

**AN ASSESSMENT OF THE CONTRIBUTION OF FOOD AID PROGRAMS  
TO HOUSEHOLD FOOD SECURITY OF SMALLHOLDER FARMERS IN  
BUHERA DISTRICT, ZIMBABWE**

**BY**

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Science Honours degree in Agricultural Economics and Development**

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## **CERTIFICATION OF DISSERTATION**

The undersigned certify that they have read and recommended for submission to the department of Agricultural Economics and Development, in partial fulfilment of the requirements for the Bachelor of Science Honours Degree in Agricultural Economics and Development, a dissertation by Christina Tinarwo entitled:

**AN ASSESSMENT OF THE CONTRIBUTION OF FOOD AID PROGRAMS TO THE HOUSEHOLD FOOD SECURITY OF SMALLHOLDER FARMERS IN BUHERA DISTRICT, ZIMBABWE.**

Supervisor

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Signed.....

Date...../...../.....

## **DEDICATION**

This dissertation is dedicated to my mother, Mrs Tinarwo and my husband Richard katiza for the endless love, prayers, tolerance and the support they have been giving to me. May the Almighty God continue to bless her in abundance.

## **ABSTRACT**

The study was carried out in Buhera District in 2013. The aim of the study was to assess the contribution of food aid on food security. The study sampled 30 households using simple random sampling who are the beneficiaries of food aid. Food aid programme is widely debated in the world and has made many people to believe that food aid has a disincentive effect while others believe it is an essential tool for agriculture and food security development. For the past decade, food aid deliveries have featured Buhera district following its food deficit. The primary data was collected using a questionnaire and was analysed using descriptive statistics, mean comparison, and ordinary least squares using STATA software package. The results shows that the number of cattle owned by a household and food aid deliveries were statistically significant and contribute to food security of the smallholder farmers. Off-farm activities and area planted were statistically insignificant but they have a contribution to the household food security. Finally household size and sex of the household head had an inverse relationship with household food security. The study recommend that off-farm employment should be persued and development of irrigation schemes so as to improve the small-holder farmers food security.

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## ACRONYMS

CRS- Catholic Relief services

FAO - Food and Agriculture Organisation

FFW- Food for work

HIV/ AIDS - Human Immune Virus/ Acquired Immune Deficiency Syndrome

IFPRI- International Food and Policy Research Institute

NGO – Non-governmental Organisation

PRP – Protracted Relief programme

USAID – United States Aid International Development

UNWFP –United Nations World Food Programme

WFP - World food Programme

## CHAPTER 1: INTRODUCTION

### 1.1 Background of the study

In the past decade Zimbabwe's domestic food supply has failed to meet the requirement of the country's citizens. Zimbabwe's economy is mainly agro-based with more than 75% of the population relying on agriculture for a living (World Food Programme, 2012). However, in the past decade the agricultural sector has suffered from technological backwardness, droughts lack of funding among other things which has seen a decline in agricultural production. Consequently about 1.6 million people (out of a total population of 13 million people) require food-aid in Zimbabwe. Predictions are that food security may continue to deteriorate, coping strategies will be eroded and livelihoods threatened (Watson, 2003) thus the people of Zimbabwe will be made vulnerable.

The formation of the WFP and Food-aid Convention instituted a framework for food-aid, making it an emergence response to food shortages. Therefore countries like Ethiopia, Kenya, Uganda, Haiti, and Swaziland have received protracted food-aid for a period spanning to 30 years. Despite 30 years of food-aid, Ethiopia's food security has steadily worsened, and relief food-aid has become an institutionalised response (Kehler, 2004). According to the African Green Revolution, a combination of low agricultural productivity and adverse environment made Africa the prime recipient of food-aid (Jaka, 2009). The 1996 World Food Summit targeted to reduce the world number of hunger stricken people by half by 2015 but eight years later nothing had happened (Shapori & Rosen, 2004). The countries in the developing world are more prone to food shortfalls due to its increasing population and would require free food assistance to save the lives of their people.

Famine is one of the major challenges for disaster management requiring proper and adequate intervention strategies which help both to save lives as well as to build resilience to further incidents of shocks. The strategies should therefore be able to address the short term survival needs as well as long term food security (Winser, Blaike, Cannon & Davis 2004). The differences in the world's climate, economic, industrial and technological development has

resulted in some countries or parts of the world producing food in excess while others experience shortfalls. FAO Trade Policy Technical Notes (2011) reveal that in the 1950s the accumulation of cereal surpluses in some developed countries gave them a room to dispose it in such a way that it improves the food security situation in vulnerable countries. This led to the FAO Principles of Surplus Disposal “a code of International Conduct that encourages the constructive use of surplus disposal of agricultural commodities, at the same time protecting the interest of commercial exporters and local producers” (Jaka, 2009).

Food-aid has played a major role in alleviating hunger in hunger stricken parts of Zimbabwe (WFP, 2012). There has been a high influence of Non-governmental organisation (NGOs) such as World Food Program, Christian Care and Goal in Buhera District coming with various food-aid programs. Christian Care annual reports (2002 to 2006) show that since 2002 the local non- governmental organisation, has implemented food-aid programmes with the support of the United Nations World Food Programme to save lives.

Despite the major role played by food aid programme in terms of improving household food security, not much research is available on empirical evaluation of the contribution of food-aid programmes on household food security (Barret, 2002). Little research on the contribution of food aid to household food security has been undertaken in Southern Africa and Zimbabwe specifically. The aim of this study was to fill in this existing gap in literature by conducting an assessment of the contribution of food-aid on the food security of smallholder farmers in Buhera District.

## **1.2 Statement of the problem**

Food insecurity in Zimbabwe has received a certain amount of attention in aid agency appeals and food-aid has been viewed as a prior response to tackle this problem. For example, over 80% of the United Nations consolidated inter-agency appeal for June 2003 was for food only, while health represented less than 10% of the appeal total (Watson, 2003). Whilst food-aid

may serve a vital tool in hedging against food insecurity and alleviating malnutrition, it does not address the fundamental causes of the food crisis (Watson, 2003).

Non-governmental organisations have been instrumental in the distribution of food to vulnerable rural communities of Zimbabwe in the past decade. However, most households in such areas have remained hunger stricken and cannot produce enough food to meet their food requirement. This study intends to examine the contribution of food-aid programs to the household food security of smallholder farmers in Buhera District, Zimbabwe. This is because less research has been done in this subject area in Zimbabwe

### **1.3 Research objective, questions**

The main objective of the study was to assess the contribution of food-aid programs to the household food security status of smallholder farmers in Buhera District, Zimbabwe

The specific objectives are:

- i. To determine the typology of the beneficiaries of food-aid in Buhera district.
- ii. To determine if there is any significant differences in the socio-economic characteristics of the beneficiaries of food aid in Buhera District.
- iii. To determine the contribution of food-aid to household food security of the beneficiaries.

The research questions are:

- i. What are the socio-economic characteristics of the beneficiaries of food-aid in Buhera district?
- ii. Is there any significant difference between household food security and factors affecting household food security of beneficiaries of food-aid in Buhera district?
- iii. Are there any changes to the food security of farmers who benefit from food-aid?

#### **1.4 Justification of the study**

For the past decade, free cereal food-aid distributions have featured prominently in covering Zimbabwe's maize gap. This follows the government's appeal to the international community for assistance in the wake of drought and erratic rains which hampered the country's food production. Mabuza (2008) says that the high level of prevalence of HIV/AIDS has increased the cruelty of the food crisis by reducing the ability of communities to take part in labour intensive food production activities. However, Zimbabwe's agricultural productivity is declining and this has attributed to the collapse of rural markets and economic crisis (ZimVac 2009).

The primary beneficiaries of the study's findings are the Non-governmental organisations. They will be informed on how their food aid programmes are contributing to household food security in the rural communities of Zimbabwe. This will help them in planning their current and future interventions. The study will also add to existing board of knowledge. This is a benefit to the academics as they will inform their own studies based on the study findings. The study will as well benefit the policy makers by providing the basis for policy formulation and planning intervention strategies for rural farmers in Zimbabwe.

#### **1.5 Organisation of the study**

The study is made up of five chapters. The first chapter introduced the study and highlighted its objectives. The main aim of this chapter was to give an overview of food aid programmes and point out the significance of carrying out the study. Chapter two presents reviews of literature on the food-aid and food security themes. The overall aim of literature review exercise was to inform this study based on the empirical findings of other researchers. Chapter three presented the research methods adopted by the study. The chapter gave an overview of the research design, data collection, data analysis techniques and the problems encountered in conducting the fieldwork. Chapter four focused on testing the study hypothesis as well as presentation and discussion of the study's findings. Chapter five gave the conclusion and policy recommendation of the study.



## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Introduction**

The purpose of this chapter was to explore literature pertaining to the study's subject matter. The chapter defines the key terms such as food-aid and food security, and show the empirical studies done by other researchers on food aid. The literature review provided the researcher with more information and further motivated the study.

### **2.2 Definition of key terms**

#### **2.2.1 Food-aid**

Food-aid refers to food assistance that is granted to governments, institutions or households to control food shortages (Shelton, 2005). FAO (2011) define food-aid as international transactions that lead to the provision of aid in the form of food commodities in a country that is in need of receiving such aid. It may be a government to government grant to make food importation cheaper or it may be a government or NGO grant or donation to another NGO for free distribution. Food obtained through the later arrangement may be received by households through general food distribution, vulnerable groups feeding, supplementary feeding or food for work.

The Food-aid Charter offers the general and long term objectives of food-aid. The objective being to help, support food security by addressing problems arising from food scarcities or shortfalls whether they are caused by structural deficiencies or crisis situations calling for emergency actions. It is aimed at preventing crises and correcting structural deficiencies by supporting overall development and taking actions directly to vulnerable groups. In this circumstance food-aid plays a positive role, whether it is supplied as food stuffs or funds generated through local sales. According to Barrett (2006) the core intent of food-aid today is to relieve human suffering. The original objective of food-aid is alleviation of poverty and hunger for the most vulnerable groups and consistent with agricultural development in those

countries (Shelton 2005). In short, food-aid focuses on: saving lives, fulfilling a human right to food that it should be nutritionally adequate, protecting assets especially human health, facilitate growth of productive assets where food availability and local market performance are limited.

Bread for the World Institute (2000) states that food-aid is used for different purposes thus it is supplied in different types of namely emergency food-aid, project food-aid and programme food-aid. Emergency food-aid is provided in response to a sudden, shortfall in food production caused by natural or man-made disasters such as droughts, floods or crime. Emergency food-aid is defined as food used for humanitarian disasters or conflict (Shelton 2005). It involves immediate relief actions by implementers and has become the most important type in the Sub-Saharan Africa (Mellor, 2001), and in 2004, about 75% of all food given to sub-Saharan Africa was emergency food-aid (Maunder, 2006) and in Zimbabwe, it has been protracted relief programmes given the complexity of the hazards faced by the country. The country has remained in an emergency situation after several years of food-aid, hence the term 'protracted relief operations'. It entails general distributions in areas experiencing acute food shortages or communities affected by chronic food shortages. This type of food-aid is highly targeted at ensuring that food reaches the most needy as well as mitigating potential market disruptions resulting from competition between food-aid and commercially food available.

Project food-aid is defined as food-aid meant to support specific or identified projects (Mellor, 2001). This type involves Food For Work (FFW) projects and it is a precondition for sustainable development, nutrition projects for building capital and is provided in the form of grants. The projects stretches from rural road construction using food as payment for workers to school meals or health nutrition services intended for the vulnerable groups. In other cases where food-aid is provided in kind, some of it is sold in markets to generate funds to cover project costs. This method of food-aid tends to enhance the local market (World Vision, 2012). Many non- governmental organisations (NGOs) like World Vision, CARE, Goal and Catholic Relief Services (CRS) normally include food-aid as a component of their relief and development activities.

Programme food-aid is another form of food-aid. It is defined as food-aid meant to support the balance of payments, government budget and the implementation of structural policy reform (Mellor, 2001). It is provided as grants or on soft loan repayment terms solely on bilateral basis that is government to government. This food-aid becomes a donation or credit sale of US commodities to developing countries, and for private sector expansion. Once the food-aid has landed to the recipient government, it is then sold in local markets and this process is also called 'monetization'. Monetization is the sale of donated food in order to generate funds for other development programmes, including health, water, agriculture, HIV and AIDS, and direct food security (USAID, 2006). The income made through the sale of donated food is used to support developmental programmes and it does contribute positively to food security and long-term development.

### **2.2.2 Food security**

A household is said to be food secure when it has food available and when it can access it, more than 70% households that spend a higher proportion of their income are most likely to be food insecure. This percentage shows the total household expenditure on food and vulnerability. These families would end up relying on market purchase as a source of food and cash income (Smith, 2002). 'Food security exists when all people at all times, have physical and economic access to sufficient, safe and nutritious food to achieve a balanced diet and food preferences for an active and healthy life' (Fantaw, 2007). The definition combines stability, access to food, accessibility of nutritionally adequate food and the biological utilization of food. In this study food security refers to the availability of food and individual access to it. Food availability- is when a household have a sufficient quantity of food on a consistent basis. Food access - is when a household have resources to obtain appropriate food for nutritious diet.

### **2.3 Cost and benefits of food-aid**

The efficiency and effectiveness of food aid have been under scrutiny by policy makers and food analysts. It has contributed in disaster relief and improving the European and some parts of the Asian economies, and did not achieve this in Africa. In between this view there are benefits of food aid, that is, poverty reduction and improving food security but there is need to advocate new and improved strategies to make the programme more powerful in achieving its objectives (Barret, 2006).

Food aid, today, is considered as an essential instrument in addressing both transitory and chronic types of food insecurity in low-income country. The humanitarian agencies, or donors, implement food aid programs in these countries as an immediate response to the needy people, to increase their income sustainability, to improve agricultural production, and improve their health and nutrition status. More so, it improves food supplies at national or regional level, increase access to food at household level through higher home production of food crops, market purchase and other means of effective utilization of food at the individual level to meet human biological needs (Barret, 2006).

However, there are disincentives of food-aid on domestic agricultural production that may result from farm level responses to price reduction caused by increased food supplies (Clark, 2001). The negative effects of food-aid can be realised when certain conditions prevail. This means that food-aid can have strong negative effects when: It is distributed during harvest period, large quantities of food-aid are released directly into countries with markets that operate with the same locally produced products, and when poor commodity targeting is implemented, such that the food-aid products given to households are likely to be exchanged in the market, particularly when that product has a local substitute and increased market supplies lower prices for the locally produced substitute (Donovan, McGlinchy, Staaz,& Tschirley, 2006).

Consequently, these price effects, have perceived food-aid as a constraint to market and trade development. Traders who rely on the sale of staple foods could suffer short-term losses as a result of decreased demand, price fall or both (Maunder, 2006). This usually occurs when a government releases grain provided under a food-aid programme into the market at below market prices. In this situation, reduced trade volumes and profitability may serve to undermine private trader's confidence in the market, hence reducing private investment and lead to disinvestment and business closure (Maunder, 2006). This could affect businesses throughout the marketing chain that is importers, major millers and local retailer. The basic concern is that the supply of food-aid increases domestic food supplies, leading to a fall in product prices and disincentives to domestic agricultural production, which in turn perpetuates the requirement for food-aid (Maunder et al, 2006).

The possible economic impacts of food-aid depend on the marketing policy and production structure of the recipient country. Economic impacts of food-aid can be affected by government actions that they tend to regard food markets as having such strategic importance as to call for different kinds of control mechanisms (Topio-Bristo, 2001).

Decreasing price means that producers' profits will diminish which will lead to decrease in production. This phenomenon is called the disincentive effect of food-aid, and it was first presented by Schultz (1960). There is a considerable amount of controversial literature on the effects of food-aid programme on the economies, and more specifically on agricultural production, of the recipient countries. Similar studies were carried out for sub-Saharan Africa by the World Bank, International Food and Policy Research Institute (IFPRI) (Abdulai et al., 2004), (Lowder, 2004), and Regional Hunger and Vulnerability Programme (Maunder, 2006), but no evidence is available for Zimbabwe in specific. The lack of evidence has resulted in premature negative conclusions about the contribution of food-aid on the country's smallholder food security.

## **2.4 Contribution of food aid on food security**

The term contribution refers to a set of changes that are brought by a policy, programme, project or intervention. Barrett (2006) proposed that the change may be positive or negative, desirable or undesirable, anticipated or not anticipated. It is usually measured against the goal or objective of the project, and is measured after the project has been implemented or midway through.

The contribution of food-aid on recipient nations can play a positive role in (i) encouraging developing countries to choose a strategy of boosting the economy thus providing employment. This is applicable to project or programme where food-aid is given to beneficiaries engaged in food for work projects or other development programmes (Mellor 2001). (ii) It pays attention on increasing agricultural production. Food-aid given in cash to the beneficiary government and is used to buy grain locally or regionally this stimulates local food production and farm prices (Musopole, 2004). It helps sustainable local production and livelihoods. “These roles of food-aid are consistent with the fact that demand for food is as much subject to national policies of low income nations as the supply of food and the extent to which nations emphasize food production is substantially a product of their policies with respect to food demand” (Mellor, 2001).

Mellor (2001) postulate that food-aid discourage growth of agricultural production in recipient nations and it encouraging the growth of world population. Food-aid has been accused of depressing agricultural price in recipient nations (as a result of excess supplies) thereby reducing incentives for food production and ultimately inhibiting long term food security. Sometimes governments focus their attention on other aspects of development at the expense of agricultural development as they hope in food-aid is covering their food deficit.

FAO (2011) food-aid is seen as a donor driven response that it serve the interests of donors rather than food security needs of the beneficiaries. It is also criticized of creating dependency among beneficiaries, disincentives for local agricultural development and distorting international trade. Jaka (2009) said that it has an effect on beneficiary households and communities, Barrett (2006) noted two ways in which food-aid can impact communities

that is positive dependency and negative dependency. Harvey and Lind (2005) states that there are assumptions and meanings that support common usage of dependency in the context of humanitarian aid which are: Dependency is perceived as something that is negative and as something that need to be avoided, associated with a provision of food relief and seem to discourage people's initiatives, a problem in areas where there is protracted relief assistance.

Lentz, Barrett and Hoddinott (2005) said positive dependency occurs when an individual, community and organisation is helped so as to meet its basic needs when it cannot sustain for itself. They argued that positive dependency is important for both development and sustainability. In this condition food-aid may complement social safety nets by providing insurance for vulnerable people. Barrett (2006) support this idea that food-aid may become welfare improving tool when the alternatives are destitution, for households which cannot take care of themselves for example the disabled. In this circumstance it will be backing up the social safety nets and food-aid is credited to support lives and is viewed as the only thing between and death starving people.

Negative Dependency, arises when current needs are achieved at the cost of reducing the recipients' ability to meet their basic needs without external assistance (Lentz, Barrett and Hoddinott, 2005). They defined changes in the behaviour of individuals, households or communities in immediate response to assistance as incentive or disincentive effects. Negative dependency is defined as unintended consequences of food-aid. Barrett (2006) noted that at micro level evidence, these consequences are reflected on household labour supply, production incentives, consumption patterns and natural resource use. However, he argued that there is a universal claim that food-aid unintentionally discourages people from working.

Consolidated Appeal Process (2007) stated that food shortages together with HIV prevalence are major threats to the nation and rapid economic decline. Chambers (1997) raises issues of dependency that may come from protracted assistance especially by non-governmental organisations and suggests that affected communities should participate in identification of needs, planning, implementation and evaluation of programmes. This is important in

ensuring capacity building for the communities and sustainability of the projects. In this case communities should participate in strategies that help them ensure food security.

Food-aid is considered as an important instrument in addressing both transitory and chronic type of food insecurity in less developed countries. The food-aid has many effects to vulnerable peoples' livelihoods. These aid programmes are planned in such a way that they help the affected population that is benefit from the five capital assets (social, financial, physical, natural and human) and transforming structures. This often results in failure to facilitate and create income sources among beneficiaries. However, food-aid and food security should be linked in such a way of achieving durable solutions for vulnerable communities. The World Food Programme (WFP) report (2007) added that the existence food and non-food assistance together under a common strategy allows close linkages among sectors, which are essential for food security interventions.

Food-aid is not the only suitable resource when seeking to maintain assets or maintain food security of smallholder farmers. Analysis of the availability and accessibility of food by smallholder farmers is the basis for food security interventions strategies. This includes the role that food-aid may play in both preserving household assets and achieve household consumption needs. It is also vital to consider the contribution that food-aid has had on institutions, policies, and processes that determine food security status, mainly markets. Where food will be supplied to the market and people do not have ways to access it without selling essential assets, cash interventions may be a preferred way of response (WFP, 2007).

However, there has been no systematic study of the influence of emergency food-aid on markets and production. Furthermore, it could be argued that the potential disincentive effects of food-aid should be an argument for investigating the suitability of the assistance being provided and the way it is provided. In countries or regions where food is available locally, it is both quicker and cheaper to purchase food-aid locally than to import it, and it supports local traders and producers.



## **2.5 Review of empirical studies**

This section provides empirical evidences that were done other by researchers in different nations (Ramakrisha (2000) in Ethiopia, Mabuza (2008) in Swaziland, Nyambe and Belete (2012) in Namibia, Consortium for Southern Africa Food Security Emergency and World Food Program (2002) in Southern Africa region and Mwaniki (2008) in Sub-Saharan Africa).

Ramakrisha (2000) studied the factors causing of food insecurity in Amhara regional state of Ethiopia. The study reviewed that the area was highly food insecure and the majority of the sampled household depends on famine relief assistance. Furthermore they used the logit model to find the cause of food insecurity and found that cereal production, fertilizer consumption, livestock, land size, reduce the chance that household will be food insecure while family size increase the probability of insecurity (Ramakrishna et al., 2002).

Mabuza (2008) undertake a study on the impact of food aid on smallholder agricultural development in Swaziland. The study was focused on the relationship of food aid and agricultural production, distribution and effect receiving aid on production. The results of the study indicated that receiving food aid in the previous year is not enough to influence the decision of household to cultivate. In short household members who rely on their locally produced food are negatively affected thus food aid has a role to play in filling this insufficient gap. However, Nyambe and Belete (2012) researched on the determinants of farmers decisions to cultivate crops in Caprivi Region, Namibia. They found out that climatic conditions have a greater influence followed by wild animals.

The Consortium for Southern Africa Food Security Emergency and the World Food Program has employed a food and livelihood security monitoring system in the Southern Africa region since 2002. The organizations finalised that food-aid have a positive impact on beneficiary households in several ways. That is it provides a short-term safety net and a source of calories to individuals so that they can remain productive enough to bear the food security crisis. Secondly it also helped households to minimise spending, avoid selling assets, and avoid

engaging negative coping behaviours. The evidence clearly shows that food-aid has contributed to declining use of coping strategies to meet food needs in beneficiary populations (WFP, 2005).

Mwaniki (2008) assessed on the challenges and issues of achieving food security in Sub-Saharan Africa. The researcher provides that many countries failed to achieve food security due to unstable economic, social and political environments. These include: macro-economic imbalance in trade, natural disasters, natural resource constraint and agricultural dependency on climate and environment. In order to achieve food security, good governance, capacity building, and provision of markets were proposed as basic strategies to alleviate food insecurity. The available literature on this section were focusing on the causes of food insecurity and farmers decision on agricultural production ,but this study focuses on the contribution of food-aid to smallholder farmers household food security .

## **2.6 Conclusion and insights from the literature**

Various literatures within the context of food aid and food security was reviewed in this chapter. The literature review started by looking at food aid that is its objectives, types and went on to look at food security. This chapter exposed how the issue of food aid cost or benefit agricultural production and markets of the nation at large. The chapter also provided the contribution of food aid on food security and provided the empirical studies by other researchers. The literature gave insights on the need to look at the well-being of rural people, since their self-sustainability is dependent on rain fed crop production.

## **CHAPTER 3: RESEARCH METHODS**

### **3.1 Introduction**

This chapter gives an illustration of the methods that were used by the researcher in carrying out the study. The issue covered include the research design, study area, conceptual framework, data types and collection procedure, validation of instrument, data analysis methods the limitation of the study and expected outcomes.

### **3.2 Research design**

Research design refers to the structure, plan and strategy of investigation conceived so as to obtain answers to the research questions. It refers to a description of the format and theoretical structure under which the study was carried out (Mutambara, Zvinvashe & Mwakiwa, 2010). This study is quantitative in nature as it seeks to explain the relationship between one or more variables. This design is relevant as the researcher seeks to determine the effect of food aid programmes on food security. The research used the descriptive design which is based on the case study method. Jaka (2009) defines a research design as a plan to be followed to answer the research objectives or framework to solve the objective problem. However, it acts as a blueprint for a study as it guides data collection and analysis. The descriptive design was chosen because first-hand information was gathered from farmers within Buhera district. The design consisted of surveys and observations in which self-administered questionnaires were used to obtain information.

### **3.3 Conceptual framework**

The conceptual frame work used in the study gives the three dimensions of food security that are availability, access, and utilization, and the nature of their relationship to one another, as well as a brief description of their determinants. The three dimensions are the indicators of

food security that are affected by different variables but all contribute to food security status of an individual or household.

Food utilisation refers to a proper biological use of food to acquire a proper energy and nutritious diet, potable water, and adequate sanitation. Biological use relates to one's level of food security and is the ability for human body to effectively change food into energy. Households that have the capacity to acquire all the food it needs may not always have the ability to utilize that capacity to the fullest.

Food utilization, is normally reflected in the nutritional status of an individual, is determined by the quantity and quality of dietary intake, general childcare and feeding practices, along with health status and its determinants. Effective food utilization depends on large measure of knowledge within the household, of food storage and processing techniques, basic principles of nutrition and proper mother child care and feeding practices, and illness management (Matthews, 2003).

Food availability refers to the physical presence of food from household to national level; this food can be provided through household production, other domestic output, or food aid. This is achieved when adequate quantities of food are consistently available at the regional or national/country level (Lovendal and Knowles 2005). Domestic food production and food import contribute to national food availability, while increasing domestic food production reduces dependence on food import. In short, food availability may be constrained by inappropriate agricultural knowledge, technology, policies, inadequate agricultural inputs, family size, to mention a few (Yared, 2001).

Food access refers to a household's ability to acquire enough food through production, exchange or transfer. Access is guaranteed when households and all its members have adequate resources that are used to meet the households access to food. Once the basic sources of food have been known, it is important to examine the interaction of agro-physical

and socioeconomic processes that limit a household's ability to achieve sufficient quantities of food from each source (USAID, 2000).

There are different sources of food for households, these are: (a) produce and consume from their own stocks; (b) purchase it from the marketplace; (c) receive it as transfer from relatives, members of the community, the government, or foreign donors; or (d) collect it in the wild. These basic patterns provide an important starting point for understanding the general nature of the food security problem (USAID, 2000).

Most people usually starve because of lack of the ability to access food rather than its availability. In other words, income or purchasing power is the most limiting factor for food security. Thus food security should aim at increasing people's ability to acquire food through production, exchange and or transfer.

### **3.4 Study area**

ZIMVAC (2009) indicated that all districts in Manicaland province had food deficits but would differ on the percentage of population that was food insecure. Buhera District has the highest percentage of households which are food insecure (27,2%) followed by Chipinge with 23,9% and Mutasa is the least food insecure with 5% (ZimVac, 2009). The district was chosen purposively to target the beneficiary households of food aid. The study was conducted in Buhera District which is in Manicaland province, Zimbabwe with an area of 5364 square kilometres. It cuts across agro-ecological regions iii (32%), iv (34%), v (34%). The summer temperatures range from 30-40 degrees Celsius and in winter the temperature ranges from 6-25 degrees Celsius with a mean temperature of 22 degrees Celsius. The annual rainfall ranges from 450mm to 800 mm. The GPS coordinates of Buhera District are: 19° 19' 57.00"S, 31° 26' 6.00"E. The district sits at an altitude of 3,904 feet (1,190 m), above sea level (Mvumi, 2005). The soils predominantly granite sands natural region iii, dolerite red clays found in natural region iv and reddish clay are found near Birchnough bridge area natural region v. Maize, sorghum, rapoko, groundnuts, sunflowers are the main crops grown in the district.

### **3.5 Sampling technique and procedure**

The respondents were randomly picked from the list of beneficiaries. Samples were selected because it is naturally difficult to carry out a research on each and every individual element of the population. The most important thing is to have a sample that is representative enough to enable appropriate results to be reached. Purge (2005) says that 10% of the population is considerable as a representative sample that can produce results which can be generalized across a sector. The researcher used random sampling in selecting 30 respondents, this technique gives all respondents an equal chance to be chosen and it eliminates bias. The technique helped the researcher to use limited available resources and time to collect data.

### **3.6 Data types and collection procedure**

The researcher used both primary and secondary data. Primary data is data that is collected for the first time for the problem to be studied, whilst secondary data are existing information that may not be specific for problem under study. The researcher used a questionnaire (see appendix 1) and interview approach as the information extraction instrument from the direct food recipients (beneficiaries). The study was done in the form of a survey and was based on the primary data gathered from individual farming households using a structured questionnaire. The information to be gathered includes household demography, agricultural production, farm and off farm income and expenditure, asset ownership and food-aid distribution.

### **3.7 Validation of the research instrument**

In order to assess the validity of the questionnaire, the researcher consulted with the experts in food –aid. The researcher also reviewed literature on food-aid to make sure that the questionnaire addressed all key aspects on the subject matter.

### **3.8 Methods of data analysis**

The data was analysed using Microsoft excel and STATA software package. The data was analysed as follows:

#### **3.8.1 To determine the typology of the beneficiaries of food aid in Buhera district**

##### **Descriptive statistics**

Descriptive statistics answers the first research question. This explains the demographic and socio-economic factors affecting the beneficiaries of food aid. The descriptive statistics also assess the level of food security among beneficiaries. Measures such as frequency, percentages, mean, and standard deviation were used and presented in a tabular form. This technique has a disadvantage that it concentrates on means that may not give the actual value. However, it is suitable when larger samples are being described.

#### **3.8.2 To determine if there is any significant difference in socio-economic characteristics of the beneficiaries of food aid in Buhera district**

To determine the difference between food security status and the factors affecting it a t-statistic was used to test for the differences in means. The null hypothesis states that there is no significance difference between the mean of the socio- economic characteristics and food security status. The decision to be taken was to reject  $H_0$  if t-calculated lies between -2 and 2. This would work as a basis on which critical factors are examined and possible solution are made to cater for these factors that may determine a household food security status.

#### **3.8.3 To determine the contribution of food aid to the total household food security of the beneficiaries of food aid in Buhera district.**

To identify household food security status and to analyse the contributing factors for food security, indices of coping strategies were used as indicators of food security. This index is based on how households adopt to the presents of food shortages. The person in the household who is responsible for preparing and serving meals is asked a series of questions

on how the household is responding to food shortages. These indices were founded by Maxwell and Frankenberger in 1992 and Maxwell (1996), went on to propose a method for taking consumption related strategies and construct a numerical index. The information on indices of coping strategies obtained from the questionnaire was summarised into a single number by calculating a weighted sum of different coping strategies, where weights reflect the frequency of use by household. Ordinal ranking is done for each strategy that is from 1 to 4. Thus a household is food insecure when its weighted sum ranges from 8 to 12 and is food secure when its weighted sum ranges from 3 to 7. In other words the higher the score the more the household is food insecure.

There is no best food security measure that is universally accepted. So, it is the researcher's decision to select an indicator or a combination of indicators that suits the objective of the study. Theoretically, households in the study area attain food security from own farm production (influencing food availability), market purchases (influencing food access) or combinations of both (Nyariki, Wiggs & Imungi, 2002). Food-aid interventions contribute to food security through strategies that enhance food production or incomes for purchases or through both. To assess the contribution of food aid on smallholder farmer's food security, Ordinary least squares regression was used and an index of coping strategies was regressed on the following explanatory variables. The following model was used.

$$Y_i = \beta_0 + \beta_1 S + \beta_2 A + \beta_3 C + \beta_4 M + \beta_5 O + \beta_6 F + \beta_7 HH + \mu \dots \dots \dots (1)$$

Where;

$Y_i$  = food security

S = sex, (where 0- female and 1- male)

A = area under cultivation

C = number of cattle per household

M = meals taken per day

O = off farm activities (piece work, small business)



F = food aid

HH = household size

$\beta_0$  = constant

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$  = coefficient to estimate the relationship between food security and the independent variables

$\mu$  - random error term

### 3.9 Expected results

Household size is expected to have influence on food security status of a household since empirical evidences in the previous works, in developing countries like Ethiopia, smallholder agricultural production have limited participation compared to non-agricultural activities. Thus large household size has a higher consumption than the labour it contributes to production. Therefore per capita food availability declines as family size increases due to population growth, small families are relatively food secure households (Paddy, 2003).

More so, education level of the household head has an impact on the household food security. If the household head is educated he/she is most likely to adopt new technology in agriculture, is able to read instructions on the use and storage of resources for production, and diversify household incomes sources which in turn would enhance household food supply (Najafi, 2003).

Agriculture is the basis for living in Buhera district. By this the theoretical and empirical foundations expect agricultural activity to have an influence on the food security situation of the households. Crop and livestock production are the main sources of food for consumption of the beneficiary farmers, which are as well influenced by socio-economic, agro-climatic and environmental factors. Farm size is another factor that increases the level of production (Haile, Alemu & Kudh, 2005). Surveys provided information on the amount of income gain

from agricultural activities, which can serve as a proxy. Agricultural income includes either direct consumption or consumption by selling agricultural products.

Finally, food aid that comes from government and non-government organization are also additional income. In literature there are different conclusions on the impact of food aid incomes on household food security, that is it used to smooth consumption in a situation of shock and shortage of food. Thus food aid is expected to have an influence on the household food security.

### **3.10 limitations of the study**

The researcher faced the following challenges during data collection. Respondents were generally reluctant to fully cooperate in the data gathering processes and confidentiality of information limited the scope of the study in that substantial information regarded as confidential was most likely to be withheld. However, laziness in participation was mitigated by a skilful and ingenuous structuring of the questionnaires and interview questions to ensure that all the required data is collected. The researcher also used diplomacy as a tool to convince respondents to give information freely and guarantee confidentiality of their information.

Another threat came from the current political division which installed fear in respondents who end up twisting information for it to appear politically correct and hence feel secure from political retaliations coming from negative publicity. However, the researcher addressed by disclosing identity and authenticating that she is genuine student only conducting and fulfilling an academic obligation. In addition, the questionnaires did not disclose the identity of the respondents to ensure free and objective participation from respondents.

### **3.11 Conclusion**

The chapter provided the research methods used in the study and quantitative approaches were used. The study targeted the beneficiaries of food aid in Buhera district. Information

was collected from them using a questionnaire and the procedures were explained in this chapter.

## **CHAPTER 4: DATA ANALYSIS, PRESENTATION AND DISCUSSION OF RESULTS**

### **4.1 Introduction**

This chapter presented the study's findings and also discussed the results. The results were presented in the form tables and graphs. The chapter presents and discuss the findings objective by objective.

### **4.2 To determine the typology of the beneficiaries of food aid in Buhera district**

#### **4.2.1 General household characteristics**

##### **4.2.1.1 Sex of the household head**

Table 1 shows the sex of the household head. The results shows that from the 30 sampled households 50% were male headed and 50% were female headed.

*Table 1: Sex of the household head*

Sex	Frequency	Percentage
Female	15	50
Male	15	50
Total	30	100

##### **4.2.1.2 Age of the household head**

Table 2 below shows the age distribution among household heads. This is an important aspect as it determines one's knowledge and experience in crop production, livestock production and other off-farm activities thus it influences household food security. From the results it shows that age ranges from 18 years to 91 years. Majority of the households were headed by adults that are 19- 65 years, these account for 66.6%. This group consists of able bodied

people who preferably should be able to engage in livelihood activities for self-reliance. When they fail to engage themselves appropriately because they expect food aid then it can be concluded that they have developed a culture of dependency. 33.4% of the beneficiary households are headed by old people who are above 65 years and children who are less than 18 years.

*Table 2: Age of the household head*

Age	Frequency	Percent
≤ 18	5	16.7
19-65	20	66.6
> 65	5	16.7
Total	30	100

#### **4.2.1.3 Marital status of the household head**

A further analysis of the marital status of the household head was also done. Table 3 shows that most of the households who receive food –aid are headed by married people (40%), followed by those headed by widows (30%), single (17%), divorced (13%). This range may basically show a general trend of marital status in the area, with vulnerability cutting across all categories. Single headed households are orphans who could have lost both parents maybe as a result of the HIV/AIDS pandemic. Their vulnerability is usually undeniable as they sometimes need to go to school and at the same time taking care of their siblings. The beneficiary household sizes ranged from 2 to 9 people.

*Table 3: Marital status of the household head*

Marital status	Frequency	Percent
Single	5	17
Married	12	40
Separated	1	3
Divorced	3	10
Widowed	9	30
Total	30	100

#### 4.2.1.4 Education level of the household head

Most of the household heads have attained secondary education (57%), 33% have attained primary education and finally 10% attained advanced education. Most households were food insecure despite their level of education this might be a sign of crop failure, lack of employment opportunities due to economic instability.

*Table 4: Education level of the household head*

Education level	Frequency	Percent
Primary	10	33
Secondary	17	57
Advanced	3	10
Total	30	100

#### 4.2.1.5 Occupation of the household

From the results, the sampled households are not formally employed. 20% of the household head were self-employed that is they are involved in carpentry, piecework to mention a few as their income generating activities. 80% of them survive from agricultural production including livestock rearing and crop production.

*Table 5: occupation of the household head*

Occupation	Frequency	Percent
Unemployed	24	80
Self-employed	6	20
Total	30	100

#### 4.2.1.6 Household land size

Table 6 shows the land size owned by a household and area planted for different crops (maize, groundnuts and beans). The results from the study noted that the total area owned had a mean of 11.3 hectares. Maize has the largest area with a mean of 3.7 hectares followed by groundnuts 0.7 and lastly beans with 0.7. Crop production is the main livelihood activity of the respondents despite the seasonal variations in temperatures and rainfall patterns which might be unfavourable for dry land cropping. The people of Buhera grow maize hence it has a very high probability of failure and they indicated that they have very few alternatives in terms of crops to grow.

*Table 6: Land size in hectares*

Variable	Standard deviation	Mean
Land size	9.2	11.3
Area under maize	2.7	3.7
Area under groundnuts	1.3	0.7
Area under beans	1.2	0.6

#### 4.2.1.7 Livestock ownership

Most households were leaving their land idle, due to dependence on food-aid, lack of equipment and changes in climate. Other respondents were claiming that the idle land was left as grazing land. Table 6 below shows that most households own chicken with an average of 7 birds. Food aid targets were deprived of many basic infrastructures and necessities of life that is draught power, livestock (cattle, goats and sheep), ploughs and employment opportunities. Thus they massively dependent on food aid, extending to other negative coping mechanisms like depletion of household assets, reduced meals per day and borrowing of food.

*Table 7: Livestock ownership*

Livestock	Standard deviation	Mean
Cattle	2	2
Chicken	6	7
Goats	2	1
Sheep	2	1

#### **4.2.1.8 Household sources of income**

Crop cultivation is the main source of income among the beneficiaries with a mean of \$ 47.8 and is followed by livestock and off-farm activities like piecework respectively.

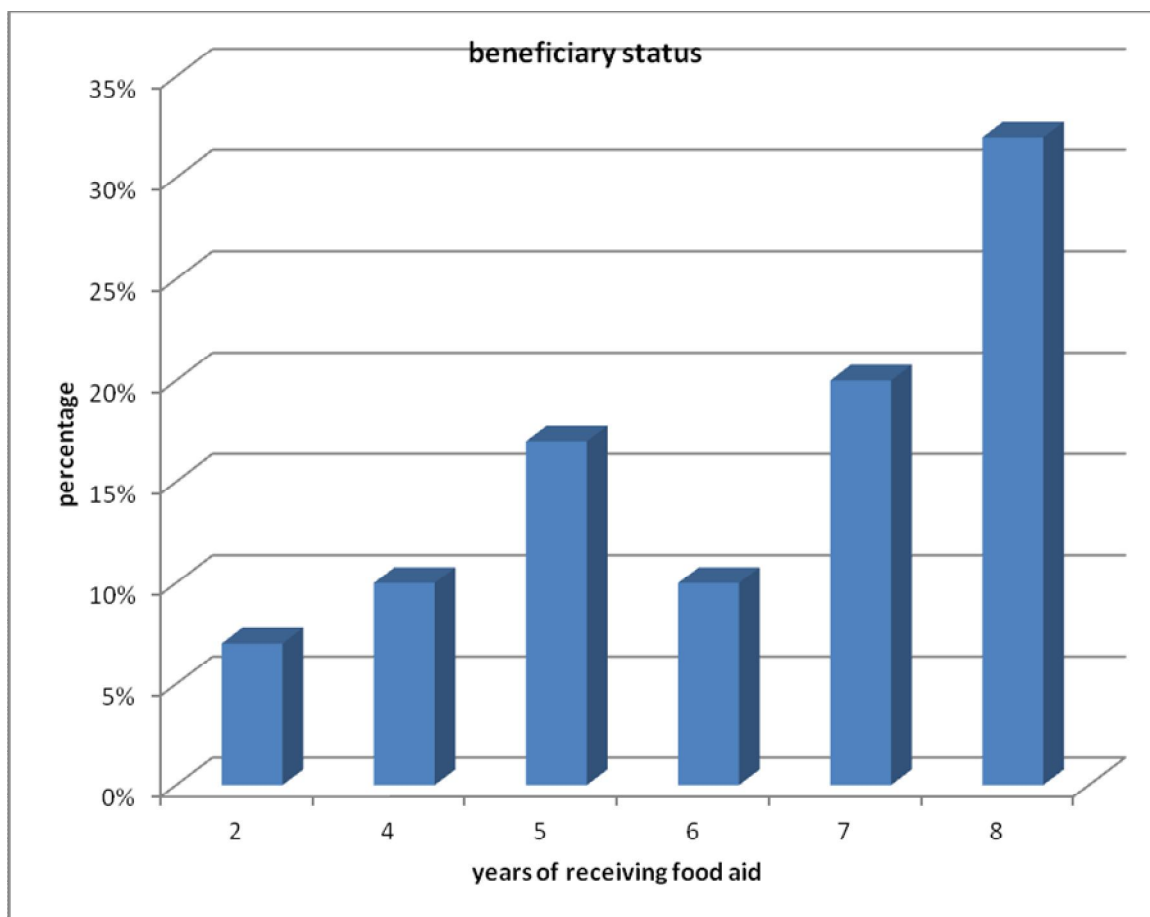
*Table 8: household sources of income*

Income source	Standard deviation	Mean
Crop	75	\$47.8
Livestock	64	\$37
Off-farm	56	\$25

#### **4.2.1.9 Beneficiary status**

All the selected respondents were beneficiaries of food aid with 2 to 10 years of receiving aid. 7% of the sampled households have received aid for a minimum of 2 years and 32.3 % have benefited for 10 years. If negative dependency has prevailed among Buhera villagers those who have benefited for a long period are most likely to be affected. Concern centres on whether these people would really put their efforts on developing livelihood strategies. These would nurture food security and self-reliance when they are almost sure that whenever there is a programme they would benefit. There has been an improvement in school attendance among children of the beneficiary households that is 80% which was equivalent to national attendance (ZimVac 2011).





*Figure 1: Food-aid beneficiary status*

#### **4.2.2 Frequency of coping strategies**

The coping strategies that are frequently practised are dietary change and rationing of food quantities for household consumption from three to seven days a week. These two practices are very common in interviewed households as indicated in Table 8 below. However, increase in food availability is dependent on food availability and access. This also varied with the season, wild fruits and availability of planted crops. The adoption of these coping mechanisms shows that the beneficiary households cannot survive from their own farm production. Their yields are disrupted by changes in seasonal patterns and at times when they achieve better yields they sell the produce to cater for school fees and other costs incurred in a household. Thus food aid contributes to the smallholder farmers' food security.

*Table 9: frequency of coping strategies.*

Coping strategy	Never	Rarely(1-2 days a week)	At times(3-4days a week)	Often (5-7 days a week)	Total
Dietary change	16.7	10	50	23.3	100
Increase in food availability	13.3	23.3	46.7	16.7	100
Rationing	10	20	53	16	100

#### **4.3 To determine whether there is any significant difference in socio-economic characteristics of the beneficiaries of food aid in Buhera district.**

To see if there is any significant difference between food security status and the variables that affect it households were divided into two categories that is food secure and food insecure. The results show that the average area planted, average number of years under food aid program is statistically significant at 1%. Indices of coping strategies are also a significant factor that determines the household food security. These are of greater importance since they are the basis for differentiating food security and food insecurity. The beneficiaries who have more years in the program are food secure and the area they put under crop production is larger compared to those who are insecure. This might be because those who are secure are able to buy inputs for production that in an incident of good rains they will have a better harvest. More so they have a bigger number of cattle that they can use it as draught power and may be exchanged or sold to cater other household needs. Off-farm activities also affect household food security, it also significant at 5%. Despite the food aid given to the beneficiaries, it shows that many households are still food insecure. In conclusion there is significant difference in the socio-economic characteristics of the beneficiaries of food aid.

*Table 10: Mean comparison of the socio-economic factors of the beneficiaries of food aid*

Variable	Food security status		T-value
	Food secure (8)	Food insecure (22)	
Average indices of coping strategies(weighted sum)	5	10	-16.7*
Average years under home based care	9	5	-4.3*
Average Area planted	8	5	-4.4*
Average number of cattle	6	2	-2.42**
Average off- farm income	50	16	-2.42**

\*Significant at -1% , \*\* Significant at - 5% ,\*\*\* significant at- 10%

Finding the factors that contribute to food insecurity goes beyond the descriptive analysis and needs use of econometrics analysis as it was mentioned in the previous chapter. It was briefly described, now it is presented in details with analysis and interpretation of the data.

#### **4.4 To determine the contribution of food aid to the total household food security of the beneficiaries of food aid in Buhera district.**

The result showed us that sex has a negative and insignificant influence on household food security. This means that female headed families have probability of being food secure. So it can be conclude that sex of the household influence food security of the household as it gives males heads advantages to engage in income generating activities than women. More so, the age of these heads could influence their coping strategies the possible reason could be that as the age of the person increase they transfer their land to others and they could not participate in other income generating activities.

*Table 11: Ordinary least squares estimation result*

Variable	Coefficient	t-statistic	Significance
Sex	-.17	-0.44	0.66
Area	0.02	0.43	0.67
Household size	0.08	0.69	0.49
Off farm income	0.20	0.56	0.58
Food aid	.022	2.12	0.04**
Cattle	0.09	1.73	0.08***
n (sample size)	30		
R-squared	0.86		
F value	0.00		

\*Significant at 1%, \*\* significant at - 5%, \*\*\* significant at- 10%

Among the explanatory variables, household size decreases the household food security problem and it is statistically insignificant. This implies that there is an inverse relationship between family size and household food security. A negative coefficient shows that an addition of one member to the household decrease its food security by 0.08. These results are concurred with the results of Bashir et al., 2012, who found that an increase of one member in the household decreases the chances of being food secure by 31%.

Area planted influence food availability in terms of food production and crop diversification. It is positively related to household food security that is a 0.02 increase in are planted will as well improve the food security status of the household. On the other hand cattle have a significant effect on household food security at 10%, and the coefficient is positive that is an increase in the number of cattle adds to the household food security. This is because people can sell it to ensure that their families are secure. More so farm productivity is mainly determined by cattle as it used as draft power. In short, cattle are regarded as a symbol of wealth in rural areas.

Off-farm activities have a positive relationship with household food security that is the more the household engage in off- farm activities the more it tackle food insecurity problem. Off farm activities are the most coping mechanisms that provide an additional income to rural household. It enhances household food security by giving additional income when there is short falls in agricultural production and it also avoid asset selling to acquire food. From the results, farm income was not statistically significant but it has a positive relationship with food security.

Home based care was received through a food-aid basket given to the beneficiary for a certain period. From the ordinary least squares regression model, the variable's coefficient is 0.22. This signifies that for a unit rise in food-aid delivery will increase the level of household food security status by 22%. Finally the number of meals taken by a household reflects its food security status. If meals are taken adlibly this will deteriorate the household food security since their stock will not last. However, it is a statistically significant variable that is closely related to household indices of coping strategies.

#### **4.5 Conclusion**

The chapter provided the presentation and analysis of data from the primary source. Results shows that food aid, meals taken per day and number of cattle owned have a significant effect on household food security. Off-farm income and area planted had a positive coefficient but were not significant variables that contribute to household food security.

## **CHAPTER 5: CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter gives a summary of the research on the contribution of food-aid on food security. The study was aimed at assessing the contribution of food-aid in improving household food self-sufficiency of the smallholder farmers. The chapter will also provide recommendations.

### **5.2 Conclusion**

#### **5.2.1 To determine the typology of the beneficiaries of food aid in Buhera district.**

Focusing on the demographic characteristics the following results were obtained. There was an equal representation of the sex of respondents that is 50% male and 50% female. The total number of single headed households constituted the greatest percentage thereby giving them an advantage participating in food-aid programs. Most of the respondents attained ordinary level but they were illiterate, this affects their production and planning. Majority of the respondents were unemployed taking care of 2-9 people in a household this was a very limiting factor in securing their food requirements. The sampled households were engaged in farm and off-farm activities, with crop production being their main activity. Thus larger area was allocated for maize as it is the staple crop. The beneficiaries also keep livestock, most households keep chicken and cattle are their source of draft power and income.

#### **5.2.2 To determine whether there are any significant difference in socio-economic characteristics of the beneficiaries of food aid in Buhera district.**

To see the significant difference between socio-economic characteristics of the beneficiaries of food-aid in Buhera district was the second objective. These were also assumed to be the causes of food insecurity among beneficiaries; hence their significance will as well improve food security status. Food security status is determined by various factors, that is meals taken

per day, area planted, livestock and asset holding, years of benefiting. Some of the beneficiaries are leaving their land idle for different reasons including dependency on food programs thus it does not have a strong association with food security. In this study all these factors were positively related to food security at household level.

### **5.2.3 To determine the contribution of food aid to the total household food security of the beneficiaries of food aid in Buhera district.**

The results from the descriptive analysis were consistent with the results from the model. Food security was indicated by indices of household coping strategy with sex, household size, farm implements, area planted, meals taken per day and food-aid as explanatory variables. Three variables were significant and could have an impact on the beneficiary that is it when it is increased or decreased it will change the security status of the household.

The data analysis revealed that most of the beneficiaries are food insecure despite their participation in food aid programs. Through the use of coping strategies, 73% of the beneficiaries are food insecure this might be a result of negative dependence. These households have changed their diet, ration their meals so that they may increase their short term availability of food. Food-aid is not a prime cause of food insecurity among beneficiary group in Buhera district, thus other factors like climate change, lack of inputs and economic instability are responsible. In short food only accounts for 22% of the total household food security, thus farm and off-farm activities, market access contribute household food security.

## **5.3 Recommendations**

### **5.3.1 To determine the typology of the beneficiaries of food aid in Buhera district.**

#### **To non-governmental organisations**

- i. Improvement of the rural community farmer's education raises chances of off-farm employment.

- ii. Larger household sizes and single headed households have a higher probability of being food insecure thus technical assistance should be provided

**5.3.2 To determine whether there are any significant difference in socio-economic characteristics of the beneficiaries of food aid in Buhera district.**

**To the community**

- i. The old age and vulnerable children should be assisted through social safety nets in their communities. In the absence of these social safety nets they would starve since they cannot work.
- ii. The food insecure group must have the first priority in development projects so as to boost their security status.

**5.3.3 To determine the contribution of food aid to the total household food security of the beneficiaries of food aid in Buhera district.**

**To the government**

- i. The government should increase the number of extension workers working in Buhera so that farmers will be able to access them when in need to improve their yields.
- ii. There is need to train farmers thus providing them with production, marketing and technological information.
- iii. Development of small-scale irrigation is an essential since rural households follow subsistence agricultural activity that solely depend on rain thus this will help their crops resist dry spells. In other words there is need to improve irrigation budget in Buhera district since there are frequent dry spells.
- iv. There is need to promote extensive farming practices (terracing, mulching, seed banking, reforestation,) and all these activities require funds so both the government and the NGOs should supply them rather than food.
- v. There is need for intensive research on agricultural production, off-farm job opportunities among smallholder farmers as they contribute to household food security status.



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## APPENDICES

### **Appendix 1: Household Questionnaire: An investigation on the impact of food aid on livelihoods of smallholder farmers in Buhera District, Zimbabwe**

Good morning/ afternoon. My name is Tinarwo Christina; I am currently studying for a BSc degree in Agricultural Economics with Midlands State University, Department of Agricultural Economics and Development. As part of my degree program I am currently carrying out research on the impact of food aid on the livelihoods of smallholder farmers. Farmers have been randomly selected to represent other farmers. This information will only be used for purposes of this study, and I will make no reference to any farm or farmer. I would be most grateful if you could participate in this survey.

DATE OF INTERVIEW.....

NAME OF ENUMERATOR .....

QUESTIONNAIRE CODE.....

**SECTION A: Demographics and socioeconomic information** (*Circle the appropriate response*)

1. Sex of Household head      1=Male                      2=Female
2. Age of the household head (in years) \_\_\_\_\_
3. Marital status of the household head  
1=single      2=married              3=separated              4=divorced              5=widowed
4. Level of education of the household head \_\_\_\_\_
5. Occupation of the household head \_\_\_\_\_
6. Household size \_\_\_\_\_
7. Number of children at school
  - a) Primary school .....Grade.....
  - b) Secondary school.....Form.....
8. Are there any children who have dropped out of school? 1=Yes      2=No
9. If yes to question 8, state the number and give reasons \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**SECTION B: (*Circle the appropriate response*)**

**Crop production**

1. Do you practice dry-land farming? 1=Yes              2=No
2. If, yes to question 1, state the land size (in ha) \_\_\_\_\_
3. How many hectares were under food crop in the last season?  
\_\_\_\_\_
4. Farming experience (in years) \_\_\_\_\_



For the 2011/2012 agricultural season indicate the crops grown and yield in the following table.

Type of crop	Area planted (ha)	Total yield in (kg) per ha	Quantity sold (kg)
Maize			
Beans			
Groundnuts			

6. How much income did you obtain from selling your farm produce in the 2011/2012 agricultural season (US\$) \_\_\_\_\_

7. How many times do you see your extension worker per month? \_\_\_\_\_

### Livestock Holding

1. Do you own the following livestock?

Type of livestock	Number of livestock
Oxen	
Cow	
Heifer and bull	
Sheep	
Goat	
Donkey	
Chickens	

2. Do you use cattle to plough? 1= Yes 2= No

3. If yes to question 2, what is the source of the cattle? 1= Hired 2= Own 3= Borrowed

4. How much did you realise from livestock sales in the 2011/2012 season? \_\_\_\_\_

### Farm implements

1. Do you own the following farm implements?

Type of implements	Number of implements
Hoe	
Ox-drawn plough	
Ox-Cart	
Wheelbarrow	
Sprayer	
Sickle	
Shovel	

**Livelihoods**

1. Do you have sources of income apart from farming? 1= Yes    2=No
2. If yes to question 1, state the source \_\_\_\_\_
3. How much off- farm income do you earn per month? \_\_\_\_\_
4. How many meals do you eat per day? \_\_\_\_\_
5. Are they the number of meals you would like to have? 1= Yes    2= No
6. Has your household consumed less preferred food in the last 7 days? 1= never    2= rarely  
3= at times    4= often
7. Have you reduced the quantity of food served to the household in the last 7 days?  
1= never    2= rarely    3= at times    4= often
8. Have your household skipped meals in the last 7 days? 1= never    2= rarely    3= at times  
4= often

**Food Aid**

1. Has your household benefited from any food support programme(s) in the past decade?  
1=yes            2=no
2. If yes to question 1, do you know why you were chosen? State the reason(s)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. If yes to question 1, fill in the following table.

Project intervention	Period of receiving benefits	Commodities received
IDP feeding		
School feeding		
Home Based Care Vulnerable Group Feeding		
OTHER		

3. Who in your household decides how the ration gets eaten? \_\_\_\_\_
4. Is the ration consumed by the whole household? 1=Yes            2=No
5. Do you ever sell/exchange food aid on the market for something you need more than food aid?

1= yes            2=no

6. Is there any improvement in school attendance by most children from food aid receiving household?      1= yes            2 = no

7. Are there any local markets that sell food?    1= yes            2=no

8. State the distance (in km) from the nearest market \_\_\_\_\_

**Thank you**

## Appendix 2: model specification tests

### Ovtest

Ramsey Reset test using the power of fitted values of fdin

Ho : model has no omitted variables

$$F(3, 20) = 1.11$$

$$\text{Prob} > F = 0.3675$$

### Test for Heteroskedasticity

Cook-Weisberg test for heteroskedasticity

Ho : constant variance

Variables : fitted values of coping strategies

$$\text{Chi}^2(1) = 0.71$$

$$\text{Prob} > \text{chi}^2 = 0.3984$$

### Test for multicollinearity

Auxiliary model $R^2$	Original model $R^2$
0.5567	0.8600