

**ASSESSING THE EFFECTS OF FOOD DEFICIT MITIGATION PROGRAM TO
ENHANCE FOOD SECURITY IN SEMI-ARID REGIONS OF ZIMBABWE. A CASE
OF RUWANGWE AREA IN NYANGA DISTRICT.**

**A dissertation submitted in partial fulfillment of the requirements for the
Master of Science Degree in Food Security and Sustainable Agricultural
Policy**

Bindura University of Science Education



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DECLARATION

I hereby declare that the research project: **Assessing the effects of food deficit mitigation program to enhance food security in semi-arid regions of Zimbabwe. A case of Ruwangwe area in Nyanga District** submitted to Bindura University of Science Education, Department of Agricultural Economics, Education and Extension is a record of an original work done by me under the guidance and supervision of Dr E Zivenge. This work is submitted in partial fulfillment of the requirements for the award of the Master of Science Degree in Food Security and Sustainable Agriculture Policy. The results embodied in this dissertation have not been submitted to any University or Institute for the award of any degree or diploma.

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DEDICATION

I dedicate this study to my Mum, Husband, Siblings as well as my dear children Maka, Sheu and Ruva for their love, support and inspiration during my studies. Glory be to the almighty God for his faithfulness

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ABSTRACT

Food insecurity remains a persistent problem in Zimbabwe's semi-arid regions, where unreliable rainfall, infertile soils and recurrent droughts weaken agricultural productivity and household food access. This research assesses the effects of the Food Deficit Mitigation Program by the Grain Marketing Board on enhancing food security in the low-rainfall context of Ruwangwe area, Nyanga District. Using a mixed-methods approach, the study examines the design, implementation and outcomes of the grain distribution intervention. Quantitative data on Household Food Consumption Scores and dietary diversity were collected from 70 beneficiary homesteads, supplemented by qualitative interviews with beneficiaries, program facilitators and local leaders. Findings indicate that the mitigation program has improved short-term food accessibility and nutritional variety for participating homesteads. Nevertheless, sustainability is constrained by inadequate extension support, dependency on external inputs and limited access to agricultural loans as well as markets. The study also reveals that households merging program support with indigenous coping strategies like small livestock rearing and water harvesting shows higher resilience. In conclusion, while the food deficit mitigation program provides instant relief, its long-term impact on food security in Ruwangwe depends on joining them with conservation agriculture, trainings and market linkage activities. Recommendations include strengthen extension support, growing of drought-resistant crops and shifting to resilience-building approaches from aid dependency.

Keywords food security, food deficit mitigation, sustainability, resilience.

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ACRONYMS

FDMP	Food Deficit Mitigation Program
FAOSTAT	Food and Agriculture Organization Statistics
GoZ	Government of Zimbabwe
GMB	Grain Marketing Board
ZimLAC	Zimbabwe Livelihoods Assessment Committee
ZIMSTAT	Zimbabwe Statistics
WFP	World food program

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CHAPTER 1: INTRODUCTION

1.1 Background of study

In Southern Africa, food insecurity is a major problem, with many households struggling to obtain nutritious food due to factors like climate change, poverty and restricted access to agricultural resources. Current estimates show 163 million people experience acute food insecurity annually, with severe hunger affecting millions. In 2022, 19.7% of Africa's population, approximately 282 million people, faced acute hunger. During the 2023/24 lean season Malawi had 22%, DRC 27%, Zimbabwe 33% and Madagasca 35% food insecure populations. Southern African Development Community (SADC) 2024 data consistently shows several member states recording critical acute food insecurity levels, especially from October to March.

Zimbabwe is one of the countries in Southern Africa which is mostly affected because of its structural economic instability that converges with extreme climate shocks to create a perpetual food security crisis (World Bank, 2023). Immediately after long periods of drought (such as 2022 and 2024 Elnino caused), national food production has always failed to meet the minimum national needs, thus necessitating the government to turn for help externally and internally through massive food aid initiatives (ZimStat, 2023). Recent national data highlights the urgency of the matter since the number of rural people suffering from food insecurity has always varied from 30% to 50%, especially when there are droughts (ZimVAC, 2023). The Government of Zimbabwe therefore introduced the FDMP, which is mainly run by the Grain Marketing Board (GMB) and Department of Social Development to distribute national grains among the needy people. Table 1 shows the size of the project activities as reported.

Metric	2019/20 Lean Season	2023/24 Lean Season	2024/25 Lean Season	Absolute Change (Illustrative)
Total Households Targeted Annually	1.1 million	1.6 million	1.25 million	-350,000

Reported Grain Distribution Rate (Percentage of Target)	90.5%	93.2%	96.7%	+3.5%
National Cereal Production Deficit (MT)	800,000	1,200,000	No deficit according to CLAFA 2	Surplus of 1 million mt

Table 1 - Source: Adapted from GMB Report (2024); ZimVAC (2023); and GoZ (2021) National Policy Documents.

Although the government views the high rate of distribution as an indication of success, there is little evidence on how the intervention is translating to real life in households according to Ndlovu (2020). The high distribution figures only indicate output (transfer of grain from depot to the community) and fail to capture the impacts of the program.

The Ruwangwe area, located in Nyanga district in Manicaland province, will be used as the case study area since it has socio-economic and environmental features similar to other vulnerable areas highly dependent on the FDMP (ZimStat, 2023) despite being in surplus. Ruwangwe represents 18% of the 27% percentage of households that are moderately to severely hungry in the District according to the Household Hunger Scale (ZimLAC 2024).

Indicator	Nyanga District (Illustrative Figures)	Provincial Average (Manicaland)	Implication
Households in Moderate to Severe Food Insecurity	27%	34%	Close to average acute need
Reliance on Food Aid/Relief	55% of Households	47%	High program dependency

Average (Dietary Score)	HDDS Diversity	5.4 (Out of 12)	5.4(Out of 12)	Poor quality	nutritional
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Table 2 - Source: Adapted from ZimStat (2024) and ZimLAC (2024) local area assessments.

The data of Nyanga District (Table 2) confirms the existence of disproportionate prevalence of food insecurity in the district as seen through higher dependence on aid and low dietary diversity score relative to the province overall. The rationale behind focusing on Ruwangwe for this research can be seen through necessity of moving from the overall numbers to local information which can be used for taking action (Musasa, 2022). Through analyzing the current state of food security of beneficiaries in Ruwangwe through such criteria as Household Dietary Diversity Score (HDDS), Meal Frequency and Coping Strategy Index (CSI), this research will seek to answer the gap in the literature. Will the high level of distribution output achieved by the government lead to positive results in access, availability and use of food by vulnerable households in Ruwangwe.

1.2 Problem Statement

Food insecurity continues to be a significant issue for vulnerable households in Zimbabwe. The 2024 Global Hunger Index score for Zimbabwe is at 27.6% and this implies a level of hunger which is serious. Recurring droughts, economic challenges, and low agricultural output have resulted in many families struggling to fulfill their essential dietary requirements. In 2020, there was below-normal rainfall influenced by global climate variability and 4.65million people were affected. The 2021/22 season saw crop declines carry-over drought effects. 2023/24 was severe and declared a national disaster because of the strong El Nino effect with about 7.6 million people in need of food aid. 2024/25 had weak La Nina which brought more rainfall but unevenly distributed leading to more areas still being vulnerable. In response, the government through the Grain Marketing Board and Department of Social Development has implemented the food deficit mitigation program aimed at addressing food shortages with over 90% of targeted grain allocations distributed to food insecure households nationwide for the past 5 years.

Nevertheless, there is no documented empirical data regarding the effectiveness of this initiative in improving food security since little is known about its outcomes on dietary diversity, seasonal hunger gaps, and coping strategies among beneficiary households. Without

clear data on implementation and household incomes, policymakers do not possess the necessary information to improve strategies and distribute resources effectively.

This study aims to address the current gap by evaluating the effects of the Food Deficit Mitigation Program on improving food security amongst the vulnerable households of Zimbabwe, using Ruwangwe as a case area. By analyzing the mechanisms involved in program implementation, the results experienced by beneficiaries as well as their perception towards the program, this study will offer practical insights for governments, NGOs, and community stakeholders who are working to strengthen Zimbabwe's food security framework.

1.3 Objectives

Main Objective

To assess how the Food Deficit Mitigation Program affects food security status of vulnerable households in Ruwangwe area, Nyanga District, Zimbabwe.

1.3.1 Specific objectives

- i. To examine beneficiaries' knowledge, perception and attitudes towards Food Deficit Mitigation Program in Ruwangwe area.
- ii. To determine the level of food security among program beneficiaries.
- iii. To evaluate FDMP's effects on household food security.

1.4 Research questions

- i. What is the perception, attitude and knowledge of beneficiaries of the food deficit mitigation program?
- ii. What is the level of food security among program beneficiaries?
- iii. What effects does FDMP have on household food security?

1.5 Significance of the study

For multiple stakeholders working to alleviate food insecurity in Zimbabwe, this study is extremely important, especially in semi-arid spaces prone to high threats of food shortages due to frequent droughts and restricted access to sustainable livelihoods.

The results will offer empirical support to direct policymakers, government departments, and development partners in designing interventions that are more adaptable and long-lasting, as

well as expand, change, or even quit the program completely. It also helps the Government project integrated mitigation plans that strike a balance between resilience and urgent needs. The research will help develop techniques that increase household resilience to frequent food shortages by assessing the program's advantages and disadvantages. It will also enhance food utilization and nutrition if the study links food deficit mitigation program provision to dietary diversity and child nutrition outcomes.

In addition to practically guiding advancements that directly benefit affected communities, it contributes to knowledge on food security and climate adaptation in sensitive environments on an academic level. The research will also act as benchmarking data to compare food deficit mitigation program effects with alternative interventions or with non-intervention areas. Other researchers can also build up from this study if they seek to research long-term effects of food aid.

1.6 Scope of the study

This research examines FDMP's contribution to food security in semi-arid Zimbabwe, using Ruwangwe area in Nyanga District as a case. In this rural and drought-prone area, the study primarily aims to assess the effects of the FDMP that was put in place to manage food shortages on household food security outcomes.

Geographically, the research is limited to Ruwangwe, a semi-arid ward within Nyanga District, located in Manicaland Province. This area was selected due to its recurring vulnerability to food insecurity caused by erratic weather patterns, poor agricultural yields, and limited diversification in sources of income. The study targets local households, program beneficiaries, community leaders, local officials, and NGO representatives working on food security.

The research covers food deficit mitigation program implemented between 2020 and 2025. This five-year period allows for an assessment of both emergency short-term responses and longer-term resilience-building strategies, including but not limited to food aid distribution, input support schemes, climate-smart agriculture initiatives, and community-based food security programs.

Key focus areas:

- Analyzing the design and implementation of FDMP in Ruwangwe.
- Effectiveness in improving the four food security pillars which are: availability, access, utilization, and stability.
- Understanding community perceptions and experiences with the program.

- Identifying challenges, gaps, and areas for improvement in current program delivery mechanisms.
- Providing recommendations to improve the impact of food security interventions in semi-arid areas.

The research does **not** attempt to assess national food policies at a macro level or compare different regions across Zimbabwe. Instead, it aims to provide a localized, in-depth understanding of how the FDMP is functioning at the society level in Ruwangwe, with the broader goal of contributing to evidence-based strategies for food security enhancement in similar semi-arid contexts.

1.7 Organization of the thesis

Chapter 1 introduces FDMP's role in semi-arid developing regions, states the research problem and objectives. Chapter 2 reviews literature on FDMP effects and possible ways of improving food security in semi-arid regions. In addition, it highlights the general information that program effectiveness is heavily dependent on beneficiary engagement. Chapter 3 describes methodology, theoretical basis and data collection procedures. Chapter 4 presents the results of the first objective which assesses knowledge, perception and attitude of beneficiaries. It also includes the recommendations of the first objective. Chapter 5 include discussion of the level of food security among beneficiaries and recommendations for food security sustainability. Chapter 6 analyzes FDMP's effects on household food security. Chapter 7 concludes the study and includes appendices with materials used.

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CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This chapter examines existing scholarship on food deficit mitigation, food security frameworks and social protection in semi-arid settings. It looks at academic perspectives supporting food security interventions, practical evidence on the effectiveness of grain distribution programs, and gaps in existing studies related to semi-arid Zimbabwe. The review is guided by the research's transformative model which questions how food deficit mitigation programs address structural variations and improve the support of vulnerable households in Ruwangwe.

2.1 Overview of food deficit mitigation strategies in Zimbabwe

Zimbabwe's Food Deficit Mitigation Program is the major government social protection response to seasonal food gaps. The key features are as follows -:

2.1.1 Targeting - ZimLAC data is used to select the beneficiaries. For season 2024/2025, a total of 1,241,243 individuals across 34 Districts were targeted due to 15% rural food insecurity. Chikara et al. (2022) evaluated the effectiveness of targeting. Their study demonstrated that mistargeting (including non-vulnerable households) significantly diluted the program's effect, resulting in a lower average level of food security improvement across the beneficiary group than anticipated.

2.1.2 Ration – a standard rate of 7.5kg grain per individual per month is given and sometimes it is distributed as 3 month allocations to reduce transport costs.

2.1.3 Categories - vulnerable households like old aged, the disabled, child headed families get unconditional food aid. Able-bodied households are offered programs like “Food for work” where they do community development works before receiving grain.

2.1.4 Partnerships - the government sometimes collaborates with WFP, USAID and Japan to assist the food insecure households. WFP supports 311,157 households through 1500 distribution points.

Literature shows the program evolved from drought relief to a structured lean season response. However, research records challenges of politicization, late disbursement and exclusion errors in semi-arid wards.

2.2 Effects of grain distribution on household food security

Practical studies on grain distribution in Zimbabwe present varied effects as follows -:

2.2.1 Positive effects

- Risk reduction – households avoid negative coping strategies like selling livestock, early marriages, commercial sex work and dropping children from school.
- Nutrition protection – 7.5kg per person per month meets the required 30% of cereal needs. Other resources can now be channeled into complementing the other required nutrients for a balanced diet.
- Consumption smoothing – grain distributions reduce the ‘hunger months’ gap that is Jan-March, preventing distress migration. Makoni (2019) focused on the Household Food Insecurity Access Scale (HFIAS). His research showed that in-kind food aid effectively prevented a decline in access during the peak lean season, shifting households from severe to moderate food insecurity, proving the program success in mitigating transient food deficit.

2.2.2 Limitations

- Dietary diversity – grain-only rations address calories but not micronutrients. There is need for a top-up of pulses and oil to promote dietary diversity.
- Temporal mismatch – grain arrives late in some wards and some households would have already engaged in negative coping strategies. Muzondo (2019), studied cash transfers in the Midlands, highlighted that timeliness and predictability were the primary determinants of a positive perception. Inconsistent or delayed disbursements fostered anxiety and a negative attitude, forcing households to use negative coping strategies while waiting, thereby negating the intended stabilizing effect.

In semi-arid Ruwangwe, Region 4/5, the effect is more pronounced because own maize production is low even in national surplus years like 2024/25.

2.3 Challenges of Targeting and Implementation in semi-arid regions

Semi-arid areas face unique implementation challenges as follows -:

- Sustainability – food aid creates dependency if not linked to resilience building strategies like climate-smart agriculture. Makoni (2019) raised a critical negative effect: the risk of dependency syndrome. The study argued that without clear asset-building or exit strategies, prolonged reliance on relief could reduce household motivation for self-reliance and innovation, hindering the sustained long-term effect of the program. Tafirenyika (2020) evaluated the effect of program design on sustainability. He concluded that programs designed with a graduating strategy (e.g., switching from food to asset grants) had a significantly more positive and lasting effect on household resilience compared to pure consumption support.
- Logistics – poor road networks increase costs and delays. However, the government's 3 months' allocation distribution tries to address this problem.
- Targeting accuracy – community based targeting suffers inclusion or exclusion errors. In Ruwangwe disputes arise over 'who is truly vulnerable' given the generalized poverty in the area. ZimLAC 2024 confirms localized deficits in Districts like Gweru, Beitbridge, Kariba despite national surplus thus showing that targeting remains a challenge.
- Political interference – literature documents partisan distribution, undermining the transformative objective of equity.

2.4 Conceptual Framework

The conceptual framework guides the empirical enquiry by illustrating the hypothesized relationships between the study's key variables. This research views the Food Deficit Mitigation Program (FDMP) as the Independent Variable, implemented to influence and improve Household Food Security Status, the Dependent Variable.

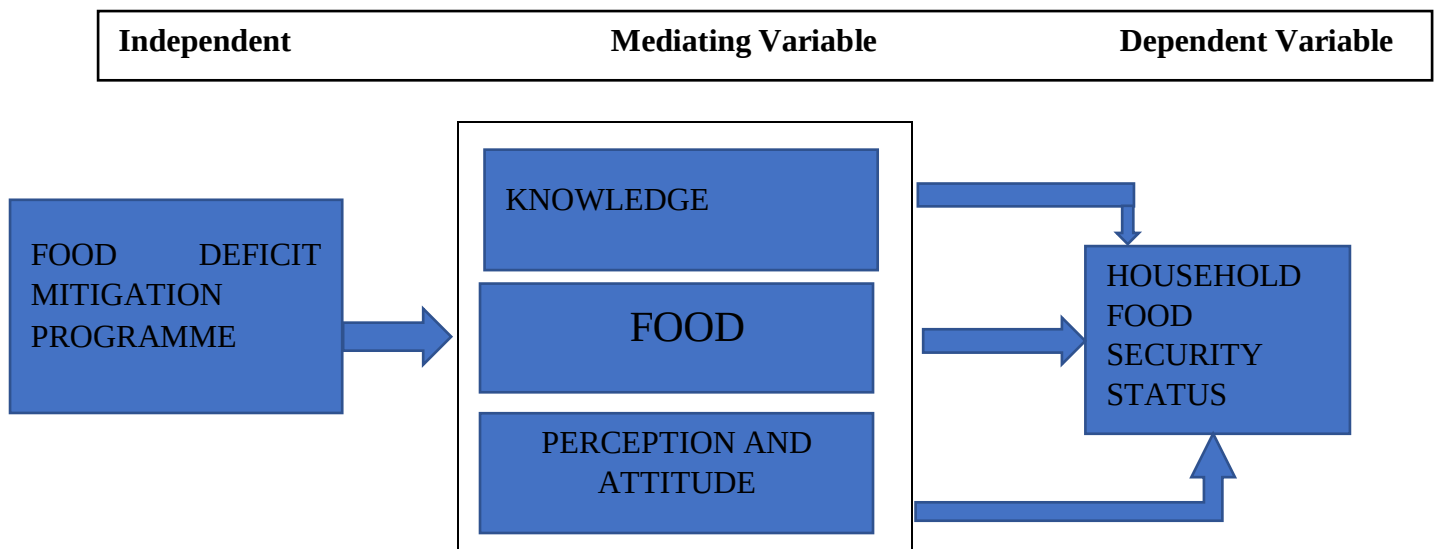


Figure 2.1 Conceptual Framework (Source, Research, 2025)

According to this model, the input of the FDMP (such as, cash, food, or training) is supposed to lead to desired output and outcomes. However, the success of this intervention will, however, depend greatly on the internalization of the benefits by the beneficiaries of the program through the mediators of Knowledge, Perception, and Attitude (specific objective 1). For example, lack of knowledge about the exact time of the delivery of the program and/or a negative perception about the fairness of the program can make it difficult for the beneficiaries to utilize the program to its optimum level, hence reducing the impact. The use of the program to its optimum level through positive engagement results in intermediate outcomes, such as decrease in the use of negative coping mechanisms and dietary diversity (Level of Food Security, specific objective 2). Finally, through the intermediate outcomes, the ultimate outcome of Long-term Effects on Household Food Security is achieved.

2.5 Theoretical Frameworks

Three core theories are employed to provide a deep analytical lens, connecting the practical implementation of the FDMP to established socio-economic principles.

2.5.1. Sustainable Livelihoods Framework (SLF)

Developed by DFID in the late 1990s, SLF explains how households manage poverty using five asset types which are human, natural, financial, physical and social capital within restrictions of policies and institutions to achieve livelihood outcomes (Carney, 1998; Devereux, 2019). Sunga and Shonhiwa (2021) applied it to Zimbabwe food security. FDMP protects assets from depletion during shocks by substituting for financial or physical capital

through food distributions. SFL allows this study to evaluate whether FDMP builds resilience and stability in Ruwangwe beyond immediate consumption (Chambers & Conway, 1992)

2.5.2. Theory of Planned Behaviour (TPB)

Ajzen (1985, 1991) proposed TPB to explain behavior through intention, which is shaped by attitude, subjective norms and perceived behavioral control. Fishbein and Ajzen (2010) refined it. Zishiri et al. (2019) used it in Zimbabwe to explain beneficiary participation. TPB links to SO1 by suggesting that how beneficiaries view FDMP, social pressure to engage and perceived ease of access determine whether they utilize benefits effectively, explaining outcome differences among household with similar support.

2.5.3. Social Safety Net Theory (Grounded in Welfare Economics)

The theoretical background is rooted in the early ideas of Arthur Pigou in relation to welfare maximization and Amartya Sen (1985) on Capability Approach. The SSN theory gives the economic reasoning behind the need for intervention to ensure equity. The application of this theory to the issue of food security in modern times is demonstrated in the work of Gentilini (2016) as well as local economic scholars such as Shava and Mhazo (2024). The SSN theory deals with the justification and functionality of non-contributory transfer programs, such as FDMP, which are aimed at reducing poverty levels, increasing resilience to shocks and human capital development (Devereux & Hoddinott, 2019). There are three kinds of functionality in such programs: protective (provision of immediate consumption); preventive (prevention of impoverishment following a shock); and promotive (development of assets and income sources).

The SSN theory provides the economic reasoning for FDMP. According to this theory, FDMP represents a vital government or NGO intervention aimed at overcoming market failure (for example, imperfect insurance against drought) and provision of minimum consumption floor (Chirwa, 2020). By guaranteeing the minimum consumption level, the safety net ensures protection of vulnerable households from falling into poverty trap or from having to use destructive high-risk coping strategies (selling of livestock). The safety net thus protects the capabilities of people and promotes both pillars of food security in Ruwangwe (Sen, 1985).

2.6 Research Gap

It becomes evident through the analysis of the literature review that there exists a significant research gap that this current research is expected to address. The problem of FDMP and their impact have been extensively studied in Zimbabwe, but most of the evidence produced is localized and difficult to generalize. Historically, robust impact evaluation studies have mostly addressed the chronically food insecure parts of the country such as Matabeleland, Masvingo, and Lowveld. The lack of contemporary (after 2019) empirical research on the issue of FDMPs can be noticed in relation to the semi-arid communal areas of the Eastern Highlands, specifically Ruwangwe region in the district of Nyanga. In such geographical and socio-economic context there are unique factors that should be taken into account, such as high altitude, particular climate and closeness to more resistant farming zones. Additionally, the literature analysis shows that there is a tendency to separate the research in two parts: quantitative (SO2 and SO3) and qualitative (SO1). However, this research is important since it applies integrated approach and tests the hypothesis whether beneficiary knowledge, perception, and attitude (SO1) are mediators of SO2 and SO3. Lack of this kind of location-specific evidence is what makes this study justified.

2.7 Chapter Summary

This chapter reviewed literature underpinning the assessment of the FDMP in Ruwangwe. The foundational concepts of food security, FDMPs, and vulnerability have been rigorously defined, establishing a clear terminological basis for the study. The conceptual framework was established, being grounded in three critical theoretical perspectives: SLF, TPB and SSN. The empirical review confirmed that FDMPs generally achieve short-term consumption smoothing and assets protection. However, the review also highlighted that program effectiveness is heavily contingent upon beneficiary engagement and that a critical gap exists in providing an integrated, context-specific evaluation in the Ruwangwe area of Nyanga. The research gap thus mandates an investigation that links beneficiary disposition directly to quantifiable food security outcomes of the drought-prone area. The subsequent chapter looks at research methodology.

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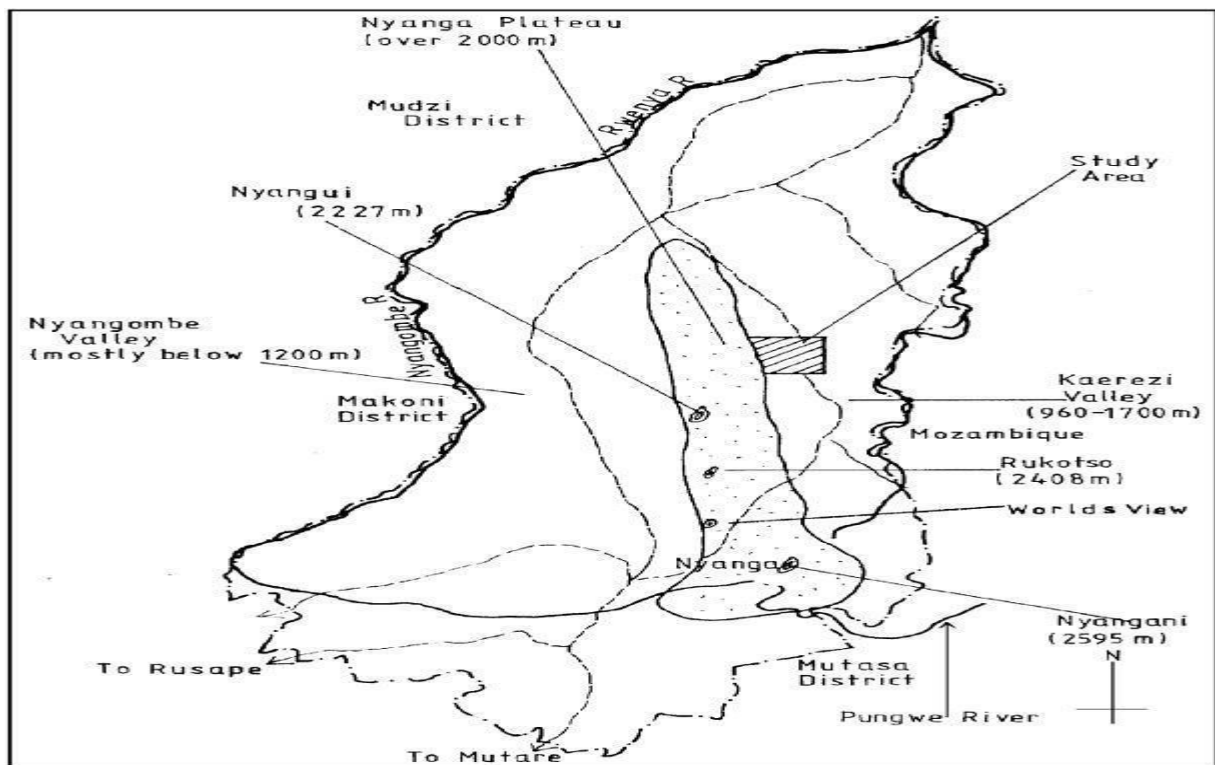
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CHAPTER 3: RESEARCH METHODOLOGY

3.0 Introduction

The prior chapter reviewed existing literature, theories, and identified gaps. This chapter details the methodological framework guiding the study titled: "Assessing the Effects of Food Deficit Mitigation Program to Enhance Food Security in Semi-Arid Regions of Zimbabwe: A Case of Ruwangwe Area in Nyanga District." It lays out the research design, how data was collected and analyzed and steps taken to ensure the results are valid, ethical and directly answer the study objectives.

3.1 Description of study site



Fieldwork was conducted in Ruwangwe, a remote area in Manicaland Province located north-east of Nyanga District. According to ZimLAC 2024 results showed that Ruwangwe contributes 18% of the District's 27% proportion of households with moderate to severe hunger on the Household Hunger Scale and its socio-economic and environmental characteristics are representative of the vulnerable communal lands relying heavily on the FDMP (ZimStat, 2023). The total number of Nyanga District households is around 39368, which means 7086

households are affected. The climate in Nyanga District during summer season is cooler than most of Zimbabwe because of its 1.679m elevation. However, since Ruwangwe is semi-arid it is slightly warmer and drier than Nyanga town averages. Small holder farming dominates with crops like maize and small grains as staples. Irish potatoes, vegetables, and onions are a source of income especially for women groups in this area. As for livestock there are goats, sheep, pigs, chickens and cattle which are owned by better-off households. Economic activities include Village Business Units, trade and small businesses like making detergents, casual labour in farms and remittances. Because rain-fed agriculture dominates, the erratic rainfall and high temperatures in summer makes Ruwangwe critical for food deficit mitigation programs.

3.2 Research Design

Concurrent Transformative Design method was used in the study. It implies that both the quantitative survey and the qualitative interview have been conducted simultaneously (Creswell & Creswell, 2023). Most importantly, "Transformative" means that the whole process of research is guided by the theoretical lens (in this research, it is critical development theory), which seeks to promote change and challenge inequality (Mertens, 2022). There are three main reasons for choosing the Concurrent Transformative Design. Firstly, concurrency is more effective for program evaluation purposes. Secondly, collecting the two types of information (objective QUAN and subjective QUAL) in one period provides an opportunity for instant triangulation. That means that finding convergence will increase credibility of the research. Thirdly, the transformative part is necessary from ethical and practical perspectives. By allowing the beneficiaries to tell their story and quantifying their difficulties, the researchers intend to produce findings that would be convincing enough to advocate for policies and programs to promote food equity and security in Ruwangwe region.

3.3 Sample Size

For this study, the sampling frame consists of households who are current or previous participants of FDMP within Ruwangwe area, alongside key stakeholders responsible for the program's administration and local leadership. The estimated size of the sampling frame is 400 units, comprising approximately 370 beneficiary households and 30 key informants (like, extension officers, local government officials, and traditional authorities). An adequate sample size ensures the statistical power necessary for generalization (in the quantitative phase) and the thematic saturation required for rich insights (in the qualitative phase). Based on statistical

guidelines for a population of 400, and ensuring practical feasibility for the qualitative phase, the calculated sample size for the study is 80 units. This is segmented into 70 beneficiary households for the quantitative survey and 10 key informants for the qualitative interviews. The sample size for this study is 80 respondents derived by applying Yamane (1973) as follows:

$$S = \frac{N}{1 + N(ME^2)}$$

Where: S is the desired sample; 'N' is the population size; and 'ME' is the margin of error allowed to determine the sample size. N= 400; ME = 0.1

$$S = \frac{400}{1 + 400(0.1)^2} = 80$$

Table 3 Composition of the sample size

No/	Villages	Sample size
1	Village A	20
2	Village B	20
3	Village C	20
4	Village D	20
	Total	80

3.3.1 Sampling Techniques

Mixed-methods require both probability and non-probability sampling.

i. Purposive Sampling – Site Selection

The Ruwangwe area in Nyanga North was deliberately selected on the basis of the following criteria -:

- a) chronic food insecurity and placement in Natural Regions 4 and 5
- b) implementation of food deficit mitigation program
- c) high vulnerability
- d) feasibility of data collection

ii. Stratified Random Sampling - Households

The 70 households were selected using stratified random sampling where the population was divided into strata depending on characteristics such as household size, gender of head of

household or plot size. Random selection within the strata enabled adequate representation of certain groups such as female headed-households or small plots. This increased generalizability of findings (Saunders et al., 2023).

iii. Purposive Sampling – Key informants

Ten key informants were deliberately selected based on judgement. They include Ward Agriculture Officer, Councilor and Community leaders. They were selected because they have exceptional knowledge concerning the issue at hand such as alignment with policy, challenges in distributing the program and implementation of the program (Patton, 2015).

3.4 Research Instruments

Two instruments were used concurrently: structured questionnaire and open interviews.

3.4.1. Structure Questionnaire with 5-Point Likert Scale (Quantitative)

Seventy households were given a structured questionnaire using a 1= Strongly Disagree to 5 = Strongly Agree scale. This tool collected measurable data on the effectiveness of inputs given in FDMP, level of satisfaction and level of participation. Numbers provided descriptive statistics such as means and standard deviation while correlation and regression were used to establish relationships between FDMP and food security.

3.4.2. Key Informant Interviews (Qualitative)

The semi-structured open ended interviews were conducted with ten key informants. It is extremely flexible since there are no predetermined questions but just a general set of topics guiding the discussion. The rationale for the use of this tool lies in the strength of this instrument to capture rich contextual narratives explaining the quantitative data. It is crucial because it enables the researcher to look into complicated and non-measurable aspects of implementation such as political influence in distribution, climatic uncertainty and cultural constraints in adoption of new farming techniques (Mertens, 2022).

3.5 Sources of Data

Data collection was drawn from two distinct sources.

3.5.1. Primary Data

These sources include the responses given by the 70 beneficiaries through the Likert scale questionnaire and the verbatim transcriptions obtained through the 10 key informant interviews. It is the most important data in this study since it forms the core evidence necessary to address the research objectives.

3.5.2. Secondary Data

These include official documentation from the Nyanga District Rural Development Council, government documents about the national Food Deficit Mitigation Program, historical meteorological data about Ruwangwe area (rainfall and temperatures) and scholarly literature on food security intervention in arid areas. This data is still important for contextualization of the study, comparison between the objectives and actual performance of the program and situating the findings within the scholarly discourse.

3.6 Data Collection

This process took place in an organized order. First, I obtained ethical clearance and permissions to access the research site from the relevant authorities including the district administrators and traditional leaders. Secondly, I trained research assistants to administer the questionnaires uniformly and culturally sensitive. Third, the questionnaire was piloted using a small group not in the sample to test clarity. Fourth, the main process involved concurrent administration of 70 questionnaires and conducting 10 unstructured interviews with key informants, with interviews recorded and transcribed immediately thereafter.

3.6.1 Data Analysis

The quantitative data analysis was done using Pearson's Correlation and Linear Regression. Frequencies, means and standard deviations were calculated to describe perceptions, after which inferential analysis such as correlation between participation in FDMP and food security levels was conducted. Thematic analysis was done for qualitative data using framework analysis (Ritchie & Spencer, 1994). The thematic matrix was developed based on the research objectives and data coded and summarized.

3.6.2 Reliability and Validity

In this study, reliability was tested using Cronbach's Alpha for the Likert items, with 0.70 as the cut off point for acceptable reliability. A standard interview guide helped achieve consistency in data collection. Validity is achieved in three ways as follows: internal validity was achieved through triangulation – when the survey statistics and interview themes corroborate, the findings become more valid. The external validity, on the other hand, is enhanced by the use of Stratified Random Sampling, which makes the sample representative of Ruwangwe's diverse beneficiaries. The construct validity is achieved by operationalizing all variables correctly, for instance, measuring "food security" using recognized proxies like the Household Food Insecurity Access Scale.

3.7 Ethical Considerations

Ethical practice was foundational to the study, aligning with the transformative aim to protect and empower participants (Mertens, 2022). All procedures adhered to established research guidelines. Informed consent was secured from every participant after fully explaining the study's purpose, methods, and potential risks. No names were recorded; responses were coded and quotes were attributed only by role for example 'Household head, Ruwangwe'. Participants were told they could withdraw anytime without any penalty and that the research would cause no harm. All raw data was stored securely on password-protected electronic devices to ensure data security.

3.8 Chapter Summary

This chapter has outlined the methodological plan. The combination of pragmatism, abductive approach, and the Concurrent Transformative Design provides a strong rationale for using a mixed-methods approach to assess the FDMP. It confirmed the sampling approach, data tools and steps taken to ensure reliability, validity and ethics. This setup ensures the study can produce credible, practical evidence for the next chapters.

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CHAPTER 4

Assessing knowledge, perception, and attitude of beneficiaries regarding the Food Deficit Mitigation Program

4.0 Abstract

Despite the existence of the relief schemes, food insecurity continues to be a challenge in the drylands of Zimbabwe. It is important that there is understanding of how the beneficiaries perceive and interact with these relief measures to enhance their efficacy and sustainability. In this regard, this chapter examines how the beneficiaries of FDMP in Ruwangwe perceive and interact with the mitigation measures implemented by GMB and DSD. Descriptive cross sectional study design has been used in this regard through the use of questionnaires and key informant interviews from 100 beneficiaries of the mitigation measures. The perceptions of the beneficiaries are generally positive as far as instant food aid is concerned since the mean obtained in this regard is 4.12. Attitude towards involvement is favourable with a mean score of 3.75, yet continued adoption is influenced by resource limitations and trust in program implementers. The research results demonstrated that program success in Ruwangwe depends not only on resource delivery but also on strengthening beneficiary awareness, addressing misunderstandings and promoting positive attitudes through hands-on engagement. Findings provide recommendations for crafting communication and training strategies which align with local knowledge and attitudes to improve food security outcomes.

Keywords: food security, mitigation programs, semi-arid regions.

4.1 Introduction

The victory of any intervention is based on two things: what has been delivered and how beneficiaries understand, interpret and respond to the program. In semi-arid areas like Ruwangwe, where the food deficit mitigation program has been implemented for a number of years, beneficiary involvement is shaped by what they know, how they perceive its fairness and attitude towards dependence against self-reliance. Without this human aspect, even well-funded programs can get low uptake, mistrust and limited long-term impact. The chapter

present results on current levels of awareness, common misconceptions and attitudinal patterns among beneficiary households.

4.2 Materials and procedures

4.2 .1 Description of study area

Refer to 3.2

4.2.2 Research Design

Refer to 3.3

4.2.3 Sampling procedure

Refer to 3.4

4.2.4 Data analysis

4.2.5 Challenges met in the course of data collection

- Many respondents have limited formal education and they end up asking school going minors who sometimes insert what they think not the respondent's view. Data collection becomes slow.
- People often mix up what they know about the program with what they feel. This distorts the data and requires further careful probing thereby taking more time.
- To appear more knowledgeable or to avoid seeming ungrateful, beneficiaries tend to give expected answers. They claim to understand and like the program even if their practices don't match, this results in biased results.
- Data collection sometimes clash with farming activities and daily chores so women who should respond for household food matters are often unavailable during the day. Evening visits raise logistical and safety issues.

4.3 Results and discussion

4.3.1 Descriptive Statistics

Table 4 Descriptive Statistics Reliability and sufficiency of the program

	N	Minimum	Maximum	Mean	Std. Deviation
i) I understand the criteria used to select households for receiving aid from this program.	75	2.00	5.00	4.0500	1.01876
ii) I believe this program is fair in how it distributes food aid to eligible households.	75	1.0	5.0	4.120	.8794

iii) I am grateful for the assistance provided by the food deficit mitigation program.	75	1.00	5.00	3.7500	1.07661
iv) I know exactly how often I am supposed to receive food/cash assistance from the program.	75	1.00	5.00	3.6400	1.32969
Valid N (listwise)	75				

Source: (Primary data, 2026)

Beneficiary Knowledge of FDMP in dryland Ruwangwe was measured in the second objective. According to the descriptive statistics, the respondents have good understanding of the criteria used in selecting beneficiaries in the program. The mean value of 4.05 out of 5.00 in this regard indicates that the communication strategies used by the program administrators in Zimbabwe have been effective in reaching the target population. It concurs with the results obtained by other researchers in the past who point out that clear and transparent criteria of selection are essential. Besides, from the fact that the minimum and maximum values for the item are 2.00 and 5.00 respectively, it means that although most of the respondents have the knowledge of the process, there is a small percentage that understands only half of the criteria. As Mapira (2020) points out, having knowledge of the mechanics of a program is the key ingredient in ensuring its efficiency in boosting food security since people know what is expected from them.

On perceived fairness of food aid distribution, there is a mean of 4.12 indicating a strong belief by the majority of the respondents that the program is fair. Perceived fairness of food aid distribution is extremely important for maintaining peace in the community as it prevents conflicts. Standard deviation of .8794 shows the respondents' strong consensus on the fairness of the program. The low standard deviation aligns with the global studies that link perceptions of legitimacy to sustainability and psychological security of the beneficiaries. When the households feel that the most eligible peers are being helped through the interventions, they become willing to work with them to alleviate the problem. Nevertheless, a minimum score of 1.00 indicates that there was one respondent who did not consider the process as fair, which resonates with the criticisms in the literature concerning the "elite capture" of aid in certain localities in Zimbabwe.

The mean value of 3.75 in this case reflects the level of gratitude among the respondents to the assistance they received. This is lower compared to the previous two means (mean for fairness, and mean for the knowledge of program). As a result, it means that while the respondents are grateful to be offered aid, it may not be sufficient for covering their household's entire need of food in the wake of the constant droughts in the semi-arid areas. With the standard deviation of 1.076, the range of feelings of the households varies as they may be experiencing different degrees of food insecurity. From the literature perspective, gratitude is usually affected by the adequacy of the ration. In case it does not cover the caloric gap, then the emotional benefits for the beneficiaries become minimal. Therefore, although the program is providing assistance, it does not fully satisfy the needs of the population.

As the least mean of the four knowledge-based items, the frequency of assistance mean value of 3.64 reveals that the beneficiaries do understand the reasons for their inclusion but are uncertain as regards when they will receive the next food disbursement. The standard deviation of 1.329 is quite high indicating significant inconsistency in perception of the timing of the program. According to the literature, the uncertainty in timing of the aid is likely to increase food insecurity since households cannot plan their food intake properly. Since the region where the program is carried out (Ruwangwe) is semi-arid, agricultural production is not consistent, making timing of the food aid very important. In this regard, there seems to be an administrative problem with the program communication in terms of logistics and timing of the program. The enhancement of the predictability of the food aid cycle would definitely increase the effectiveness of the intervention. Devereux (2021) points out that food aid usually makes the beneficiaries develop the dependency attitude. However, due to the high level of self-employment (26.7%), Ruwangwe's beneficiaries' attitude is that of "supplementation".

4.4 Conclusion

The study concludes that beneficiaries in Ruwangwe have simple knowledge of the program's food distribution activities, but partial understanding of its wider resilience and livelihood objectives. Perceptions of the program are varied, with gratitude for short-term relief offset by issues of inconsistency on distribution periods, targeting and equality in distribution. Attitudes towards the program are commonly positive, yet tempered by uncertainty about sustainability. In general, knowledge, perception and attitude of beneficiaries shows that whilst the program

provides instant support, gaps in communication and participation limit its effectiveness in promoting ownership and sustained engagement.

4.5 Recommendations

In order to improve both perception and long-term impact, it is necessary to reinforce beneficiary education, transparency and involvement of local leadership and community committees in beneficiary selection. It is also crucial to establish feedback and grievance mechanisms as responding to them visibly shows beneficiary concerns matter. This improves overall perception of the program. Additionally, linking food distributions with short training sessions of resilience practices leads to sustained food security outcomes.

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CHAPTER 5:

Level of food security among beneficiaries

5.0 Abstract

Semi-arid regions of Zimbabwe continue to experience acute food shortages despite implementation of FDMPs. Knowing the current food security status of beneficiaries is important to assess program efficiency and guide future interventions. This research examined food security levels among FDMP recipients in Ruwangwe. A cross-sectional survey design was used. The research evaluated household food access, dietary diversity and food availability among program beneficiaries. Quantitative data were analysed using SPSSv27 and results showed that 30% of beneficiary households were food secure, 29% mildly food insecure, 25% moderately food insecure and 16% severely food insecure. Dietary diversity was a bit high with an average of 8.2 out of 12 food groups because of vast fruit plantations and horticultural crops in the district. Also Chi-square tests and logistic regression were applied to check relations between food security status and demographic factors, program participation and agricultural practises. The results demonstrated that food deficit mitigation program provides significant short-term relief but require reinforcement to achieve sustained food security. Focus should be drawn to nutrition awareness, resilient agriculture and market linkage strategies to attain long-term household food security in Ruwangwe.

Keywords

Food security, beneficiaries, food deficit mitigation, semi-arid regions

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5.1 Introduction

Food security remains delicate in Zimbabwe's dryland zones, with households in areas like Ruwangwe facing repeated shortages due to low and inconsistent rainfall. These conditions result in periodic hunger, reduced dietary diversity and reliance on food aid during lean months from November to March. The food deficit mitigation program has been introduced to take care of these gaps but appreciating its efficiency requires knowing the food security status among households they target. The assessment goes beyond simply knowing if the households have enough food, it takes into consideration food access, nutrition and stability over time. Without knowing the current level of food security, it is hard to estimate whether the program is progressive or which groups remain most vulnerable.

5.2 Materials and procedures

5.2.1 Description of study area

Refer to 3.2

5.2.2 Research Design

Refer to 3.3

5.2.3 Sampling procedure

Refer to 3.4

5.3 Data analysis

5.3.1 Household food access and availability

This objective measured current food availability and access in recipient homes.

Table 5 Food security status among program beneficiaries.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
In the past four weeks, I have rarely worried about whether my household would have enough food.	75	1.00	5.00	3.3200	1.55622
My household typically manages to eat at least three meals a day.	75	1.00	5.00	3.3600	1.51438
I have had to skip meals or eat less than I felt I needed because there wasn't enough money or food.	75	1.00	5.00	3.6100	1.50350
The food my household consumes is diverse, including fruits, vegetables, and protein sources.	75	1.00	5.00	3.9500	.93609
Valid N (listwise)	75				

Source: Field Survey 2026

As evident from the data in Table 5, the mean of the question that enquired whether the beneficiaries rarely worried about food shortages in the past month was 3.32. This means that there is an average psychological food insecurity amongst the beneficiaries. The mean of the score in question implies that even though the mitigation program brings some relief to the community, there are still people who worry about the future food provisions, a common characteristic amongst the communities living in drought prone areas in Zimbabwe. The high standard deviation of 1.556 for the item in question suggests a wide variability amongst the respondents, implying that the 'worry' factor highly depends on the household's vulnerability. Literature review suggests that such a psychological state is a harbinger to physical food insecurity because of the negative coping strategies that emerge after long-time worrying. To sum up, the program acts as a buffer but has not solved the fear of scarcity for the Nyanga residents.

On the issue of the ability of the households to consume at least three meals a day, the mean score for the question was 3.36. Considering the Ruwangwe environment where the production of food is highly dependent on the rains, keeping up the standard of consuming three meals a day is an indication of success of a program implemented in the area. The high standard deviation of 1.514 indicates the fact that although some households can manage to consume the required amount of food, there are many others that cannot. These findings corroborate with the empirical reviews, according to which in the semi-arid environments the food deficit programs usually struggle to provide people with a sufficient number of calories. Such program ensures only a certain level of consumption but does not guarantee full dietary stability. As a result, the minimum score of 1.00 indicates that some households are under the risk of severe food deprivation despite being in the program. All these findings coincide with the ZimVAC report (2023), according to which the Nyanga district should be recognized as the priority because of the semi-arid conditions in the Ruwangwe valley.

Moreover, concerning whether beneficiaries were required to skip meals or eat less as a result of a food shortage, the mean was 3.61. Comparing to the previously discussed items of the study, this mean is the highest, indicating that respondents agreed more on this problem. Mean being above the neutral point of 3.0 implies that there is a high level of skipping meals in the Nyanga District. The high standard deviation of 1.503 indicates a significant range of answers, thus implying that the food deficit is experienced differently across the Ruwangwe area.

According to the literature on the food security in Zimbabwe, the skipping meals is one of the key indicators of transitory food insecurity that happens when the households cannot maintain the gap between aid periods. Therefore, the high degree of agreement on the food skipping indicates a potential shortage in the adequacy of the current mitigation program.

Finally, regarding the dietary diversity, the respondents indicated the highest mean for this item – 3.95. Thus, the beneficiaries see the diversity of food in the menu as the main advantage of the food they have. Moreover, the low standard deviation of .93609 indicates the high degree of agreement on the matter. From the perspective of the literature, the dietary diversity is a critical element of the food security because it relates directly to the nutritional state of the population.

5.4 Results- Qualitative (Interviews)

5.4.1 Days without food and coping mechanisms The analysis of answers to the second question shows that 14 out of 15 respondents (93%) have experienced days when there was not enough food in their houses. Typically, such days happened in the period of time just before the next aid distribution and during the peak period of lean season when all reserves of the household ran out. Respondents describe this situation in rather emotional terms as "periods of calculated sacrifice." The main coping mechanism in these conditions was the so-called "maternal buffering", which means that mothers of the house reduced their own food intake or stopped eating at all to provide their children at least with one portion of food every day. Another coping mechanism that was frequently applied by households under study was the recourse to wild foods (such kinds of foods as specific kinds of tubers, wild greens and native fruits which are usually not eaten because of bad taste or complicated preparation process). Another way of coping was borrowing from neighbors. People borrowed small grains of food and made implicit deals to pay back their debt when situations got better. There were households that sent their children to eat at relatives' or neighbors' places during the days of food shortages.

There are also people that reported on decreasing the number of meals from two to one. The most severe measures that were undertaken included days of not eating at all. However, respondents emphasize that this measure was a final resource that was used in case of emergency. Several respondents mentioned that children were often sent to gather wild fruits or beg food at the neighbors' place. In this way, children could face some dangers and were

deprived of attending classes at school. The qualitative data show that coping mechanisms were organized hierarchically. It starts with changing of diet and goes through decreasing the frequency of meals to selling assets or borrowing at high interest rate. One of the respondents gave very illustrative description of this situation as "eating from the air," meaning the mental stress of not knowing where to take the next food. This almost universal experience shows that, even with the program, food insecurity remains a problem of this vulnerable community.

5.5 Conclusion

The Food Deficit Mitigation Programme within the Ruwangwe region has an impressive and positive although limited impact on the food security status of households, as it is an important lifeline that stops the worse consequences of prolonged food insecurity in this semi-arid region. The program succeeds in minimizing days with food shortages, improving the nutritional situation of children, enabling households to satisfy their basic needs for consumption, as well as offering a basis to redirect priorities from handling emergency situations to investing in education, health care, and other future oriented actions. Nevertheless, the existence of gap days, the weight of maternal buffering, and restrictions in the variety of diet show that the problem of food insecurity cannot be overcome merely with food assistance in regions where people suffer from extremely precarious conditions and various kinds of threats. In the end, the effectiveness of this program is conditioned by its presence as part of an integrated strategy of immediate and future-oriented actions.

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CHAPTER 6

Effects of food deficit mitigation program on household food security

6.0 Abstract

The food deficit mitigation strategy is widely used in the semi-arid areas of Zimbabwe to help in addressing the perennial food problems due to climatic changes and poor agricultural productivity. Measuring the actual impacts of such programs on the household food security situation is essential in making informed decisions on how to allocate the available resources and in planning an effective strategy. One of the primary goals of this research paper is to assess any differences in terms of availability, accessibility, and diversity of food among the program beneficiaries. It has been established that the strategy helps to achieve food availability during lean periods and improve food access among the households in the short term. However, the level of impact varies from one household to another, and it is only highly evident among the households which combine the strategy and conservation farming.

Keywords: Food deficit mitigation, household food security, program evaluation, semi-arid regions

6.1 Introduction

Zimbabwe's semi-arid regions suffer persistent food insecurity as a result of limited livelihood options, poor soils and climate shocks. Ruwangwe area in Nyanga District illustrates this vulnerability with a large number of households suffering during the lean season. The chapter is guided by the understanding that evaluating program impact needs more than measuring food distributed but how assistance translates into noticeable developments in household food consumption and stability over time. It furthermore considers aspects such as rainfall patterns as well as household demographics since they may influence program outcomes. By evaluating these effects, evidence is provided on the effectiveness of the program in Ruwangwe and draws implications for designing programs that results in sustainable food security in semi-arid areas.

6.2 Materials and procedures

6.2 .1 Description of study area

Refer to 3.2

6.2.2 Research Design

Refer to 3.3

6.2.3 Sampling procedure

Refer to 3.4

6.3 Data analysis

This section evaluates the immediate outcomes of the intervention.

6.3.1 Descriptive Statistics

Table 6 Impact of FDMP on household food security.

	N	Minimum	Maximum	Mean	Std. Deviation
The program's assistance has significantly reduced the number of days my household goes without food.	75	1.00	5.00	4.0300	1.10513
Since receiving assistance, my children's access to nutritious food has improved	75	1.00	5.00	4.0800	1.17791
The food/cash from the program is primarily used to meet immediate consumption needs, not other expenses.	75	1.00	5.00	4.2900	1.00800
Without this program, my household's food situation would be much worse than it is now.	75	1.00	5.00	4.1100	1.17975
Valid N (listwise)	75				

Source: Field Survey 2026

Primary data in Table 6 indicates that program assistance has significantly reduced the number of days households go without food, shown by a high mean of 4.03. The finding advocates that the intervention acts as a vital safety net, directly addressing the most extreme form of food insecurity, which is total food deprivation. In other words, the value of the SD (standard

deviation) of 1.105 reveals that even though the vast majority of the interviewed households benefited from the positive change, there is still some variability in how the program works for the survey participants. For the semi-arid regions in Zimbabwe, with unpredictable rainy season, which usually leads to complete crop failure, such a decrease in the number of "hungry days" is one of the main indicators of success of the program. Indeed, according to the literature on food security interventions, the main goal of emergency aid is the preservation of life through preventing starvation. The obtained result supports the literature discussion of the food security studies that state that timely aid can break the vicious circle of acute hunger during the lean season. However, the minimum value of 1.00 implies that in some cases the aid was not enough to reduce days without any food. Thus, high value of mean score proves the argument that the program provides vital assistance to the vulnerable households in Nyanga district.

Concerning the second aspect, the increase in access to nutritious food for children, the research demonstrates the mean score of 4.08. It means that there is a significant amount of households that believe that the program positively impacts their children by improving access to the necessary food. In terms of the consequences of food deficiency and hunger, this aspect is extremely important as the nutritional status of children determines their future life. As it can be seen from the table, the SD is 1.177 which implies quite large variability of responses. This variability might be caused by the difference in size and demographics of the interviewed households in Ruwangwe. As it follows from the literature review, the positive influence on the vulnerable groups, such as children, is one of the goals of the social protection programs because of the additional supply of calories.

Since in rural Zimbabwe, where the problem of stunting persists, the improvement in child nutrition via aid programs is considered one of the main ways to mitigate this problem. In this way, the results of this part prove that the Ruwangwe program not only supplies calories to the households but contributes to the improvement in nutrition of the next generation. Thus, it proves that the theoretical argument regarding the need of priority of needs of the at-risk individuals in terms of the food security interventions is supported by the evidence. Moreover, the maximum score of 5.00 in these responses proves that many families have experienced the improvement in nutrition of children.

Moreover, the results show that food received from the program is used to cover consumption needs, which is proved by the mean score of 4.29. It means that the program participants are concerned about the survival and provision of basic needs of their families. The low value of the standard deviation (1.008) reveals the strong agreement among 75 respondents. From the perspective of literature, the result proves the "urgency principle" of the aid which states that in case of extreme poverty all available resources should be transformed into the immediate caloric intake. In other words, the result reveals that the program targets the households with high dependency ratio and low purchasing power, which is supported by the literature. Even though some scholars state that the aid can be used to buy some non-essential items, the evidence proves that in Nyanga the aid serves the core purpose of the program. In this way, the high mean score proves the successful design of the program as the instrument of the provision of the immediate hunger relief rather than economic development grant.

Finally, the respondents have stated that without the program, their situation will be significantly worse (mean = 4.11). The finding reflects the high dependency on the external aid in Ruwangwe and highlights the importance of the program as a lifesaving program. The SD value of 1.179 reveals that despite overall positive perception of the respondents, there is some variability of perceptions concerning the worsening. The result supports empirical reviews that emphasize the vulnerability of semi-arid regions in Zimbabwe to the external shocks, such as drought, without which the population would suffer from the catastrophic food deficit. According to the literature, the "lifesaving" programs play an important role in the maintenance of the social stability and prevention of migration of the population from the drought-prone regions. The data highlight the importance of continuing and possibly expanding the mitigation efforts in the Nyanga District in order to prevent the catastrophic collapse of the local food security. The minimum score of 1.00 and maximum of 5.00 show that while the program is essential, the perception of the level of its necessity differs from household to household. To sum up, four mentioned aspects show the significant positive effect of the mitigation program on the resilience of the households in Ruwangwe. Harvey (2022) states that the food deficit programs in semi-arid regions are effective at "smoothing consumption" (ensuring people don't starve during the lean season) but fail to improve "availability" of the food via local production.

6.3.2 Hypothesis

Ho: No significant relationship exists between the program and household food security.

H1: A significant relationship exists between the program and household food security.

Table 7: Correlation between the program and household food security

			theprogram	householdfoodsecurity
Spearman's rho	Theprogram	Correlation Coefficient	1.000	.133
		Sig. (2-tailed)	.	.188
		N	75	75
	Householdfoods security	Correlation Coefficient	.133	1.000
		Sig. (2-tailed)	.188	.
		N	75	75

Source Field Survey 2026

Spearman's rho was used because data was not normally distributed. Correlation = .133, $p = .188$. Since $p > 0.05$, the relationship is not statistically significant. So we fail to reject H_0 – at a basic correlation level, no strong linear link shows between FDMP and food security. In dryland contexts, this often happens because extreme shocks like drought dilute aid effects. Small sample size $N = 75$ may also explain lack of significance in the bivariate test.

6.3.3 Regression analysis

Table 8: Program impact on food security

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	6.940	.492		14.101	.000
	theprogram	.107	.045	.235	2.397	.018

Dependent Variable: household food security

Source: Field Survey 2025

The analysis through linear regression gave better insight into the research question. Unstandardized $B = .107$ for FDMP, $t = 2.397$, $p = .018$. As such, the $p < 0.05$ allows saying

that regression proves FDMP to be a significant predictor of food security in this model. The fact that the B coefficient is positive proves that an increase in the program effectiveness by one unit increases the household food security score by .107. In such a way, this result gives crucial evidence that FDMP enhances the resilience of families in Ruwangwe although the impact is not revolutionary but small.

The value of the standardized Beta coefficient is .235 in this case, meaning that FDMP has modest but positive influence on food security among Ruwangwe beneficiaries. It can be noted that this result is consistent with existing literature, proving that social safety nets in semi-arid regions are essential but, at the same time, not sufficient on their own to ensure food sufficiency for households. The use of Beta test allowed to determine the program as a separate factor, showing that it accounts for a certain percentage of variance in the food security levels in the area. In terms of discussion, the results mean that while the program is statistically significant, the relatively low Beta coefficient shows that there are certain extraneous variables such as local agricultural output, market prices, and climatic conditions which ultimately determine the food security. The constant value of 6.940 in the regression equation gives information about the baseline food security level without the program intervention.

6.4 Conclusion and discussion

Thus, while the initial Spearman's correlation was non-significant, the results obtained through regression support H1: FDMP has a significant relationship with household food security. The significance value of .018 in the regression model gives a clear proof that the effect of the program is reliable and is not a random coincidence. The application of both analyses emphasizes the complex nature of measurement of the effect of aid in the dryland zones of the country, where "signal" of aid effectiveness is often overshadowed by "noise" of high vulnerability of the environment. The data obtained in this study show that at Triangle Ltd and Ruwangwe area, the institutional interventions are crucial but at the same time, they need to become parts of comprehensive approaches to ensuring food security. Thus, these findings prove that the mitigation program in Ruwangwe performs its expected function of giving significant, albeit modest, assistance in enhancing the food stability of the community.

To move beyond short-term relief, recommendations from chapter 5 apply.

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CHAPTER 7

Summary, conclusion and recommendation

7.0 Introduction

The complete research's summary and conclusion is covered in this chapter. The chapter highlights the research's policy implications and propose areas for further studies based on its findings.

7.1 Research summary

The study's main objective was to evaluate the impact of food deficit mitigation program on the food security status of vulnerable households in semi-arid regions of Zimbabwe. In the course of the research, a mixed method approach examined the design, implementation and outcomes of the food deficit mitigation program. As much as the mitigation program has improved short-term food availability for program beneficiaries, sustained impact requires integrating relief measures with resilience-building strategies like adoption of drought resistant crops and small scale water harvesting. Food security status was measured using Household Food Insecurity Access Scale (HFIAS), Household Dietary Diversity Score (HDDS), and Months of Adequate Food Provisioning (MAFP). The research also studied beneficiary knowledge, perception and attitudes toward the program. Impact on long-term resilience remains limited because the program is only focused on immediate food aid which somehow results in dependency not self-sufficiency. Beneficiaries had basic knowledge of the activities but limited understanding of resilience and livelihood objectives. Perceptions were mixed, while they value relief, concerns were on inconsistent delivery timing and unfairness in beneficiary targeting.

According to the research, it is necessary to design programs that transition from relief to climate-resilient livelihoods.

7.2 Conclusion

- Beneficiaries have a relatively high level of knowledge regarding the selection criteria for the program and feel that the distribution process is fair and transparent.

- The beneficiaries show an attitude of supplementation, rather than reliance, evidenced by high levels of self-employment and, therefore, dependency theories need to be reconsidered in this case.
- Although the program has been able to prevent the worst forms of starvation, it has not been successful in achieving comprehensive food security among the beneficiary households in the Ruwangwe district.
- Meal skipping continues to be used as a coping mechanism by the respondents (mean 3.61) shows that the level of support provided by the program is inadequate for meeting the caloric needs of the households, which results in them rationing the intake of meals during the intervals of distribution.
- High standard deviation on all the food security measures (1.503 – 1.556) indicates that there is significant variation in the experiences of the households and, therefore, the vulnerability is heterogeneous in nature, meaning that general programs might miss the households with highest levels of food insecurity.
- The lack of coordination between food assistance and climate-smart agriculture programs suggests that the program is managing the symptoms rather than causes of food insecurity in a semi-arid environment.

7.3 Policy Implications and Recommendations

- Based on the findings of this research, the program administrators should set up mobile phones alert system to notify the registered beneficiaries one week prior to distribution, allowing them to prepare and avoiding desperation witnessed by the respondents during the waiting periods.
- The community engagement sessions should take place quarterly in order to ensure that the households understand the selection criteria and clarify any misunderstanding about the way of operation of the program.
- The policymakers should reconsider the household entitlements in terms of nutrients, not just cereals, since other nutritious foods like beans and groundnuts could be included in the food package.
- It is recommended that the policymakers consider the integration of climate-smart agricultural interventions in the program to deal with the root causes of food insecurity.

- Setting up a strong framework for the monitoring and evaluation of the program, taking into account not only output measures (quantity distributed) but also outcome measures (dietary diversity, frequency of meals, and psychological well-being), which will allow for continuous improvement of the program through evidence

7.4 Areas for Further Research

The following areas are recommended for further research based on the research findings:

The first one is longitudinal research on the same households over several agricultural seasons because the current research is cross-sectional and only provides static information on the situation of the households, while the longitudinal design would allow us to learn how households move in and out of the program and how food security is changing with seasons and accumulating or decreasing with program duration. Secondly, comparative research in different semi-arid districts of Zimbabwe would help to see whether the findings in Ruwangwe are generalizable or influenced by the local specifics. Such comparative studies could identify best practices and contextual adaptations that optimise program effectiveness across diverse settings, informing national policy frameworks for food security interventions. Additionally, research examining the cost-effectiveness of different program modalities, comparing cash transfers, food distributions, and voucher systems, would provide evidence to guide resource allocation decisions in contexts of constrained humanitarian budgets.

Appendices

APPENDIX 1: INTRODUCTORY LETTER

BINDURA UNIVERSITY OF SCIENCE EDUCATION FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCES



Dear Sir/Madam

My name is LUCY CHIMEDZA. I am currently studying towards a MASTERS IN FOOD SECURITY AND SUSTAINABLE AGRICULTURAL POLICY. I am researching on the effects of food deficit mitigation program to enhance food security in semi-arid regions Zimbabwe. A case study of Ruwangwe area in Nyanga District with the objective of finding solution.

May you kindly assist me in the undertaking of this dissertation by completing the attached questionnaire; by ticking the appropriate bracket and filling the space provided where necessary. All the information you provide in the questionnaire will be used strictly for academic purposes and will be treated with the highest level of confidentiality and your participation is on voluntary basis. Your responses will be treated in high confidence and names of participants should not be written or known, as the researcher is interested in overall/aggregated summary/trend of the responses.

For further information, I can be contacted on cell number: 0778883680 and on email:

chimedzalc@gmail.com

APPENDIX 2: RESEARCH QUESTIONNAIRE

Topic: Assessing the effects of food deficit mitigation program to enhance food security in semi-arid regions Zimbabwe. A case of Ruwangwe area in Nyanga District.

Instructions: Please Tick the most appropriate answers

SECTION A- DEMOGRAPHIC DATA

1a.) Age group

18>20 ☐ 21-30 ☐ 31-40 ☐ 41-50 ☐ 51-60 ☐ 61-64 ☐ 65> ☐

b.) Gender: Male ☐ Female ☐

c.) Qualifications

>O level ☐ A level ☐ Certificate ☐ Diploma ☐ Degree ☐

d) Family Size

5 and below	
6-10	
11-15	
16 and above	

e) Head of the family

Child-headed	
Female headed	

Male- headed	
Jointly-headed	

f) Marital Status of head of family

Married	
Single	
Divorced	
Widowed	

g) Household Income

\$150 and less	
150-300	
300-450	
450-600	
Above 600	

h) Type of employment

Full-time	
Part-time	

Self-employed	
Unemployed	
Retired	
Student	

i) Do you understand the food deficit mitigation program to enhance food security?

YES ☐ NO ☐

RESEARCH OBJECTIVES

SECTION B

Objective 1: To assess the knowledge, perception and attitude of beneficiaries of the food deficit mitigation program in Ruwangwe area.

Claim	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
i) I understand the criteria used to select households for receiving aid from this program.					
ii) I believe this program is fair in how it distributes food aid to eligible households.					
iii) I am grateful for the assistance provided by the food deficit mitigation program.					
iv) I know exactly how often I am supposed to receive food/cash assistance from the program.					

SECTION C- To assess the level of food security among program beneficiaries.

Claim	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
i) In the past four weeks, I have rarely worried about whether my household would have enough food.					
ii) My household typically manages to eat at least three meals a day.					
iii) I have had to skip meals or eat less than I felt I needed because there wasn't enough money or food.					
iv) The food my household consumes is diverse, including fruits, vegetables, and protein sources.					

SECTION D. To evaluate the effects of the program on household food security.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
i) The program's assistance has significantly reduced the number of days my					

	household goes without food.					
ii)	Since receiving assistance, my children's access to nutritious food has improved					
iii)	The food/cash from the program is primarily used to meet immediate consumption needs, not other expenses.					
iv)	Without this program, my household's food situation would be much worse than it is now.					

Thank you for your time!!!

APPENDIX 3: INTERVIEW GUIDE

1. In your own words, how has the food deficit mitigation program changed your household's daily life, and what is one suggestion you have for improving the program's operations?

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2. Were there any days when your household did not have enough food to eat? If yes, what specific coping mechanism did you use to manage that shortage?

.....

.....

.....

.....

3. Could you please describe what you were told about your entitlements under this program—specifically, what you should receive and how often?

.....

.....

4. Before the program, how did your household prioritize spending or tasks to ensure you had food?
Has this prioritization changed since you started receiving aid?

.....

.....

5. How would you describe the variety and quality compared to six months before the
program started?.....

“Thank you very much for your time and input, it is sincerely appreciated.”