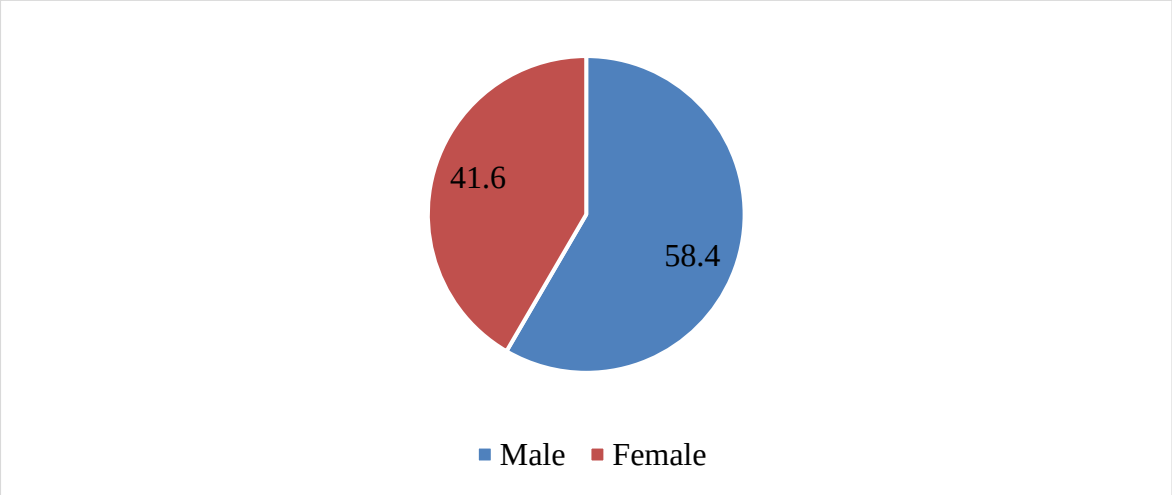

Figure 4.1 Sex aggregation of respondents

4.2.2 Age

The age disaggregation of the study indicated that the majority (37.1%) of the respondents were belonging to the age group 31-45 years and the next age group which had 30.3% of the respondents were between 46-60 years of age. Following this was those in the above 60 years category (16.9%) with the least of the respondents in the 18-30 years age category (15.7%). The large proportion of respondents (37.1% and 30.3% respectively) fell in the age categories: 31-45 and 46-60 years, respectively, suggest that the interventions for resilience are mostly targeted to socio-economically active and experienced household heads who are more likely to be working on agricultural production, livelihood diversification and community development activities. This is consistent with other studies suggesting that middle aged farmers are more likely to be involved in resilience and/or adaptation practices because of their farming experience, productive assets and decision-making authority in the household.

Table 3.1. Age categories of respondents.

Age Category	Frequency=89	Percentage
18–30 years	14	15.7
31–45 years	33	37.1
46–60 years	27	30.3
Above 60 years	15	16.9

4.2.3 Educational Qualifications

Education of the household's head is reported as stated by the interviewees in the study. The findings indicate that the highest proportion of respondents had attained secondary school education with a moderate level of formal education implying that most of the respondents had secondary school education. Few had tertiary education or university, and, compared to other populations, relatively few had gone to university. The results have policy implications for designing resilience programmes, as education holds important importance for households' access to new and better technology and for their ability to make appropriate livelihood choices. Training and capacity building programme(s) must be effective in all resilience programmes being implemented in the Gwanda district because educated household heads are more likely to access resilience programmes and institutions support.

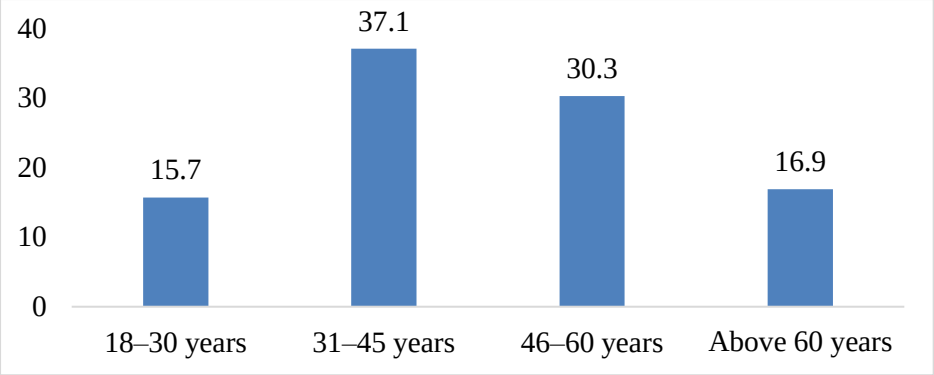

Figure 2.2. Educational Qualifications.

4.2.4 Marital Status.

Table 4.2 indicates that majority of the respondents (68.5%) were married, 13.5% were widows, 12.4% were single and 5.6% were divorced or separated. The majority of the respondents were found to be married, pointing to a significant share of households having family-level labour resources and capacity, which could enhance their potential to engage in resilience activities and cope with shocks. Other studies have documented that most married households are more resilient because they are able to get more social support, labour and collective decision making when it comes to livelihood activities (Mubaya & Mafongoya, 2017). A significant proportion of widowed household heads (13.5%) also deserves consideration since female headed and widow-headed households in the semi-arid Zimbabwe are generally less resourceful due to lower levels of productive assets, institutional support networks and less working ability.

Table 4.2. Marital Status of respondents.

Marital Status	Frequency=89	Percentage
Married	61	68.5
Single	11	12.4
Widowed	12	13.5
Divorced/Separated	5	5.6

4.2.5 Primary Source of Livelihoods.

The findings of the study shown in Figure 4.3 confirms that, the majority of the respondents was engaged in crop farming as their principal source of livelihoods with 38.2% confirming that. This is followed by those who are into livestock rearing who constitutes 20.2% of the total

respondents. In addition, small business trading was selected as a primary source of income by 18% of the respondents and 15.7% highlighted that they were into casual labour. The least of the respondents had remittances as their primary source of income. The outcomes show that agriculture (38.2%) and livestock keeping (20.2%) are the major livelihood activities engaged by the households in Gwanda District indicating the high dependency of the rural community on agricultural activities for their livelihood and survival. This dependence on climatic sensitive livelihoods highlights the need for a resilient approach to interventions that can increase household adaptive capacity through encouraging CLTS, livelihood diversification and risk reduction.

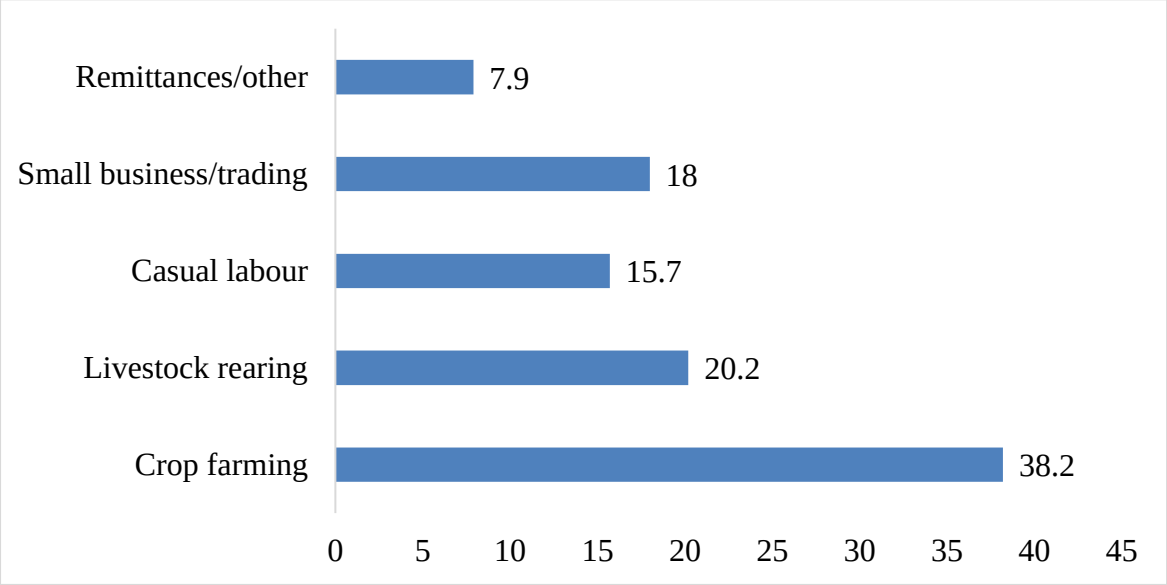

Figure 4. 1 Primary Source of Livelihoods.

4.2.6 Quantitative Demographic Variables.

Results in Table 4.3 review that the respondents in the study earned between US$421 and US$3,150.00 as their annual income with the average sitting on US$751.12. Additionally, the respondents had land size holdings ranging from 0.75 hectares to 5 hectares with the average at 1.92 hectares. This shows that the majority of the respondents were smallholder farmers in the study. The household size for the respondents ranged from 2 to 15 members with the average being around 6 members. The findings indicate that respondents are largely low-income smallholder farmers, with an average annual income of US$751.12, reflecting high levels of economic vulnerability and limited surplus for investment in productive activities. This is consistent with literature showing that smallholder farmers in semi-arid regions often

operate under constrained income and resource conditions, which limits their adaptive capacity and resilience to shocks (Barrett, 2008; World Bank, 2016).

The average landholding size of 1.92 hectares, coupled with household sizes averaging 6 members, further confirms the predominance of small-scale, subsistence-oriented farming systems in the study area. Similar studies have shown that limited land size combined with relatively large household dependency ratios increases pressure on household resources, thereby reinforcing vulnerability and the need for effective resilience-building interventions (Chamberlin & Jayne, 2013).

Table 4.3 Quantitative Demographic Characteristics.

Variable	Min	Max	Mean	St. Deviation
Average Annual Income (US$)	421	3150	751.12	1.112
Land size (Ha)	0.75	*5*	1.92	1.431
Household size	2	15	6.52	2.124

4.3 Characterisation of resilience building initiatives.

This section contains results analysis and discussion on the objective on the characterisation of resilience building initiatives received by vulnerable households in the study.

4.3.1 Types of projects received.

Results on the characterisation of resilience building initiatives which the respondents interacted with in Table 4.4 below shows that, VSALs/saving groups were the most common resilience building initiative with 76.4% of the respondents indicating that. The results show that, financial inclusion and savings is considered as beacons for development and building of resilient capacities. These results concur with Chitongo, (2019) who indicated that VSALs allows vulnerable households to save small amounts, access them in times of emergencies as well as start small businesses which boosts their livelihoods. This indicates that resilience initiatives are not only focused on agriculture but also on strengthening household financial capacity.

Table 4.4. Project Type which respondents interacted with.

Project Type	**Frequency (n=89)**	**Percentage (%)**
Pfumvudza/Intwasa	61	68.5
Small grain promotion	54	60.7
Irrigation schemes	47	52.8
Livestock projects	50	56.2
WASH projects	43	48.3
VSLA / Savings groups	68	76.4
Capacity building	57	64.0
FAO projects (ZEFP)	35	39.3
UNDP Projects (ZRBF/GCF)	41	46.1
MASAP project	27	30.3
SEEF project	20	22.5
Women and Land Zimbabwe	19	21.3
Food/Cash-for-Assets	20	22.5

Since the respondents are mostly agricultural, conservation agriculture in form of Pfumvudza (68.5%), capacity building (64%) and small grain production (60.7%) were also amongst the most common resiliency building initiatives amongst the vulnerable groups. These results show that food security is prioritised in the area as one of the most important pillars in resilience building. Cavoli et. The findings that high participation in Pfumvudza/Intwasa is an indicator of conservation agriculture, retention of moisture and enhanced crop productivity in dry conditions, are supported by Al. (2023). Likewise, encouraging of small grains like sorghum and millet are suitable for Gwanda given the ability of these crops to withstand drought conditions better than maize. Also, there is evidence that projects are trying to enhance the knowledge, skills and adaptive capacity of households, as training and/or capacity building activities are considered in relation to its high occurrence.

Diversification of livelihoods was also noted to be a major feature of resilience building initiatives received by the vulnerable with 56.2% of the respondents pointing out to livestock projects whilst 52.8% of the respondents agreed that irrigation schemes and nutrition gardens were also part of the features. Food and cash assistance was accounted for by 51.7% signifying its importance as one of the critical activities under resilience building initiatives. The results

indicate that the different types of resilience building activities are not only being implemented without any randomness in the communities but also to ensure that dependence on the rain-fed agriculture is decreased. Climate change is one of the most pressing issues that elevates communities' susceptibility and vulnerability to shocks and stresses, as described by Filmon (2023). The results are also similar to the findings of Cavoli et. al, (2023) who also highlighted that supporting livestock, irrigation, and asset creation increases resilience capacities. Food/Cash-for-Assets programs are significant because they offer immediate support and build community assets like roads, water and conservation projects.

The results also shows that whilst savings and agriculture programs are accessible to the vulnerable group the coverage of specialized intervention have lower participation and uneven coverage. This includes programmes that are being implemented by FAO, MASAP, SEEF and Women and land Zimbabwe. Dube & Manik, (2025) cites budget constraints and controlled participant registration as the major contribution to the low coverage. The results further demonstrated low levels of gender related and WASH project coverage could also adversely affect positive resilience outcomes as WASH is also a crucial aspect in addition to institutional support for critical long-term household resilience (Dube, 2023).

4.3.2 Implementing Agents for the resilient building activities.

Results in the Figure 4.4 reviews that the majority of the projects that were implemented within the community were facilitated by NGOs (40.4%) of the respondents confirmed that. This suggests that resilience building initiatives are largely driven by NGOs who take care of designing, funding and implementation of the programs. The findings of this study resonate with Filmon, (2023) who noted that the dominance of NGOs is due to flexibility, availability of resources and approaches to community-level engagement. Following this, 29.2% of the respondents highlighted that, UN agencies were also a second major implementing agent for the resilient building activities in the area followed by 22.5% who signalled the government as another key implementing partner. According to Cavoli et. al., (2023) UN agencies usually fund massive programs which are large in scale and usually are in line with development goals. As a result of limited resources dedicated to development programs, the Government is the third common. The results concur with Chitongo, (2019) who indicated that, the government has a tight fiscal and complements other development agencies by deploying their local staff rather than designing and funding its own isolated resilience programs. Community based Organisations where the least common amongst the implementing agents identified by the respondents for resilience building initiatives in the communities.

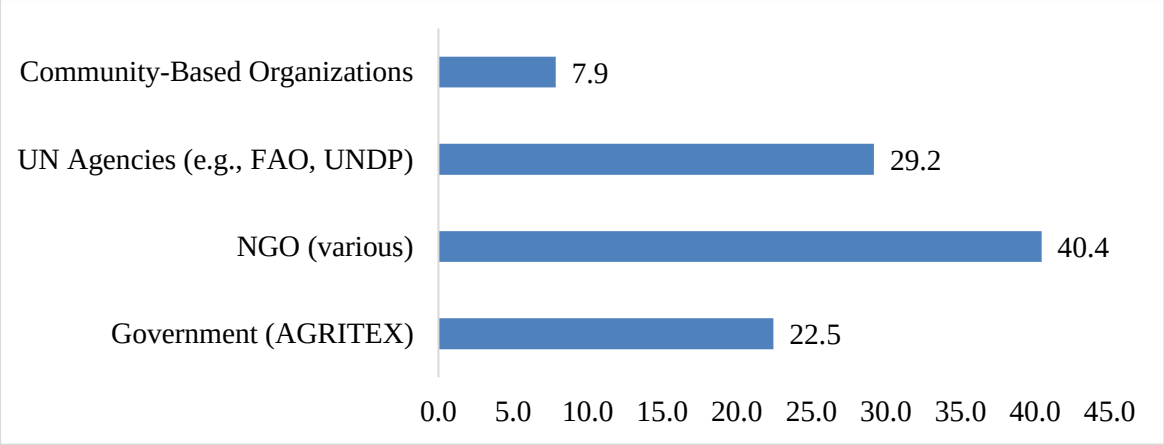

Figure 4.4. Implementing agent for resilience building project

4.3.3 Duration of Participation in the resilience building initiatives

Results from the study presented in Figure 4.5 shows that the majority of the respondents (38.2%) indicated that the most of the resilience building initiatives ranged between three to five years in duration. This shows that most projects are medium termed in length which might be sufficient according to Filmon, (2023) for sustainability of resilience gains amongst the vulnerable. Cavoli et. al, (2023) however argues that the length might not be enough to create transformative resilience which typically requires sustained engagement over longer periods This is followed by those projects who are between one and two years (29.2%). The least of the projects were less than one year (13.5%) followed by those who were over five years which 19.1% of the respondents signalled.

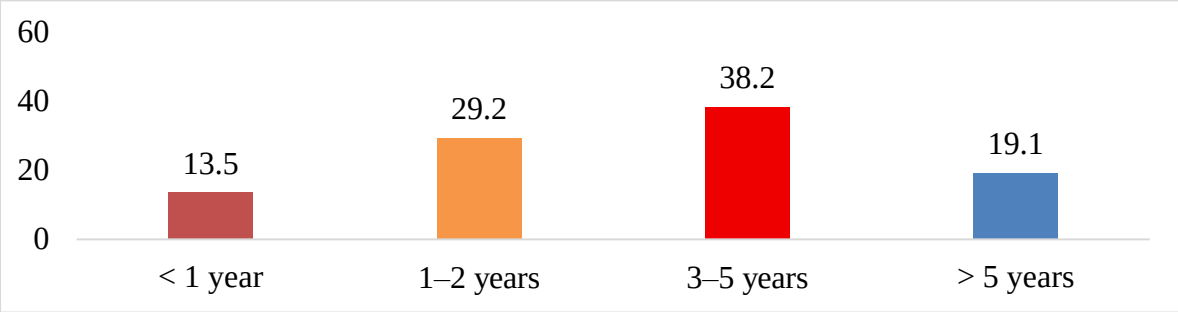

Figure 4.5 Duration of resilience building project

4.3.4 Type of support Received

The results in Table 4.5 indicate that training and capacity-building support was the most widely received intervention, with (75.3%). This is followed closely by agriculture input support which was selected by 71.9% of the respondents. These results show the projects design where people are trained and capacitated with knowledge then given input packs for

implementation. This is supported by Cavoli et. al., (2023) who highlighted that, this combination improves both human capital and productive capacities which is important for enhancing adaptive resilience among vulnerable households.

Table 4.5. Type of Support support received for resilience building

Type of Support	**Frequency (n=89)**	**Percentage (%)**
Agricultural inputs	64	71.9
Livestock support	48	53.9
Cash transfers	36	40.4
Trainings	67	75.3
Access to water	44	49.4
Irrigation schemes	40	44.9
Market access for produce	28	31.5
Tools and equipment	51	57.3
Support for small business start-up	33	37.1

This was facilitated through tools and equipment distribution (57.3%) and livestock support (59.3%) which is an indication of asset oriented resilient building strategy, and benefitted a significant number of households. Filmon, (2023) states that provision of assets that decrease the need for labour in production makes the production more efficient. Banda, Chirisa, & Ndemo, (2023) also agrees with the findings as they assert that livestock provision is an integral aspect of production diversification to ensure mitigation of climate change impacts, as well as the provision of alternative income sources and financial security. The results indicate that resiliency efforts are not limited to providing short-term assistance, but are equally aimed at helping to develop household assets.

The results also review that natural resources access and infrastructure had moderate coverage (49.4%) together with irrigation schemes (44.9%) This shows that almost half of the vulnerable are benefiting from resilience building initiatives which are aimed at improving environmental sustainability and water availability. This is in line with the findings of Cavoli et. al, (2023) who indicated that water is one of the fundamental pillars of transformative resilience together with sustainable environmental sustainability. Yet, approximately half of the respondents still do not have access to sustainable water supply for production, which is a huge challenge in the

penetration of interventions related to water. Other agricultural development activities may be affected by this constraint; water is still a key resource for agricultural productivity.

4.4 Challenges faced in resilience building.

The findings in Table 4.6 revealed that climate related challenges were also the highest level of problem faced in attaining climate resilience, which is closely associated with drought and poor rainfall coverage with a mean severity of 4.52, followed by climate change impacts on agricultural incomes, which have a mean severity of 4.16. The area is semi-arid whilst the majority of the communities rely on agriculture for their livelihoods. This, therefore, means that resilience building programs are vulnerable and sensitive to environmental shocks that can hinder their effectiveness as pointed out by Filmon (2023). The findings are also similar to that of Chitongo (2019) who pointed out that droughts have an impact on agriculture productivity, food security, and income generation, which are crucial components of building resilience.

Table 4.6. Challenges faced in resilience building initiatives

Challenge	**Mean Severity Rating**	**St. Deviation**
Drought/poor rainfall	4.52	0.71
Lack of access to productive inputs	4.47	0.76
Lack of access to credit	4.21	0.88
High cost of inputs	4.31	0.92
Poor market Infrastructure	4.12	0.95
Poor road networks	2.92	1.01
Poor market prices for produce	3.76	1.08
Lack of technical support services	3.64	1.12
Human wildlife conflict	3.21	1.13
Land Degradation	3.71	1.02

Limited access to productive inputs was also highlighted as a chief challenge affecting resilience building initiatives amongst the vulnerable households with a mean severity of 4.47 closed linked to the high cost of input with a mean severity score of 4.31. these findings reveals that the vulnerable households face significant challenges in acquiring important productive resources such as fertilisers, seeds and irrigation equipment. These results are similar to those of Filmon, (2023) who also indicated that whilst these resources might be available,

affordability also remains a key challenge affecting access hence also affecting resilience building which relies on such productive inputs for its effectiveness.

Results also indicate financial exclusion is a significant issue in building resilience with lack of credit having a high severity score (4.21) across the average. This exposes the limited availability of formal and affordable financial services in the rural areas as well as the inability of the vulnerable households to acquire credit for investments into productive activities. This is in line with Cavoli et. al., (2023) who had argued that vulnerable households do not have the means to provide collateral to ensure they can access credit from formal financial institutions, nor have the necessary Know Your Customer paperwork. Banda, Chirisa, & Ndemo, (2023) also added this is because the various financial institutions lack innovative products which suits the profile of the vulnerable households. This then reinforces that need for financial mechanisms that are suited to the vulnerable households such as savings groups.

Additionally, the results also shows that market related challenges are also prominent with lack of proper market infrastructure (mean score=4.12) and low prices for produce with a mean score of 3.76. These findings show that whilst there is productivity, the market still stifles these efforts with poor pricing and lack of proper storage facilities and limited value addition opportunities. This is consistent with the report of Dube & Manik, (2025) which revealed a gap between production and market systems, and reduced income generation and economic empowerment.

Furthermore, institutional and technical challenges were identified as moderate severe challenges with mean score of 3.64 for lack of technical support, and 3.71 for land degradation, respectively. The findings resonate with Cavoli et. al., (2023) who pointed out that limited exposure of the vulnerable households to extension services and advisory affects the adoption of improved innovative technologies resulting in reduction of efficiency in production which affects negatively resilience building. In addition, Chitongo, (2019) also sited land degradation as a critical factor which affects productivity since it leads to reduced fertility and affects the viability in the long term of agriculture as a productive pillar for transformative resilience building.

4.5 Effects of resilience building projects on income generation and empowerment.

As indicated in Table 4.7 the results indicate that the programmes of resilience building for the vulnerable groups had a statistically significant positive effect on the monthly household income, with an average increase of US$57.35 ($p<0.001$). This suggests that interventions

which includes agriculture support, irrigation support and savings groups led to the increase in livelihood diversification and also income generation which contributed to the broadening of the earning capacities of the respondents. This is supported by Filmon, (2023) who indicated that resilience building package increases and diversifies livelihoods which ultimately leads to increase in income.

Table 4.7. independent samples T-test results on impact of resilience on household economic indicators

Indicator	**Beneficiary mean**	**Non beneficiary mean**	**Mean Difference**	**t-value**	**df**	**Sig. (p-value)**
Monthly household income (USD)	181.25	123.90	57.35	8.42	87	0.001
Number of income sources	3.12	1.97	1.15	7.96	87	0.002
Savings level (USD/month)	14.75	12.50	2.25	6.88	87	0.001
Ability to meet basic needs	3.64	2.21	1.43	7.25	87	0.004
Asset ownership index	5.82	4.66	1.16	6.54	87	0.005

The results also show an improvement in income sources with an increase of an average of one income source (p=0.002) which shows high diversification of livelihoods owing to their participation in resilience programs. According to Banda, Chirisa, & Ndemo, (2023) resilience building is centred on layering of interventions as a safety measure which dismisses the reliance on a single source of income which leads to increased vulnerability. Households now engage in multiple income generating activities such as small business livestock rearing and off farm work all which generates income. This is also supported by Dube, (2023) who highlights diversification reduces vulnerability to shocks and enhances the stability of household income streams.

Savings capacity also improved significantly after the introduction of resilience building with an increase of US$2.25 per month (p=0.001). This is positive for financial inclusion within the

vulnerable communities since resilience building activities were also centered on VSAL and savings groups formation. The findings are supported by Cavoli et. al., (2023) who indicated that increased engage savings enable households to manage for emergencies as well as invest in productive enterprises as well as smooth consumption and nutrition for the whole family in times of income shortfall and also in shocks and stresses.

The ability of households to meet their basic needs has also improved significantly, as reflected by a mean increase of 1.43 ($p = 0.004$). This suggests that households are better able to afford essential requirements such as food, healthcare, education, and shelter after participating in resilience-building programmers. These findings are similar to those of Chitongo, (2019) who indicated that, the improvement in welfare of the vulnerable households is an important indicator of economic empowerment, as it reflects enhanced household well-being beyond mere income increases. Filmon, (2023) also noted that, it is also a clear indicator that resilience interventions are contributing to improved living standards.

Asset ownership, which is a key indicator of long-term economic security, also shows a significant increase (Mean Difference = 1.16, $p = 0.005$) after the involvement of the vulnerable households in resilient building activities. This suggests that households are accumulating productive assets such as livestock, farming equipment, and small business tools. Cavoli et. al., (2023) anchors the results highlighting that, asset accumulation is important in rural contexts, as it provides a buffer against shocks and stress and increases future income-generating potential for the vulnerable households. Banda, Chirisa, & Ndemo, (2023) also notes that assets can also be exchanged for food and also for access to basic necessities such as education and health and are very liquid in rural areas. The positive change in asset ownership indicates that resilience programs contribute not just to short-term coping mechanism but also to sustainable long term wealth creation.

4.6 Factors Affecting resilience building

The multiple linear regression results (Table 4.8) confirm that resilience among vulnerable households is shaped by a combination of socio-economic, institutional, and environmental variables, with several predictors statistically significant at the 5% level.

Table 4.8. Multiple linear Regression results on the factors affecting resilience building initiative amongst vulnerable households

Variable	**B**	**Std. Error**	**Beta**	**t**	**Sig.**

(Constant)	0.761	0.298		2.57	**0.012**
Age	0.091	0.042	0.124	2.17	0.093
Sex (1=Male)	0.078	0.058	0.098	1.5	0.138
Household size	-0.152	0.051	-0.156	-2.59	0.092
Income	0.491	0.079	0.338	3.86	**0.013**
Education level	0.267	0.061	0.182	2.74	**0.014**
Access to credit	0.251	0.072	0.265	3.35	**0.012**
Access to irrigation water	0.238	0.068	0.247	3.35	**0.011**
Participation in VSLA	0.196	0.066	0.228	2.97	**0.027**
Access to extension services	0.139	0.067	0.153	2.07	0.142
Asset ownership	0.254	0.078	0.271	3.26	**0.029**
Climate shocks exposure	-0.221	0.064	-0.259	-3.45	0.078
Market Access	0.167	0.061	0.182	2.74	0.083
Land size	0.241	0.072	0.265	3.35	0.071

Significant at 0.05 significant level (BOLD)

The overall regression model was statistically significant ($F(13, 75) = 12.847$, $p < 0.001$), as shown in Table 4.9. The model explained 71.7% of the total variance in the Composite Resilience Index ($R^2 = 0.717$), with an Adjusted R^2 of 0.661, confirming strong model fit after accounting for the 13 predictors and sample size. The Durbin-Watson statistic of 1.923 confirms no autocorrelation in the residuals. All VIF values were below 2.0 (Table 4.10), confirming the absence of multicollinearity among predictors. These diagnostics collectively validate the OLS regression estimates.

Access to extension services ($\beta = 0.139$, $p = 0.142$), climate shocks exposure ($\beta = -0.221$, $p = 0.078$), market access ($\beta = 0.167$, $p = 0.083$), and land size ($\beta = 0.241$, $p = 0.071$) were not statistically significant at the 5% significance level in the regression model. The extension services access is an important factor, albeit not significant, because Socio-Ecological Resilience theory has given it a strong profile, but a high number of low ratios of extension officers to farmers and a small range of services provided to farmers in the semi-arid part of Zimbabwe may account for this fact (Dube & Manik, 2025). The coefficient of the climate shocks exposure is opposite to the expected sign of climate change, i.e., negative, but not significant at the 5% level, it does confirm the negative direction of effect that was predicted

in the Sustainable Livelihood Framework (Scoones, 1998) linking climate shocks exposure to decrease in resilience. The low values of market access and land size could be attributed to the fact that the mean market access level and also the size of land holdings was low across all households in Ward 11, Gwanda District, thus the statistical variance was not high enough to detect separate market access and land holding effects, when other socio-economic factors are taken into consideration and controlled for in the model.

The variables in this study most strongly associated with resilience are income (p=0.013) and educational level (p=0.014), access to credit (p=0.012), access to irrigation (p=0.011), VSLA participation (P=0.027) and asset ownership(p=0.029) at the 5% significance level. This indicates that households with higher income levels are mostly likely geared to withstand shocks and stresses compared to households which are have low income. This results to the confirmation of the previous studies done by Cavoli et al., (2023) that indicated that the increase in income can be utilized for productive activities that continue to generate income which in turn, would generate diversification and livelihood security for the increase in income households.

Education level was also found to have strong influence on resilience levels of households (p=0.014) which implies that those with more education are able to withstand shocks and stresses compared to those without much education. The results of this study are in line with the results of Filmon (2023) which found that educated heads of households can implement better agricultural practices, access information and make informed livelihood decisions.

In addition, access to productive assets like credit also contributes to increased resilience levels among vulnerable households (p=0.012). This is also in line with Chitongo, (2019) who noted that households that have access to credit can invest in inputs, and diversify livelihoods through investment in other income generation activities, thus enhancing their resilience to shock and stress. In addition, those with access to credit as emphasized by Banda, Chirisa, & Ndemo, (2023) are able to borrow to cover household income demands during times of distress therefore saving their households from the effects of the financial shocks and stresses.

It was also determined that access to irrigation was a critical influencer of resilience in the study (p=0.011) indicating that water is critical in the agricultural area of Gwanda, where sometimes drought spells occur. These findings are corroborated by Cavoli et. al., 2023 who report that households that irrigate have less dependence on rain-fed agriculture, suggesting

they can produce their crops throughout the year; thus, they also have the ability to generate income throughout the year and in turn food security, an important aspect of resilience.

The asset ownership (p=0.029) was also one of the factors that were associated with resilience as identified in this study. These results imply that households with more assets which includes livestock, farming equipment are able to absorb shocks and stresses better. This is similar to the findings of Filmon, (2023) who asserted that assets are both a safety net and a source of income during times of crisis and can be disposed during times of crisis and the money can be used to cater for immediate and emergency household needs.

Table 4.9 Model Summary and fit statistics

Statistic	Value	Interpretation	Decision
R (multiple correlation)	0.847	Strong positive correlation between predictors and RI	Good model fit
R-squared	0.717	71.7% of variance in RI explained by the model.	Good explanatory power.
Adjusted squared	0.661	Adjusted number of predictors (n=89, k=13)	Model is not over fitted
F- statistic	12.847	Overall model is statistically significant	P<0.001 model valid
Durbin Watson	1.923	Value close to 2 indicates no auto correlation.	Assumption met
N(observation)	89	Usable questionnaires analysed	Adequate for 13 predictors

Table 4.10 Multicollinearity diagnostic: Variance inflation factors (VIF)

Variable	Tolerance	VIF	Multicollinearity assessment
Income	0.612	1.634	No Multicollinearity (VIF<5)
Education level	0.698	1.432	No Multicollinearity (VIF<5)
Access to credit	0.571	1.751	No Multicollinearity (VIF<5)
Access to irrigation	0.683	1.464	No Multicollinearity (VIF<5)
VSLA participation	0.724	1.381	No Multicollinearity (VIF<5)
Asset ownership	0.541	1.848	No Multicollinearity (VIF<5)
Climate shocks	0.789	1.267	No Multicollinearity (VIF<5)
Market access	0.651	1.536	No Multicollinearity (VIF<5)
Land size	0.712	1.404	No Multicollinearity (VIF<5)

Age	0.834	1.199	No Multicollinearity (VIF<5)
Sex	0.901	1.110	No Multicollinearity (VIF<5)
Household size	0.673	1.486	No Multicollinearity (VIF<5)
Extension access	0.745	1.342	No Multicollinearity (VIF<5)

All the VIF are below 2.0 which is within the accepted threshold, confirming no significant multicollinearity among predictors.

4.7. 1. Hypothesis Testing

Hypothesis I

The majority of the Resilience Building Projects in the Gwanda District are on Drought Tolerant Agriculture, Income Diversification and community-based capacity development.

This hypothesis is confirmed by the results of the study. The findings revealed that the highest proportion of the initiatives that supported building resilience were Village Savings and Lending Associations (VSLAs) (76.4%), capacity-building and training programmes (64.0%), Pfumvudza/Intwasa conservation agriculture (68.5%) and small grain promotion (60.7%). These interventions are directly related to drought adaptation, livelihood diversification and empowerment. Promotion of sorghum and millet crops as drought-tolerant crops and conservation agriculture practices are an attempt to build resilience to drought in the agriculture. Similarly, the adoption of VSLAs and training indicates a definite focus on improving financial inclusion, skills and adaptive capacity. Thus, it is evident that activities focused on building resilience in Gwanda District have been geared towards climate smart agriculture, diversified livelihoods and strengthening of community capacities.

4.7.2. Hypothesis II:

Climate variability, lack of technical assistance and resources of the vulnerable households in Gwanda District limit the effectiveness of resilience building projects.

The results of this study strongly back up this hypothesis. Drought (4.52), availability of inadequate productive inputs (4.47), high input costs (4.31), access to credit (4.21), and market infrastructure (4.12) were the top five problems faced by the households. Furthermore, the respondents acknowledged that there is a great restriction because of the provision of technical support services (Mean = 3.64). The results show that although there are initiatives in place to build resilience, households have environmental, financial and institutional constraints which make it difficult for them to maximise their benefit from these initiatives. But the vulnerability of farmers' life to frequent droughts and irregular rainfall has been made increasingly obvious

due to the increasing frequency of climate related issues. The results therefore provide compelling evidence that resource limitations, technical support gaps and climate challenges continue to impact the effectiveness of resilience-building actions.

4.7.3. Hypothesis III:

The impact of resilience building projects is reflected in the significant increase in income, economic empowerment and livelihood diversity in the households involved, compared to those non-participating in resilience building projects.

Likewise, there was a significant increase in household savings (mean difference = USD (2.25) per month, $t = 6.88$, $p = 0.001$), respondents became significantly more able to meet basic household needs (mean difference = 1.43, $p = 0.004$), and there was a meaningful improvement in the asset ownership index (mean difference = 1.16, $p = 0.005$). Overall, these findings indicate the positive impact of resilience building programmes on economic empowerment of households through an increase in income generating potential, financial stability, accumulation of assets and household well-being. There is good statistical support for the hypothesis that key economic indicators for participation in interventions that build resilience show significant improvements.

4.7.2. Hypothesis IV:

The socio-economic status, access to drought resistant crops, institutional support and participation in community initiatives all have a bearing on household resilience in Gwanda District.

The regression results will also serve as the foundation for the testing of the hypothesis in the study. The null hypothesis was that there is no effect of socio-economic, institutional, and environmental factors on household resilience in vulnerable households of Gwanda District and the alternative hypothesis was that socio-economic, institutional and environmental factors have an effect on household resilience in vulnerable households of Gwanda District. The results of the regression test suggest that the null hypothesis is partially accepted because of the fact that some variables are statistically significant at the 5% level of significance ($p<0.05$) including income, education level, credit access, irrigation water access, VSLA membership and assets ownership. Such findings have confirmed that economic resources, productive assets and institutions are important in influencing the resilience. Not all selected predictors are independent, however, as the influences of some other variables weren't significant: sex, age, access to markets and extension services. Thus, the alternative hypothesis that key socio-

economic and institutional factors have a significant influence in household resilience in Gwanda District was supported by the results.

4.8. Chapter Summary

The chapter presented the results related to the goals of the study with regards to the initiatives on resilience of vulnerable households in Gwanda District. The chapter presented and discussed the findings on initiatives on resilient vulnerable households in Gwanda District in relation to the study aimed. The results showed that interventions to build resilience are primarily related to climate smart agriculture, livelihood diversification, financial inclusion (VSLAs), and building community capacities. The study also identified that households still have major limitations, such as poor rainfall, water-stress, limited access to productive inputs and credit facilities, high input costs, limited market infrastructure, and lack of technical assistance which affect the effectiveness of resilience interventions. Despite these challenges, the outcomes demonstrated that the interventions on enhancing household resilience have yielded positive results in improving the income of the households, members' savings, livelihood diversification, asset management and ability to access basic needs an important dimension of economic empowerment and household welfare.

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATIONS.

5.1 Introduction

The summary, conclusion and recommendations for the research will be the focus of this chapter. The chapter opens with the summary of the research which summarises the research from the beginning till the end of the results discussion and analysis section. The end conclusion follows from the outcomes, as shown above. Also in this chapter there are practical and actionable recommendations outlined which are aimed at various stakeholders that can benefit from the results of the research. The chapter is followed by a set of recommendations for further studies.

5.2 Summary.

The research focused on enhancement of resilience building amongst vulnerable households with the objectives focusing on the characterisation of the resilience building initiatives that are received by the vulnerable households, to the challenges faced by the households in achieving resilience as well as the various factors affecting resilience building amongst the vulnerable households and lastly the impact of resilience building on income and empowerment of the vulnerable households.

In this aspect, the study employed sound research design which was made up of survey design to collect data from vulnerable household and a mixed research design. The target population of the study was the vulnerable household's household heads in Gwanda District; however, purposive sampling was used to select 89 respondents that were included in the data collection of the study. Further, face to face data collection was done in compliance with authorization from the district council and face to face data collection was done by the use of questionnaires and the semi-structured interviews for key informant interviews. Descriptive statistics and regression analysis were used to analyse the data collected, which included the factors influencing resilience. The key metrics compared to assess the effect of resilience building to the vulnerable households were the income and the paired T-test was used.

The results of the study on the characterisation of resilience building initiatives shows that, VSALs and savings groups dominated the types of resilience building projects that the respondents ventured which is a key financial inclusion strategy. Furthermore, climate smart agriculture widely embraced with Pfumvudza (key) and capacity building and small grains

production shows a high strategic inclination towards food security as a pillar of transformative climate resilience building. The results further highlighted the importance of livelihood diversification along with livestock production and irrigation and food support thereby lessening the reliance on rain-fed agriculture. Besides, there have been multiple actors involved in resilience building, but not evenly: Gender gaps and lack of involvement in specialised programs (FAO, MASAP, SEEF, WASH) might reduce long-term resilience outcomes. The results also indicated that NGOs are the key players and project are of medium duration (3-5 years). Training and input support were key interventions which were implemented for resilience building as well as asset-based support in form of productive resources and livestock to increase income diversification and long-term resilience.

The climate constraints were most severe in the case of droughts occurring together with ongoing rains, for the objective of challenges to the full attainment of resilience. Limited access to productive inputs was also found to be a huge challenge coupled with high cost of productive inputs such as seed which negatively affects the farmers ability to implement resilient stratifies. The results also showed that lack of financial inclusion was a key constraint as credit was limited which prevented the farmers from investing in productive activities and also resources due to the lack of requirements for collateral and the lack of financial products specifically designed for the farmers. The outcomes of the study also revealed that market related challenges continued even though the market infrastructure was lacking and market prices were not profitable for the farmers, which impacted their income potential regardless of agriculture production. The study also revealed the presence of institutional constraints like limited technical support, which moderately impacts access to extension by farmers, thereby limiting the adoption of improved technologies, needed for vulnerable household resilience.

The third goal of the study was about the effect of resilience building on the income and empowerment of the vulnerable households. The results of the study indicated that there was increase in income of around $57.35 per month as part of the resilience building project. The livelihood diversification was also improved with the households having additional income sources. Furthermore, the findings also showed that there was an increase in the savings capacity as well, as monthly saving rose by $2.25 per month reflecting improved financial inclusion due to resilience building. Additionally, the presence of basic needs, including food, health care and education, also helped to increase the ability of household to meet their basic needs. Further, value of productive assets increased markedly, which showed a positive

economic strengthening and resilience over the long-term. They provide an immediate nutrition and income source, and long-term wealth building and economic security.

The findings suggest that there is a complex interplay between economic, social and resource-based factors which have a significant impact on the level of resiliency of households. That is, income was one of the best factors ($p = 0.013$) as households who have a higher income are better able to buffer shocks due to their ability to invest in productive activities and diversify their livelihoods. Another key factor is education level ($p = 0.014$); a higher education level means a household can have more information, can develop more improved practices and can make better decisions. Households' access to productive assets, such as access to credit, also contributes to resilience because during a crisis it will provide the financial tools to allow them to invest in income-generating activities ($p = 0.012$). Moreover, access to irrigation ($p = 0.011$) was found to be very critical, as they help to lessen dependence on rainfall and help to produce crops all year round thus enhancing food security and improving income stability. The number of assets owned is also an important determinant of resilience ($p = 0.029$); assets such as livestock and equipment offer income and a safety buffer in cases of a crisis.

5.3 Conclusion.

Conclusion on Objective 1 (Characterization of resilience-building projects): The study concludes that resilience-building initiatives in Gwanda District's Ward 11 are dominated by Village Savings and Lending Associations (76.4%), Pfumvudza/Intwasa conservation agriculture (68.5%), capacity-building programmes (64.0%) and small grain promotion (60.7%), implemented mainly by NGOs over medium-term cycles of three to five years.

Conclusion on Objective 2 (Challenges faced by households): The study concludes that drought (mean severity 4.52/5), limited access to productive inputs (4.47), high input costs (4.31) and limited access to credit (4.21) are the most severe constraints limiting households' ability to benefit fully from resilience-building initiatives.

Conclusion on Objective 3 (Impact on income and economic empowerment): The study concludes that participation in resilience-building initiatives produces a statistically significant improvement in household welfare, raising monthly income by USD 57.35 ($p = 0.001$), income sources by 1.15 ($p = 0.002$), savings by USD 2.25 per month ($p = 0.001$), and the asset ownership index by 1.16 ($p = 0.005$), relative to non-beneficiary households.

Conclusion on Objective 4 (Factors affecting resilience): The study concludes that household resilience in Gwanda District is significantly and positively influenced by income, education

level, access to credit, access to irrigation, VSLA participation and asset ownership (all $p < 0.05$), while age, sex, household size, access to extension services, climate shock exposure, market access and land size did not have a statistically significant independent effect once the other factors were controlled for.

5.4 Recommendations.

Based on the findings of this study, the following recommendations were made:

1. The Ministry of Lands, Agriculture, Fisheries, Water and Rural Development (MLAFWRD), through AGRITEX Gwanda District, should partner with certified seed suppliers to establish a dedicated drought-tolerant input supply chain that delivers small grain seed, fertiliser and irrigation equipment to Ward 11 ahead of each planting season.

2. Microfinance institutions registered with the Reserve Bank of Zimbabwe, in collaboration with VSLA-facilitating NGOs such as World Vision and CARE International, should scale up VSLA networks and design low-interest, collateral-free credit products tailored to smallholder households in Gwanda District.

3. AGRITEX, under MLAFWRD, should increase the ratio of extension officers to farmers in Ward 11 and pilot a mobile (SMS/USSD) extension advisory platform in partnership with a mobile network operator such as Econet, to improve the reach of technical support.

4. Gwanda Rural District Council, together with the Department of Social Development, should convene a coordination forum bringing together NGO and UN implementing partners (FAO, UNDP, ZRBF) to reduce duplication of effort, close ward-level coverage gaps including WASH and mainstream gender-responsive programming and specialized interventions such as MASAP and SEEF.

5. Development financing partners, particularly the Zimbabwe Resilience Building Fund (ZRBF), UNDP, FAO and the Green Climate Fund (GCF), should extend project cycles to a minimum of five years to allow transformative, rather than purely absorptive, resilience gains to be achieved among vulnerable households in Gwanda District.

5.5 Suggestions for Further Research

Land size and market access were not statistically significant predictors of household resilience in this study, despite being significant in comparable studies elsewhere in Zimbabwe. This may be because variation in both variables was limited within Ward 11. Future research should replicate the Household Resilience Index model across multiple wards and agro-ecological

zones in Gwanda District to test whether land size and market access become significant predictors at a larger sample size, and should further investigate the role of livestock-based capital, which this study's questionnaire captured only partially.

APPENDIXES

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APPENDIX II RESEARCH QUESTIONNAIRE

Enhancing Resilience Building Initiatives Among Vulnerable Households in Gwanda District, Zimbabwe

Researcher: Tinotenda T. Mutimukuru (B222864B), Bindura University of Science Education. This questionnaire is for academic purposes only. All responses are strictly confidential. Participation is voluntary.

Household No.: _____ Date: _____ Ward: 11 Village: _____

SECTION A: HOUSEHOLD DEMOGRAPHICS

A1. Name of Household Head (Optional): _____

A2. Gender: [ ] Male [ ] Female A3. Age: _____ years

A4. Marital status: [ ] Married [ ] Single [ ] Widowed [ ] Divorced/Separated

A5. Highest education level: [ ] None [ ] Primary [ ] Secondary [ ] Tertiary

A6. Main occupation: [ ] Farmer [ ] Informal trader [ ] Formal employment [ ] Casual labourer [ ] Remittances [ ] Other: _____

A7. Household size (number of people): _____ A8. Children under 18: _____

SECTION B: CHARACTERISATION OF RESILIENCE-BUILDING PROJECTS (Objective 1)

B1. Are you aware of resilience-building projects in your community? [ ] Yes [ ] No

B2. Is your household a beneficiary? [ ] Yes [ ] No (If No, skip to Section C)

B3. Which projects do you participate in? (Tick all that apply)

[ ] Pfumvudza/Intwasa [ ] Small grain promotion [ ] Irrigation/nutrition garden [ ] Livestock project [ ] WASH [ ] VSLA/Savings group [ ] Capacity building/training [ ] FAO/ZEFP [ ] UNDP/ZRBF/GCF [ ] MASAP [ ] SEEF [ ] Women & Land Zimbabwe [ ] Food/Cash-for-Assets [ ] Other: _____

B4. Who implements the main project? [ ] Government (AGRITEX) [ ] NGO (name if known: _____) [ ] UN Agency (FAO/WFP/UNICEF) [ ] CBO [ ] Don't know

B5. How long have you participated? [ ] <1 year [ ] 1–2 years [ ] 3–5 years [ ] >5 years

B6. What support have you received? (Tick all that apply)

[ ] Agricultural inputs [ ] Livestock [ ] Cash transfers [ ] Training/workshops [ ] Water access [ ] Irrigation scheme [ ] Market linkages [ ] Tools/equipment [ ] Small business support [ ] Other: _____

B7. Do you practise these methods? (Circle Y/N) Pfumvudza Y/N | Drought-tolerant crops Y/N | Irrigation/gardening Y/N | Agroforestry Y/N | Permaculture Y/N

B8. Reliable water for: Domestic use Y/N | Irrigation Y/N B9. Latrine: [ ] Private [ ] Shared [ ] None

B10. Community group membership: [ ] VSLA [ ] Farmer group/cooperative [ ] Seed bank [ ] Water committee [ ] Irrigation joint venture [ ] Farmer field school [ ] None

SECTION C: CHALLENGES FACED BY HOUSEHOLDS (Objective 2)

C1. What are the main challenges you face in resilience-building projects? (Tick all that apply)

[ ] Drought/lack of water [ ] No credit/loans [ ] Lack of inputs [ ] Weak extension support [ ] Low knowledge/skills [ ] Soil degradation [ ] Erratic rainfall [ ] Poor roads/markets [ ] Low produce prices [ ] High input costs [ ] Livestock disease [ ] Mining contamination [ ] Labour shortage [ ] Short project duration [ ] Human-wildlife conflict [ ] Other: _____

C2. Single biggest challenge: _____

C3. Was training/technical support adequate? [ ] Yes, adequately [ ] Somewhat [ ] No

C4. Is project support accessible to all? [ ] Accessible to all [ ] Some groups excluded [ ] Don't know

C5. Coping strategies used in the past year: (Tick all that apply)

[ ] Reduced meals [ ] Sold livestock for food [ ] Withdrew children from school [ ] Illegal activities (e.g., border crossing) [ ] Begged for food/money [ ] Depended on food aid [ ] None of the above

SECTION D: IMPACT ON INCOME & ECONOMIC EMPOWERMENT (Objective 3) — BENEFICIARIES ONLY

D1. How has total annual income changed since joining the project? [ ] Increased significantly [ ] Increased slightly [ ] Stayed same [ ] Decreased

D2. Income from project activities in last 12 months: [ ] $0 [ ] $1–$100 [ ] $101–$300 [ ] $301–$500 [ ] >$500 USD

D3. Livestock ownership change: Cattle: Inc/Dec/Same | Goats: Inc/Dec/Same | Poultry: Inc/Dec/Same

D4. VSLA member? [ ] Yes [ ] No If yes: Did it help you save? Y/N | Access a loan? Y/N | Pay school fees? Y/N | Invest in inputs? Y/N

D5. Control over household income since project: [ ] More [ ] Less [ ] Same [ ] N/A

D6. Has the project helped start new income activities? [ ] Yes [ ] No

SECTION E: FACTORS AFFECTING RESILIENCE — FIVE CAPITALS (Objective 4)

E1. Human Capital: Adults fit to work: _____ Anyone too ill to work last month? Y/N

E2. Social Capital: Can you rely on community in emergency? [ ] Always [ ] Sometimes [ ] Never | Receive remittances? [ ] Regularly [ ] Occasionally [ ] No

E3. Natural Capital: Agricultural land (ha): _____ Soil quality: [] Fertile [ ] Moderate [ ] Poor | Main water source: [ ] Borehole [ ] Protected well [ ] River/stream [ ] Unprotected well

E4. Physical Capital: Assets owned (circle Y/N): Plough/ox-cart Y/N | Wheelbarrow Y/N | Knapsack sprayer Y/N | Mobile phone Y/N | Radio Y/N | Distance to nearest market: [] <30 min walks [] 30–60 min [] >1 hr./transport needed

E5. Financial Capital: Have savings? Y/N | Access to credit? Y/N | Regular off-farm income? Y/N

SECTION F: PERCEPTIONS & OUTLOOK

F1. Rate your household's ability to recover from a severe drought: 1 (Not resilient) – 2 – 3 – 4 – 5 (Very resilient) Circle: 1 2 3 4 5

F2. Most important thing to improve your household's resilience and food security:

_____

F3. Any other comments or suggestions about resilience projects in your area:

_____

Thank you very much for your time and cooperation. Your responses are greatly valued

APPENDIX III: UNIVERSITY INTRODUCTORY LETTER

BINDURA UNIVERSITY OF SCIENCE EDUCATION
Faculty of Agriculture and Environmental Sciences
Department of Agricultural Economics and Management

Date: _____

TO WHOM IT MAY CONCERN

RE: INTRODUCTORY LETTER FOR TINOTENDA TAWANDA MUTIMUKURU (REG. NO. B222864B)

This letter serves to introduce Tinotenda Tawanda Mutimukuru, a final-year student in the Bachelor of Science Honors Degree in Agricultural Economics and Management at Bindura University of Science Education. The student is currently undertaking a research project titled 'Enhancing Resilience Building Initiatives Among Vulnerable Households in Gwanda District, Zimbabwe', under the supervision of Dr. Zivenge, in partial fulfilment of the requirements of the degree.

The study requires the collection of primary data from households, key informants and community focus groups in Ward 11, Gwanda District, through structured questionnaires, key informant interviews and focus group discussions. We kindly request your office/organization/community to assist the student by granting access and permission to carry out this academic exercise.

All information collected will be used strictly for academic purposes and will be treated with the highest level of confidentiality. Your assistance and cooperation in this regard will be greatly appreciated.

Yours faithfully,

Supervisor
Department of Agricultural Economics and Management
Bindura University of Science Education

APPENDIX IV: KEY INFORMANT INTERVIEW (KII) GUIDE

Enhancing Resilience Building Initiatives Among Vulnerable Households in Gwanda District, Zimbabwe

For: AGRITEX officers, NGO/UN agency staff, local government representatives, traditional/community leaders (target: 10 key informants)

Date: _____ Organization/Role: _____ Location: _____

Section A: Background of Informant

1. What is your role/position, and how long have you worked on resilience-building or related programmes in Gwanda District?
2. Which organization(s) do you represent, and which resilience-building projects are you directly involved with in Ward 11 or the wider district?

Section B: Characterization of Resilience-Building Projects (Objective 1)

3. What resilience-building projects has your organization implemented or supported in Gwanda District, and since when?
4. What is the typical design of these projects (target beneficiaries, duration, type of support provided)?
5. How are beneficiary households selected, and how is coverage decided across wards?
6. Which other organizations are active in the same space, and how is coordination handled between you?

Section C: Challenges Faced by Households (Objective 2)

7. In your experience, what are the most significant challenges households face in participating in or benefiting from these projects?
8. Are there specific groups of households that are excluded or underserved, and why?
9. What institutional, financial or logistical constraints affect your organization's ability to deliver these projects effectively?

Section D: Impact on Income and Economic Empowerment (Objective 3)

10. What changes, if any, have you observed in household income, savings or asset ownership among beneficiaries compared to non-beneficiaries?
11. Does your organization track outcome data (e.g., income, savings) for beneficiaries? If so, what trends have you seen?
12. In your view, which type of intervention has produced the most measurable economic benefit, and why?

Section E: Factors Affecting Household Resilience (Objective 4)

13. What factors, in your professional opinion, most strongly determine whether a household becomes resilient to drought and economic shocks?

14. How important is access to credit, irrigation, or extension services relative to other factors you have observed?
15. What would you recommend to improve the long-term resilience outcomes of these projects in Gwanda District?

Thank you for your time and valuable insights.

APPENDIX V: FOCUS GROUP DISCUSSION (FGD) GUIDE

Enhancing Resilience Building Initiatives Among Vulnerable Households in Gwanda District, Zimbabwe

Target: 3 FGDs of 8–10 community members each, Ward 11, Gwanda District (mixed beneficiary/non-beneficiary composition recommended)

Date: _____ Village: _____ Number of participants: ____ Facilitator: _____ Note-taker: _____

Theme 1: Characterization of Resilience-Building Projects (Objective 1)

1. What resilience-building projects are present in this community? (Probe: Pfumvudza/Intwasa, VSLA, irrigation, livestock, WASH, capacity building)
2. Who brought these projects to the community, and how long have they been running?
3. How were participating households selected? Do you feel the selection process was fair?

Theme 2: Challenges Faced (Objective 2)

4. What are the biggest difficulties this community faces in trying to benefit from these projects?
5. Are there households or groups that are left out of these projects? Who, and why?
6. How has drought specifically affected your ability to participate in or benefit from these initiatives?

Theme 3: Impact on Income and Economic Empowerment (Objective 3)

7. Has your household's income or savings changed since these projects started? In what way?
8. What new income-generating activities, if any, have started in the community because of these projects?
9. How has VSLA or savings-group participation changed how households manage money?

Theme 4: Factors Affecting Resilience (Objective 4)

10. What helps a household in this community recover quickly after a drought or bad season?
11. What is missing that would make households here more resilient in future?

12. If you could ask the government or NGOs for one thing to strengthen resilience here, what would it be?

Closing (5 minutes)

Summarize key points back to the group for validation, thank participants, and confirm there are no further comments (Question F3 from the questionnaire can be cross-referenced here).