

Assessing Food Security Coping Strategies in the Peri- Urban Areas: A Case of Dora Ward 5,
Mutare

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DECLARATION

I hereby declare that the research project entitled Assessing Food Security Coping Strategies in the Peri- Urban Areas: A Case of Dora Ward 5, Mutare 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 Zivenge and this work is submitted in partial fulfilment of the requirements for the award of a Master of Science Degree in Food Security and Sustainable Agriculture. The results embodied in this thesis have not been submitted to any University or Institute for the award of any degree or diploma.

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DEDICATION

To my family.

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ABSTRACT

The main purpose of this study was to assess food security coping strategies in the peri-urban areas (Dora Ward 5, Mutare). A total of 51 respondents were randomly selected from the area dominated by brick making, pit sand quarrying, and firewood sales. Structured questionnaires and key informant interviews were used to collect data on household characteristics and the socio-economic status of the households under study. Information on their household dietary diversity and coping mechanisms in times of food shortages was also collected. This data was analyzed using Household Dietary Diversity Scores and the Coping Strategy Index to determine their food security status. The results indicated that households in this area are relatively food insecure, having a Household Dietary Diversity Scores of 4.61 and a Coping Strategy Index of 64 on average. The data was linearly regressed using SPSS software version 16.0 to determine the effect of household size, gender, marital status, education, income, age of the household head, food primary source, and livestock assets on the food security status of the households. The results revealed that monthly income, education, and livestock assets ($p < 0.05$) played a significant role in determining the food security status of the households under study. The regression analysis of Coping Strategy Index and food security suggests that borrowing, consuming seedstock, limiting portion sizes, and skipping entire days without eating ($p < 0.05$) are substantially related to decreases in food security, while the other variables do not have a reliable effect. The results also indicated that there is a strong negative correlation between food security and Coping Strategy Index ($r = -0.8917$) such that as the Coping Strategy Index increases, the food security index decreases. However, these findings indicate that there is generally low food security and the coping strategies employed by people are negatively impacting food security in that area. As such, the research recommends that the root causes of food insecurity be addressed in order to ensure that there is consistent access to food. This can be

done by improving people's livelihoods through job creation, sufficient food production, and food distribution programs.

Key words: peri- urban, food security, Household Dietary Diversity Scores, coping strategies, Dora Ward 5

LIST OF ACRONYMS AND ABBREVIATIONS

CSI – Coping Strategy Index

FAO - Food and Agriculture Organization of the United Nations

FGD Focus Group Discussion Household Dietary Diversity

HDDS – Household Dietary Diversity Score

HIES - Household Income and Expenditure Surveys

HFIAS - Household Food Insecurity Access Scale

NGOs - Non-Governmental Organizations

WFP - World Food Programme

ZIMSTAT - Zimbabwe National Statistical Agency

ZVAC - Zimbabwe Vulnerability Assessment Committee

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CHAPTER 1

INTRODUCTION

1.1 Introduction of the Chapter

This chapter provides an overview of the study and its history, providing a more comprehensive understanding of the global problem of food insecurity, which narrows down to peri-urban food security and coping strategies in the event of food shortages in Zimbabwe, specifically Dora Ward 5. The chapter will highlight the problem statement that prompted the need for this study. It will also provide the objectives of the study, justification or significance of the investigation, scope or delimitations of the study, and finally, an outline of the thesis.

1.2 Background of the study

Approximately 925 million people worldwide suffer from chronic hunger as a result of extreme poverty, while up to two billion people occasionally lack food security as a result of various levels of poverty (FAO, 2009). According to FAO in 2019, approximately 690 million people were undernourished, and in 2023 FAO pointed out that hunger is still on the rise in all sub-regions of Africa and in comparison, to other regions of the world. In 2022, about 29.6 % of the global population was affected by moderate to severe food insecurity, while 11.3 % were severely food insecure (Phiri, 2024). However, this alarming statistic highlights the urgent need for effective interventions and projects aimed at improving food security.

Food security is a pressing global issue affecting millions of people, particularly in low-income countries such as Zimbabwe. The country has been facing numerous challenges since the late 1990's which have negatively affected the food security situation due to widespread poverty, HIV and AIDS, limited employment opportunities, liquidity challenges, recurrent climate-induced shocks, and economic instability (Chingarande et al, 2020). These have contributed to the limited supply of adequate food. Rural communities being mostly affected as they often rely on natural resource-based livelihoods for their food security and income (Ellis, 2000), peri-

urban areas not being left out. However, unsustainable use of these natural resources can damage the environment and undermine long-term food production capacity (Tefera et al., 2018).

Ensuring food security is a critical challenge, particularly in the rapidly urbanizing and peri-urban areas of the developing world. Peri-urban areas, situated between the urban core and the rural hinterland, are characterized by a mix of agricultural and non-agricultural activities, as well as rapid population growth and the transition from rural to urban livelihoods (Drechsel et al., 2006). These areas face unique challenges in maintaining food security, such as limited access to land, water, and other resources, as well as the disruption of traditional food production and distribution systems (Crush & Frayne, 2011; Battersby, 2013).

When a household is food insecure, the members device means of surviving the prevailing situation (Adekoya, 2009) and there are a variety of strategies that households often use to cope with food insecurity (Dhlamini et al, 2023). These include eating less expensive food, borrowing food or money, using credit, relying on relatives or friends, limiting portion sizes or the number of meals per day and even begging for food (Cordero-Ahiman, 2018). However, according to Adekoya (2009), it is difficult to generalize about coping strategies in response to food insecurity, so the strategies are at best region specific and when ineffective, vulnerability of marginal groups is increased. It is therefore critical to verify and screen the adaptation options in a particular situation to generate relevant information (Adekoya, 2009).

According to the Zimbabwe Food Security Desk Research (2020), when households encounter food security challenges, they normally cope by either changing consumption patterns or employing some strategies at their disposal to increase their access to food. However, the crisis in Dora has led the community members to employ some of the coping strategies mentioned by Cordero-Ahiman (2018). To add onto that they found themselves looking for a source of livelihood through using that which is at their disposal: brick molding, pit sand quarrying and firewood sales for income. Basing on that, if adequate measures are not put in place, the situation is likely to worsen, leading to adverse impacts on health, education, and overall socio- economic development.

By conducting this study, empirical data and insights into complex relationship between food security and coping strategies are gathered. The current status of food security, coping strategies

as the key drivers of land degradation so their impacts on food production and level of poverty are to be assessed. Hence this will enable an exploration of innovative and sustainable solutions.

1.3 Problem statement

According to the 2023 Global Hunger Index, Zimbabwe is in a dire state, with 42% of its population living in extreme poverty (WFP, 2024). The situation is caused by a number of socio-economic factors, which include widespread poverty, the prevalence of HIV/AIDS, limited employment opportunities, and recurrent climate-induced shock (WFP, 2024). However, the existing socio-economic vulnerabilities have been exacerbated by the El Niño drought, particularly in rural communities that are reliant on rain-fed agriculture (OCHA, 2024). This, however, becomes the centre of many studies.

While food security studies in Zimbabwe generally focus on rural areas, which are perceived to be the problem areas, recent evidence shows that the food poverty situation in the urban and peri-urban areas of the country are equally dire (Tawodzera and Chigumira, 2019). Crush & Frayne, 2011; Battersby, 2013 said the same that most studies have focused on urban areas or rural communities, with fewer in-depth analyses of the unique challenges and opportunities faced by peri-urban populations.

As a result, there is scant literature on food security and coping mechanisms in peri-urban locations such as Dora Ward 5, Mutare. This area is highly characterized by livelihood activities such as pit sand quarrying, brick molding, and firewood selling which are highly correlated to food security. Due to the unavailability of literature specifically on the area, the goal of this study was to investigate the food security coping methods used by these households, as well as the nature and degree of food security status, and to analyze any additional factors that may be influencing food security.

1.3 Objectives of the study

1.4.1 Main objective

Generally, the study seeks to assess food security coping strategies in Dora Ward 5

1.4.2 Specific objectives

1. To assess the level of food security status in Dora Ward 5.
2. To assess coping strategies on food security in Dora Ward 5.
3. To examine factors influencing household food security in Dora Ward 5.

1.5 Research questions

1. What is the level of food security status in Dora?
2. What are the coping strategies on food security in Dora?
3. What are the factors influencing food security in Dora?

1.6 Justification

Food insecurity remains a persistent issue in many regions of the world, including Dora, Ward 5. According to research, households experiencing food shortages frequently adopt a variety of coping mechanisms to meet their basic food demands. These techniques can include limiting meal quantities and missing meals, as well as selling possessions, borrowing money, or seeking emergency food assistance. By conducting a research project to thoroughly examine the food security coping strategies used by Dora households, critical evidence will be gained to assist more effective and long-term initiatives to address regional food poverty. However, the findings of this study can improve decision-making, resource allocation, and the creation of treatments that better fulfil the needs in that area.

Since there is no enough documentation about prior studies done in this area, this research project is necessary so that valuable data is generated and evidence that can inform policy and decision-making processes. However, the study will guide future interventions and strategies to improve food security by different stakeholders such as NGOs, the government and academic students.

Every research study contributes to filling knowledge gaps and advancing scientific understanding. So, by identifying the specific gaps in knowledge that this project aims to

address, it can contribute to the existing body of research on food security thus pushing the boundaries of knowledge in this field.

Land degradation poses a major threat to food security, livelihoods sustainability, ecosystem services and biodiversity conservation (AbdelRahman, 2023). Hence the research was necessary to pave way for further studies on the complex relationship between food security and land degradation which is being posed by the community's livelihood activities.

1.7 Scope/ delimitations and limitations of study

The project had some financial and logistical constraints, limiting the scale and the activities that had to be implemented. As a result, it focused on one area which is dominated with land degradation activities which is Dora Ward 5: Bvirindi village found in Mutare, Manicaland Province.

The target populations being the households living in that area where pit sand quarrying, brick making and firewood selling are rampant as a source of livelihood.

1.8 Outline of Thesis

This paper is structured into seven chapters, each addressing a specific aspect of the research topic. Chapter 1 introduces the problem and provides an overview of the research context. Chapter 2 conducts a comprehensive review of the pertinent literature. In Chapter 3, describes the research design. Chapter 4 shows an assessment of the level of food security, then Chapter 5 assesses coping strategies done in Dora in times of food shortage. Chapter 6 presents factors that affect food security in Dora. Finally, Chapter 7 concludes the study by presenting key findings and offering recommendations based on the research findings.

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CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Food security is a critical issue in peri-urban areas, where access to nutritious food can be limited. In these areas, households often employ coping strategies to ensure their food security. This literature review aims to examine the existing body of knowledge around food security and coping strategies employed by households in times of food scarcity with a specific focus on Dora Ward 5 in Mutare.

2.2 Definition of terms

Food Security

Food security is defined as a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO, 2006; Peng and Berry, 2018). While Agada and Igbokwe, (2015) defines it as a state in which every member of the household has physical and financial access to enough wholesome food to meet their needs and is not in constant fear of starving or hunger. As a result, food security is anchored on four pillars which are accessibility, availability, utilization and stability (Ahmad et al., 2021).

Food Insecurity

Food insecurity is defined as the lack of consistent access to the foods necessary for an active lifestyle (Kersten et al. 2018). According to FAO, food insecurity is defined as a situation that exists when people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development and active and healthy life (FAO, IFAD, 2013). However, FAO categorizes food insecurity into three major groups which are, (i) Acute: Severe hunger and malnutrition to the point that lives are in a significant threat immediately (e.g., famine), (ii) Occasional: It is defined as existence of food insecurity due to a specific temporary

circumstance, (iii) Chronic: the requirement of food needs is consistently or permanently under threat (Ahmad et al., 2021).

Coping Strategies

Coping strategies are mechanisms by which households or community members are able to meet their relief and recovery needs, as well as adjust to future disaster-related risks, through their own efforts without relying on external support or assistance (Degnew, 1993; Bedeke, 2012).

2.3 Measures of food security

Given the multidimensional nature of food security, practitioners and policy makers have long recognized the need for a variety of means of measurement (FAO 2013). There are several direct and indirect measurements of food security such as socioeconomic measures, food consumption, anthropometry and coping strategies, and a single indicator may not adequately capture the complexity of food security (Maxwell et al., 1999).

The Household Dietary Diversity Score (HDDS) was developed to measure household food access, one of the levels of food security and it is now frequently used indicator of food security (Vellema et al, 2015). According to FAO (2010), household dietary diversity score (HDDS) is meant to reflect, in a snapshot form, the economic ability of a household to access a variety of foods. Studies have shown that an increase in dietary diversity is associated with socio-economic status and household food security (FAO, 2010).

2.3.1 Food security and coping strategies

Coping is the manner in which people act within the confines of existing resources and range of expectations to achieve various means (Wisner et al., 2004). Resources may include land, livestock, draught animals, crops and labour. According to Ellis (2000), coping strategies refer to the methods that households employ to survive when faced with unexpected livelihood crises. The approaches households take to cope with these crises vary both within and between households (Maxwell et al., 2003). The coping behaviors adopted by households also differ depending on their poverty level, with varying degrees of wealth influencing the strategies they use to cope (Mjonono, 2009). While some coping strategies are common across households, the

effectiveness of these strategies in helping households stay afloat depends on the resources available to them (Devereux, 2001).

Poor community households frequently diversify their sources of income and means of subsistence (Battersby, 2011) depending on location. For urban dwellers in Zimbabwe, one of the agro-based safety nets against food shortages and nutritional demands is home vegetable gardening (Mrema & Chitiyo, 2008). Reducing food consumption was one of the most popular coping mechanisms in southern Africa during periods of food insecurity (Abdall, 2007). Households in Zimbabwe's most afflicted areas have initially tried to adjust by consuming fewer meals. Families increased their attempts to cope by going without meals during the day as the shortage of food supply grew severe (Abdall, 2008). Other typical household measures, according to Haese et al. (2011), include maternal buffering, short-term dietary adjustments, and limiting or rationing consumption. Due to inadequate diet, the health of some of the most vulnerable members of the household—such as the ill, the elderly, and children under five—is negatively impacted when meals are reduced or skipped (Muzah, 2015).

The size and seriousness of the risk, as well as the assets of the household, including social capital, determine how resilient a household is to shocks or hazards. According to Mudefi (2011), residents of high-risk locations for food shortages will eventually create a self-insurance coping mechanism to reduce the risk to their livelihoods and household food security. To provide for their families, some households may turn to asset sales or relocation to areas with easier access to work (Muzah, 2015).

Generally, the poorer a household is, the more likely they are to engage in desperate measures, such as selling off productive assets like farm equipment, in order to cope (Hoddinott, 2004). As for the case of Dora apart from employing short term coping strategies, the community has resorted to natural resources harvesting by engaging in economic activities such as brick molding, pit sand quarrying and fire wood selling. However, these strategies can have unintended consequences on the environment.

2.3.2 Factors that influence food security at household levels

Abdulla et al (2019), postulated that the determinants of food security differ at different levels i.e. from global to regional and national to household and individual level because food security is deemed to be a multidimensional phenomenon encompassing climate change, civil conflicts, natural disasters, and social norms. Generally, the ability to achieve food security is influenced by a multitude of factors that can be grouped into three broad categories: socio-economic factors, demographic factors, and environmental factors.

In a study made by Abdullah et al (2019), age of the household head, education of household head, household labor size, and ownership of livestock, remittances and access to market information were found to be positively influencing household food security. These results concur with Drammeh et al, (2019) assertions when it was highlighted that A number of characteristics, such as poverty, low income, education level, size of the household, job status, age, gender of the household head, and food prices, are associated with food insecurity at the household level. In another research done in Mudzi District Zimbabwe by Mango et al in 2014, it was found that age and education of the head of the home, labor force and size, ownership of livestock, remittances and access to market knowledge all affect the diversity of diets within a household.

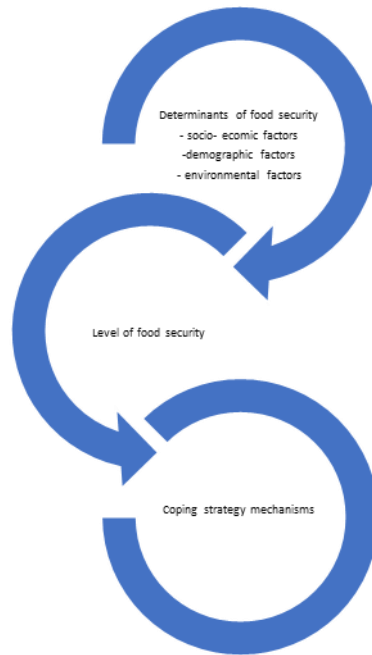
Basing on this, research was done on the determinants of food security but focusing on another area which is in this case Dora Ward 5.

2.3.3 Research Gap and Future Directions

While there is some literature available on food security and coping strategies in peri-urban areas, there is a need for more research specifically focusing on Dora Ward 5 in Mutare. Future studies could explore the specific environmental challenges faced by households in this area in trying to have access to food and identify strategies to mitigate these impacts.

2.4 Conceptual/ theoretical framework

Figure 3.2 Conceptual framework on food security coping strategies



The conceptual model shown above on Fig 2.3 shows a complex interrelation of household food security which is determined by a complex interplay of socio-economic, demographic, and environmental factors, which influence the level of food security and in turn the coping strategies households employ, and the effectiveness of these strategies in maintaining food security despite adverse events.

2.5 Summary of literature review

In conclusion, this literature highlights measurements of food security its determinants and food security coping strategies common to rural/ peri- urban areas. Sustainable improvement of livelihoods of people will be the key to optimize food security over the long term. The proposed case study of Dora Ward 5 adds an important perspective from a southern African context.

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CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter provides an overview of the research methods used in the study. It outlines whether the research approach was quantitative, qualitative, or a combination of both. The chapter also clearly defines the study area, presents the research design, and describes the target population and study units. Additionally, the chapter covers the sampling methods, including the sampling technique, procedures, and sample size. It also details the data analysis methods and analytical framework employed. Finally, the chapter concludes by discussing the ethical considerations taken into account during the research, and provides a summary of the overall research methodology

3.2 Description of the study area/ site

The study was conducted in Dora ward 5 of Mutare District in Manicaland Province in the eastern Zimbabwe. According to Christian Relief Services (2022) the region has 23 villages which are located near Mutare town. Though it is a peri- urban community it exhibits strong rural features with a significant proportion of residents engaged in pit sand quarrying, brick making and firewood selling for their survival, taking an advantage of its proximity to Mutare urban where there is ready market for these products.

The region experiences rainfall that is either average or below average annually. It is primarily characterized by Brachystegia vegetation, specifically *Brachystegia spiciformis* and *Brachystegia randii*. However, the lantana camara shrub has started to inhabit the areas where the primary vegetation has been cleared. The prevalent soil type in the area is sandy soil, which originates from granite.

Despite being located within Natural Region 1, the area is generally a drought- prone, not favorable for farming throughout the year. This leaves the whole community of Dora having a general challenge for food access, and easy access to safe drinking water.

3.3 Research Design

In order to assess the food security status, coping strategies and factors that affect food security in Dora Ward 5, Mutare, the study employed a survey research design. A cross – sectional survey and a mixed approach comprising of both qualitative and quantitative were used. According to Sullivan and Calderwood (2016), a cross- sectional survey design involve collecting data at one moment in time. A survey design was chosen for this research as it is most versatile research tool for quantitative data (Thomas and Zubkov, 2023). This design involved collection and gathering of data through administering structured questionnaires on the subject matter to a specified population (those who are in brick molding, pit sand extraction and fire wood selling for survival).

3.4 Sampling procedure

A multi-stage technique was used in selecting the site for the research, followed by a simple random procedure for the respondents. The area was selected based on the researcher's preference since it is easily accessible as it is in proximity to Mutare Urban. With that, the selection of the area was based on non-probability (purposive) sampling. Purposive random selection, sometimes referred to as subjective sampling, was used to focus on areas with specific qualities that could be more helpful for the pertinent research, and randomly selected houses were chosen for interviews (Muzah, 2015).

The study sample comprised of community leaders and people in Dora Ward 5 where people generally struggle economically as it is evidenced by their source of livelihood. Respondents were randomly selected so that each member of this population had an equal chance of being selected for the study.

A sample size of about 51 households was chosen from a population of about 106 households that were directly or indirectly relied on environmental harvesting for survival. Yamane (1967) and Glenn (2004) changed the formula to arrive at a suitable sample size for the investigation. The method can be applied to populations in which the sampling frame's total number of units is fewer than 10,000 (Mkhatshane, 2019). This is shown below:

$$\text{Sample size} = N / (1 + N \times e^2)$$

Where: N is the population size (106) and e is the margin of error (0.1)

Plugging in values:

$$\text{Sample size} = 106 / (1 + 106 \times 0.12)$$

$$= 51.46$$

$$= 51 \text{ individuals}$$

3.5 Data collection procedure

A mixed method approach was used whereby it involved both quantitative and qualitative methods in order to get a more comprehensive understanding of the issue. Surveys and structured questionnaires were used to collect quantitative data (statistics on crop yields, demographic information, coping strategies etc.). Face to face interviews were also conducted with the community leadership in order to get an in depth understanding of the situation in that area.

Regarding the state of food security, primary data on household demographic situation, dietary diversity, and coping strategies was collected using structured questionnaires.

3.6 Data analysis

To analyze the survey data collected, descriptive statistics, correlation analysis, and regression analysis were used. However, the table below shows a summary of the data analysis methods used on each objective:

Table 3.6 Summary of data analysis methods

Objective	Research Question	Analytical tool
1. To assess the level of food security status in Dora Estate.	What is the level of food security status in Dora Estate?	Household Dietary Diversity Score (HDDS)

2. To assess coping strategies on food security in Dora Ward 5.	What are the coping strategies on food security in Dora?	Coping strategy indices and regression analysis
3. To examine factors influencing household food security in Dora	What are the factors that are influencing food security in Dora?	Regression analysis

3.6.1 Objective 1: To assess the level of food security status in Dora Ward 5.

Common household-level indicators that can capture dimensions of food access, availability, utilization and stability include the Household Food Insecurity Access Scale (HFIAS) (Coates et al., 2007) and Household Dietary Diversity Score (HDDS) (Swindale & Bilinsky, 2006) as well as the anthropometric measurements.

However, in this research HDDS was used in assessing this objective. The HDDS indicator provides a glimpse of a household's ability to access food as well as its socio- economic status based on the previous 24 hours (Kennedy et al., 2011). Knowing what households consume, for example, an average of four different food groups implies that their diets offer some diversity in both macro- and micronutrients (Swindale and Bilinsky, 2006). Knowing that households consume four different foods, all of which could be cereals, is less meaningful as an indicator compared to the following set of 12 food groups used to calculate the Household Dietary Diversity Score (HDDS): A. Cereals; B. Root and tubers; C. Vegetables; D. Fruits; E. Meat, poultry, offal; F. Eggs; G. Fish and seafood; H. Pulses/legumes/nuts; I. Milk and milk products; J. Oil/fats; K. Sugar/honey; and L. Miscellaneous.

The HDDS provides a more comprehensive and informative measure of dietary diversity (Swindale and Bilinsky, 2006). A score of 1 was given to each food group if it had been ingested within the previous 24 hours, and 0 if it hadn't. The total number of food categories consumed by the household is represented by the household score, which ranged from 0 to 12: $A + B + C + D + E + F + G + H + I + J + K + L = \text{Sum (HDDS)}$ Next, the following formula was used to determine the average home dietary diversity score for the research population:

$\text{Sum (HDDS)} / \text{Total number of households surveyed (International Dietary Data Expansion Project, 2023)}$.

The distribution of scores were also analyzed by calculating the mean, median, percentages, range of the least and most consumed food. However, this data helped to assess nutritional adequacy and a review of diets of households scoring below a threshold (e.g. minimum 5 food groups) were analyzed so that key nutritional gaps were identified. This helped to determine the severity of food insecurity of that area of study.

3.6.2 Objective 2: To assess the impact of coping strategies on food security in Dora.

Data was analyzed using the Coping strategy Index from The Coping Strategies Index Field Methods Manual by Maxwell and Caldwell (2008). They defined Coping Strategy Index (CSI) as a tool used to assess and measure the severity and frequency of coping strategies employed by households or individuals to manage food shortages or inadequate access to food. It provides insights into how people adapt to challenging food security situations and the strategies they adopt to meet their food needs (Maxwell and Caldwell, 2008). The CSI is widely used in food security and nutrition research and has been applied in various countries and contexts.

Following what Maxwell and Caldwell (2008) mentioned, a shortage of food for consumption is measured through a series of questions that yield a simple numerical score. In its most basic form, tracking changes in the CSI score shows whether the state of family food security is getting better or getting worse (Maxwell and Caldwell, 2008).

Taking the list of individual behaviors developed in that Field Methods Manual Book, the main question becomes how often, in the past seven days, and a household had to rely on each individual coping behavior.

Table 3.6.2 Consumption Coping Strategy Responses (CSI)

Adopted from the Field Methods Manual written by Maxwell and Cardwell (2008)

Number of days in the past 7 days when a household had to:	Frequency: Number of days out of the past seven using a range of 0 – 7	Severity weight	Weighted score (frequency × weight)
a. Rely on less preferred and less expensive foods?			
b. Borrow food, or rely on help from a friend or relative?			
c. Purchase food on credit?			
d. Gather wild food, hunt, or harvest immature crops?			
e. Consume seed stock held for next season?			
f. Send household members to eat elsewhere?			
g. Send household members to beg?			
h. Limit portion size at mealtimes?			
i. Restrict consumption by adults in order for small children to eat?			
j. Feed working			

members of HH at the expense of non-working members?			
k. Reduce number of meals eaten in a day?			
l. Skip entire days without eating?			

Data was collected from the study sample on the number of days in the previous week that a household had to employ each of the different coping mechanisms shown in the above table—which range from "never" (0) to "every day" (7)—was determined by gathering data from the study population.

It was then cleaned and entered into the computer where it was then analyzed using Coping Strategy Index. In order to get the weighted score, Maxwell and Caldwell (2008) pointed out that the raw/ frequency score is multiplied by the severity weight of each strategy per household. However, in their manual it is stated that the severity score depends with the place for different strategies are “weighted” differently, depending on how severe they are considered to be by the people who rely on them. So, in this research, the severity scores used, were obtained from a data pilot study done in Kenya where the individual strategies listed have been grouped into four categories, with 1 indicating the least severe category; 4 indicating the most severe, and 2 and 3 are intermediate (Maxwell and Caldwell, 2008).

Thereafter, the researcher added together the scores of the individual strategies to obtain the coping strategy index score (CSI) of each household. Maxwell and Caldwell (2008) state that a household's level of food insecurity increases with their CSI raw index score. In order to determine the effect of each coping strategy on food security, a regression analysis was run using the SPSS and Excel software. The regression model used is as follows:

$$Food\ Security\ (y) = b_0 + b_1\ Coping\ Strategy\ 1 + b_2\ Coping\ Strategy\ 2 + \dots + b_n\ Coping\ Strategy\ n.$$

The outputs of the regression analysis were then used to identify the coping strategies that were affecting food security in that area, at p value < 0.05 .

Relationship between CSI and HDDS

Using Pearson's correlation coefficient, the degree of the relationship between HDDS and coping method was also examined under the same goal. As a result, the two data sets were entered into Excel in adjacent columns, and the correlation between the two data sets was determined using an integrated formula. According to Fernando (2024), values always fall between -1 and 1, denoting a perfectly inverse or negative association and 1 denoting a perfectly positive correlation. An extremely weak correlation or no linear relationship is indicated by values that are at or near zero (Fernando, 2024). When the number is near to -1, it indicates that coping mechanisms rise in response to a decline in food security, and the opposite is true.

3.6.3 Objective 3: To assess factors of food security in Dora Ward 5

In order to evaluate factors of food security, the HDDS (as a proxy of Food security score) obtained in objective 1 were regressed with socio- economic factors such as income level, education, household size, livestock assets and other demographic factors such as age, gender of household head, marital status and sources of food. This was done using SPSS version 16.0. The data was first coded, entered into computers, cleaned, and then analyzed. The following regression model was used:

$$\text{Food Security } (y) = b_0 + b_1 \text{ Factor}_1 + b_2 \text{ Factor}_2 + \dots + b_n \text{ Factor }_n.$$

Testing at 5% level of significance, the outputs of the regression model were used to identify the factors affecting food security in Dora.

3.7 Ethical considerations

Before administering the questionnaire, the researcher sought and obtained permission from the local community leadership to conduct the study in the area. Following permission, potential participants were approached and provided with a comprehensive overview of the study's purpose, including a verbal explanation and a detailed cover letter. Once participants had given

their informed consent, the researchers outlined the questionnaire completion procedure, emphasizing the guarantees of confidentiality and anonymity. Participants were also assured of their right to voluntary participation, with the freedom to withdraw at any stage without consequence.

3.8 Summary

The chapter began by describing study area which is Dora Ward 5. It then outlined the research design, sampling procedures, data collection methods, and data analysis approaches used to address the three study objectives. The chapter provided a comprehensive examination of the data analysis methods and presentation of findings for each objective. This included details on the coding, entry, cleaning, and processing of the data, as well as the statistical software packages utilized for the analysis. Additionally, the chapter focused on the linear regression analysis employed to examine the coping strategies and other factors on food security. Finally, the chapter assessed the reliability of the research results.

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CHAPTER 4

ANALYSIS OF FOOD SECURITY STATUS IN DORA, WARD 5, MUTARE

Abstract

Despite the global trend of economic growth in recent years, food insecurity continues to be a significant and persistent challenge in many parts of Africa. However, the main objective of this chapter was to determine the food security status of households in Dora Ward 5 that rely on pit sand quarrying, brick making and fire wood selling. A purposive sampling was done in selecting the area dominated with such activities due to researcher's preference. In that area, a simple random sampling was done to select 51 respondents. Structured questionnaires were administered to the respondents and data collected was analyzed using the Household Dietary Diversity Score (HDDS) as a proxy measure for both the household's food security as well as its broader socio- economic status. Also, data on demographic characteristics and socio- economic status was collected and analyzed using mean, median, etc and this included age distribution, gender, marital status, occupation, and educational levels and income. Findings from the research indicated that households in this area are generally food insecure with a HDDS of 4.61. To boost food security status of people living in this area, a number of interventions through a collaboration with the government, NGOs and the community have to be done. These interventions may include promoting of market gardening, livestock ownership, adoption of small grains, improvement of market structures and irrigation schemes.

Key words: Household demographics, Socio- economic status, Food security, Household Dietary Diversity Score (HDDS)

4.1 Introduction

Despite continued economic growth around the world, food insecurity remains a pressing problem in many parts of Africa (Muzah, 2015), with peri-urban areas not left out. More and more people lack year-round access to food that is safe, sufficient, and nutrient-rich to meet their dietary needs and preferences to support an active and healthy lifestyle (Phiri, 2024).

Household-level food insecurity is related to several factors which include poverty, low income, level of education, household size, employment status, age, gender of household head, food prices (Drammeh et al., 2019), among other factors. In other researches for instance, one done by De Marco and Thorburn (2009) the total household income and poverty level are the main causal factors that limit access to adequate food among low-income households. Poverty and low income render poor households vulnerable to limited access to food, which could further deter the distribution of available food among household members (Phiri, 2024). However, the existing research indicates that socioeconomic factors such as income, poverty, education, household composition, and food prices are key determinants of household food insecurity, particularly among low-income populations.

The HDDS is a measure of dietary diversity, which is an important aspect of food security and nutrition. A higher HDDS generally suggests that a household has greater access to a variety of foods, which can contribute to a more nutrient-dense and balanced diet.

However, this chapter will give a broader overview of the food security status of peri-urban areas, with particular focus on Dora Ward 5 in Mutare, Zimbabwe, by first looking at the household demographics of the area and the HDDS. The HDDS only counts the 12 food groups that the household ingested in the 24 hours before the survey. Twelve equally weighted categories were created from the foods consumed in the 24 hours prior to the interview: cereals, white tubers and roots, vegetables, fruits, meat, eggs, fish and seafood, legumes, nuts, and seeds, milk and milk products, oils and fats, and sweets. The number of categories reported was added up to determine the household's HDDS (0–12) (Kabir, 2022). The Food and Agriculture Organization's (FAO, 2012) recommendations for measuring dietary diversity were followed in this study when calculating the household dietary diversity score (HDDS).

4.2 Material and Methods

Details regarding the materials and methods are described in Chapter 3.

4.2.1 Description of study area

The study was conducted in Dora Ward 5 in Mutare Province, Zimbabwe. Details on the description of the study area are given in Chapter 3.

4.2.2 Research Design

The study mainly employed a survey research design comprising structured, pre-tested questionnaires that were self-administered to collect data.

4.2.3 Sampling procedure

Randomly selected individuals were selected as the respondents and a total of 51 households were selected in the area. The details on how sampling procedure was done is outlined in Chapter 3, Section 3.3.

4.2.4 Data Collection Procedure

Data collection was done in March 2024, using structured questionnaire and key informant interviews. Household demographics information was first collected to get an overview of the households under study, followed by their HDDS. Details regarding data collection procedure are given in Chapter 3, Section 3.4.

4.2.5 Data analysis procedure and methods

Descriptive analysis was done on all the variables looked at and this included looking at mean values and frequencies of all the variables and their HDDS.

4.2.6 Challenges encountered during data collection

A small number of participants in the study indicated that they were impatient with the length of the questionnaire and that they needed more time to complete the interview. Also, since participants self-reported data, this may have led to reporting bias due to either incentives or incorrect food recalls made during the reference period.

4.3 Results and discussion

The table below provides an overview of the descriptive statistics of the information received from the study on the socioeconomic characteristics and household demographics:-

Table 4.3 Household demographics and socio-economic characteristics

Variable description	Categories	Frequencies	Percentages
➤ Household demographics			
• Gender of household head	Males	30	58.8
	Females	21	41.2
• Education of household head	Never gone to school	2	3.9
	Primary	16	31.4
	Secondary	31	60.8
• Age of household head	Tertiary/ graduate	2	3.9
	Below 18	2	3.9
	Between 18 and 25	10	19.6
• Marital status of the head of household	Between 26 and 35	12	23.5
	Between 36 and 60	16	31.4
	Above 60	11	21.6
	Married	31	60.8

	Not married	20	39.2
<ul style="list-style-type: none"> ➤ Household composition • Total number of household members • Number of adults (above 18 years old) • Number of children (below 18 years old) 	<ul style="list-style-type: none"> 3- 5 members 6- 8 members 1 adult 2 adults Above 2 adults 0 adults Less than 3 children Between 4-6 children Above 6 	<ul style="list-style-type: none"> 25 26 17 29 3 2 15 29 7 	<ul style="list-style-type: none"> 49 51 33.3 56.9 5.9 3.9 29.4 56.9 13.7
<ul style="list-style-type: none"> • Monthly income 	<ul style="list-style-type: none"> Less than \$50 Between \$50 and \$100 Above \$100 	<ul style="list-style-type: none"> 17 14 20 	<ul style="list-style-type: none"> 33.3 27.5 39.2
<ul style="list-style-type: none"> • Livestock assets (cattle or goats) 	<ul style="list-style-type: none"> Yes No 	<ul style="list-style-type: none"> 21 30 	<ul style="list-style-type: none"> 41.2 58.8
<ul style="list-style-type: none"> • Source of food 	<ul style="list-style-type: none"> i. Market ii. Own (Fields/garden/ barter trade) iii. Food assistance programs 	<ul style="list-style-type: none"> 11 28 12 	<ul style="list-style-type: none"> 21.6 54.9 23.5

n= 51 households

4.3.1 Gender of household head

The study indicated that males (58.8%) were more than female counter parts (41.2%) of the total population of the households that were sampled. This shows that males form the highest percentage in this area. These results are in tandem with the source of livelihood found in that area that requires a lot of manual labour. In studies done by Amugsi et al., 2016, gender has been identified as a significant determinant in food security, and women have a crucial role in achieving food availability, accessibility and consumption. As compared to men, Bashir (2013) noted that in Sub-Saharan Africa, women provide a significant portion of the farmed food supply. According to Drammeh (2019), research has shown that when women contribute to the household economy and participate in household decision making, they are more likely to prioritize spending on food, health services, and child care. In contrast, Ivers and Cullen (2011) said male household heads may devote a portion of the household income to non- food items and activities. However, this phenomenon suggests that gender of the household head can influence the allocation of resources and the resulting food security outcomes (Drammeh et al., 2019). To add onto that, many studies have found that female- headed households are generally less likely to achieve food security compared to male- headed households (Doss, 2013; Kassie et al., 2014).

4.3.2 Education level of head of household

There were four categories created based on the level of education attained: (1) no formal education at all; (2) primary education; (3) secondary education; and (4) upper education. 60.8% of the sampled population reached up to Secondary school, followed by 31,4% of them that reached up to primary level. This means majority are school drop outs. The lowest proportion of household heads from the study sample were those who never went to school (3.9%) and those who attained at least a tertiary certificate. Basing on this, the study area has a high literacy rate but lacking survival skills. This likely have increased the household vulnerability. Normally food insecurity is mostly frequent in households with lower levels of education and no formal schooling (AFSUN, 2009), because better educated people are able to improve the quality of life for generating-income and hence a better access to adequate and nutritious food. Unfortunately, it was reviewed that for the community on focus all graduates

simply relocate to towns for better opportunities, leaving behind those who have no skills to offer in towns.

4.3.3 Age of household head

The study revealed that the average age of household heads is 42.9 years with the youngest reported to be 16 years and the oldest was 85 years. About 78% of this population falls between 17- 48 years which resonates with the composition of the Zimbabwe population which has a sizeable young population (ZIMSTATS, 2022). The results also agree with those of Phiri (2024) in Epworth; however, the bulk of the study's participants were members of the economically active group, who were looking for alternative sources of income. A study carried out in Nigeria found that families led by older people had a higher prevalence of food insecurity than households headed by younger people (Babatunde et al., 2007). Young people are generally more active than older people because they are able to run around looking for something that can fend them.

4.3.4 Marital Status

62% were married while the remaining were single parents. This shows that the majority of the population were married, though some were not staying with their spouses. In most cases households with married people are quite food secure as compared to households with single parents.

4.3.5 Household composition

Total number of household members that had above 6 members were 66%, while those below 5 members were 34%. The households with least members had 3 people and the highest recorded had 8 members which included in- laws. Nevertheless, the majority ranged from 5 to 7 members.

Dora (Ward 3) has an average household size of 5.49 members which is slightly above the national mean household size of 4 (ZIMSTATS 2022). This suggests that the area is characterized by medium-sized households, and most are still young families. Household size is

an important determinant factor for household food security (Deressa et al., 2009) because a large family size may place an additional burden on food consumption and large families are more likely to experience food insecurity than smaller families (Oluwatayo,2009). On the other hand, it gives more man power (source of labour) especially if the household relies on farming for survival. Those with adequate labour carry out farming activities timely, resulting in high yields (Mango et al., 2014.)

- Number of adults (above 18 years old)

The majority of households had 1 adult member and this constituted the majority of the population, 58%. This number is quite lower than the percentage of married people in this survey. This is because some do not live with their spouses. However, those households with 2 adults, including spouses there were 32%. 4% had at least 3 adults and lastly 6% had 0 adults.

- Number of children (below 18 years old)

From the study it was revealed that children had the greatest proportion of that population. The majority of the households had between 4 and 6 children and the least, 14%, of the population had above 6 children.

4.3.6 Household monthly income

The main sources of income for this population are from brick making and pit sand quarrying by males and females do firewood selling as already highlighted in Chapter 1 and 2. Out of the households that were sampled 27.5% got between \$50 and \$100. Then (39.2%) got above \$100 and these were those who have relatives elsewhere especially in town who are able to send them money periodically. Finally, 33.3% denoted that they got less than \$50 per month. From an in-depth interview done with one of the respondents, it was revealed that on average a bundle of firewood is sold at \$2- \$3. So, if they manage to sell on daily basis (5 days a week) they get a minimum of \$10- \$15 which translate to an average of \$50 per month. All these amounts are way below the Food Poverty Line (FPL) which stood at ZWL155, 360.39 (equivalent to \$24) for one person in January 2024, according to Zimstat. Food Poverty Line represents the amount of money that an individual requires to afford daily minimum energy intake of 2,100 calories

(ZimStart, 19 January 2024). This is an indication that this community is living in abject poverty and therefore it is difficult for them to meet their food daily requirements.

4.3.7 Sources of food for each household

The majority of these households (54.9%) pointed out that they get food on their own either through exchanging with firewood, gardening for those who are near wet lands and from their fields. Just a few 21.6% of them got their food from the markets after selling their bricks, firewood and pit sand. Lastly, about 23.5% got it from food aid organizations such as Care, World Food Program, etc. This figure, 23.5%, shows that not all people are able to benefit from food aid which is worrying situation considering how much each household earns.

4.3.8 Livestock assets

The research revealed that out of the whole study sample only 41.2% own livestock in the form of cattle and or goats. Despite importance of livestock as a source of proteins, the majority do not have and this has a negative implication on the nutritional diet of most households. Studies done by Taruvinga et al (2013) indicate a positive significant association between ownership of small-livestock and dietary diversity, suggesting that households who own small-livestock are more likely to move from medium dietary diversity to high dietary diversity. Small livestock are easy to keep, easy to trade and contain several food groups (eggs, meat and goat milk) that may provide micro and macronutrients (Taruvinga et al., 2013).

4.4 Household Dietary Diversity Scores (HDDS)

The HDDS for every household was calculated based on the frequency of food groups ate in the last 24 hours. The table below is a summary of the results obtained: -

Table 4.4 Household Dietary Diversity Score Summary

Food group	Number of households	Percentage
A. Grains (e.g., rice, wheat, maize)	51	100

B. Roots and tubers	13	25.5
C. Meat and poultry	1	2
D. Fish and seafood	5	9.8
E. Eggs	2	3.9
F. Milk/ milk products	3	5.9
G. Fruits (wild fruits)	35	68.6
H. Vegetables	44	86.3
I. Pulses, Legumes (e.g., beans, lentils) and nuts	7	13.7
J. Sugars/ honey	29	52.9
K. Oils/ fats	45	88.2
L. Miscellaneous	-	-
Total score		4.61

n= 51

The average household dietary diversity score for this population of study is as follows: Sum (HDDS) / Total number of households surveyed (International Dietary Data Expansion Project, 2023).

$$\{51+ 13+ 1+5+2+3+35+44+7+29+45\}/51= 235/ 51 = 4.61$$

The food security statuses of these rural households were grouped in to three ordinal categories just like what was done in research by Chirota and Adem (2022). Rural households with food consumption of three or fewer food groups were classified as having a low household dietary diversity score; those with food consumption between four and five food groups were classified as having a medium household dietary diversity score; and those with food consumption of six or more food groups were classified as having a high household dietary diversity score (Chirota and Adem, 2022).

However, the research found out that the average Household Dietary Diversity Score (HDDS) of the study area was 4.61. This indicates that, on average, each household consumed 4.61 different food groups or varieties (such as different crops or livestock products) during the reference day of the study.

The proportion of households that consumed grains in the previous 24 hours of the research was 100%, followed by those who consumed fats and oils (88.2%) then vegetables (86.3%). Those that consumed meat and poultry constituted about 2% of the population. In that group, the foods that were consumed the least frequently were milk, eggs, fruits, legumes, meat and fish, owing to their prices which are a bit higher for the majority. However, the research found out that a small percentage that consumed meat and dairy were those with livestock at their homes. These results are in line with the observation that populations in the developing world, whose diets are primarily based on staples and frequently only contain a few animal products at most as well as seasonal fruits and vegetables, have an especially serious problem with a lack of diversity (Arimond and Ruel, 2014).

According to WHO (2020), a healthy diet consists of fruits, vegetables, legumes, nuts, and whole grains, which are however lacking in the diet of the households sampled. Insufficient dietary diversity is strongly linked to inadequate consumption and an increased risk of deficiencies in essential micronutrients such as vitamin A, iron, and zinc (Arimond and Ruel, 2014). The consequences of micronutrient deficiencies have far-reaching implications for the health, nutrition, development, and well-being of affected individuals, both in the short and long term (United Nations Children's Fund and Micronutrient Initiative, 2011).

Most households reported consuming between three and five food groups the previous day. The mean dietary diversity terciles were between 3 and 7 with a grand mean of 4.61 as shown on the table above. Terciles were used because there are currently no international guidelines or recommendations on which to base cut-offs for low, average and high (Agada and Edwin, 2015 and Kennedy et. al, 2011). According to the study's findings, over half of the families under investigation consumed three to five different food categories the day before and were classified as medium tercile households. Research conducted in various poor nations to assess their dietary diversity scores revealed that Filipino children between the ages of 24 and 71 months had an average DDS of 4.91 using scores from nine food groups; in Burkina Faso, the mean DDS was 4.6, in Laos, 5.2, and in Northern Uganda, 3.3 (Kennedy et al, 2011). The DDS was 4.02 in adult South Africans' diets (Labadarios et al, 2011). It is clear that a lack of diversity in one's diet is a problem in many developing nations, not just Zimbabwe and in particular the area under study.

A study published in the Journal of Nutrition and Metabolism in 2017 found that a mean HDDS of 4.61 among rural households in a developing country context was indicative of a relatively low level of dietary diversity (Swindale & Bilinsky, 2017). The authors noted that households with an HDDS below 5 were considered to have "poor" dietary diversity. The implications of a 4.61 HDDS value are that, on average, the households in the study were consuming food from less than 5 out of the 12 possible food groups over the reference period. This suggests a limited variety in the overall diet, which may indicate decreased access to a diverse range of nutrient-rich foods and potential nutritional vulnerabilities within the population.

4.5 Recommendations

The limited availability of nutritious food in the study area can be attributed to factors such as a scarcity of nutrient-rich foods and mainly economic constraints that they are facing. Hence, the need for improving dietary diversity is a key strategy for enhancing food and nutrition security in resource-constrained settings. This can be done through strategies such as nutrition gardens, adoption of small grains in order to guarantee harvest since the area receives normal to below average rainfall which is a characteristic of a marginal area (Nciizah, T. et al., 2021), livestock possession and also improvement of market structures. This can not only solve the problem of food security but also their livelihood in general.

4.6 Conclusion

In summary, a 4.61 HDDS value points to a relatively low level of dietary diversity, which can have implications on the nutritional status and food security of the households studied. Level of income, availability of livestock at household level, marital status and size of households are the main contributory factors to HDDS as shall be also analyzed in the next chapter. Based on the findings of this study an increase in dietary diversity is associated with socioeconomic status and household food security. Promoting moderate household sizes, increasing cultivated land, nutritional gardens and growing livestock ownership are key actions that can help enhance overall food security.

4.7 References

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CHAPTER 5

ASSESSING THE EFFECT OF COPING STRATEGIES ON FOOD SECURITY IN DORA, WARD 5

Abstract

The study found that households used various coping strategies to deal with food shortages caused by insufficient crop production. These strategies included: relying on less preferred or cheaper food items; borrowing food or getting help from friends and family; gathering wild foods; hunting or harvesting immature crops; consuming seed stock intended for the next planting season; sending household members to eat elsewhere; limiting portion sizes at mealtimes; prioritizing food for young children over adults; reducing the number of meals eaten per day; skipping entire days without eating; and begging for food from neighbors or friends. However, the regression analysis suggests that borrowing ($p = 0.000$), consuming seedstock ($p = 0.000$), limiting portion sizes ($p = 0.00$), and skipping entire days without eating ($p = 0.029$) are substantially related to decreases in food security, while the other variables do not have a reliable effect. Correlation coefficient of food security and CSI ($r = -0.8917$). This means that as the CSI increases, the food security index decreases. Those households with a higher CSI had a lower food security score (HDDS). As such, the research recommends that the root causes of food insecurity be addressed, and this can be done by improving people's livelihoods through job creation, sufficient food production, and food distribution programs.

Key words: Coping Strategy index, Household Dietary Diversity Score, food security, food insecurity

5.1 Introduction

Many researchers have noted that as food insecurity becomes more severe, households are more likely to employ coping strategies that are less reversible. These more extreme coping mechanisms represent a greater degree of food insecurity as what is found in this research. Coping mechanisms are a good way to measure a household's susceptibility to hunger, as impoverished households are more likely to employ more coping mechanisms. Families with limited food availability or a diet that is not very diverse frequently turn to coping mechanisms more frequently to deal with the shortage and poor quality of food (Mkhatshane, 2019). These findings from other researchers concur with the findings in this research where more than four strategies are employed by most households in order to cope with food insecurity. According to this description, the CSI is a gauge of food insecurity; the higher the score, the more insecure the food supply. A higher score corresponds to a higher degree of coping and, thus, a higher level of food insecurity (Maxwell and Cardwell, 2008).

Diverse poverty levels lead to diverse coping strategies being used by households due to disparities in capital levels. These coping strategies, while providing temporary relief, can have detrimental effects on the nutritional status, health, and long-term food security of the affected households (Maxwell, 1996; Hadley & Patil, 2006; Bashir & Schilizzi, 2013).

The CSI score by itself is meaningless because the CSI monitoring tool is a comparative tool rather than an exact indicator of food insecurity (Maxwell et al., 2003). But it creates a baseline within-sample comparative measure so that variations in household food security may be tracked over time (Maxwell et al., 2003). A baseline for tracking trends and the effectiveness of interventions is established by comparing CSI scores and averages, which provides a useful overview of total household food security (Devereux, 2001). As a result, in this research it was regressed with HDDS to determine the effect of each coping strategy to food security.

5.2 Materials and Methods

Details regarding the materials and method are outlined in Chapter 3.

5.2.1 Description of the study area

The study was conducted in Mutare, Dora Ward 5. Details on the study area have already been described in Chapter 3.

5.2.2 Research design

The study mainly employed pre- tested questionnaires which were administered directly to the respondents, and a sample of 51 respondents were selected.

5.2.3 Sampling procedure

Respondents were randomly selected from the population that depend on firewood selling, pit sand quarrying and brick making for their survival. The area was purposively selected as described in Chapter 3.

5.2.4 Data collection procedure

Using structured questionnaires, data was gathered from 51 homes about their coping mechanisms in the event of limited availability to food. Therefore, a seven-day recall interval was employed, and a numerical score was allocated based on how frequently a specific technique was performed.

5.2.5 Data analysis procedure and methods

Data obtained from this research was analyzed using Coping Strategy Index where the raw score was multiplied by the severity weight of each strategy per household ((Maxwell and Caldwell,

2008). However, according to that document, the severity score varies based on the location since different techniques are "weighted" differently based on how severe the individuals who rely on them think they are. So, in this research, the severity scores used, were obtained from a data pilot study done in Kenya where the individual tactics listed have been divided into four categories, with 1 is the least severe category; 4 is the most severe, and 2 and 3 are intermediate (Maxwell and Caldwell, 2008). Thereafter, the researcher added together the scores of the individual strategies to obtain the coping strategy index score (CSI) of each household. The weighted scores of each coping strategy obtained were the ones analyzed in the regression model on food security (HDDS). Details on data analysis are outlined in Chapter 3.

5.2.6 Challenges encountered during data collection

The main challenge was that some people were not able to re-call the number of times they employed certain types of strategies. Another challenge during the research process was managing the respondents' expectations about potential government or NGO interventions to improve their living conditions. The researcher recognized the importance of these concerns, but clarified that the primary aim of the research was to contribute to academic knowledge, rather than to directly influence policymaking. While the researcher did not minimize the significance of the study, they emphasized that any potential impact on local policy would be a secondary benefit.

5.3 Results and Discussion

5.3.1 Coping strategy index

The table below shows a summary of the responses made by the respondents.

Table 5.3.1 Consumption Coping Strategy Responses (CSI)

Number of days in the past 7 days when a household had to:	Number of the households	Number of days out of the past seven: 0 – 7	Severity weight	Weighted score (frequency × weight)
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a. Rely on less preferred and less expensive foods?	51	7	1	357
b. Borrow food, or rely on help from a friend or relative?	19 10 22	3 1 0	2 2 0	120 20 0
c. Purchase food on credit?	16	1	2	30
d. Gather wild food, hunt, or harvest immature crops?	50	7	4	1400
e. Consume seed stock held for next season?	50	1-3= 2	3	300
f. Send household members to eat elsewhere?	10	2	2	40
g. Send household members to beg?	5	1	4	20
h. Limit portion size at mealtimes?	20	7	1	189
i. Restrict consumption by adults in order for small children to eat?	10	2	2	40
j. Feed working members of HH at the expense of non-working members?	0	0	2	0

k. Reduce number of meals eaten in a day?	51	7	2	
l. Skip entire days without eating?	1	1	4	4
Total		41		3220
Average		7		63.1

Coping strategies vary from one household to another and also over time according to choices, objectives, opportunities of household's food sources and constraints. However, some coping strategies are common to households (Mkhatshane, 2019), for example relying on less preferred and less expensive foods, consuming seed reserved for next season as well as reducing the number of meals per day in this study. Only 1 household reported to have skipped the entire day without eating due to illness. After calculating the weighted scores per each house hold the average coping strategy index for all the households was found to be 62.4.

In extreme cases, food insecure households may have to resort to selling valuable assets like livestock or land, which can further undermine their long-term food security and livelihood resilience (Kazianga & Udry, 2006; Farzana et al., 2017), even though this was not analyzed in this research.

5.3.2 Regression analysis of individual coping strategies and food security

Below is a model summary on the effects of individual coping strategies on food security:

Table 5.3.2 Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.979 ^a	.959	.951	.39470

a. Predictors: (Constant), Skip entire day without eating, consume seedstock for next season, limit portion of food, purchase food on credit, Members send to beg, Feed children only, Borrowing, Members eat somewhere

The R-squared value of 0.959 indicates that the model explains 95.9% of the variance in the dependent variable which is food security. However, the adjusted R-squared of 0.951 suggests that the model has a good fit and is not overfitted.

Table 5.3.3 Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	10.000	.395		25.336	.000
Borrowing	-.407	.044	-.617	-9.188	.000
Purchase on credit	-.159	.142	-.084	-1.122	.268
Consume seedstock	-.488	.067	-.230	-7.256	.000
Members send to eat somewhere	.002	.092	.001	.017	.987
Members beg for food	-.034	.068	-.023	-.506	.616
Limit portion of food	-.124	.023	-.240	-5.470	.000
Feed children only	-.078	.079	-.070	-.980	.333
Skip entire day without eating	-.250	.110	-.079	-2.266	.029

a. Dependent Variable: Food security scores

Relying on less preferred and less expensive foods: Food insecure households may shift to consuming lower quality, less nutritious, and cheaper foods to stretch their limited food resources (Swindale & Bilinsky, 2006; Coates et al., 2006).

The results obtained indicates that borrowing has a negative coefficient of -0.407, showing that as the level of borrowing increases by one unit, food security decreases by 0.407 units, holding all other variables constant. This implies that increased borrowing is associated with a decrease in food security status.

Consume seedstock has a negative coefficient of -0.488 indicating that a one-unit increase in the consumption of seedstock is associated with a 0.488 unit decrease in food security. This suggests that higher consumption of seedstock is linked to a lower value of food security.

One of the most popular adjustment tactics that families currently use to deal with food shortage is adjusting to meals (Ojeleye et al., 2014). These mealtime modifications include cutting back on the number of meals consumed in a day or skipping meals entirely, replacing favored foods with less expensive options, and setting portion sizes for family members, particularly the adults (Ojeleye et al., 2014). As may be predicted given their level of poverty and susceptibility to shocks and stresses, the poorest households utilize this method even more frequently (Rashid, 2002). These tactics, however, have a substantial negative impact on the farm family's virility and general health since they put the members at risk for malnutrition and related health problems. However, this study revealed that limiting portion of food has a coefficient of -0.124 means that a one-unit increase in limiting portion sizes is related to a 0.124 unit decrease in food security. This implies that reducing food portion sizes is associated with a decrease in food security. Studies have found that food insecure households often resort to reducing the size and number of meals consumed, which can negatively impact nutritional intake and lead to malnutrition (Hadley & Patil, 2006).

Skipping entire day without eating has a negative coefficient of -0.250 suggests that skipping an entire day without eating is associated with a 0.250 unit decrease in the food security. This indicates that skipping meals is related to a lower value of food security.

The coefficients for borrowing, consume seedstock, limit portion of food, and skip entire day without eating are statistically significant at the 5% level (p-values < 0.05), meaning that these

variables have a real effect on food security, and the observed relationships are not due to chance. However, borrowing food or relying on help from friends, relatives or social networks can provide short-term relief but do not address the underlying causes of food insecurity (Aidoo et al., 2013; Bashir & Schilizzi, 2013).

The coefficients for the other variables (purchase on credit, members send to eat somewhere, members beg for food, and feed children only) are not statistically significant (p-values > 0.05), suggesting that these variables do not have a reliable effect on food security, or their effects are not detected by the model.

In summary, the food insecure households adopted various coping strategies to mitigate the negative effects (Alinovi et al., 2010). So, the regression analysis suggests that borrowing, consuming seedstock, limiting portion sizes, and skipping entire days without eating are significantly associated (p< 0.05) with decreases in food security, while the other variables do not have a reliable effect.

5.4 Relationship between CSI and food security score (HDDS)

Table 5.4 Relationship between CSI and HDDS

	Frequencies		
HDDS	≤3	4-5	≥6
CSI	81-95	57—87	52-57
Average CSI	88	72	54.2
Number of HH	9	16	26

Corelation coefficient = -0.8917

In this research it has been noted that there is a strong negative correlation of -0.8917 between food security and CSI. This means as the CSI increases, food security index decreases. Those households with higher CSI, had lower food security score (HDDS) as shown above on table

5.3.4. These results are in line with findings made by Ojeleye et al. (2014) that, compared to households with high CSI levels, those with low scores used these food coping techniques less frequently.

According to Phiri (2024) a high score indicates extensive use of negative coping strategies and thus elevated food insecurity. As a result of this people may remain in the vicious cycle of poverty (Dzvimbo et al., 2022).

5.5 Recommendations

Basing on the regression analysis results key recommendations would be to:

- explore ways to reduce reliance on borrowing, such as increasing access to alternative financing options, implementing savings programs, or providing financial literacy education to help households better manage their finances
- preserve and conserve seedstock through encouraging diversification of food sources, and exploring sustainable farming practices to preserve this critical resource because using up valuable seed stocks may compromise long-term food security.
- promote appropriate portion sizes especially for vulnerable members like children, to ensure sufficient caloric and nutrient intake
- ensure consistent access to food and regular meal intake by recommend implementing programs or policies that improve access to food and enable households to regularly consume meals, such as food assistance, community kitchens, or meal delivery services especially for vulnerable household members, can contribute to improved food security. Skip entire day without eating" and food security highlights the importance of maintaining a consistent meal schedule and access to food.

Nonetheless, the most important thing is to address the root cause of food insecurity which is poverty.

5.6 Conclusion

The analyzed factors have a significant impact on food security, with some factors being positively associated and others negatively associated. However, the results indicate that borrowing, consumption of seedstock, portion sizes, and meal regularity are significant factors influencing food security. Targeting these areas through appropriate policies, programs, and interventions could potentially lead to improvements in household and community-level food security.

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CHAPTER 6

ASSESSING FACTORS INFLUENCING HOUSEHOLD FOOD SECURITY IN DORA, WARD 5

Abstract

This study reveals that several socio-economic factors play a crucial role in determining household food security in peri-urban areas. The survey data was collected and analyzed using the Statistical Package for the Social Sciences (SPSS), version 16.0. A regression analysis was run in order to examine the determinants of food security in this area. Among the variables that were analysed it was found that level of education, monthly income of the household head and livestock possession ($p < 0.05$) significantly affected food security in this area. Households that engage in home gardening only ($p=0.037$) have a significantly lower food security score compared to other households. The other variables (household size, source of food, age groups, nutrition knowledge, home gardening and food preservation) are not statistically significant predictors of food security score in this study. However, a number of interventions can be done to improve food security by focusing on promoting education, implementing income generating projects, livestock possession among targeted population and complementing home gardening with other food production strategies such as small-scale farming.

Key terms: HDDS, Household, Peri- urban, Regression analysis, Food security

6.1 Introduction

A bigger household size means more people to feed. This was an advantage if the people rely on farming as their survival means, which implies more labour and hence better chances of being food secure. High yields are the result of timely farming activities carried out by those with

adequate labor (Mango et al., 2014). It is unfortunately that for the study area it is a different scenario all together as the bulk of the people are children, school going ages and can't help much when it comes to the sustenance of the family.

It is expected that as age increases, food security decreases. This is supported by the findings made by other researchers. For example, according to Bashir et al. (2012), a household's likelihood of achieving food security declines with the age of the head of the household.

Since the people in that area relies on manual labour for their survival, it becomes difficult especially for those above 60 years of age to fully cater for themselves and hence they depend on help from family and relatives.

The results indicated a positive effect of gender and marital status on food security and $p < 0.05$ at 5% significant level. The majority of household heads were male, according to ZimStats (2012), which is consistent with the study's findings. Male-headed families tend to have higher levels of asset ownership security, higher levels of human capital formation, and more earning opportunities, all of which can contribute to a household's ability to maintain a safe supply of food (Muzah, 2015). In terms of food security, married family heads are thought to have an advantage because joint attempts to provide for the food requirements of the household improve the chances of being food secure (Sekhampu, 2017). Therefore, married household heads have better chances of maintaining household food security compared to their counterparts, as they help each other with household necessities (Muzah, 2015). Due to the lack of spouses, single-headed households are typically headed by women, who consequently have fewer economically engaged household members and are less advantaged than male-headed households.

The head of the household's educational attainment typically has a favorable impact on the variety of foods the household eats and a negative impact on food insecurity. This indicates that compared to other households, those led by literate individuals are less likely to experience food insecurity or worry about it (Mango et al, 2014). This is due to the fact that education plays a crucial role in urban survival since it influences not just work and income but also the household's capacity for rational decision-making in times of emergency.

The primary underlying cause of low-income households' inability to obtain enough food is poverty (Drammeh et al., 2019). Poor households are unable to obtain enough resources and

ensure their food security because of their low socioeconomic level (De Marco and Thornburn, 2009). According to Bogale & Shimelis (2009), livestock is an indicator of the social and economic standing of a farmer. Resource-endowed farmers enjoy a multitude of benefits, including the ability to sell their animals during times of food scarcity, as well as the ability to obtain milk, milk products, and meat from them or sell them for a profit. In addition, livestock provides draft power and aids in meeting the household's needs for subsistence, income, and nutrition (Bogale & Shimelis, 2009). Therefore, animal assets are essential for improving the food security of households.

6.2 Materials and methods

Details regarding the materials and methods are described in Chapter 3.

6.2.1 Description of Study Area

The study was conducted in Dora Ward 5 in Mutare Province, Zimbabwe. Details on the description of the study area are given in Chapter 3.

6.2.2 Research Design

In order to collect data, the study mostly used a survey research design that included self-administered, structured, pre-tested questionnaires. Details are outlined in Chapter 3.

6.2.3 Sampling Procedure

Fifty- one houses were chosen at random to serve as respondents. The specifics of the sampling process are described in Section 3.3 of Chapter 3.

6.2.4 Data Collection Procedure

Details regarding data collection procedure are given in Chapter 3.

6.2.5 Data Analysis Procedure

Data on socio- economic and demographic variables collected in Chapter 4 was used to determine the factors affecting food security in this area. So, it was regressed against food security scores (HDDS). Details are there in Chapter 3.

6.2.6 Challenges encountered during data collection

Impatience on the part of the respondents as the questionnaire had too many questions.

6.3 Results and Discussion

6.3.1 Regression analysis on effect of different variables on food security

Table below shows the linear regression coefficient results for the effect of different variables on food security.

Table 6.3.1 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.919 ^a	.844	.774	.78559

a. Predictors: (Constant), home gardening and food preservation, monthly expenditure, above 100, education, above 60, gender, House hold size, between 26 and 35, source of food, home gardening only, nutrient knowledge, livestock assets, between 18 and 25, age.

Table 6.3.2 Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	4.898	1.655		2.959	.006
Household size	-.102	.137	-.075	-.739	.466
Source of food	-.187	.255	-.075	-.734	.469
Monthly income	.404	.190	.206	2.127	.041
above 100	-.209	.334	-.059	-.627	.535
Education	.535	.248	.189	2.157	.039
Gender	.652	.445	.198	1.464	.153
Livestock assets	1.673	.387	.488	4.323	.000
Age	.165	.240	.114	.690	.495
between 18 and 25	.134	.580	.037	.232	.818
between 26 and 35	.682	.495	.166	1.379	.178
above 60	-.116	.521	-.024	-.222	.826
Nutrition knowledge	-.492	.400	-.128	-1.230	.228
Home gardening only	-.854	.393	-.223	-2.175	.037
Home gardening and food preservation	-.409	.365	-.124	-1.120	.272

a. Dependent Variable: Food Security Score

The model has 15 predictors, including household size, source of food, monthly income, education, gender, livestock assets, age, and various age group and food production variables. With food security score as the dependent variable. The key findings are that monthly income ($p=0.041$) and education ($p=0.039$) are positively associated with food security score and statistically significant at the 5% level. Livestock assets ($p<0.01$) is also positively associated with food security score and highly statistically significant. Households that engage in home gardening only ($p=0.037$) have a significantly lower food security score compared to other households. On the other hand, the other variables (household size, source of food, age groups, nutrition knowledge, home gardening and food preservation) are not statistically significant predictors of food security score in this study.

Household income and education level are the most important socioeconomic factors influencing household food security. Households with higher monthly incomes and higher levels of education tend to have significantly better food security outcomes.

The results showed a positive effect of income on food security ($p< 0.05$), as income increases food security score increases as well. These results are in line with other studies which have shown that households receiving high incomes have a greater chance of being food secure (Akerlele et al., 2013 and Kuwornu et al., 2011), even though there is a huge gap between household earnings (\$50 -\$100) from this study and the overall food basket which stood at \$440.79 in January 2024 according to the Consumer Council of Zimbabwe for a family of six (Newsday January 10, 2024). According to data from the Zimbabwe National Statistics Agency (ZimStats) in 2014, the total consumption poverty line for a typical household in January 2014 was around \$466 in Manicaland Province. This indicates that the people in this area are living below poverty datum line. However, this shows a substantial food and nutrition insecurity.

The results showed that education is positively associated with food security ($p< 0.05$). A household which was better food secured in this study (HDDS score of 9 and CSI of 13) showed clearly that level of education has a positive impact on food security and consequently reduces food insecurity.

Literature reveals that households with more livestock holdings are able to achieve greater food security, likely through improved access to nutrient-rich animal source foods as well as additional income and assets. According to Mango et al (2014), households with livestock to be

more food secure than those without these assets and this resonates with the results obtained in this research where the presence of livestock is statistically significant ($p < 0.01$) and has a positive impact on food security. Small livestock are easy to keep, easy to trade and contain several food groups (eggs, meat and goat milk) that may provide micro and macronutrients (Taruvunga, 2013).

While home gardening is often promoted as a strategy to improve food security, the results suggest that doing home gardening alone may not be sufficient. Households that only engage in home gardening have significantly lower food security scores compared to other households.

6.4 Recommendations

Based on the results obtained, the following recommendations can be made to help improve household food security:

- Increase household income

Implement policies and programs that boost income-generating opportunities, such as improving access to credit, facilitating small business development, or providing cash transfers to low-income households.

- Invest in skills training and vocational education to enhance the earning potential of household members.

- Improve education levels:

Expand access to quality education in order to raise the educational attainment of the population and by providing incentives and support for families to keep children, especially girls, in school for longer durations.

- Promote livestock ownership:

Facilitate access to livestock assets through subsidies, credit, or livestock distribution programs targeted at food-insecure households. Also Invest in veterinary services and animal husbandry training to help households better manage and derive benefits from their livestock.

- Complement home gardening with other food production strategies:

Encouraging households to adopt a diversified approach that combines home gardening with other food production methods, such as small-scale farming, rearing of small livestock, or community-based food preservation techniques. small-scale fruit and vegetable production via kitchen garden projects were identified as nutrition-sensitive agriculture interventions having the highest success rate due to their ease of adoptability, investment in human capital, and women's empowerment aspects (Shetty, 2018).

Providing training and extension services to help households improve the productivity and sustainability of their home gardens and other food production activities.

Implementing these recommendations in a coordinated and context-specific manner can help address the multifaceted nature of food insecurity and ultimately improve the food security and nutrition outcomes for vulnerable households.

6.5 Conclusion

Of the variables analyzed, the results revealed that monthly income, education, and livestock assets are the key drivers of household food security in this area, while home gardening alone may not be sufficient to ensure better food security outcomes. Other factors like household size, source of food, age, and nutrition knowledge do not appear to be statistically significant predictors of food security in this context. The overall high explanatory power of the model (R-squared of 0.844) indicates that the included socioeconomic and agricultural variables are able to capture the key drivers of household food security in this population. These findings highlight the importance of investing in interventions that can boost household incomes, educational attainment, and livestock ownership as effective pathways to improve food security. Complementary approaches that go beyond just home gardening may be needed to comprehensively address food insecurity.

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CHAPTER 7

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

This chapter offers a summary of the research conducted and how it addressed the aim and objectives of the study. It will also provide recommendations and identify areas for further research.

7.2 Research Summary

The first chapter of this study covered the introduction, problem statement, research objectives, research questions, justification for the study, and an outline of the overall thesis structure. This was followed by the second chapter, which focused on a literature review synthesis, where the relevant academic literature on the topic was reviewed and synthesized. The third chapter then outlined the methodology used in this study, including details on the study site, the research design, the sampling procedure, the data collection process, the data analysis approach, and the ethical considerations taken into account, concluding with a summary of the key methodological aspects.

Chapters four, five, and six were dedicated to presenting the results, with each chapter addressing one of the respective research objectives. Chapter four was to assess the level of food security status in Dora, Ward 5 and this was achieved through use of structured questionnaires on household demographics, socio- economic statuses and dietary diversity. However, the research has revealed that households in Dora, Ward 5 are generally food insecure (HDDS of 4.63) due to various reasons which ranges from socio- economic challenges, climate change, demographic characteristics. Poverty being the main driver of this problem. The current El- Nino phenomenon which has affected the 2023/ 2024 growing season has been found to have exacerbated the situation in Zimbabwe and particularly this area. As a result of the food shortages that they are facing, the people delved more in applying certain coping strategies and among them, the borrowing, consumption of seedstock, portion sizes, and meal regularity were found to be

significant factors ($p < 0.05$) influencing food security as revealed in Chapter 5. The results also indicated that there is a strong negative correlation between food security and CSI ($r = -0.8917$) such that as the CSI increases, food security index decreases. Those households with higher CSI, had lower food security score (HDDS).

Lastly in Chapter five, an examination of factors influencing household food security in Dora was done. Many households in area rely on brick making, pit sand extraction, and firewood selling as their primary income-generating activities. However, these livelihoods tend to provide low and inconsistent earnings for the households. The unstable incomes from these occupations directly impact the households' ability to afford and purchase enough nutritious food. This, in turn, affects the overall food security situation within the community. In addition to that, the results revealed that education, and livestock assets ($p < 0.05$) are the key drivers of household food security in this area, while home gardening alone may not be sufficient to ensure better food security outcomes. Other factors like household size, source of food, age, and nutrition knowledge do not appear to be statistically significant predictors of food security in this setting.

7.3 Conclusions

In conclusion, generally, the households in the study area were found to be food insecure, and a number of coping strategies that they employed and that have greatly impacted food security were found to be borrowing, consumption of seedstock, reduction of food portion sizes, and meal regularity. The results also indicated that there is a strong negative correlation between food security and CSI ($r = -0.8917$) such that as the CSI increases, the food security index decreases. Those households with a higher CSI had a lower food security score (HDDS). The greatest determinants of food security status in this area were found to be level of income, education, and livestock assets. Gardening alone could not provide sufficient food hence the need for integrating it with livestock husbandry and small-scale farming. If these areas are improved, there is a great possibility that household food security in this area will increase.

7.4 Policy implication and recommendations

The study suggests several strategies to improve household food security, including increasing income through policies and programs, improving education levels, promoting livestock ownership, combining home gardening with other food production methods, and tailoring interventions based on household characteristics. These include increasing income through small business development, investing in skills training and vocational education, promoting livestock ownership through subsidies and credit, combining home gardening with other methods, and tailoring interventions to specific needs and constraints.

Policy implications include expanding access to credit, promoting small business development (Banerjee et al., 2015), providing cash transfers to low-income households (Hidrobo et al., 2014), investing in quality education and provide incentives for families to keep children, particularly girls, in school (Muralidharan & Prakash, 2017). Also prioritizing facilitating livestock ownership among food-insecure households through initiatives like subsidized livestock distribution (Rawlins et al., 2014), improved access to veterinary services (Alemayehu et al., 2012), and training in animal husbandry (Iannotti et al., 2014).

Policy implications also include reducing reliance on negative coping strategies, promoting positive coping mechanisms, and tailoring interventions based on factors like income, education, and asset ownership. This could involve prioritizing support for households with lower incomes, lower education levels, or limited access to livestock assets (Alderman, 2010; Devereux & Sabates-Wheeler, 2004).

Comprehensive resilience-building strategies, strengthening social safety nets, promoting financial inclusion, and leveraging community-based institutions and social networks are recommended. Monitoring and evaluation systems should be established to track the effectiveness of policies and interventions in reducing the use of negative coping strategies and promoting more positive ones (Bamberger et al., 2012).

7.5 Areas for further research

From the research, areas for further research can be on:

- the role of livelihood diversification, such as engaging in multiple income-generating activities, in enhancing the food security of households in the study area. Understand the barriers and enablers for diversifying livelihoods.
- Determinants of food security beyond socio- economic and demographic factors
- Examining how the food security coping strategies employed by households in Dora Ward 5 compare to those used in other peri-urban or similar contexts. This could provide insights into context-specific factors and help identify transferable best practices.
- Impact of land degradation on food security.

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7.7 APPENDICES

Appendix 1

Household Questionnaire

Assessing Food Security Coping Strategies in the Peri- Urban Areas: A Case of Dora Ward 5, Mutare

1. Basic Information

- a. Age of household head _____
- b. Gender _____
- c. Marital status _____
- d. Level of education _____

2. Household Composition

- a. Total number of household members: _____
- b. Number of adults (above 18 years old): _____
- c. Number of children (below 18 years old): _____

3. Household Income and Expenditure

- a. Monthly household income (in USD): _____
- b. Monthly expenditure on food (in USD): _____
- c. Monthly expenditure on non-food items (in USD): _____

4. Food Sources and Access

A. Where do you primarily obtain your food? (Select all that apply)

- i. Buying, barter trade
- iii. Own food (garden or field)
- iv. Food assistance programs
- v. Other specify

B. How often do you face challenges in accessing sufficient food? (Select one)

- i. Rarely
- ii. Occasionally
- iii. Frequently
- iv. Always

C. Are there any barriers that limit your access to a diverse range of food options? (Select all that apply)

- i. Limited financial resources
- ii. Limited availability of diverse food options
- iii. Lack of transportation
- iv. Lack of information on nutritious food choices
- v. Other (please specify):

5. Household Food Diversity Score

A. Please indicate the frequency of consumption for the following food groups in your household over the last 24 hours:

Food group	Frequency of consumption over the last 24 hours
i. Grains (e.g., rice, wheat, maize)	
ii. Meat and poultry	
iii. Fish and seafood	
iv. Eggs	
v. Dairy products	
vi. Fruits	
vii. Vegetables	
viii. Legumes (e.g., beans, lentils)	
ix. Nuts and seeds	
x. Other (please specify):	

8. Coping Strategy Index

Behaviors: In the past 7 days, if there have been times when you did not have enough food or money to buy food, how many days has your household had to:	Frequency: Number of days out of the past seven: (Use numbers 0 – 7 to answer number of days; Use NA for not applicable)
a. Rely on less preferred and less expensive foods?	
b. Borrow food, or rely on help from a friend or relative?	
c. Purchase food on credit?	
d. Gather wild food, hunt, or harvest immature crops?	

e. Consume seed stock held for next season?	
f. Send household members to eat elsewhere?	
g. Send household members to beg?	
h. Limit portion size at mealtimes?	
i. Restrict consumption by adults in order for small children to eat?	
j. Feed working members of HH at the expense of non-working members?	
k. Reduce number of meals eaten in a day?	
l. Skip entire days without eating?	

6. Food Preservation and Storage

A. Do you have access to appropriate food storage facilities? (Select one)

- i. Yes
- ii. No

B. If yes, please specify the type(s) of food storage facilities available (e.g., refrigerator, freezer, pantry):

7. Knowledge and Practices

A. How would you rate your knowledge about nutritious food options? (Select one)

- i. Excellent
- ii. Good
- iii. Fair
- iv. Poor

B. Do you engage in any of the following practices to improve food security? (Select all that apply)

- i. Home gardening

ii. Food preservation techniques (canning, drying, etc.)

iii. Community food sharing initiatives

iv. Participating in food-related workshops or training

v. Other (please specify):

8. Additional Comments

Is there anything else you would like to share regarding your household's food security and diversity?

Thank you for participating in this survey. Your responses will greatly contribute to our assessment of the food security status in Dora, Ward 5.