ASSESSING THE CONTRIBUTION OF FOOD ASSISTANCE IN CURBING FOOD INSECURITY. A CASE OF MT DARWIN, ZIMBABWE

A submitted dissertation that partially meets the requirements for the Master of Science in Food Security and Sustainable Agriculture

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DECLARATION

I hereby declare that the research project entitled **"ASSESSING THE CONTRIBUTION OF FOOD ASSISTANCE IN CURBING FOOD INSECURITY. A CASE OF MT DARWIN, ZIMBABWE."** 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 **NAME/S OF SUPERVISOR/S** and this work is t submitted in partial compliance with 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

This research project is dedicated to my family. I love you deeply with all my heart. To my wife Jessica, you have been a listener and supporter of all my endeavors. Your partnership, steadfastness and love sustain me.

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ABSTRACT

Rural community household food insecurity in marginalized communities has become a chronic problem that perpetually needs great attention. The prolonged household food insecurity has been recognized as a threat to developing countries with Zimbabwe included. The study assessed the household food insecurity (availability) status in the study area and food assistance contribution in curbing food insecurity as the main objective. A cross sectional survey was employed to cover households that were randomly selected from the 4 wards in Mt Darwin district under Mashonaland Central province. A total of 80 households were selected with each ward. 4 wards of Mt Darwin in WFP-LSA 2022-2023 programme were considered, 2 from the upper part of Mt Darwin and the other 2 from the lower part or the valley taking 2 villages from each ward and targeting 10 households from each selected village for the interviews with 5 being food assistance beneficiaries and the other 5 non-beneficiaries .The results of the study was analysed using a binary logistic regression and descriptive statistics. The results of the study indicated that food assistance improves food security at household level. The results of a comparison between food assistance beneficiaries and non- beneficiaries illustrated that the log odds of being food secure was 0.835. These assertions are statistically significant at 1% level of significance. The conclusion of the study is that food assistance programs have a positive impact on improving food security status of households. In terms of tubers and other roots, the distribution was slightly even, with 54% of the households indicating they were having these in their diet, compared to just 46% who were not having roots and tubes in their diets, this illustrated that the community members survived on wild roots and fruits as a coping strategy. The other research findings were that 39 % of the people indicated that their preferred commodity was vegetable oil, the second most preferred commodity was cereal with 32 % and lastly, 29 % respondents indicated that their preferred product from the WFP commodities were pulses. The recommendations brought about were that the government with the assistance of development partners increase the coverage of the food assistance interventions to households particularly those vulnerable so that there is reduction in food insecurity in the country. The government can achieve this by lobbying more partners beyond the World Food Programme so that more assistance is availed to the most food insecure households.

Keywords: (Households, Food availability, Food Assistance, Food security, Vulnerability)

LIST OF ACRONYMS AND ABBREVIATIONS

ANOVA	: Analysis of Variance
FANTA	: Food and Nutrition Technical Assistance Project
FAO	: Food and Agriculture Organization
FEWS NET	: Famine Early Warning System Network
GAM	: Global Acute Malnutrition
GDP	: Gross Domestic Product
HDDS	: Household Dietary Diversity Score
HFIAS	: Household Food Insecurity Access Score
IPC	: Integrated Food Security Classification Phase
LSA	: Lean Season Assistance
RBZ	: Reserve Bank of Zimbabwe
RTGS	: Real Time Gross Settlement
SPSS	: Statistical Package for Social Sciences
SSA	: Sub-Saharan Africa
UN	: United Nations
UNICEF	: United Nations Children's Emergency Fund
USAID	: United States Agency for International Development
WFP	: World Food Programme
WHO	: World Health Organisation
WVI	: World Vision International
ZFSO	: Zimbabwe Food Security Outlook
ZimVAC	: Zimbabwe Vulnerability Assessment Committee
ZimSTAT	: Zimbabwe National Statistics

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CHAPTER 1

INTRODUCTION

1.1 Background of the study

Zimbabwe is a landlocked developing country located in the sub-Saharan region of Africa. The country currently operates without an adopted agricultural and food policy, relying mainly on a framework. Despite the country's food security gains long ago when Zimbabwe was still the breadbasket of Africa, the country failed sometime in 2019 and 2022, with the global COVID-19 pandemic and excessive heat to cope with wave due to global warming leading to drought

According to (Backer and Billing 2021) on global food security, they emphasized that food insecurity, or the availability of food for the vulnerable community members, is not only caused by poor harvests, but is mainly due to high local food prices, lower disposable incomes and higher unemployment rate. Based on the current situation, WFP projected that the prices of other non-grain staples would increase sharply over the forecast period.

After the global Covid-19 pandemic and the drought in Zimbabwe, poverty and inequality remained a serious global economic problem, particularly in developing countries. The majority of people in developing countries are at risk of food insecurity (La Chimia 2016). One of the main causes of food insecurity in developing countries is the inability of vulnerable people to obtain sufficient food of adequate variety and quality due to shortages in food systems (Alinovi *et al*. 2005). The food system includes all elements related to the production, processing, distribution and consumption of food (Godfray *et al*. 2010). The status quo of food insecurity in Zimbabwe is caused by the lingering effects of ongoing political instability and economic deterioration, past extreme weather conditions, reduced harvests and the decay of livelihoods and family-based external support systems. Disruptions in food systems can cause systemic problems that cause food insecure and vulnerable individuals and households to lose vital, nutrient-dense foods and other basic needs (Rosegrant and Ringler 2000). Examples of systemic problems resulting from disruptions in food systems include households' lack of purchasing power in terms of disposable income, inability to access food markets, and weak food transportation systems.

The aim of this study is to support food aid efforts to achieve improvements in food systems to ensure food security at both individual and household levels. Improving the food network that reduces food insecurity and starvation can also bring benefits supporting direct beneficiaries (Capone *et al*. 2014). Direct food aid uses transfer modalities such as monetary or non-cash benefits for improvement the availability of food of a specified nutritional value and quality.

This dissertation uses evidence from Zimbabwe to assess the contribution of food aid to improving household food security. The study assesses the impact of the World Food Program (WFP) Lean Season Assistance food aid intervention on the variety and quality of diets in recipient households in Zimbabwe. The study also discusses the influence of the variety and quality of diets in recipient households on the design of systemic food assistance responses. This understanding can provide very important evidence as to whether food aid has the potential to convert needs into demands for nutritious and sufficient food to improve food security. This could help improve the design of unique government interventions in collaboration with various NGOs and other implementing partners. Food aid is needed in situations of widespread food insecurity and vulnerability among community members. The goal of this food aid is to improve the performance of the food system by addressing food insecurity and the vulnerability of the population at large.

The challenges faced by the most food-insecure and those living below the poverty line in tackling economic opportunities and challenges cause ongoing household suffering. For example, lack of access to adequate formal education, insufficient capital, and poor health conditions due to a lack of diet variety and quality impede the ability of food-insecure and vulnerable people to seize economic opportunities (Miller *et al*. 2011). The vulnerable and food insecure households from marginalized communities, especially in rural areas, are also experiencing various socio-economic, natural, physical and institutional shocks such as drought, disease, stress and in the worst case, death due to the prevailing skyrocketing basic needs and food prices. The above shocks contribute to putting the most food-insecure households at risk of food insecurity. These shocks adversely affect food availability, income and other basic household needs such as education. To alleviate food shortages, households are adopting precautionary food consumption and income-saving behaviors such as rationalization (Niles and Salerno 2018). Such measures aim to minimize economic, nutritional and social costs at the household level (Devereux and Jere 2008). Coping

strategies require vulnerable and food-insecure households to survive in the short-term, but compromise their long-term well-being due to compromised quality.

The three main functions of food aid interventions include protecting the consumption levels of food-insecure and vulnerable people and preventing them from sliding into poverty, enabling investment in productive assets and human resources such as education, and facilitating a break-out from vulnerable situations (Behzadifar *et al* .2016). Food aid is also an integral part of humanitarian aid (Billing 2021). Food aid plays a central role in building resilient livelihoods and improving food availability in development contexts as part of the broader Sustainable Development Goals (Kabbani and Kmeid 2005).

Recently, the World Food Program recognized that its food aid operations have unprecedented potential to alleviate hunger and food insecurity by employing methods that support government efforts to achieve United Nations (UN) Sustainable Development Goal 2, which is primarily aimed at eliminating hunger (Rickards and Shortis 2019). The World Food Program takes a different position as it interacts with commercial markets where the organization primarily sources food to fund the food relief efforts. WFP also completes the food chain by providing services such as transport, storage and handling of food. This completion of food systems, coupled with the delivery of food assistance to beneficiaries, gives World Food Programs the opportunity to address food system deficiencies and disruptions (Rickards and Shortis 2019). However, this potential for improving food systems is only achievable if commitments, efforts and investments in food assistance are demand-driven, transformative and capacity-enhancing (Bene 2020).

1.2 Statement of the research problem

Food insecurity and household vulnerability are no longer viewed as failures in global agricultural production. The main causes of household food insecurity are inadequate livelihoods that cannot ensure current and future food availability at both household and individual levels (Connolly-Boutin and Smit 2016). The poverty literature also appreciates the idea that the availability of assets that can be easily converted into productive livelihood strategies is a way to offer the most food-insecure and vulnerable community members a way out of the cycle of poverty (Capone *et al*. 2014). This is also supported by (Yaro 2004) with his study on the theory of food insecurity and building a livelihood framework for research on food insecurity. Another piece of literature consistent with the claim that all available assets can be converted into productive livelihood strategies comes from (Hesselberg and

Yaro 2006) with his 2009 study of poverty, food insecurity and livelihood strategies in rural Gedeo, Ethiopia. There is a need for food aid. Sub-Saharan Africa is being stimulated by persistently high levels of food insecurity and malnutrition, skyrocketing prices for staple foods, ever-changing weather patterns, political instability, and the erosion of livelihoods due to shocks such as the COVID-19 virus pandemic and droughts (Niles *et al*. 2020)

The World Bank (2019) notes that money transfer modalities can facilitate the link between humanitarian and development interventions. The World Bank also noted that the modalities of transfers in kind will remain a relevant and very critical part of humanitarian assistance for years to come. However, little is known about the potential of food aid in the form of goods transfers to improve food security and increase demand for nutritious food during the dry season (Bank 2017). Most of the evidence presented by researchers for the comparative performance of different transfer modalities comes from non-emergency development scenarios (Bank 2017). Humanitarian interventions such as Lean Season Assistance often present multiple drawbacks and urgencies that differ from development contexts (Bank 2017). These challenges include the unavailability of physical food markets due to inadequate security, very poor transportation infrastructure, devastated and devastated telecommunications networks, and non-functioning financial systems due to fluctuating exchange rates and interest rates due to the resulting economic collapse and hyperinflation.

Therefore, when food systems are not functioning effectively and properly, humanitarian interventions can support the provision of sufficient, safe, and nutritious food to people (Bn 2020). Disruptions to properly functioning food systems create underlying problems that impede the supply of adequate food to households and individuals (Savary *et al*. 2020). The disruption of food systems from fundamental problems and shocks can create emergencies that require food replenishment measures to alleviate food insecurity. The ability to withstand shocks and the overall performance of food systems depend on how well food transfers mitigate these fundamental problems (OConnor *et al*. 2017). Establishing properly functioning food systems that ensure an adequate supply of food of adequate quality and quality to nutritionally insecure households and most vulnerable households remains a global food security phenomenon that requires attention (Saint Ville *et al*. 2019).

The aim of this study is to assess the extent to which food assistance responses to specific population groups in Zimbabwe address fundamental food insecurity issues and ensure food

security by improving diet diversity and quality, and the capacity of food insecure households to cope with food insecurity.

1.3 Study objectives

The main objective of the study was to assess the extent to which the World Food Program's food assistance operations in Zimbabwe improve food security. The study focused on four specific objectives:

1. To assess if the WFP's food aid intervention in Zimbabwe can improve food insecurity.
2. To assess if the WFP's food assistance intervention in Zimbabwe improves beneficiaries' diversity of their diety.
3. To assess how the WFP's food aid intervention in Zimbabwe influence the safeguarding strategies food insecure and vulnerable households adopted to alleviate food insecurity.
4. To determine the WFP's food commodity the recipient households prefer most.

1.4 Research Questions

This study examined whether food aid has the potential to address food insecurity and focused on the following research questions:

1. Can the WFP's food aid intervention in Zimbabwe improve food insecurity?
2. Did the WFP's food assistance intervention in Zimbabwe improve beneficiaries' diversity of their diet?
3. Did the WFP's food aid intervention in Zimbabwe influence the safeguarding strategies food insecure households adopted to alleviate food insecurity?
4. What WFP's food commodity did recipient households prefer most?

1.5 Justification of the study

This study makes six important contributions to improving food security for the people of Zimbabwe, particularly in the Mt Darwin District. The study benefits WFP, the Mt. Darwin community and partners in the delivery of food aid. The first contribution of this study is that it advocates for the compilation of data for evidence-based interventions in emergencies. The volatility of humanitarian interventions leads to an increased focus on the need to generate conscientious data on the performance of transfer modalities and the effectiveness of those modalities in emergency situations (Bank 2017).

The second contribution of this study is as follows: The findings of this work contribute to an understanding of how the WFP status quo in terms of interventions affects household diet diversity. The results are not only essential for the design of future programs under the WFP Strategic Plan 2023-2028, but most importantly they contribute to the understanding of the fundamental impacts of goods transfers on the food system, which can take place in the context of development.

The third benefit of this study is that it examines how food aid responses can be used to convert the need for safe, healthy and nutritious food into an effective demand, thereby improving people's food security. This directly benefits members of the Mt. Darwin community, particularly food aid recipients, by providing them with a basket of nutritious food.

The other critical use of this study is as follows: It is well argued in the literature that there is little consensus and evidence as to whether transfer-in-kind modalities are more effective in preventing food insecurity and discouraging the most vulnerable households from adopting strategies to cope with adverse impacts Food consumption in acute food shortages (Bene 2020). This study contributes to filling this knowledge gap.

The fifth contribution of this study is that it provides important and detailed information relevant only to WFP's food aid interventions in Zimbabwe. This is important as food aid for food security operations is context specific and not necessarily replicable (Devereux 2016). This means, therefore, that understanding the design, methods and implementation modalities that best suit Zimbabwe can best be justified through research and assessments that are specifically tailored to Zimbabwe's circumstances.

Finally, this study can help implementing partners to make informed and objective decisions about the best delivery modalities for a given intervention. This study also helps determine the food raw material preferred by most food aid beneficiaries. In this regard, it will therefore be crucial for the Government of Zimbabwe, donors and implementing partners to stick to the commodities most favored by the most food-insecure households and the most vulnerable people in the community. Providing the most preferred goods helps to achieve all goals and objectives of specific food aid operations.

1.6 Scope of Study

The study is limited to communal rural households in the Mt. Darwin district and will only provide information on current trends in their lives and not on past experiences. The aim is to analyze how social structures, income levels, agricultural production and market structures as a whole contribute to household food security. The project does not intend to look for the different ways in which food can be made available, nor does it take into account the level or scale of food use. It is assumed that the people in the area live in a household form and from each selected household one respondent should be found who would understand the interviewer.

1.7 Limitation of the study

During the study period, Zimbabwe was characterized by a multi-currency system that resulted in fluctuating exchange rates, which technically resulted in price volatility of goods and services. The transport costs became too high, which limited the mobility of the data collectors. This in turn slowed down data collection at the stations. However, the challenge had to be overcome by the fact that the on-site data collection took longer than expected and the company transport had to be used as an alternative. Due to financial problems, the researcher could not use the Agritex extension staff for data collection as planned and had to use work colleagues and enumerators for data collection. To reduce bias, other household members were asked to help the respondent.

1.8 Outline of the thesis

The study was presented in 6 chapters and the content of the 6 chapters is summarized as follows. Chapter 1, also called the introduction, includes the background of the study, the presentation of the research problem, research goals, research questions, the rationale for the study, the scope of the study, the limitations of the study and an overview of the thesis. Chapter 2, also called the literature review, comprised the introduction, the conceptual framework, the theoretical framework and a literature summary. Chapter 3, also called methodology, contains a brief description of the study area, research design, sampling method, data analysis procedure, summary of ethical considerations, and references. Chapters 4 and 5, commonly known as “Results” and “Discussion”, illustrated two different developed research manuscripts for the study, each consisting of a summary, an introduction, a

methodology, a description of the area studied, a data collection procedure, a data collection, etc Passed data analysis procedures and The challenges encountered were data collection, results and discussion of results, recommendations, conclusions and references. Finally, Chapter 6 contains the introduction, research summary, conclusions, policy implications and recommendations, areas for further research, references and appendices.

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CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The availability and accessibility of food as one of the cornerstones of food security has since become one of the main topics in which researchers and policy makers are interested. In this regard, therefore, it has also become an integral part of the main goals of the Sustainable Development Goals (SDGs). The government and various stakeholders in the international and local community have expressed an interest in reducing food insecurity as they seek to eliminate hunger as part of Sustainable Development Goal #2. Food security can be explained by all livelihoods being sufficient and healthy and sustainable enough to ensure sufficient food availability at the household level (Shortis 2019). In this sense, subsistence means all assets and activities that are necessary for a reasonable subsistence (Lentz 2010). According to the status quo of their socioeconomic and political environment, politics, history and agro ecology, individual community members combine these assets and skills into livelihood action plans that translate into sustainable livelihood outcomes (Kabbani 2019). Food aid and food relief operations are implemented in scenarios where all individual resources and skills are insufficient to support livelihoods and ensure food security (Yaro 2004). Food aid and food assistance entitle beneficiaries to access nutritious food for consumption, thereby saving and protecting lives and livelihoods (WFP 2022).

2.2 Food Security in Context

2.2.1 Overview of the Status Quo of Food Security Situation in Zimbabwe

Due to climate change resulting from global warming as well as the COVID-19 pandemic, Zimbabwe has suffered from food insecurity over the past decade. Food security is defined as assets and activities that enable people to make a living in a manner that is stringent and feasible enough to provide enough food for all households (La Chimia 2016). (Pinstrup-Andersen 2009) also conveys an understanding of food security by arguing that food security exists only when all people have, at all times, physical and economic access to relatively sufficient, safe and nutritious food that meets their dietary needs.

The 2022 Zimbabwe Vulnerability Assessment (ZIMVAC) report estimates that at the peak of the 2022-23 hunger season in Zimbabwe, 3.8 million rural residents from diverse households were food insecure. This figure represents an approximate slight change of 9.8% from the 5-year average percentage and an increase of 29.8% from the 2021/22 consumption year. This large increase in the percentage of food insecurity is mainly due to the lack of a high shock exposure index as many households report being exposed to a series of shocks resulting from global climate change (WFP and UNICEF 2022). The main shocks threatening household livelihoods were seasonal droughts, drought, floods, waterlogging, livestock and crop diseases, pests, and the ongoing impact of the Covid-19 pandemic (WFP and UNICEF 2022).

The series of shocks mentioned above reduced the coping capacity of many vulnerable households and led to food insecurity. The intra-seasonal dry spell between February and March 2022 had catastrophic negative effects on agricultural production, particularly in Zimbabwe's non-surplus producing areas such as Matebeleland North, parts of Mashonaland East and Mashonaland Central provinces (Salerno 2018). The Famine Early Warning System Network (FEWSNET) is forecasting an extension of Intergated Food Security Phase Classification (IPC) Phase 3 results through January 2023 for most of the southern parts of the country, as well as smaller areas in the northern counties that produce excess crops. Finally, the prevailing unfavorable deteriorating economic conditions have further weakened the purchasing power of the local currency and the disposable income of many households, leaving them unable to meet their basic household needs.

Following a collapse in macroeconomic conditions that left households unable to meet their basic needs, this has resulted in severe suffering for already poor households, exacerbating their vulnerability and increasing food insecurity for both rural and urban community members overall. Due to a series of complicated environmental, economic, social and political factors throughout the year, the country is no longer self-sufficient in food production. Most Zimbabwean regions such as Matabeleland North and South provinces, Mashonaland Central and Mashonaland East provinces experienced temporary food shortages and food insecurity throughout the year (Pingali et al. 2005). Although agriculture is considered a cornerstone of Zimbabwe's economy, the country has been a major recipient of food aid over the past decade, particularly in the sub-Saharan region. Research into food security in Zimbabwe conducted by ZimVAC in 2015, 2019 and 2020 consistently showed high levels of food insecurity in rural areas. However, ZIMVAC's nine most recent studies also showed an increase in food security vulnerabilities in urban areas.

This has prompted both international and local NGOs to get involved in food aid in the urban area as well. According to ZimVac (2022), current food insecurity shows that about 2.4 million people are food insecure in Zimbabwe, representing 24% of the rural population. Increase in the number of people affected by food insecurity despite fluctuating rates. UNICEF (2021) states that 70% of the population lived below the poverty line and that this number could rise given the prevailing economic situation with skyrocketing food prices. This affects the rural population, who face low agricultural production in the face of climate change characterized by global warming. Zimbabwe is considered a low-income country with a diverse economy, with mining and agriculture among the key sectors contributing to GDP (Davis and Hirji 2014). (Maiyaki 2010) agreed with (Muzari et al. 2016) and pointed out that the majority of Zimbabwe's population has always been agrarian.

2.2.2 Determinates of household food security

(UNICEF 2021) referred to the notion that food security is not based solely on food security at the national level, but rather on the failure of livelihoods to ensure the availability of sufficient food at both household and individual levels. (Saint Ville *et al*. 2019) stated that according to the WFP, the main components of food security are food availability, food supply to markets, access to food, purchasing power in local currency and access to markets, and consumption or use of food Eat. Differences in levels of food security between households are explained by unique factors that include income, household land tenure, employment status, household productive wealth, and household size (Hart et al. 2009). (Galiani and McEwan 2013) argued that economic status is the most important factor determining the food security status of an individual or household, but may not be the only factor determining food security in developing countries. This is true given that a high-performing economy has formal job opportunities and stable food prices.

(Muhoyi et al. 2014) pointed out in his study that food security is determined by factors such as household composition, level of education and the diversity of livelihoods. (De Muro and Burchi 2007) also indicated that education is a crucial factor in household food security, noting that educated households are more likely to be food secure than households that are illiterate. (Gasperini 2000) agreed with these findings and found in his study that literacy reduces the risk of food insecurity in households. There is a chance that an educated household will make a great contribution to the diversification of income, skills, work

efficiency, the adoption of technology, and will have a concrete vision for creating a favorable environment for education of its loved ones, providing all financial educational needs covers the goal of further improving the living conditions of illiterates in the future (Ehui 2002).

(Ndiweni 2015) showed in his study in Matobo, Zimbabwe that household size matters for households with food insecurity compared to households with secure food. (Ndiweni 2015) also discovered that the availability of credit facilities determines household food security to a greater extent. Credit facilities and lines of credit give the household the opportunity to invest and finance all income-creation activities, which can increase their financial capacity and disposable incomes to reduce the risk of food shortages as-well as food insecurity. This therefore tends to cover the households that would suffer from food shocks such as droughts, mid-season droughts and floods.

2.2.3 Food Aid and Food Systems

Effective, functioning, and systematic food systems support the provision of sufficient, healthy, and nutritious food to individuals and households (La Chimia 2016). The need for sufficient, healthy and nutritious food to meet market demands requires the purchasing power of beneficiaries and the availability of effectively functioning markets for the supply of basic necessities. In the environment of humanitarian organizations and implementing partners, there is often a lack of disposable income, purchasing power of the local currency and effectively functioning markets, which leads to need, but in particular to no effective demand (von Braun et al. 2021) .

(Huffman and Jensen 2003) in their recent studies on the interaction between food brands, human capital participation, and food insecurity status of low-income households under different interventions and economic conditions. The results of their study supported the assumption that functioning and efficient food systems support the provision of sufficient and nutritious food. Her findings from her study were that food assistance interventions play an essential role in meeting the basic needs of low-income households

2.2.4 Food availability as a barrier to food security

The ability to provide food for individuals and households, as a prerequisite for food security, is critical to defining and articulating the meaning of food security. The Food and Agriculture Organizations (FAO) define food security as a situation in which all people have, at all times,

physical, social and economic access to adequate, safe and nutritious food that meets their dietary needs and nutritional preferences for an active and productive life (Upton et al. 2016). The final declarations of the World Food Conference (Assembly 2015) emphasized the importance of food availability for improving food security. This is achievable through reasonable food prices through increased food production, improved global food supply and food aid (Assembly 2015).

This claim goes back to the findings of (Billing 2021), who in 1981 with his entitlement theory (Maxwell 1996) cited the issue of food availability as the main cause of food insecurity. Billings entitlement theory posits that the entitlement set is the total package of goods and services one can acquire through the exchange of one's possessions, formerly known as barter. In summary, a household or individual's entitlement is directly related to the resources available to them for daily use (Himmelgreen et al. 2022).

Food insecurity creeps in when the entitlements of a household or an individual are unable to provide enough food for the household and individual needs. (Romero-Daza et al. 2022) argued that, contrary to popular belief and understanding, food insecurity is caused not only by food scarcity but also by other factors. Shocks such as droughts and floods all result in crop failures, and high food and commodity prices, poor governance and civil wars are major contributors to food insecurity. Although all of the above factors contribute to food insecurity, the most critical elements that lead to food insecurity are the social systems that currently play a role in our everyday society.

(Zakari *et al*. 2014) confirmed that vulnerability, poor soil fertility, pests, diseases and insect infestation are the main causes of food insecurity. The results of his study showed that the gender of the household head, pests and diseases, labor supply, flooding, access to markets and food aid are important factors influencing a household's adequate daily food rations.

2.2.5 Access to and the right to food

Having adequate food and being free from hunger is not a privilege but a basic human right (Powell *et al*. 2013). Access to food, whether through physical or economic means, is vital to the realization of this right, as is the availability of sufficient essential nutrients needed for adequate nutrition. Food insecurity arises when access to food is not possible, even when food is plentiful

(Wheeler and Von Braun 2013) argued that food availability may be affected by climate change. The results of his study indicated that the stability of whole food systems could be

threatened by climate change due to short-term fluctuations in supply. (Kotir 2011) agreed with the claim that climate change is having a negative impact on food security. He noted that Africa's climate is already undergoing significant changes, reflected in changes in average temperature, changes in rainfall levels and patterns, and the frequency and intensity of extreme weather events. These impacts affect all components of the food system that ensure security, namely food availability, food accessibility, food utilization and food stability, thus increasing the risk of food insecurity.

2.2.6 Theoretical Framework

Numerous scientists around the world have conducted numerous studies in an attempt to end hunger, food insecurity and other forms of malnutrition. However, despite recent developments in these areas, many people still suffer from serious food insecurity problems, especially in developing countries such as Zimbabwe. In the mid-1970s, food shortages forced world leaders to publicly acknowledge their collective efforts to eradicate hunger and malnutrition. Nevertheless, between 1980 and 1998, per capita food consumption fell in the 48 least developed countries, while it increased in most developing countries.

Stable distribution networks are of great importance for food security. Since early 2020, the COVID-19 pandemic has been putting that stability to one of the most timid tests it has ever known. Lockdowns, economic downturns, trade restrictions and skyrocketing food prices show the pandemic is more than just a health concern. It is emerging as a significant economic threat to global food security. Food costs have reached an all-time high due to the war in Ukraine, food supply problems and the ongoing economic impact of the COVID-19 epidemic. People in low- and middle-income countries spend a large part of their income on food and are therefore particularly vulnerable to price fluctuations.

Numerous studies have pointed to several factors that contribute significantly to food insecurity in Africa. For example, low economic growth, gender inequality, rising food prices, low agricultural productivity, drought, underinvestment in irrigation, climate change and rapid population growth (Barrett, 2010). Floods, heavy rains, droughts, hurricanes and storms are all climate-related phenomena that negatively impact rural income and food security in low-income developing countries (Altman, 2009). Similarly, (Ehui, 2002) outlined the impact of a lack of social inclusion, (Devereux, 2016) emphasized the inappropriate use of natural resources, and (Ericksen, 2008) examined the impact of politics and political instability. However, the present study takes a multidimensional perspective on food

insecurity in Africa and not only focuses on the determinants of food insecurity in sub-Saharan Africa, but also examines the contribution that food aid is making to food security in the ongoing food security dilemma of SSAs.

2.2.6.1 Effects of Drought and Vulnerability on Food Insecurity

(Connolly-Boutin, 2016) examined the indirect impacts of drought on the most vulnerable and food-insecure groups of people, including households headed by children and whose income comes primarily from agriculture. In addition, women have poor educational and literacy skills and poor health, which is exacerbated by HIV/AIDS (Crush, 2012). (Connolly-Boutin, 2016) agreed with claims that drought and the vulnerability of community members affect food security, as his findings suggested that environmental changes in 19th-century Africa threatened vulnerable groups, including children, people with disabilities and ethnic groups . Minorities, the chronically ill and the elderly, whose daily survival depends solely on nature, were directly affected.

(Crush *et al*. 2012) showed the impact of drought on rural households and livelihoods. These authors link such challenges to erratic climate variability, rising temperatures, and flooding. Food-insecure rural people in Africa are thought to depend on subsistence agriculture for their survival and livelihood, which is sensitive to changes in weather patterns. Loud (Bain, 2013). The agricultural sector is hardest hit by the unpredictable impacts of climate change, as most rural populations are vulnerable to chronic hunger and malnutrition, a sign of food insecurity. The level of food insecurity limits people's ability to adapt to climate variability and natural disasters (Lam, 2021). Consequently (Mango *et al*. 2017) found that rural households and communities in sub-Saharan Africa face socio-economic challenges due to climate change and variability.

(Sutcliffe et al. 2015) also examined how government policies on climate adaptation affected farmers and concluded that insufficient government support limited farmers' initiatives. (Maiyaki, 2010) supported these findings when his research attributed food shortages in rural Zimbabwe to poor economic policies and the violent land grabs of 2000. The author further alleges that politically connected people bought grain from the Grain Marketing Board during the drought and then resold it, bringing it to market at inflated prices, thereby benefiting financially from the country's food insecurity. (Manap, 2015) identified the deterioration in donor-government relations as the cause of the slow donor response to the 2001-2002

drought in Malawi, with food aid arriving late, resulting in severe malnutrition and a high mortality rate. According to (Manyeruke *et al*. 2013), poverty and food insecurity lead to unsustainable use of natural resources and general environmental degradation.

2.3 Conceptual framework

The following conceptual frameworks were taken into account in order to comprehend the topic of food security and food aid better. According to (Jabareen 2009), a conceptual framework illustrates the fundamental elements of the study by taking important elements, constructs, or variables into consideration as well as the assumed relationships between them. Figure 2.1 makes an attempt to evaluate the state of food security and to demonstrate how household food supply and livelihood security measures affect it. The conceptual framework shown in Figure 2.1 below demonstrates how socioeconomic resources and institutional support work together to ensure food security.

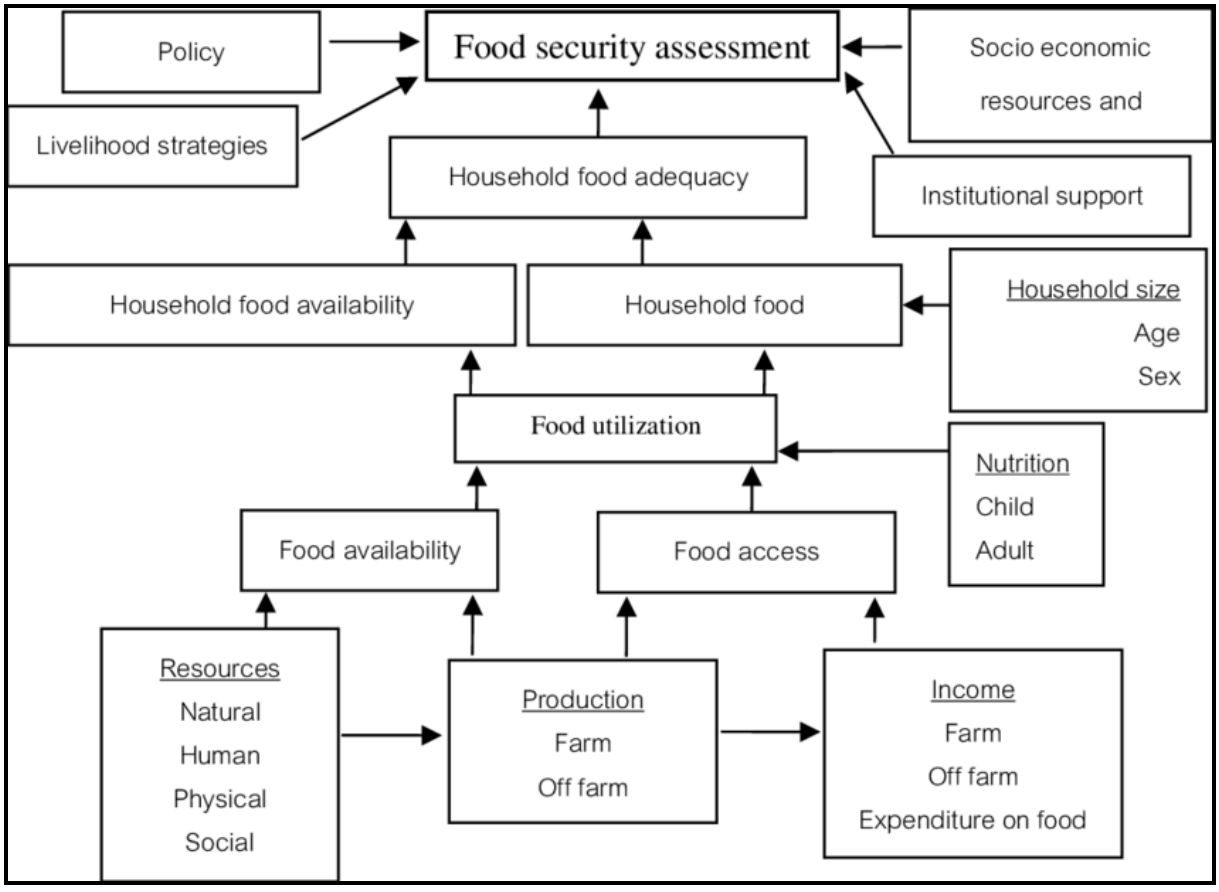

Figure 2. 1: Food Security conceptual framework

Source: (Yaroch *et al*. 2011)

Figure 2.1 suggests interactions through which households access food and make it available for consumption. The framework identified three main interacting factors and pillars of food security, including food availability, food accessibility and food use. Food availability is ensured by available resources, food availability occurs through agricultural production, and food use occurs at the household level. When all three pillars are in place, food security is assured (Pinstrup-Andersen 2009)

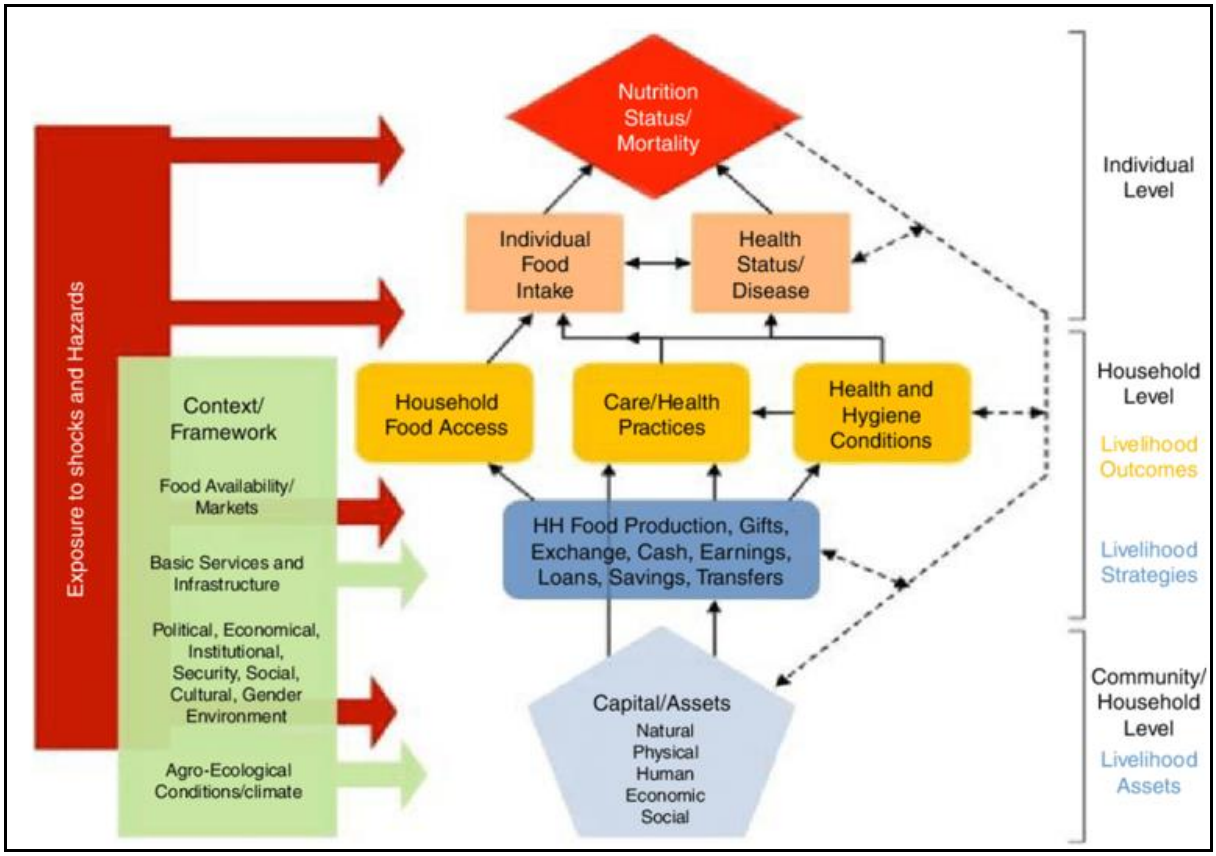

Figure 2. 2: Household Nutrition Status Conceptual Framework

Source: (Guariso *et al*. 2013*)*

The interactions shown in Figure 2.2 are how households obtain nourishing food for consumption. The framework identified three primary interrelated factors: household food sources related to food receipts and own production; household income sources related to crop sales; income from employment and other sources; and expenditure, which is the fourth significant factor.

2.4 Summary of Literature Review

Sources claim that food insecurity is a major problem in Zimbabwe and other developing nations. The rural population's food insecurity is a worry because this has so many causes. The home food insecurity access score has shown to be helpful, not only easy but also less expensive than other methods of measuring food insecurity (availability), according to the authorities. It can be said that there are established elements that have consistently demonstrated their efficacy for facilitating food accessibility. The conceptual frameworks were offered in this chapter for other research recommendations.

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CHAPTER THREE

METHODOLOGY

3.1 Introduction

This section focuses on the methods, assumptions, and constraints that were encountered when conducting the study, followed by ethical considerations. Both primary and secondary data were employed in the investigation. Prior to this study, WFP in Zimbabwe and the Zimbabwean government had collected data for other programs. The steps taken to acquire data for this research are described in the study population selection, sample size estimation, and data collection sections.

3.2 Description of the study area

The study was conducted in the province of Mashonaland Central, specifically in the Mt. Darwin District. The province is located in northeast Zimbabwe. The province is divided into eight districts namely Bindura, Mbire, Guruve, Mount Darwin, Rushinga, Shamva and Mazowe. All eight districts have lively business centers, so-called growth points. The Central Province of Mashonaland has an area of 28,347 km² and a population of 1,152,520 people with an average of 315,241 households of 4 people each, which is about 8.5% of the total population of Zimbabwe (ZimStat, 2012). Mount Darwin is located in northeast Zimbabwe and about 156 km north of the capital, Harare. It is bordered by Rushinga District to the east, Shamva to the south, Muzarabani to the west and Mozambique to the north. It has a total area of 459,219.09 ha with a potential arable area of 367,375.27 ha, which is about 80% of the total area.

The district is the largest in Mashonaland central and is divided into 40 wards with six farming sectors. The district has 5 Chiefs and 5 Headman. Mt Darwin is divided into two parts, upper and lower Mount Darwin (part of the Zambezi Valley). Food insecurity is a common feature in both parts but it is more pronounced in the valley. The main source of livelihoods in the district is subsistence farming both food and cash crops. Cotton production used to be vibrant to such a time when there was a drop in the international cotton prices which affected local prices as well (Risk, 2021), Tobbacco farming replaced cotton farming as it has become the dominant livelihood amongst most households in the entire District. Figure 3.1 shows the location of Mount Darwin as it is located in Mashonaland Central province.

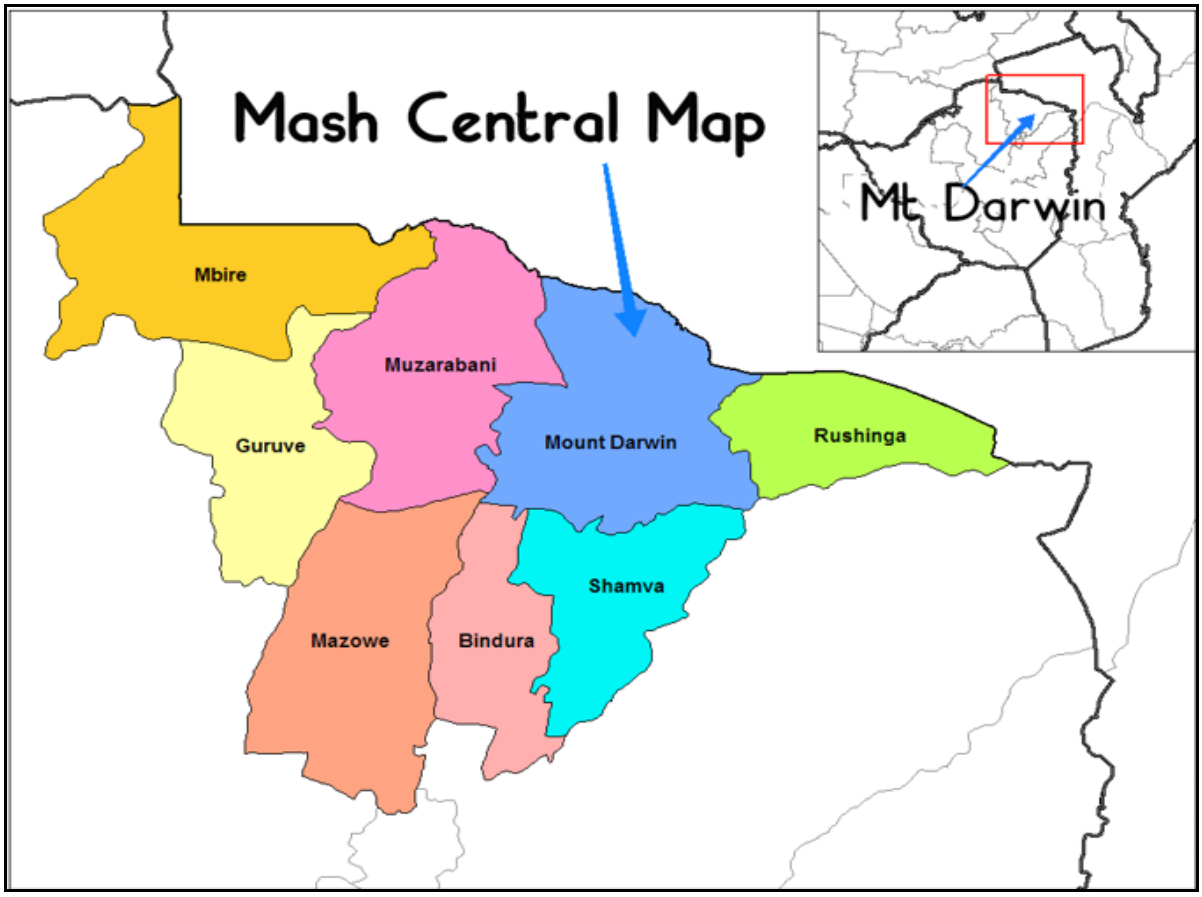

Figure 3. 1: Study Area Map

Source: *Google Maps (2023)*

Mount Darwin was chosen as the focus of this study because it is one of the provinces in the country with vulnerable and food insecure households, according to the ZIMVAC 2022 survey. In addition, the district has received some food assistance from development partners such as WFP to reduce poverty and household food insecurity through interventions such as LSA and Food Assistance for Assets (FFA). However, since not every household receives the assistance, it is appropriate to examine the impact of these food assistance programs on food security using the example of Mt. Darwin households.

3.3 Research design

A research design is a substructure of research procedures which are chosen to perform a study in a bid to answer research questions (Bloomfield and Fisher, 2019). It consists of a set of plans and procedures designed to generate trustworthy and valid data. The study design must be appropriate for the sort of research topic and data being collected. There are various study designs, including descriptive, correlational, experimental, and quasi-experimental designs (Sileyew, 2019). This study adopted both descriptive and correlation research designs

since the study was quantitative in nature. The study used questionnaires to collect data from the participants.

3.4 Sampling procedure

A sample in a study is selected using either probability sampling or non-probability sampling techniques. Probability sampling techniques include random sampling, stratified sampling, systematic sampling, and cluster sampling, while non-probable sampling techniques, on the other hand, include directed sampling, quota sampling, snowballing, and practical sampling.

3.4.1 Determining Sample Size

The research study population included all the WFP-LSA people assisted living in Mt Darwin District which is precisely 400 households as of WFP-LSA 2022 data base. The researcher chose Mt Darwin District as the study area as he was employed by World Vision International for the WFP-LSA 2022-23 project during the period of the study. The study used stratified sampling to come up with the sample for this study. Two strata for the study were developed where the first strata consisted of households that received the food assistance and the second strata consisted of households that did not receive food assistance. The study used the Slovin sample size determination formula to come up with the sample which is given below. The Slovin sample size determination formula has been successfully used by other researchers in literature such as Susanti *et al*. (2019) and Adhikari (2021).

$$n = \frac{N}{1 + N(e^2)}$$

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

$$= 80\ households$$

N - Is the population size (400)

n- Is the sample size.

e – is the error rate and in this case was 10%.

3.5 Data collection procedure

The questionnaires were validated by using the test and retest of the coefficient stability method to administer them twice to chosen, different but comparable sample answers in the study. The tool's usefulness for testing relevance and clarity was also examined by the supervisor from Bindura University of Science Education. By distributing the created questionnaire to a small number of identical families not involved in the main study, the instrument's validity was further tested. The same questionnaire was given to the same families again after a week to ensure consistency and make necessary corrections for accurate data collection

The viability of managing the questionnaires was assessed in the lead-up to the survey. In order to do this, interviews were conducted with 20 households in District 23 and a thorough conversation was held with Agritex staff members who were accessible to offer input and modifications. As a result, the questionnaire was modified to fit the research. Information was gathered six weeks after February 1, 2023. After a field operation to ensure the questions were comprehensive and usable, the questionnaires were to be distributed to four enumerators. Both primary and secondary data were employed in the investigation. Respondents from the study's chosen household were given questionnaires.

Respondents in the field of civics provided both qualitative and quantitative data for the study. The World Food Program (WFP), the Zimbabwe Vulnerability Assessment Committee (Zim-VAC), the National Statistics Office of Zimbabwe (ZimStat), the Famine Early Warning Systems Network (FEWSNET), and other public and private publications are the main sources of secondary data that have been gathered in relation to socioeconomic information. The questionnaires used had open-ended, direct questions that the evaluators may choose from. The questionnaires used had open-ended, direct questions that the evaluators may choose from. Survey identifying details, household demographics, the degree of food security, agricultural productivity, agricultural innovation, and market intelligence were all collected.

3.6 Data analysis procedure

Data analysing in research is an exercise of deducing meaning from the data collected so as to provide informative recommendations in improving the outcome variable of interest (Patel & Patel, 2019). Data analysis is mainly conducted based of the nature of the study where there are techniques designed to analyse quantitative data and for qualitative data. Since the study

was quantitative in nature, the statistical package for the Social Sciences (SPSS version 28) was used together with STATA and Microsoft Excel to analyse the findings of the study. These data analysis techniques were selected because they are easy to apply and presents the results in a simpler and more understandable way.

Table 3. 1 Data Analysis and Presentation

Objective	Analytical Tool Used
To assess if the WFP's food assistance intervention in Zimbabwe can improve food insecurity.	Binary logistic and descriptive statistics
To assess if the WFP's food assistance programme in Zimbabwe improves recipients' dietary diversity.	Binary logistic and descriptive statistics
To assess how the WFP's food assistance intervention in Zimbabwe influence the preventative measures households with food insecurity made adoptions to lessen food insecurity	SPSS, STATA and Microsoft Excel
To determine the WFP's food commodity the recipient households, prefer most	SPSS, STATA and Microsoft Excel

3.6.1 Descriptive Statistics

Descriptive statistics were also used to analyse the data where a summary of some of the data was provided and inference was made. Specifically, descriptive statistics captured demographic details of the participants and some of the research questions were answered through employing descriptive statistics.

3.6.2 Regression analysis

The study also employed regression analysis in order to answer some of the research questions. To be specific, a binary regression model was used which assessed the factors that

cause the probability of households to be food secure. A binary logistic regression model was used to estimate the model. Further details are given in Chapter 4 and Chapter 5.

3.7 Ethical considerations

In research, ethical concerns are a set of principles that influence your study ideas and procedures. These principles include none other than voluntary participation, informed consent, anonymity, confidentiality, and potential for harm (Husband, 2020).

3.7.1 Voluntary participation

One of the most critical ethical considerations in research is voluntary participation. It means all participants in the study should be free to choose whether or not to participate in the survey (Head, 2020). All participants should be given the option to withdraw from or exit the study at any time without feeling obligated to do so. Thus, the researcher explained to the participants that participation in the survey was voluntary.

3.7.2 Informed consent

Informed consent means that the participants should either verbally or in writing agree that they are willing to participate in the study and provide honest and truthfull answers (Bos, 2020). The researcher gave an explanation to the participants what the research was all about so that they would indicate that they are willing to get involved in the study or not .

3.7.3 Anonymity

Anonymity means that the participants' identities are kept private and are not divulged to anybody outside the research team (Bos, 2020). This protects the participants' anonymity and ensures that they face no adverse consequences as a result of their involvement in the study. The whole data collection process did not collect the names of the participants and the questionnaires did not have an option for the participants to put their names.

3.7.4 Confidentiality

Confidentiality in research entails that the information that is provided by participants should be kept secret and is not disclosed to anybody (Head, 2020). This ensures that the participants are protected and cannot be subjected to any form of consequences due to their participation in the data collection process. The research er ensured confidentiality by even shredding the questionnaires as soon as the data analysis process was completed.

3.7.5 Potential for harm

Researchers need ensure that the participation of respondents in the survey should not be exposed to any kind of harm (Patel & Patel, 2019). Also, researchers must identify prospective benefits and risks of harm, assess the possibility of potential benefits and harms occurring, as well as their amount or severity, and determine who may benefit and who may face the risks. The researcher ensured that there are no risks associated with participation to the study since the nature of the study did not involve any complicated issues but rather a mere evaluation of food assistance they got from WFP.

3.8 Summary

The research approach used to accomplish the research objectives was described in Chapter 3. According to the chapter, a sample of homes were included in the study, which was carried out in the Mt. Darwin district. The chapter also discussed the study's use of a quantitative research approach.

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CHAPTER FOUR

AN ANALYSIS ON THE CONTRIBUTION OF FOOD ASSISTANCE IN CURBING FOOD INSECURITY (AVAILABILITY) EXPERIENCED BY THE RURAL HOUSEHOLDS IN ZIMBABWE A CASE OF MT DARWIN

Abstract

The study assessed the household food insecurity (availability) status in the study area and food assistance contribution in curbing food insecurity as the main objective. This chapter will give results and discussion of the first two objectives of the study which are to assess if the WFP's food assistance programme in Zimbabwe can improve food insecurity and to assess if the WFP's food assistance programme in Zimbabwe improves recipients' dietary diversity .A cross sectional survey was employed to cover households that were randomly selected from the 4 wards in Mt Darwin district under Mashonaland Central province. A total of 80 households were selected with each ward. 4 wards of Mt Darwin in WFP-LSA 2022-2023 programme were considered, 2 from the upper part of Mt Darwin and the other 2 from the lower part or the valley taking 2 villages from each ward and targeting 10 households from each selected village for the interviews. The results of the study was analysed using a binary logistic regression and descriptive statistics. The results of the study indicated that food assistance improves food security at household level. The results of a comparison between food assistance beneficiaries and non- beneficiaries illustrated that the log odds of being food secure was 0.835. These assertions are statistically significant at 1% level of significance. The conclusion of the study is that food assistance programs have a positive impact on improving food security status of households. About 97% of the respondents indicated that they were having mealie- meal products compared to just 3% which were not having mealie meal foods in their diet after the food assistance programme. The recommendations brought about were that the government with the assistance of development partners increase the coverage of the food assistance interventions to households particularly those vulnerable so that there is reduction in food insecurity in the country. The government can achieve this by lobbying more partners beyond the World Food Programme so that more assistance is availed to the most food insecure households.

Keywords: (Households, Food availability, Food Assistance, Food security, Vulnerability)

4.1 Introduction

The COVID-19 pandemic has resulted in a catastrophe globally since it began in 2019 to this point. Despite the aforementioned worldwide challenge, the world's agriculture has made progress. However, the problem is that by 2050, 9 billion people are expected to be food insecure (Mc Carthy, Uysal et al. 2018). According to (McGuire 2015), there are close to 1 billion people who are considered to be hungry. According to (UNICEF 2021), around 10.9 million children under the age of five die from hunger-related causes every year. Globally frequent extreme weather events have the potential to exacerbate the issue of food insecurity (Downing, Watts et al. 1996). It should be mentioned that there are several factors besides climate change that have an impact on food security. Price increases were cited as one of the main causes of food insecurity by (Barrett and Lentz 2010). This suggests that the decline in disposable earnings is also a factor because it has a detrimental impact on people's ability to purchase goods. The rate of increase in food demand is anticipated to be higher in emerging countries than in developed ones due to these regions' high yield gaps, which are the causes of food insecurity. (Siamwalla and Valdés 1980). According to (Islam and Karim 2019), the demand for grain is anticipated to increase from the 1.2 million tons in 1974 and 1.84 million tons in 1997 to approximately 10094 million tons in 2030 and 14886 million tons in 2050. On the other hand, an exponential rise in population may be seen around the world. The entire population of Sub-Saharan Africa (SSA) was estimated by Dawson et al. (2017) to expand from 867 million in 2010 to 1.08 billion in 2020, 1.54 billion in 2040, and 1.76 billion in 2050, respectively.

(Thornton *et al*. 2014) found that diverse time horizons of food insecurity exist, with some experiencing underconsumption and others experiencing overconsumption. Households may experience chronic food insecurity as a result of long-term resource shortages and poverty, which make it difficult for them to buy enough food. According to (Frayne *et al*. 2012), some households encounter unexpected or brief food deficits, which are frequently brought on by low food productivity, high food prices, or climatic catastrophes. (Ehui 2002) emphasized that just as with food security, interactions across many spatial and temporal scales impact food insecurity. Chronic food insecurity has been linked to decreased physical performance, impaired mental health and development, and an increased risk of chronic diseases, according to Ehui (2002). (Boliko 2019) continued by quantifying the losses at the national level, which are expected to cost 15% or more of the national GDP and be required to meet various fiscal demands. It should be highlighted that access to and availability of food depend on having the

financial means to buy wholesome food. Food preferences, intra-community and intra-household food distribution, food costs, and closeness to food markets are all influenced by socio-cultural norms in the context of food accessibility and availability (Manap and Ismail 2019).

When evaluating the availability and accessibility of food in Zimbabwe, socioeconomic factors and the physical state of various locations might be considered. Zimbabwe's rural population experienced food insecurity in three-quarters of cases by 2011 (Saint Ville, Po *et al*. 2019). The national poverty rate was estimated by the Bank in 2013 to be around 72%.

The research report presented here is a portion of a larger study that examined empirically the impact of food assistance (availability) on reducing food insecurity in rural households in Mount Darwin by examining levels of food insecurity, times of hunger each year, and the factors that influence food availability. The findings about how food assistance affects the nutrition and food security of rural households are presented separately in the following study (chapter 5). The goal of this study is to quantify the degree of food insecurity experienced by communal rural households in the Mt Darwin district and to ascertain the effect that food aid has on reducing food insecurity.

Following a summary of the study, research design, sample process, and difficulties encountered during data collecting, the specifics of the materials and techniques are put out. Following the results on the food insecurity (availability) status of the rural residents, which were analysed in accordance with the study questions, are discussion and recommendations. The discussion and recommendations are provided in the paper's last section. The following are the research-related issues for which support is needed for this paper:

- Can the WFP’s food assistance programme in Zimbabwe improve food insecurity?
- Did the WFP’s food assistance intervention in Zimbabwe improve recipients’ diversity of their diety?

4.2 Methodology

4.2.1 Description of study area

The study was carried out in Mashonaland Central Province's Mt Darwin District, one of the province's nine districts. The region was primarily chosen since no other research of this kind have been noted as having been conducted there. A research site map is shown in Figure 3.1, and Chapter Three provides a more detailed overview of the study area.

4.2.2 Research Design

Descriptive and correlational research design was embraced in this study in order to unpack the impact of food assistance program that households received and how the assistance contributed to improvement of their food security status.

4.2.3 Sampling procedure

Probability sampling procedure was employed to select the sample that was used to draw up the sample for the study. The study employed the Sloven sample size determination formula from a target of 400 households from the four wards which were selected in Mount Darwin. Detailed sampling procedure that was undertaken is given in Chapter Three.

4.2.4 Data collection procedure

The study used primary data which was collected from the households through the use of a well-structured questionnaire. The questionnaire had some sections which provided questions that would assist in providing information that can answer the research questions. The questionnaires were physically distributed to the participants and the data was collected with the assistance of research assistants.

4.2.5 Data analysis procedure

The first two research questions were analysed using a binary logistic regression and descriptive statistics. The first research question was to find out if the WFP's food assistance intervention in Zimbabwe improves food security. The nature of the dependent variable for this research question was binary where the household was either food secure or food insecure. Thus, the model was specified as follows:

Having the basic regression model given by:

$$Y_i = \alpha_0 + \alpha_1{}'X_i + \varepsilon_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where $Y_i = \begin{cases} 1 \; if \; the \; household \; is \; food \; secure \\ 0 \; if \; the \; household \; is \; food \; insecure \end{cases}$

X_i represents the explanatory variables included in the study (food assistance, education level, gender, family size, family income and age). α_0 is the intercept while α_1 represents all

the slope coefficients. The probability that the household is food secure $(Y_i = 1|X_i)$ can be expressed as a cumulative logistic distribution function as:

$$p_i = E(Y_i = 1|X_i) = \alpha_0 + \alpha_1 X_i \dots\dots\dots\dots\dots\dots\dots (2)$$

According to Wooldridge (2000), the logit model was derived from the logistic function which gives the probability in favour of success as:

$$P_i = \frac{1}{1 + e^{-z_i}} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3)$$

Where $z_i = \alpha_0 + \alpha_i X_i$

The problem of non-linearity in equation 3 can be solved by creation of the odds ratio.

$$1 - P_i = \frac{1}{1 + e^{z_i}} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (4)$$

$$\frac{p_i}{1 - p_i} = \frac{\frac{1}{1 + e^{-z_i}}}{\frac{1}{1 + e^{z_i}}} = e^{z_i} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (5)$$

$$L_i = \ln\left(\frac{p_i}{1 - p_i}\right) = z_i = \alpha_0 + \alpha_1{}' X_i \dots\dots\dots\dots\dots\dots (6)$$

4.2.6 Definition and justification of variables.

Food security

Food security is the dependent variable in the binary regression model which takes the value of 1 if the household is food secure and 0 if otherwise.

Food assistance

Food assistance is the core explanatory variable in this study which is also binary as it takes the value 1 for households that received the food assistance and for 0 for households that did not receive the food assistance. Receiving food assistance is expected to increase the probability that one is food secure. Thus, the expected sign of the slope coefficient of food assistance is positive.

Education level

Education level speaks to the highest level of education of the household where they had to indicate if it was primary, secondary or tertiary. The variable was also categorical which take the vale 1 for primary, 2 for secondary and 3 for tertiary. Having a higher level of education was expected to increase the probability of food security which means the priori expectation of the slope coefficient of the base class tertiary was positive.

Family size

Family size is also a critical factor in determining the food security status of a household where bigger families are expected to be food insecure. The variable is continuous, and it is measured as number of people within a family. The expected sign of the slope coefficient of family size was negative.

Family income

Family income is the amount of money that a family receives on average at the end of the month. The variable is continuous and measured as Zimbabwean dollars. Families have higher incomes were expected to have a higher change of being food secure. Hence, the expected sign of the slope coefficient was positive.

Age

Participants were asked to indicate their age, and this is a continuous variable measured in years. People who are older in the rural areas are expected to be vulnerable and food insecure as they would not be able to carry out economic activities effectively. Hence, the expected sign of the slope coefficient of age. The variables are summarised in Table 4.1.

Table 4. 1: Summary of variables

Variable	Measurement	Expected sign
Food security	binary	Dependent variable
Food assistance	binary	+
Education level	Years of school (continuous)	+
Family size	Number of people (continuous)	-
Family income	Dollars (continuous)	+
Age	Number of years (continuous)	-

STATA 17 was then used to estimate the logistic regression model.

4.2.7 Challenges encountered during data collection

The major setbacks encountered during the data collection process were the distance travelled and costs incurred during data collection. This was rectified through the use of workmates and other colleagues to collect data during working hours hence using organization's resources.

4.3 Results and Discussion

4.3.1 Response Rate.

The questionnaires for this study were distributed physically distributed to a sample of 80 households. Of these 80 questionnaires, 72 questionnaires were responded fully whilst 8 questionnaires were either partially responded or not responded to at all. The researcher treated the questionnaires which were partially responded the same way as those which were not responded at all. Hence, the response rate was 90%. This response rate can be viewed as sufficient enough to continue doing analysis and make concrete conclusions. For instance, in literature, any response rate which is above 50% and the sample size large enough, that is, above 30, then this can be deemed sufficient for analysis.

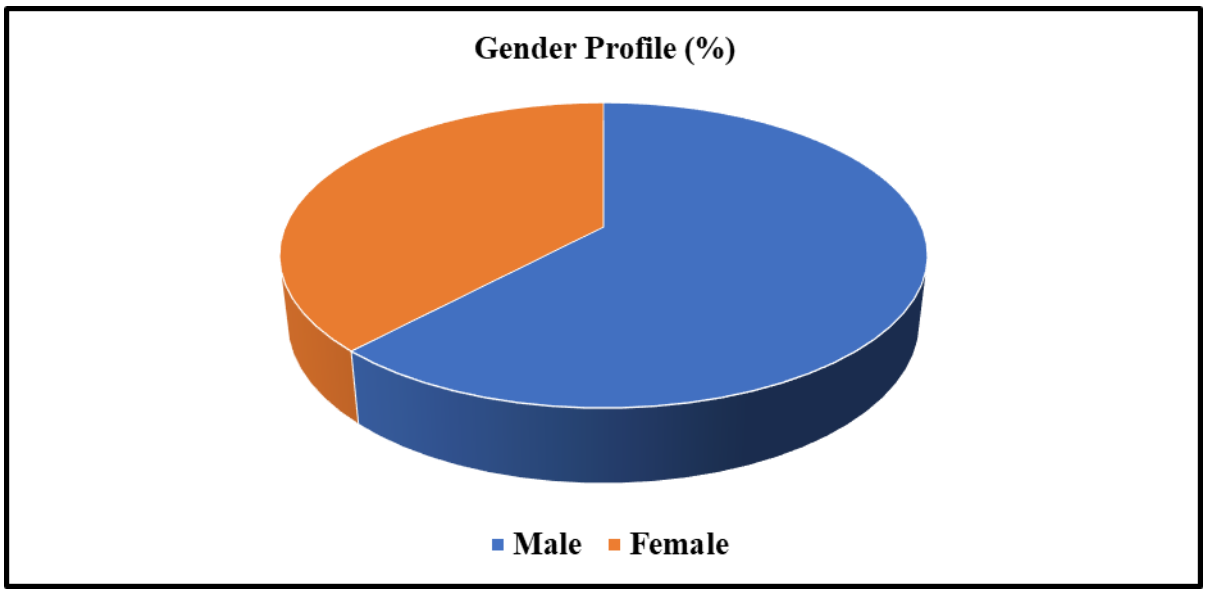
4.3.2 Descriptive Statistics for Socio-economic Variables

The study collected socioeconomic information about the participants in the study as a way of identifying the general characteristics of the people whom the researcher was dealing with. These demographic factors were gender, age, education, family size, family income, and occupation. The findings are given in the subsequent sub-sections.

4.3.1 Gender profile of the sample

Figure 4.1 below shows the gender profile of the household head who were interviewed.

Figure 4. 1: Gender Profile



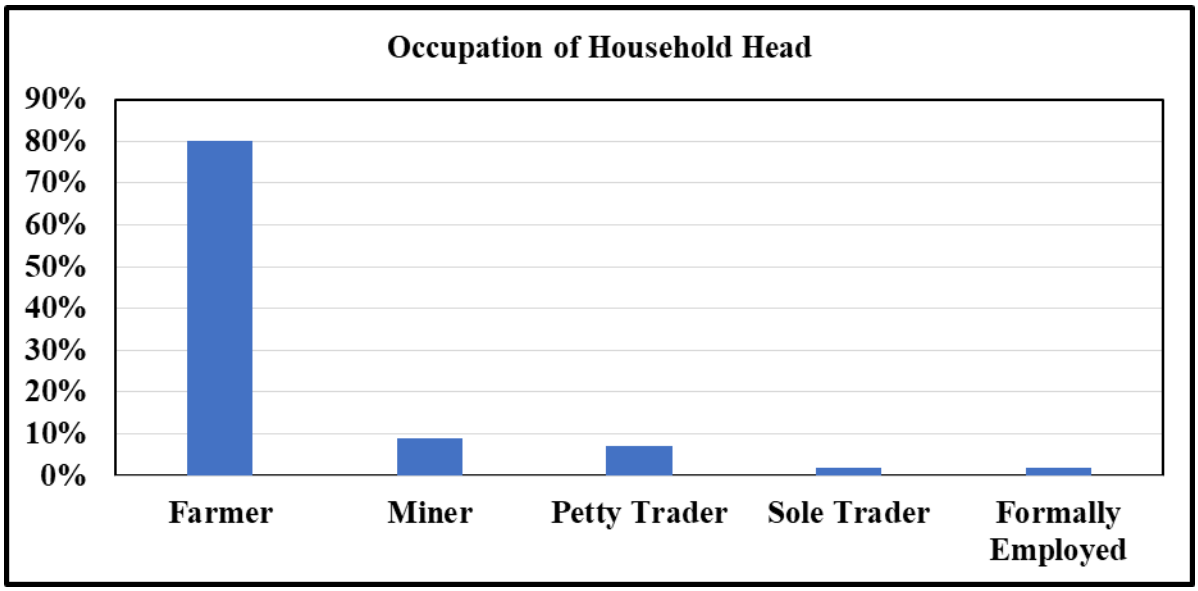
Source: Author's Illustrations

From the sample of respondents, 62% of the households surveyed were being led by males. On the other 38% of the households were led by females.

4.3.2 Occupation

Occupation of the person who completed the questionnaire was also recorded. This person was the head of the household which was included in the sample.

Figure 4. 2: Occupation of the Household Head



Source: Author's Illustrations

From the graph above, 80% of the interviewed people cited that their occupation was farming.

The second occupation was miners, with 9% of the households getting their livelihoods from this profession. Petty cash trading was also recorded as an occupation which provided livelihoods for the people in the sample and 7% of the respondents recorded this as their livelihood. Other occupations which were recorded include sole trading and formal employment, which was recorded by 2% of respondents each.

4.3.3 Level of Education

Level of education was also another variable which was included which the researcher believes that it can influence food security status of the family, as highlighted in the Chapter 3 of this study. The results are given in the Table 4.2.

Table 4. 2: Education Level

Years spent at school

N	Valid	72
	Missing	0
Mean		12.00
Mode		13.00
Std. Deviation		1.26

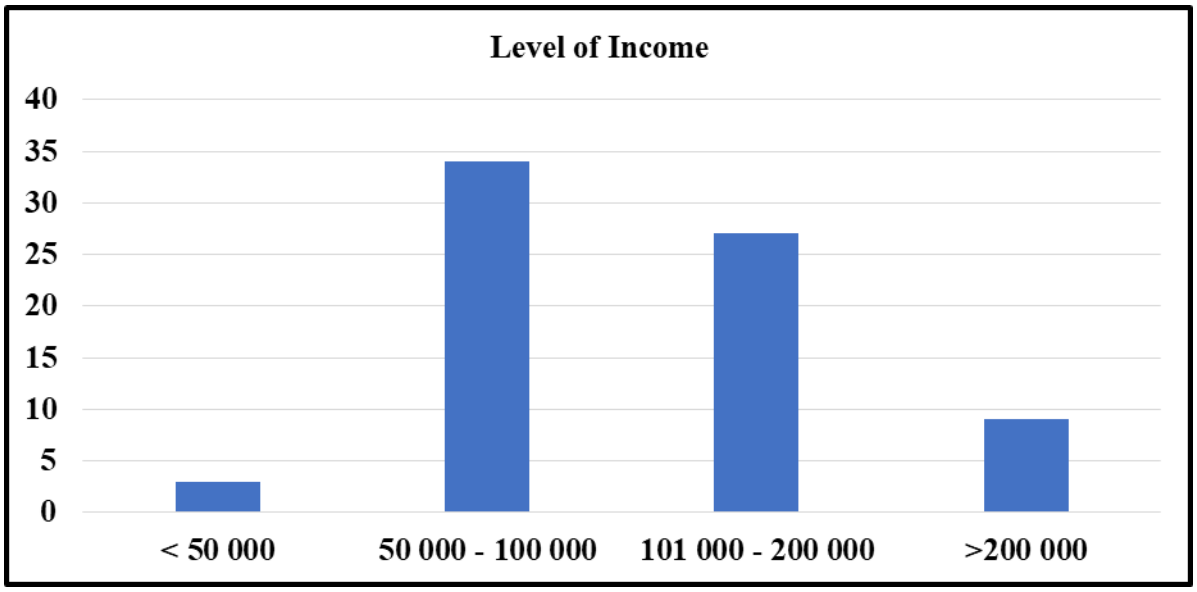
Source: Author's Illustrations

From the Table above, the majority of the respondents have spent about 13 years at school which translates to achievement of secondary education level which is shown by the mode of 13 years at school and the mean of 13 years. In terms of variability, the results indicate that it was a bit volatile since the value if the standard deviation is a bit far from 0. This may be understandably so, given that the majority of respondents were farmers, and have backgrounds in rural areas.

4.3.4 Income Levels

Level of income positively affect the level of food security for every household, as highlighted in chapter 3. The graph below shows the income levels of the respondents.

Figure 4. 3: Level of Income



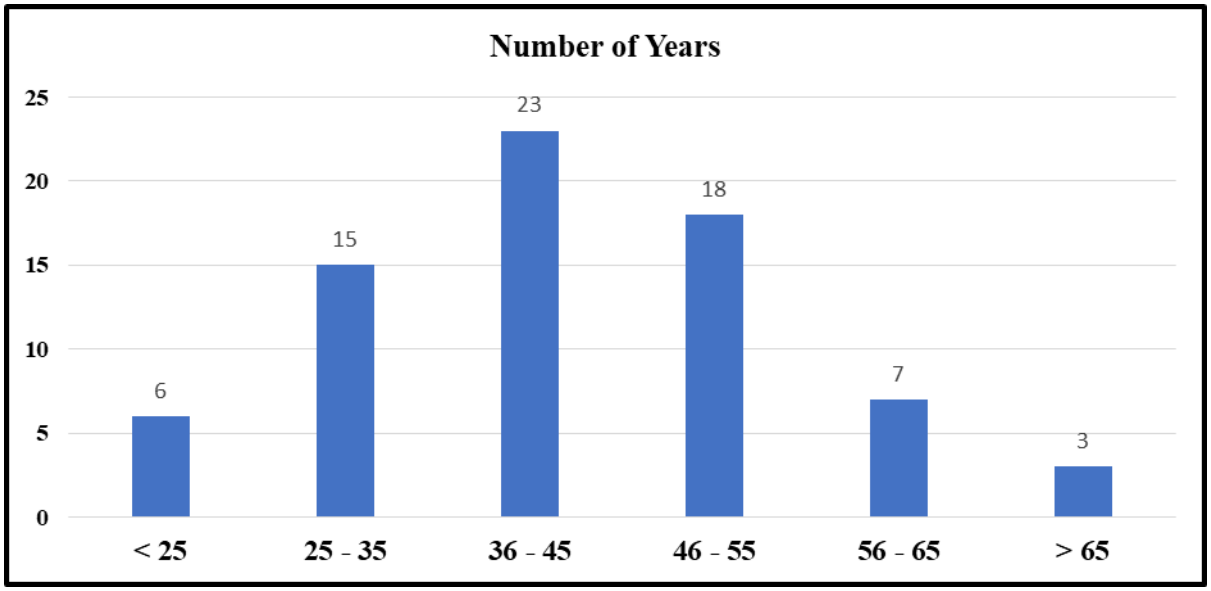
Source: Author's Illustrations

From the graph above, of the 72 people who successfully responded to questionnaire, only three indicated that they have monthly income less than ZW$50 000. On the other hand, 34 individuals indicated that their monthly income falls between ZW$50 000 and ZW$100 000. This was followed by 27 individuals who indicated that that their monthly income was between ZW$101 000 and ZW$200 000. However, only 9 individuals indicated that their household monthly income was ZW$200 000.

4.3.5 Age of Household Head

The graph below shows that the majority of households in the sample were headed by people between the ages of 25 and 55. For example, only 6 people indicated that their age was under 25 years. On the other hand, 15 people indicated that they were under 25 or under 35 years of age. The age group with the highest frequency was the 36 to 45 year olds with 23 people. On the other hand, 18 people indicated that their age group was between 46 and 55 years old, compared to seven in the age group between 56 and 65 years. In the people whose age group was over 65 years, there were only three. Please refer to the graphic below for a summary of these descriptions.

Figure 4. 4: Age of Household Head



Source: Author's Illustrations

4.3.6 Family Size

The higher the family size the more it is likely that the household will face food security challenges. Table 4.3 shows a summary of family size of the sample included in this study.

Table 4. 3: Family Size

Family Size

N	Valid	72
	Missing	0
Mean		6.00
Mode		5.00
Std. Deviation		0.49

Source*: Survey data (2023)*

From Table 4.3, the majority of the households had a family size of 5 and the average family size of the households was 5.

4.4 The impact of food assistance on food security

A logistic regression model was also estimated to identify the factors influencing the likelihood of the household becoming food insecure or food insecure. The table below shows the results of this logistic regression model.

Table 4. 4: Logistic Regression results

Dependent Variable: Food Security	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
Received the assistance	0.835	0.263	3.18	0.001	0.32	1.351	***
Education Level	1.073	0.372	2.88	0.004	0.344	1.803	***
Gender: Male	0.034	0.177	0.19	0.846	-0.312	0.381	
Occupation: Farmer	7.22	4.31	1.68	0.098	-1.351	15.794	*
Family Size	-0.088	0.064	-1.37	0.171	-0.215	0.038	
Family Income	0.013	0.004	3.35	0.001	0.005	0.021	***
Age	0.517	0.05	10.25	0.000	0.616	0.419	***
Constant	4.542	.519	8.75	0.000	3.524	5.559	***

Mean dependent var	0.778	SD dependent var	0.416
Pseudo r-squared	0.216	Number of obs	72
Chi-square	228.902	Prob > chi2	0.000
Akaike crit. (AIC)	843.953	Bayesian crit. (BIC)	878.307

*** p<.01, ** p<.05, * p<.1

Source: *Author's Calculations using sample data*

The above logistic regression model shows that receiving food aid is a factor that determines the state of household food security or insecurity. For example, compared to households receiving food aid, the logarithmic probability of being food secure was 0.835. The results show that the slope coefficient of education was positive and statistically significant. This means that the longer you go to school, the more likely you are to be food secure. These

claims are statistically significant at the 1% level of significance. These results were also similar to those of Devereux (2016).

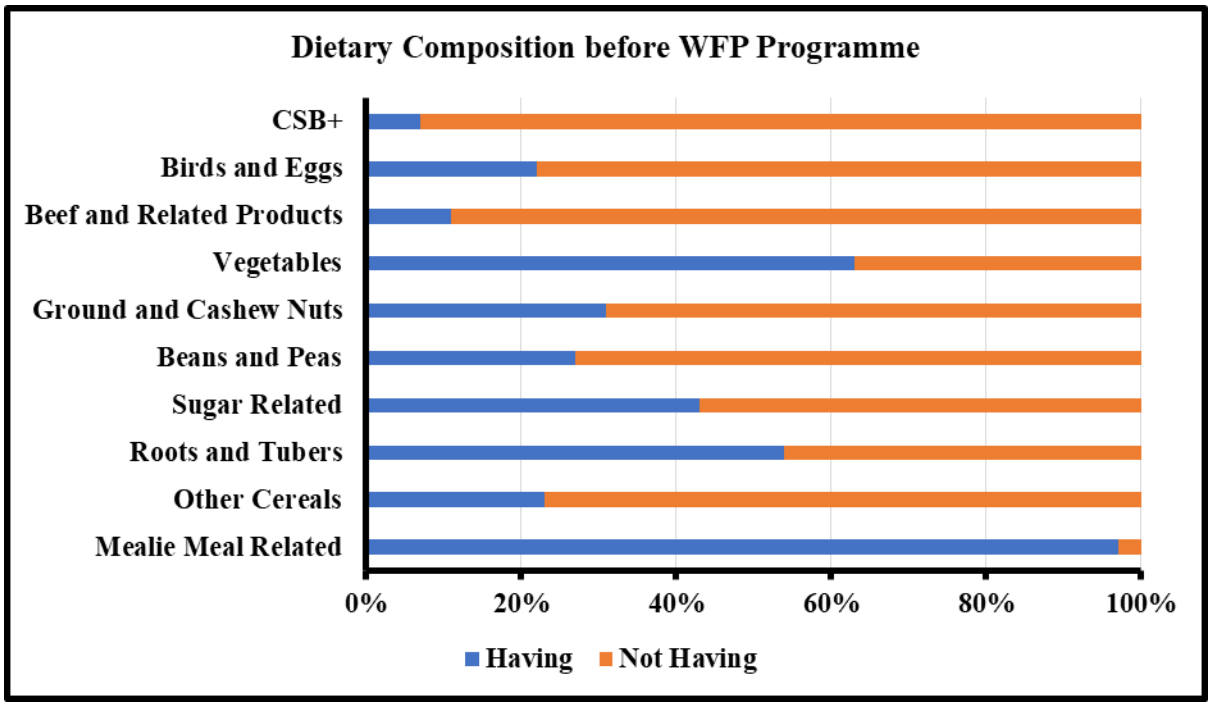
More so, the logistic regression model above indicates that receiving food assistance is a factor determining the state of food security or insecurity in the household. For instance, compared to households who received food assistance, the log odds of being food secure was 0.835. The results indicate that the slope coefficient of education was positive and statistically significant. This means an increase in number of years at school increases the probability that one is food secure. These assertions are statistically significant at 1% level of significance. These results were also similar to that of Devereux (2016).

In addition, the logistic regression model has shown that family income is also one of the factors affecting household food security status. The results in the table show that a $1 increase in household income increases the likelihood that the household will be food secure by 0.013 units. The model shows the same effect for the age of the head of household. Increasing the age of the household by one year increases the probability that the household will become food-secure by 0.517 units. Both claims hold at the 1% level of significance. The results are also consistent with the findings of (Assembly, 2015).

4.4.1 Effect of WFP programme on Diet Composition

To assess the effect of the WFP programme on the dietary composition of the households, the households were asked about their dietary composition. Specifically, they were asked if they have any of the following foods in their diet. These include beef products, birds and related foods, beef and related products, vegetables, ground and cashew nuts, beans and peas, sugar related products, roots and tubers, cereals and mealie meal related products. The figure below indicates their responses before the WFP Programme.

Figure 4.5: Dietary Composition and Quality before the WFP programme

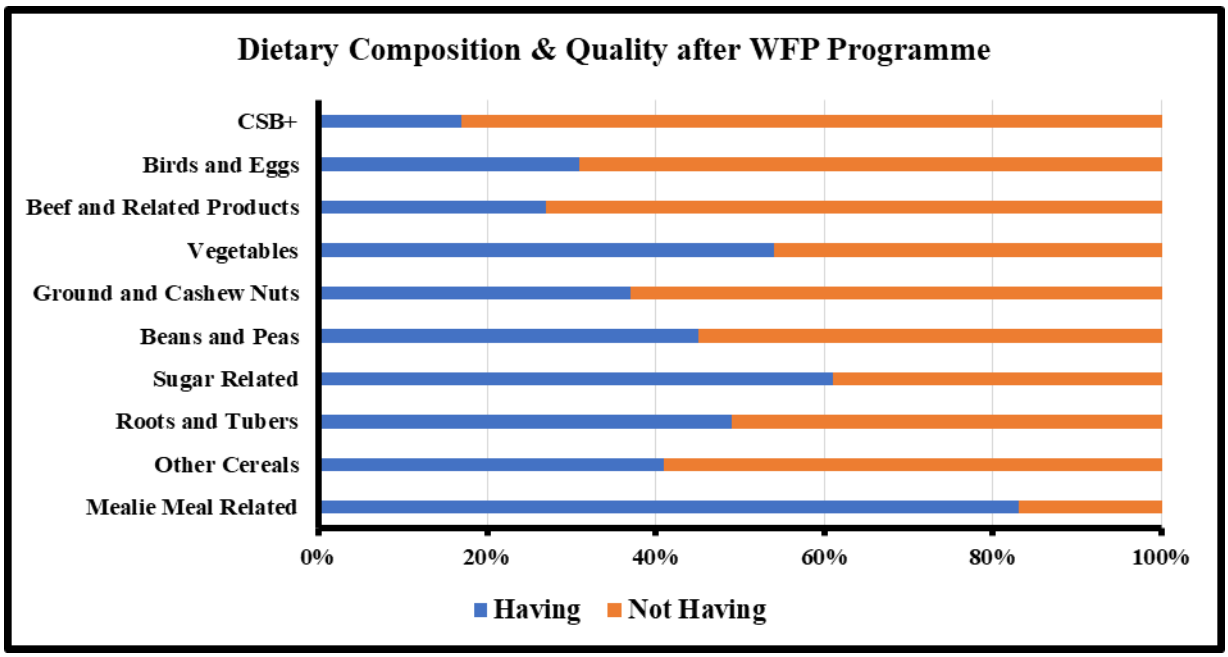


Source: Author's Illustrations

From the figure above, 97% of the respondents indicated that they were having mealie meal products compared to just 3% which were not having mealie meal foods in their diet. This is understandably so given that maize is Zimbabwe's staple crop. More so, before the WFP programme, 23% of the households were having cereals in their meals, whilst the remainder were not having cereals. In terms of tubers and other roots, the distribution was slightly even, with 54% of the households indicating they were having these in their diet, compared to just 46% who were not having roots and tubes in their diets. The majority of the households were not affording sugar related products before the WFP programme (57%), whilst only 43% were having sugar related products in their diets. More so, the majority of the households were not having beans and peas in their diets (73%) ground and cashew nuts (69%), and beef related foods (89%) in their diets. However, before the WFP programme, the majority of the households were having vegetables and related foods in their diets (63%).

The households were also asked to record their consumption of the same foods after the WFP programme so that the researcher will be able to see if there was an improvement in the diets and consumption of other products. The results are given in the graph below.

Figure 4.6: Dietary Composition and Quality after the WFP Programme



Source: *Author's Illustrations*

From the graph above, it can be shown that there has been an improvement in the composition of the diets of the households after the WFP programme. For instance, the uptake of sugar related products increased from 43% before the WFP programme to 61% after the WFP programme. Other notable foods which showed an increase in their uptake following the WFP programme include birds and eggs (31%), beans and peas (45%), other cereals (41%). These are all significant increases following the introduction of the WFP programme. However, there was a decrease in the uptake of mealie meal related products, with only 83% of the households indicating that they are having cereal related products in their diets. This can be an indication of an improvement in diet diversity and quality.

In literature, the conclusions in this study have been found in other studies. For example, Muhoyi *et al.*, 2014, have realised that the introduction of certain non-governmental organisation programmes had an effect on food security and dietary composition in Zimbabwe (Muhoyi *et al.*, 2014). More so, food assistance has also been found to increase

food security and dietary composition in other parts of the world. A study by Afsana *et al*. 2021, concluded that this maybe the case especially for programmes such as the WFP programmes which improves the level of income and the purchasing power of the households. Hence, the conclusion of this study that the WFP programme was effective in improving diversity and the quality of the products being eaten by the households has some backing from other literature.

4.5 Recommendations

The study found that food aid programs have a positive effect/impact on improving household food security. This means that the availability of such supplies plays a bigger role in ensuring households have enough food for their families. The policy recommendations are that the government, with the support of development partners, should increase the outreach of aid programs to households, particularly those at risk, in order to reduce food insecurity in the country. The government can do this by lobbying more partners outside the World Food Program to make more help available to households. The study also found that the food relief programs improve household nutrition through the availability of varied and high-quality products. The policy conclusion is that the need to improve household nutrition can be met by ensuring that households have enough food. This would also require government, the private sector and households themselves to be actively involved in activities that provide them with food.

4.6 Conclusion

In this chapter the results of the data analysis are presented and discussed. The results presented in this chapter were answers to the initial research questions posed in the first chapter of the study. In the next chapter, the results of the second set of research questions of the study are presented and discussed.

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CHAPTER 5
AN ANALYSIS ON THE CONTRIBUTION OF FOOD ASSISTANCE IN CURBING FOOD INSECURITY (AVAILABILITY) EXPERIENCED BY THE RURAL HOUSEHOLDS IN MT DARWIN

Abstract

The major aim of this study was to make an analysis of the contribution of food assistance in curbing food insecurity experience by rural households in Zimbabwe using a case of rural households in Mt Darwin. The other two objectives of the study were to assess whether WFP's food assistance programme in Zimbabwe influence the precautionary strategies food insecure households adopted to mitigate food insecurity and to establish the WFP's food commodity did recipient households preferred most. A cross sectional survey was employed to cover households that were randomly selected from the 4 wards in Mt Darwin district under Mashonaland Central province. A total of 80 households were selected with each ward. 4 wards of Mt Darwin in WFP-LSA 2022-2023 programme were considered, 2 from the upper part of Mt Darwin and the other 2 from the lower part or the valley taking 2 villages from each ward and targeting 10 households from each selected village for the interviews, of the 10 households selected 5 were beneficiaries of food assistance whilst the other 5 were non-beneficiaries. A quantitative research approach was also adopted where questionnaires were distributed to households. Data was analysed using Microsoft Excel, SPSS and STATA in order to provide answers to the research questions. The results of the study found that food assistance that is given to households has significantly reduced the coping strategies that were previously employed by households to preserve the few food items they had. The study recommended that the WFP should increase its assistance and lobby other partners since their assistance help improve the food security of households. Further recommendations were that all development partners who implement food assistance interventions should increase the rations of vegetable oil and cereals since these are the commodities that households prefer most.

Key words: (Food insecurity, preferred commodities, cereals, vegetable oil, pulses)

5.1 Introduction

The type of commodities that people receive as assistance should be driven by the beneficiaries themselves where they are consulted so that the commodities, they require meet their needs (Cardwell & Ghazalian, 2020). According to Yu and Jaenicke (2020), development agencies that are involved in giving or assisting households with food commodities should work closely with the locals where they learn of the type of food which is consumed by the households. People across the world have different diets or staple foods. Within the same country, households in different constituencies or regions also have food items that they consume most (Keith-Jennings, Llobrera & Dean, 2019). Thus, it is imperative that the food assistance that is availed is specific to the requirements of each community. However, there are challenges that households always encounter where most development agencies adopt a universal approach where every household is treated the same, every community and every region across the country is given the same food commodities (Pollard & Booth, 2019). This has affected some communities where food is given to the people, but they remain food insecure because the type of food they are given they would not eat much of it.

For example, households in Zimbabwe eat much of maize meal compared to those in Mozambique who eat rice as their staple food. Other countries eat banana or cassava as their stable food. Therefore, giving bananas or cassava to the Zimbabwean households would entail that the households will still face hunger as they will not consume the food. Coming to Zimbabwe, there are some parts of the country which consumes much of sorghum, millet and rapoko (those in the lowveld) compared to those in the high veld who eat much more of maize meal (Mafuta & Kamuzhanje, 2021). Hence, giving sorghum and millet to households staying in highveld areas will have serious complications on the food security status of them since they may not consume the sorghum they are not used to.

However, the food assistance that is always given to households have shown to be very effective in improving their food security (Nestle, 2019). Households end up eating normal meals per day with recommended quantities (calories), and in fact they will reduce the coping strategies they used to do to preserve the few food items they had. The food assistance in most cases comes as a supplement to what the households already have. However, there are some situations where the households would have no meaningful food for their families

which makes them to entirely rely on the items they are given as food assistance by donors and food assistance agencies such as World Vision and WFP (Keith-Jennings et al., 2019).

Thus, this study sought to answer the following research questions:

- Does WFP's food aid intervention in Zimbabwe influence the safeguarding strategies food insecure and vulnerable households adopted to alleviate food insecurity?
- What WFP's food commodity did recipient households preferred most?

5.2 Methodology

5.2.1 Description of study area

Mt Darwin district was chosen as the areas of focus since it is one of the districts that has benefited from the WFP food assistance program. The programme focused Ward 1, 2, 7 and 23. Mt Darwin district as a whole in general is one of the vulnerable districts where households have experience food insecurity challenges and thus development partners such as WFP have identified their need for food assistance. However, areas such as Ward 1, 2, 7 and 23 has recently suffered the most devastating food insecurity challenges among all the wards which are in Mt Darwin District. This explains why they have been probably chosen for this WFP food assistant project. Therefore, assessing the effectiveness of the food assistance programme in the areas is more plausible. The district is located in Mashonaland Central Province.

5.2.2 Research Design

The entire technique of conducting research that defines a concise and logical plan to address established research questions through data collection, interpretation, analysis, and discussion is known as research design. This is a method for using empirical data to answer the research questions developed. There are different study designs including descriptive, correlative, experimental and quasi-experimental designs. The research design chosen is determined by the study question and the type of data to be collected

A quantitative research design is a method for solving research questions by using empirical data. It involves collecting and analyzing numerical data to test hypotheses and make broad generalizations about a population (Park and Park, 2016). Quantitative research is commonly used in the natural and social sciences, including biology, chemistry, psychology, economics, sociology, and marketing.

In general, quantitative research designs are classified into two types, namely correlative and descriptive designs. Correlation designs are used to study characteristics, means, trends, and connections between variables. Experimental and quasi-experimental techniques are used to investigate causal relationships.

In qualitative research, on the other hand, non-numerical data (such as text, video, or audio) is collected and analysed to better understand concepts, opinions, or experiences. It can be used to gain deeper insights into a topic or to generate new research ideas1. Grounded theory, ethnography, action research, phenomenological research, and story research are all common approaches to qualitative research.

However, due to the nature of this study, a descriptive quantitative research design was chosen as a quantitative research methodology was adopted. More specifically, the study used a descriptive survey as a research strategy, which allowed the study to disaggregate and examine the ways in which households were supported with the food aid programs.

5.2.3 Sampling procedure

In research, sampling methods are ways of selecting a sample from a population. In general, a researcher has two types of research sampling strategies to choose from: probability sampling and non-probability sampling. Probability sampling is a random selection that allows the researcher to make meaningful statistical conclusions about the entire group. The non-probable sample is a non-random selection based on expediency or other criteria that allows for rapid data collection.

Due to the advantages of the probability sampling technique highlighted above, the study employed simple random sampling to come up with a sample of 80 households on the District who participated in the survey. This approach was selected as it reduces bias in selection of participants and gives every participant an equal chance of participating in the study. Detailed research sampling procedure employed for the study is given in Chapter three of the study.

5.2.4 Data collection procedure

Depending on the type of study you want to be involved in, either quantitative or qualitative. These different methods require different data collection methods. For this study, the researcher mainly used quantitative research methods. Therefore, the data collection methods were carefully chosen to ensure that the responses effectively answer the research questions. Quantitative data collection methods are used to collect numerical data that can then be

statistically examined (Park and Park, 2016). Conducting surveys is the most popular method of collecting quantitative data. Interviews can also be used to collect quantitative data.

Another basic approach of acquiring quantitative data is observation, in which researchers see or count participants attending a certain event or utilizing a service in a given location. Other means of gathering quantitative data include document examination and secondary data collection.

With the arguments highlighted above, the study used a structured questionnaire to collect data from participants to provide answers to research questions on the effectiveness of food aid programs in improving household food security (Park and Park, 2016). The questionnaires were also distributed to the households, where some were filled out while the researcher waited and some of the questionnaires were left for the participants to fill out and picked up at a later time.

5.2.5 Data analysis procedure

The study used quantitative data analysis techniques. SPSS, STATA and Microsoft Excel were used to analyse data that was obtained. These tools were selected because they allow the research to easily make summary of the data and presents the results in very simple and understandable format.

Descriptive statistics were used for both research question one and research question two. For research question one, the researcher compared the outcome variable of choice (that is copying strategy used) both before and after the WFP programme. However, due to lack of data before the WFP programme, a regression model particularly Difference in Difference (DiD) was in applicable. This could have yielded more robust results, since it would have added other variable which are likely to affect the choice of copying strategy which was eventually chosen by the household.

More so, for the research question two, descriptive statistics were also used. Household were asked to choose which commodities they preferred from the WFP food supplementary project. The respondents were asked to choose between cereal, pulses and vegetable oil. Then the results were presented in graph, as shown in Figure 5.1.

5.2.6 Challenges encountered during data collection

When gathering data, there are numerous obstacles that may develop. Data quality difficulties like as mistakes, inconsistencies, and other issues are prevalent challenges. Other issues to

consider are dataset availability, data privacy, data security, and data storage (Park and Park, 2016). To overcome these obstacles, a well-designed data gathering plan with clear aims and targets is required. It is also critical to have a team of professionals that can assist you in identifying potential problems and developing solutions.

Having discussed different challenges which are generally faced in data collection, the challenge mainly faced in this study was time constraint which led to the data collection process to be very tedious. Also, some of the households were not fully interested in giving honest answers where this was resolved by making follow up questions for the participants to validate the responses they would have given. In addition, sample size was kept low due to the financial constraints (Park and Park, 2016). Although the sample which was ultimately chosen satisfied all statistical pre-conditions, a larger sample would have given more credibility in terms of both internal and external validity of the analysis.

5.3 Results and Discussion

This section presents and discusses the results of the second set of research questions. Results are going to be presented in different sections, each section for each question.

5.3.1 The effect of WFP Programme on coping strategies.

The households were also asked to what extent they used different coping strategies before and after the WFP programme. The results are being shown in the table below.

Table 5. 1: Effect of the WFP programme on the copying strategies

Coping Strategy	% of Households Using this strategy before	% of Households Using this strategy after
Eating cheaper and least preferred food	63	41
Borrowing and asking for food from friends or family	57	47
Reducing consumption of food by adults to give children	77	61
Reducing number of meals per day	56	53
Reducing the food portion size	81	71

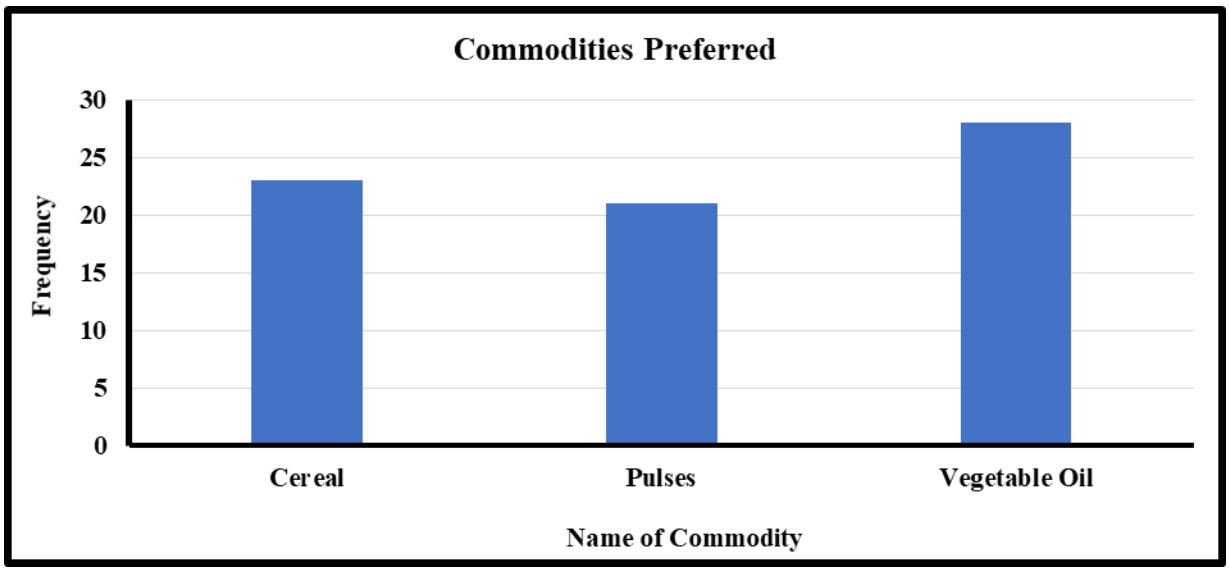
Source: *Author's Illustrations*

From the table 5.1 above, the results from the study indicated that all the coping strategies which were being used before the WFP programme have been reduced following the introduction of this programme. For instance, 63% of the households indicated that they preferred eating less and cheaper products as a coping strategy before the programme. However, this strategy was now being used by 41% of the households after the WFP programme. This can be an indication that the programme was successful in ensuring food security in the households. This trend of decreasing use of food shortage copying strategies has been seen in all the coping strategies. From literature, food assistance programmes have been seen to reduce copying strategies since they improve food security (Davis & Hirji, 2014; Po et al. 2019; McMichael, 1994)

5.3.2 Food Commodities preferred most.

The last objective of this study was to determine what the commodities do the households prefer most from the WFP's food basket. The results are presented in Figure 9.

Figure 5. 1: Commodities preferred.



Source: *Author's illustrations*

From the graph above, there is evidence that the most preferred commodity from the WFP's food commodities was vegetable oil. Of the 72 interviewed people, 28 people indicated that their preferred product was vegetable oil. The second most preferred product was cereal, with 23 individuals indicated that their preferred product was cereal. Lastly, 21 respondents indicated that their preferred product from the WFP products were pulses. These results

conform to the findings of Murendo *et al* (2021) who also found that households in Mt Darwin consume much of cereals as their main source of food.

5.4 Recommendations

The study found that food assistance program helped to reduce the coping strategies that were previously used by households to ensure that they remain food secure. It was found that households would now have more food at their disposal and even having at least 3 meals per day hence eliminating the food rationing strategy. The policy recommendation is that WFP and the government should work hand in hand to ensure that the food assistance is provided to those in need of it as this improves the amount of food they eat on a daily basis. The study also found that the most preferred commodity was vegetable oil followed by cereals. Therefore, the recommendation is that those organisations that provide food assistance should increase the rations of cereals and vegetable oil that they give to households as these are the commodities they prefer most.

5.5 Conclusion

This chapter introduced and discussed the results of the second set of research questions. The chapter also included recommendations on the results of the data analysis. The following chapter provides a summary of the main findings of the study, conclusions, policy recommendations and suggested areas for further research.

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CHAPTER 6
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter provides an overview of the entire research study in a condensed form and provides a review of the research ideology, methodology and findings of the study. The scope of this chapter includes the research summary, conclusions, policy implications and recommendations considering the research findings, areas for further research based on the identified gaps, references, and appendices.

6.2 Research summary

The study looked at the contribution of food aid to reducing food insecurity among rural communities, despite the availability of food locally through production and other means. The aim of the study was to analyze the food security situation in the study area and to determine the relationship between food aid and food systems. The descriptive survey method turned out to be the most appropriate as it made it possible to capture the experiences, perceptions and attitudes of the respondents. Using a questionnaire consisting of demographic information, economic information and questions on indicators of food insecurity, and household interviews, data was collected from a sample of 80 households randomly selected from selected counties in the study area. A 100 percent response rate to the questionnaires was observed since they were filled out with the evaluators' gifts. On the other hand, however, focus group discussions were conducted to obtain local market information for each municipality. The research involved both descriptive statistics and the use of econometric tools to analyze the data in order to obtain better study results. Key findings were that food aid makes a major contribution to household food security in the study area, with the majority of households exhibiting improved dietary diversity during food aid. It was found that the households not receiving food aid during the study period were the most vulnerable and at risk of food insecurity.

6.3 Conclusions

The aim of the study was to analyze the food security situation (availability) in the study area and to determine the contribution of food aid to improving food security. The results of the

study showed that food aid improves food security at the household level. The results of a comparison between beneficiaries and non-recipients of food aid showed that the logarithmic probability of food security was 0.835. In addition, a household where the head of household has completed tertiary education is 1.073 more likely to ensure food security than a household where the head of household has just completed primary education. These claims are statistically significant at the 1% level of significance. The conclusion of the study is that food aid programs have a positive impact on improving household food security. Approximately 97% of respondents reported consuming cornmeal products, compared to just 3% who had no cornmeal products in their diet. This is understandable as corn is Zimbabwe's staple food. Worse still, before the WFP programme, 23% of households ate cereal with their meals, while the rest did not eat cereal, indicating food insecurity. For tubers and other roots, the distribution was somewhat even: 54% of households reported having these in their diet, compared to just 46% who did not have roots and tubes in their diet.

6.4 Policy implication and recommendations

For Zimbabwe as a nation to resolve problems that leads to reduced food availability and accessibility in the area of study and ensure that households have adequate food. Based on the findings of this empirical study, suggestions are in place for improvement on key policy issues that involves:

a) Education - Education levels in general in the study area were low and male community members were advanced in terms of academic qualifications compared to their male counterparts to which it proved to be a significant factor affecting food availability and accessibility. Recommendations are that free basic education should be provided to the local people of all ages whether formal or informal by the Ministry of primary and secondary education with care given to address the gender disparities in education.
b) Social grants – the study exposed that the rural households had at some point experienced critical food shortages for consecutive months especially during the Lean Season. Recommendations are that through the ministry of women and social welfare, the government should have established safety nets to cover for the intended months especially for child headed, disabled, chronically ill as well as elderly household heads.
c) Employment – employment proved to be a critical determinant of food accessibility and availability because reliable and stable incomes from formal employment tend to

reduce food insecurity considering that the greater part the households meet their food needs through purchases. Recommendations are that government through the ministry of industry and commerce set favourable conditions and policies in the industry that would increase foreign direct investment to create more jobs. Ministry of small to medium enterprises as well as that of youth sports and culture can also work hand in glove help the active people in the study area to become entrepreneurs through offering loans to the youths.

d) Agriculture – the study disclosed that the households in the study area lacked self-sufficiency hence over reliance on food assistance hence creating donor syndrome. Recommendations are that the NGO's in partnership with the government of Zimbabwe should get rid of the interventions that gives food hand outs but rather alternatively engage in interventions that are sustainable in nature. Another recommendation is the farmer support through the Ministry of agriculture under programmes such as command agriculture being revisited and perfected as well as the presidential input schemes. Awareness is also crucial to ensure that farmers have affordable access to virtual innovation platforms which bears productive information. These will enhance productivity and market knowledge base and will in turn improve on food stocks.

e) Sustainability – the study revealed that people in the study area are not resilient enough hence the need for capacity building. Through the initiative of the Reserve Bank of Zimbabwe, the study recommends the provision of micro-finances at favourable rates so that households would have address their resource acquisition constraints.

6.5 Areas for further research

The research managed to bring out the contribution of food assistance in ensuring food accessibility and availability for the rural households, identify major causes of food insecurity, and explore the dietary benefits of food assistance as well as identifying the socio-economic determinants of food accessibility and availability by the rural households. Therefore, the study recommends further studies to look into the other financial modalities that can be used to assist rural households, explore the limitations of these modalities to food availability of some food items as well analysing other factors that affect food availability other than socio-economic for instance political and legal factors.

Appendices

Appendix 1: Household Survey Questionnaire

BINDURA UNIVERSITY OF SCIENCE EDUCATION

FOOD ASSISTANCE, FOOD INSECURITY AND COPING STRATEGIES SURVEY 2023

Household Questionnaire

Good day. Please note that the questionnaire is meant to collect data to be used for the thesis work as part of Msc Food Security Requirements. Information collected will remain confidential and participation is voluntary.

Section A: Survey Identification

A1	Survey record number	
A2	HH ID number	
A3	Ward	
A4	Village	
A5	Enumerator	
A6	Time taken	From……To……..

A6. Respondents Position:

1. Head [ ] 2. Spouse [ ] 3. Other [ ]

2. Section B: Demographic Information

2.1 How many members are in the household?.....

2.2 How many Males……..

2.3 How many Females……

2.4 Gender of household head ……..……...

2.5 Age of household head …….….....

2.6 Educational level……..

2.7 Occupation 1. Farmer 2. Miner 3. Petty trader 4. Sole trader 5. Formally employed

2.8 Income/ month…….

Section C: Food Insecurity Indicators

Questions		Responses			
1	Did you have enough food for the whole family before food assistance by WFP?	1. Yes	2. No	3. Sometimes	
2	How many meals did you have per day before LSA?	1. 1	2. 2	3. 3	4.4
3	What is your main livelihood?	1. Farming	2. Casual labour	3. Gold panning	4. Begging
4	What was your previous season's maize harvest	1. Less than 50kg	2. Equivalent to 50kg	3. Less than a tonne	A tonne and above
6	Do you	1. Yes	2. No	3. Sometimes	

	survive on eating wild fruits and roots?				
7	Was there ever no food to eat of any kind in your household because of lack of resources to get food?	1. Yes	2. No	3. Sometimes	4. Never
8	Did you or any household member go to sleep at night hungry because there was not enough food?	1. Yes	2. Sometimes	3. No	
9	Did you or any household member go a whole day and night	1. Yes	2. No	3. Sometimes	

	without eating anything because there was not enough food?				

Section D: Household livelihoods

C1 Please complete the table, per activity, using the income codes	1a. In the last six months, what were the three major sources of income at your home? (Use the codes for sources of income up to three sources)	C2. Please estimate the relative contribution of each source of income (%)
A. Major source	|__ |__|	|__ |__|
B. 2nd	|__| __|	|__ |__|
C. 3rd	|__| __|	|__| __|

Codes of the main sources of income:

1 = External support

2 = Sell of locally produced food crops/sale of garden vegetables

3 = Farming of tobacco/cotton

4 = Casual labour (maricho)

5 = Applying for cash loans

6 = Sale of domestic animals

7 = Sale of masawu & mawuyu

8 = Sale charcoal(marasha)

9 = Pension

11 = Fishing

12 = Gold panning(kuwonga)

13 = Sell of (kachasu) 14 = Food assistance 15 = No other source		

Section E: Food consumption

E1	How many meals did adults of this house have yesterday?		|__| No of meals
E2	How many times did children of this household ate yesterday?		|__| No of meals
E3. In the last week, how many days did you eat the following products? And where did the food came from?			
		No of Days (0-7)	Source
a. Grain from maize, mealie-meal porridge, sadza etc			
b. rice, sorghum, millet, bread, spaghetti etc		|__|	| __|
c. Roots and tubers (manyanya, mawuyu, potatoes, sweet potatoes)		|__|	|__|
d. sugar products		|__|	|__|
e. legume (peas, beans and cow-peas)		|__|	|__|
f. nuts, cashew nuts & round nuts		|__|	|__|
g. Vegetables/leaves		|__|	|__|
h. Beef, goat, other red meats (cow, pig		|__|	|__|
i. Birds (chicken, etc.) and eggs		|__|	|__|
n. CSB+ (mixture of mealie meal and soya)		|__|	|__|
Codes for source of Product: 1. locally availabe 2. casual labour (maricho) 3. begging			

4. external support 5. buying from shops 6. food assistance 7.Barter trade 8. lost and found&fishing		

Section F: Coping strategies

	During the food assistance intervention (LSA), how many days did your household used the following coping strategies in order to make food available for consumption?	
		Frequency (0 to 7 days)
1	Eating cheaper and least preferred foods	
2	Borrowing food from friends or family	
3	Reducing number of daily meals	
4	Rationing the adult meals to give food to children	
5	Adjusting the timetable for food meals	
6	Reducing the food portion size	

Following the introduction of food assistance, how many times did your household resort to one or more of the following coping strategies in order to make food available for consumption?			
The whole day without eating		1- yes	2- no
Borrow food on credit		1-yes	2-no
Send family members to relatives		1-yes	2-no
Sending family		1-yes	2-no

members to beg for food			
Heavily depending on casual labour as a source of food		1-yes	2-no

Section G: Food assistance: LSA beneficiaries

G1	What type of food items did you receive?	1. Cereal 2. Pulses	3.Veg Oil 4. CSB	5. All of the above
G2	What type of cereal did you receive?	1. Maize 2. Sorghum	3. Millet 4. Wheat	
G3	What type of pulses did you receive?	1.Yellow Peas 3. Pigeon Peas	4. Split-Yellow Peas 5. Sweet beans	
G4	What rations of veg oil did you receive per person per month?	1.500 2. 660 ml	3. 750 4. 1 litre|	
G5	What rations of cereal did you receive per person per month?	1. 5kg 2. 6.5kg	3. 7.5kg 4. 8kg	
G6	Which food commodity did you prefer the most	1. Cereal	2. Pulses	3. Veg oil
G4	Gender of the person who collected the last food ration?	1- M	2- F	
G5	Who decides on the use of the food assistance rations from WFP?	1- M	2- F	3- Both
G6	Did you sell the food you received from	A- Cereal 1-Yes 0- No	B - Pulses 1- Yes 0- No	C- Veg Oil 1- Yes0-No

	WFP?			
G7	How long did your food last?	1. Less than a month	2.1 month	2. 3 months

THANK YOU

Appendix 2: Informed Consent Form

AN ASSESSMENT OF THE CONTRIBUTION OF FOOD ASSISTANCE TOWARDS CURBING FOOD INSECURITY. A CASE OF MT DARWIN

CONSENT TO TAKE PART IN RESEARCH

- I…… voluntarily agree to participate in this research study.

- I understand that even if I agree to participate now, I can withdraw at any time or refuse to answer any question without any consequences of any kind.
- I understand that I can withdraw permission to use data from my interview within two weeks after the interview, in which case the material will be deleted.
- I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study.
- I understand that participation involves face to face interviews with electronic gadgets recording the interviewee's respondents.
- I understand that I will not benefit directly from participating in this research and I will not be paid for the participation.
- I agree to my interview being electronically recorded.
- I understand that all information I provide for this study will be treated confidentially.
- I understand that in any report on the results of this research my identity will remain anonymous.
- I understand that disguised extracts from my interview may be quoted in research project
- I understand that if I inform the researcher that my-self or someone else is at risk of harm they may have to report this to the relevant authorities - they will discuss this with me first but may be required to report with or without my permission.
- I understand that signed consent forms will be kept in a very safe place untill the students' dissertation results are plublished by Bindura University of Science examination board.
- I understand that under freedom of information legalisation I am entitled to access the information I have provided at any time while it is in storage as specified above.
- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

Signature of research participant

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Signature of participant Date

Signature of researcher

I believe the participant is giving informed consent to participate in this study

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Signature of researcher Date