

BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE

DEPARTMENT OF GEOGRAPHY

**AN INVESTIGATION INTO THE IMPACT OF PRODUCTIVE ASSET CREATION
(PAC) PROJECT IN ENSURING FOOD SECURITY FOR SUBSISTENCE FARMERS
IN RUSHINGA DISTRICT WARD 21**



By

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APPROVAL FORM

The undersigned supervisor certify that he have read this project and have approved its submission for marking after confirming that it confirms to the Faculty of Science, Geography department and HBSCDG requirements.

Supervisor

Dr. J. Mapuva Date/ April 2015

DECLARATION

I **Gatsi Earnmore B1129552** declare that this project herein is my own work and has not been copied or adopted from any source without acknowledgement.

Signed

DateApril 2015

DEDICATION FORM

This project is dedicated to my parents Mr and Mrs Kazai, I thank you.

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ABSTRACT

The purpose of the study was to investigate the impact of PAC (Productive Asset Creation) Project in ensuring food security for subsistence farmers in ward 21 of Rushinga District in Zimbabwe's Mashonaland Central Province. The research used both quantitative, qualitative and the case study approach. Research instruments used in this study include in-depth interview guides, focused group discussions, questionnaires and observations. In ward 21, PAC Project implemented projects such as rehabilitation of a dip tank, construction of weir dams and nutrition gardens. The study found out that many people are benefiting from PAC Project as evidenced by improved cattle production since cattle death and diseases were reduced through dipping. Maize yield also improved through irrigation. It has also been found that people got fish from weir dams as well using the water for various other domestic chores. The study revealed that not all people benefited from the inception of the Project mainly due to it being poorly resourced especially in terms of irrigation equipment. This Project has highlighted the need for NGOs and Government to join hands in the provision of enough irrigation equipment, strict weir dam management practices, maintenance and practice of proper management of a dip tank and nutrition gardens.

LIST OF ACRONYMS

ADP	Area Development Programme
AGRITEX	Agricultural Technical Extension Services
AIDS	Acquired Immune Deficiency Syndrome
BUSE	Bindura University of Science Education
CLPP	Community Level Participatory Planning Process
DA	District Administrator
DFs	Development Facilitators
FAO	Food and Agriculture Organisation
FGD	Focused Group Discussion
FFA	Food For Asset
GMB	Grain Marketing Board
HIV	Human Immune Virus
MDGs	Millennium Development Goals
RD	Rushinga District
NGOs	Non- Governmental Organisations
PAC	Productive Asset Creation
PWP	Public Works Programme
SDGs	Sustainable Development Goals
UMP	Uzumba Maramba Pfungwe

WFP	World Food Programme
WHO	World Health Organisation
WVI	World Vision International
WVZ	World Vision Zimbabwe
Zim-Asset	Zimbabwe Agenda for Sustainable Socio-Economic Transformation
ZimVAC	Zimbabwe Vulnerability Assessment Committee

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CHAPTER ONE

1.1 INTRODUCTION

Rushinga District has had incessant rains for years with consequential food shortages for the local populace. A myriad of interventions have been tried to alleviate the situation including non-governmental projects. This study investigated the impact of Productive Asset Creation (PAC), a Project founded by World Vision Zimbabwe (WVZ) under the World Food Programme (WFP) in ensuring food security for Rushinga District (RD) using ward 21 (Nyanhewe) as a case. Productive Asset Creation Project is also known as Food For Asset (FFA) initiative.

1.2 BACKGROUND OF THE STUDY

Food insecurity tends to impede human development in most countries. Worldwide around 852 million people are chronically starving due to tremendous shrink of agricultural yield as a result of climate change (Food and Agriculture Organisation (FAO), 2009). This indicates a global structural problem intimidating the achievement of the Millennium Development Goals (MDGs), (now called Sustainable Development Goals) (SDGs) to halve hunger by 2015 World Health Organisation (WHO) (2013). In this respect, NGOs have come to play key roles in the agricultural sector of improving food security since more than 75% of the people in developing countries directly depend on farming for their survival (World Bank, 2008). Therefore, agriculture remains the hub of most countries.

Output has declined ensuing in the current situation where the country has been abridged from being the bread basket of Southern Africa into a bread basin (Chenga, 2010). Zimbabwe used to be an exporter of cereals such as maize, wheat, sorghum and millet to neighbouring countries but the tide has turned, instead it is now relying on importing. ZimVAC (2012) noted that bearing in mind the high prevalence of food insecurity at the start of 2012/2013 consumption year, it is suggested that food assistance in the form of

ongoing safety net programmes be expanded immediately. This means that Zimbabwe will remain a beggar not a giver or well wisher.

In the past years, enough maize was produced and Zimbabwe was able to meet its domestic demand and also export a large quantity, but in the early 21st century with the decline in agricultural productivity, the country was incapable to meet domestic needs (Musemwa, 2011).

Furthermore, among the shocks that affected rural livelihoods in Zimbabwe in the 2011/12 consumption year, drought was acknowledged as the major one and its crash was a major implication on human health (ZimVAC, 2012). Zimbabwe's food insecurity was determined by countless problems ranging from lack of enough skills of farmers and funding of agricultural equipments (ZimVAC, 2012). Chenga (2010) noted that the leading factors of food insecurity in Zimbabwe comprised of socio-economic, political and climatic challenges.

Provincially, the main economic activity in Mashonaland Central Province was the growing of crops and rearing of livestock (Musemwa, 2011). From the ancient times, this province was among those regarded as having the highest percentage of food security due to favourable climatic conditions (Musemwa, 2011). However, currently most areas are prone to food insecurity due to a general decrease of yields as a result of climate change which has led to reduced and unreliable rainfall patterns.

In addition, the amount of food insecure households of Rushinga District in 2012 was 26, 7% (ZimVAC, 2012). Although, most people in Rushinga District engaged in subsistence farming for the fulfillment of their basic needs, they are realizing low yields. The dismal food insecurity of the district, led WVZ to implement PAC Project to intervene in some wards including ward 21. The project is aimed to empower vulnerable communities to move away from dependency on food assistance and create assets that can increase their ability to handle future shocks such as drought in the long term (World Vision International (WVI), 2009). In the selected ward, the Project implement projects such as construction of weir dams, rehabilitation of a dip tank and construction of nutrition gardens.

In this dilemma faced by the Rushinga District, WVZ has come at a time when their services were most needed. It is also at a time when the capacity of the state to provide food aid to communities is limited, hence the intervention of PAC Project whose activities in this regard form the basis of this research.

1.3 THE SCOPE OF RESEARCH

Rushinga District (RD) has numerous wards but this study explores the work of WVZ in ward 21. RD is located to the northern side of Harare and shares an international border with Mozambique to the north, a district boundary with Mount Darwin to the west, Mudzi District to the south east and Uzumba Maramba Pfungwe to the north. Rushinga district is in region 4 with erratic rainfall being dominant and this fuelled very low yield that led to the outbreak of food insecurity (ZimVAC, 2012).

For the past decade, farmers managed to yield crops that sustained their living and marketed little surplus. However, the current situation is such that the same farmers yield has reduced so that they yield little for their survival and not enough surplus to be marketed. Therefore, food insecurity has increasingly and remained a major challenge for the local communities.

1.4 JUSTIFICATION OF THE STUDY

This study is of paramount importance to various groups, institutions and individuals. At a global level, the research contributes towards the achievement of SDG number one of eradicating extreme poverty and hunger.

The finding of this study is useful to the AGRITEX department for the study provide recommendations and measures to enhance production of the farmers in ward 21 of Rushinga District. In this regard, the Ministry of Agriculture may also adopt the roles of WVZ in improving agricultural production in Zimbabwe, hence alleviating poverty and ensuring food security. This probably upgrades the quality of life for the rural people. The findings of the study ensure correcting and filling the gaps that have been left by other researchers of increasing crop yield and managing cattle production of the farmers. The research also provides information regarding the opinions and attitudes of grass root

farmers towards their challenges, hence can be used by the Government in agricultural planning. Apart from supplying information for improving productivity of the farmers, this study contributes to literature on technical, allocative and economic efficiencies that are rare for farm businesses of the farmers.

Furthermore, the research is important to other relief officials working for NGOs in successfully implementing better farming practice and employs the various strategies that this research would have unearthed to redress. Individuals can also get an insight into the challenges of food insecurity. The farmers can also benefit since solutions to their problems would be highlighted and can find better ways to remedy their solutions.

1.5 STATEMENT OF THE PROBLEM

The ward has experienced extreme food insecurity and the challenges are still persisting as the Rushinga District's population continues to grow geometrically (Musemwa, 2011). The persistence of food insecurity in ward 21 was mainly due to rejection of NGOs from the previous years. The ward experiences frequent droughts which result in the poor crop harvest and poor livestock rearing. This led to many people engage into illegal forms of living such as prostitution as well as robbery, increase of hard working jobs such as brick making and the dropping of school going children especially in secondary schools. Early marriages were a result of those school drop outs.

In addition to the poor rainfalls, food affordability remains problematic due to slow rural economic recovery, poor economic growth and high unemployment rates. The majority of rural households do not have access to cash for them to buy food in the market. This has largely resulted in the asymmetric barter trade where the food insecure households sell their assets mainly to have access to food leading to the depletion of assets. Also, the food prices are higher in this ward due to long distance and poor road network to reach the main supply markets (Rushinga Business Centre).

The efforts by Government and the farmers themselves are very little to control the perennial decline of crop and livestock rearing confronting villagers in ward 21. It is therefore against this background that the researcher has decided to carry out a detailed

investigation into the impact of PAC Project in ensuring food security for subsistence farmers in ward 21 of Rushinga District so that measures of food insecurity are raised.

1.6 AIM OF THE STUDY

The aim of this study was to investigate the impact of PAC Project in ensuring food security for subsistence farmers in ward 21 of Rushinga District.

1.6.1 Specific objectives

From the aim above, the project is guided by the specific objectives below:

- To identify the roles of PAC Project in achieving food security for subsistence farmers in ward 21 of Rushinga District.
- To establish the achievements made by PAC Project in ensuring food security for subsistence farmers in ward 21 of Rushinga District.
- To evaluate the activities of PAC Project's intervention as a tool for ensuring food security for subsistence farmers in ward 21 of Rushinga District.

1.6.2 Research questions

- What are the roles of PAC Project in achieving food security for subsistence farmers in ward 21 of Rushinga District?
- What are the achievements made by PAC Project in ensuring food security for subsistence farmers in ward 21 of Rushinga District?
- How effective are the activities of PAC Project's intervention in achieving food security for subsistence farmers in ward 21 of Rushinga District?

1.7 DEFINITION OF TERMS

Several key terms used in this study are defined below:

1.7.1 Non-Governmental Organizations (NGOs) is any non-profit, voluntary citizen group which is organized on a local, national or international level (Desai and Potter,

2008). (Chazovachii *et al.*, 2012), defined NGOs as non-profit making, non-violent organized group of people who are not seeking Governmental office. Therefore, in this study NGOs are independent organizations that do not seek to challenge Governments either as a political party or by a narrow focus on human rights, non-profit making and non-criminal.

1.7.2 Food security exists when all people at all times have physical and economic access to sufficient, safe, nutritious food to maintain a healthy and active life (FAO, 2009). Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (Rosin *et al.*, 2012). Hence, in this study food security exists when all people meet enough food at all times.

1.7.3 Food insecurity is a situation that exists when people lack access to sufficient amounts of safe and nutritious food for normal growth, development, an active and healthy life (Gukurume, 2012). Food insecurity exists when people do not have adequate physical, social or economic access to food (Chenga, 2010). However, in this study food insecurity exists when people lack access to meet enough food at all times.

1.7.4 Subsistence farming is a type of farming in which most of the produce is consumed by the farmer and his family, leaving little or nothing to be marketed (FAO, 2009). Subsistence farming is an advanced form of primitive agriculture that is considered as a way of life based on the principle of “grow it and eat it” instead of growing crops on a commercial basis (Desai and Potter, 2008). Hence, in this study the term will be regarded as raising the crops only for family needs.

1.8 ORGANISATION OF THE STUDY

The work is divided into five chapters. In chapter one there is an introduction to the study. It identified the research problem and spelt the aims and objectives of the study. The research problem of experiencing extreme food insecurity of ward 21 forms the main emphasis of the research. Chapter two deals with literature review which provides a link between this study and what other researchers have found out in relation to food insecurity faced by subsistence farmers with particular reference to the situation in the

selected ward. Chapter three looked at the research methodology. Particularly, this chapter is concerned with research design, data collection procedures, research instruments, data presentation and analysis, delimitation and limitations of the study. Results and findings are presented and discussed in chapter four. The chapter also provides answers to the questions raised and accomplish the objectives of this study. In chapter five there is a summary, conclusion and recommendations of the research findings.

1.9 SUMMARY

This chapter looked at introducing the research where the background factors that lead to this research were explained. This chapter outlines the background of the study, statement of the problem, justification, aim of the study, specific objectives, research questions, research methodology, definition of terms, preliminary literature review, the scope of research and the summary to the chapter.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

In this chapter, several strategies of PAC Project in achieving food security around the globe were discussed. It further provides a link between this study and what other researchers have found out in relation to food insecurity faced by subsistence farmers with particular reference to the situation in the selected ward. The chapter also looks at the concept of subsistence farming, its importance and its challenges.

2.2 FOOD SECURITY AND INSECURITY: GLOBAL PERSPECTIVE

World Food Programme (WFP) provides food assistance internationally. In January 2013, WFP commenced a new five year country programme through actively supporting the Government of Nepal in tackling food insecurity, focusing on social safety nets in the areas of nutrition, education and rural livelihoods support (Rosin *et al.*, 2012). The interventions give attention on the most disadvantaged populations in the mid and far western hills and mountain regions where the most food insecure people live. On Productive Asset and Livelihoods Support, WFP implements projects which include nutrition gardening scheme to offer employment opportunities to create protective and productive assets and restore, rebuild livelihoods with the aim of improving food security (Alderman and Hoddinott (2007).

About 410,000 vulnerable people directly benefit from WFP's livelihoods support projects at a cost of US\$25 million yearly (World Bank, 2008). In the design and implementation of individual projects, WFP builds on its vast experience as the organization has carried out related projects since 1996. PAC Project under control of WFP generated significant non-economic benefits. Social cohesion and pride in people was enhanced as communities worked together to rebuild assets such as schools in post-conflict situations (Alderman and Hoddinott, 2007). School facilities also potentially increased overall access to education. The proven track record by WFP's of successfully handing over projects to the Government of Nepal will serve as a blue print for future

activities. Already during the project design phase WFP considers how the project can later be transferred to communities and to the Government, thus making project sustainable (World Bank, 2008).

Abele *et al.*, (2002) noted that, around 900 million adults in Less Economically Developed Countries are incapable to earn enough to maintain their families above US\$2 a day per person poverty line; 200 million people are unemployed globally, among them 75 million young people, hundreds of millions work long hours under inhumane conditions and with no job security in the informal economy. Poverty remains either a stark reality or a real threat for the majority of workers in the developing world, despite the rapid economic growth that has characterized many regions over the past decade (Rosin *et al.*, 2012). Between 2002 and 2010, PAC Project or FFA (Food For Asset) met the short-term minimum food requirements of between 47,000 and 218,000 food-insecure households for four months a year in Nepal (World Bank, 2008). This was a very significant contribution, particularly for the poorest households, which face food shortages, which have no land and rely on daily labour (Abele *et al.*, 2002). However, PAC Project was often found to have been opportunistic in response to short-term needs and resource availability rather than on a well-planned, long-term asset creation and maintenance strategy. This was especially the case during most of the evaluation reference period, when conflict and its aftermath made meeting the immediate food needs of beneficiaries the prime focus and local Government planning systems were not operating effectively (Rosin *et al.*, 2012).

According to Fanelli and Dumba (2006), people at all levels know how to handle natural resources for long term benefit and new investments in infrastructure link once distant areas more closely to their regional and national contexts. It is from this context that PAC Projects have been sought as new ways of maintaining the world in reducing rural poverty. Four strategic objectives to address these issues such as reducing rural poverty, stimulating agricultural growth, providing food security and supporting natural resource management have developed by World Bank's East Asia and Pacific Region (World Bank, 2007). In the case of PAC Project, it appears that the project had the greatest positive impact on those most in need of assistance in Bangladesh (World Bank, 2007).

More women with no schooling were working in nutrition garden. In general, it seems that the project had the positive impact on women with little or no schooling and women in the second and third asset and landholding terciles as they sell irrigated vegetables and earn income for purchasing their needs (World Bank, 2007). However, the project has a negative impact on women's autonomy in decision making, their control over the money needed to buy personal items and food, their mobility in the community, and the incidence of emotional abuse in their households (Gukurume, 2012).

Coady *et al.*, (2004) expanded the analysis that management of risk and vulnerability to food insecurity were central as people and households try to achieve secure and sustainable livelihoods. World Bank (2008) stated that nearly 40% of the total population lives in dire poverty due to smallholder agriculture characterized by complete reliance on rain fed farming, which is vulnerable to shocks emerging from unfavourable weather situation and low land holding sizes. Zvikomborero and Chigora (2010) argued that rural community development is difficult if people fail to have food security hence people need to have access to productive land and receive favourable prices for their crops that allow them sufficient livelihoods. According to FAO (2009), the problems facing rural livelihoods in accessing sustainable livelihoods and food security especially in Southern Africa emphasize the growing livelihoods crisis within the developing world mainly amongst the rural populace.

The number of people that are facing food insecurity globally is overpowering. In 2009, over 33, 4 million people globally were living below the poverty datum line (Narayan and Petesch, 2002). The rural areas, where agriculture is the mainstay of all people, the industry supports some 70 to 80% of the sum population including 70% of the continent's extreme poor and undernourished. In this respect, agricultural sector was pointed to play a major role since more than 70% of the population in developing nations live in rural areas and directly depend on farming (Coady *et al.*, 2004). WVZ (2012) recognizes that food security is an outcome of livelihoods, in other words capabilities, assets and activities needed to sustain a way of living including means to obtain food.

2.3 FOOD SECURITY AND INSECURITY: AFRICAN PERSPECTIVES

Fanelli and Dumba, (2006) propounded that “the rural populace suffers from acute low productivity, social and economic retrogression due mainly to ignorance which is also a direct consequence of either inadequate or total lack of information provision to them”. Despite the point that the nation is endowed with human and natural resources, our rural areas are suffering due to incidence of poverty and illiteracy. Riddell, (1990) viewed that for the rural populace to be able to implement their sovereignty and assume responsibility for development, they must have essential resources, adequate revenue allocation from Federal and State sources and internal capacity to generate their own revenue locally as well as access to relevant and desirable information for development.

World Bank, (2008) argued that in Ghana’s experience with the developments of its community, community participation and initiative was a pivotal role to the development process. This is because communities are also responsible for planning, operating and monitoring their own programmes. In Malawi, PAC Project implements many projects in infrastructure (road and bridge construction, building and construction and pit latrines), agro-forestry (forestation; terracing and establishment of fruit tree seedling nurseries), flood protection activities (levee construction) and food production (compost manure making, communal gardens, small-scale irrigation, fish ponds construction/rehabilitation) (World Bank, 2008). About 500,000 people benefited from the Project and the activities help people to preserve and establish community assets such as irrigation schemes, fish ponds and pit latrines. Communities and individuals who participate in PAC Projects are able to increase their own food production and maximize food utilization through soil and water conservation and fertility practices, communal/kitchen gardens, crop diversification and food processing (WVZ, 2012). Since the suspension of the Project in May 2013 due to funding shortfalls the production of food has decreased although communities continue to maintain the created assets (World Bank, 2008).

Narayan and Petesch (2002), noted that rural areas in Nigeria are generally characterized by poor living circumstances – absolute poverty and lack of almost all amenities of life. Narayan and Petesch (2002) again propounded that literacy in Nigeria is about 35-40%,

but is much lower among women and in rural communities. Success and progress in developing countries lies with the development of their rural communities. Any nation that neglects the development and empowerment of the rural communities should not expect meaningful development (World Bank, 2008). Musemwa, (2011) stated that the third world countries have recently come to realize that unless the rural areas are well developed, hardly would any meaningful development occur in these countries. Development can only be effective if rural people have access to relevant needs and access to development.

2.4 CLIMATE CHANGE AND FOOD INSECURITY: LOCAL PERSPECTIVE

Due to climate change, food security has been under threat in different parts of Zimbabwe. The state has limited resources to curb or reduce food insecurity and to enhance food security, thereby living NGOs as the main players in alleviating poverty in rural people specifically in Rushinga ward 21. Sahley, (1997) posits that Zimbabwe is currently experiencing challenges of poverty and food insecurity such that most exposed groups require assistance of both state and non state actors to deal with their challenges.

Zimbabwe launched a food distribution programme as far as 1982 to lessen the impact of persistent drought on disadvantaged groups (WVZ, 2012). From the past years the food distribution programme has undergone several transformations – from Free Food Distribution Programme to Food for Work programme in 1985 to the Grain Loan Scheme and to Public Works Programme in 2000 (World Bank, 2008). At least one agricultural input support programme supported all the transformation that included crop and fertilizer packs, tillage or other packages. The Public Works Programme is one of the useful components of Zimbabwe's Enhanced Social Protection Strategy formulated in 2000 (Zvikomborero and Chigova, 2010).

A proposal of food insecurity has been submitted by World Vision to WFP and has been awarded five districts to implement the Seasonal Targeted Assistance which is in response to the ZimVAC assessment (ZimVAC, 2012). WVZ (2012) noted that World Vision is implementing the PAC Project in different districts of Zimbabwe. The districts were chosen by analyzing historical trends over the last five years that showed that these

districts are recurrently food insecure and some of these are Rushinga, Mutasa, Zaka, Chipinge, Mt Darwin as well as Uzumba Maramba Pfungwe (UMP) (ZimVAC, 2012). Due to a sense of ownership through a Community Level Participatory Planning Process (CLPP) that enables community members to actively identify projects and take responsibility in creating or repairing, maintaining and utilizing projects, PAC Project tend to promote the lives of people. From 2001 to 2002, PAC Project under support of WFP and United Methodist Committee on Relief played a crucial role in achieving food security of Uzumba Maramba Pfungwe through rehabilitation of nutrition gardening (WVI, 2009). About 35 women and 25 men with each owning 26 vegetable beds where they grow different vegetables benefited more from Nyazhou nutrition garden project (WVI, 2009). Through selling of vegetables to the surrounding community, the beneficiaries earn money of purchasing basic needs and enable them to pay school fees for their children.

Some of the projects overlap and are implemented in the same district concurrently. Some rural districts in Zimbabwe are food insecure mainly due to shortage of rainfall. The rains came too late and went too early leaving crops moisture stressed. Rehabilitation of Nyazhou dam by the project led to the sustainability of Nyazhou nutrition garden at a cost of \$200 000 that conduct all year irrigation activities in the area (WVI, 2009).

The PAC Project brings in an element of community ownership of the developmental projects which is essential to its success and sustainability as communities often run with what they are committed to (WVI, 2009). Rehabilitation of dip tanks in UMP led to villages such as Nyakasoro to improve in cattle management and led to beneficiaries of community gardeners to purchase goats. About 1456 people benefited from rehabilitation of the dip tanks and cattle sales pen in UMP (ZimVAC, 2012).

In 2010 and 2011, about 20,000 households in Manicaland, Mashonaland Central, Masvingo and southwestern parts of the nation improve their livelihoods through improved food security (ZimVAC, 2012). This is because of projects which included irrigation schemes, dam and well construction, repair of school buildings, installation of dip tanks, nutrition gardens and piggeries. Communities have improved livelihoods compared to the time before the assets were created. For example, beneficiaries have

access to markets in areas where roads were impassable, and those that started irrigation projects no longer depend on rainfall completely (Rosin *et al.*, 2012). However, the projects were constrained by the fact that work could only be carried out during the phase between crops being harvested and the start of the next farming season to allow families time to give attention to their own fields (Coady *et al.*, 2004). Monitoring reports by WFP indicate that the PAC Project faces other constraints, among them shortages of building materials and expert supervision.

2.5 SIGNIFICANCE OF SUBSISTENCE FARMING.

Subsistence farming is mainly dominant in developing countries especially the rural poor. The agriculture sector is therefore still the sponsor of the economy.

Subsistence agriculture employs from 40% of the population in Morocco to 58% in Burkina Faso and Tanzania (Gukurume, 2012). Agriculture was the largest employer in 2003, accounting for 60% of the employed in Zimbabwe (FAO, 2009). Gukurume, (2012) further revealed that in other countries such as Congo, Namibia and Zimbabwe where the contribution of the agriculture sector to GDP is small, the sector still plays an extremely vital role as a source of employment.

In addition, subsistence agriculture improves dietary quality and diversity to the poor (Zvikomborero and Chigora, 2010). It also improves nutritional food available to the rural folks since subsistence farmers grow different crops such as maize, beans, groundnuts, millet and sorghum to sunflower (Desai and Potter, 2008).

Moreover, agriculture is a key sector of rural Zimbabwe and provides income to almost 70% of the total population (Riddell, 1990). Chazovachii *et al.*, (2012) noted that subsistence agriculture is the primary means of raising income. Riddell, (1990) also argued that 10% of the people in some parts of Asia engaged in subsistence farming for cash income, which implies that subsistence farming is a foundation of household income.

2.6 GLOBAL CHALLENGES FACED BY SUBSISTENCE FARMERS

Subsistence farming tends to be affected by socio-economic challenges ranging from shortage of money, inputs, draught power to inadequate labour (World Bank, 2008). World Bank, (2007) also stated that socio-economic challenges have a crucial influence in subsistence agriculture and are threatening food security particularly for those more vulnerable sections of the society. Politically, corruption tends to affect high yield due to misusing of funds for example in Zimbabwe funds from agriculture are being channeled to purchase medicines such as ARV's in the health department.

Financial constraints in agriculture remain the limiting factor for subsistence farmers that hinder them from producing enough yields (Desai and Potter, 2008). Ellis (2000) also argued that the major factor that holds back the development of small enterprises is lack of effective capital. Subsistence farmers are rarely able to improve their output due to insufficient capital to procure inputs (Musemwa, 2011). For instance, in 2008 season, SEED CO Company had 7500 maize seed in store, but sold only 500 tonnes due to economic challenges, such as shortage of capital (ZimVAC, 2011). A study carried by Narayan and Petesch (2002) in rural communities of Ghana showed that lack of money was a principle barrier to farming and to more active markets. Narayan and Petesch (2002) claimed that due to rising population in Okpuje village in Nigeria, land become scarce, a major challenge faced by the people in the village.

About 41% of the rural poor in Masvingo province were having inadequate land (ZimVAC, 2011). Desai and Potter (2008) pointed out that agricultural activities are now characterised by a decline in men's participation, with women featuring prominently as the real cultivators of the land. Musemwa, (2011) put forward that most black Zimbabwe women especially in rural areas live under constraints of customary law which denied them access to land. In addition, different factors including land shortages and displacement meant that many women in communal areas no longer obtain an allocation of land from the husband (ZimVAC, 2011).

Lack of credit facilities is a major problem to subsistence farmers in Zimbabwe (Narayan and Petesch (2002). This is because farmers produce very little yield that cannot allow

them to have access to credit facilities. The economic situation played a part in the poor harvests that resulted, as there was failure by the responsible authorities to supply the market with farming inputs. Shortage of farming inputs has been a major blow to the farmers. This led to most communal farmers planting little than they had scheduled. The prevalence of HIV and AIDS in Zimbabwe has had a negative impact on people as it constrained households and livelihoods at any given time. HIV/AIDS has affected many people and has left many people facing food accessibility challenges (Yusuf and Baba, 2010). It reduced the household asset base as in most cases people would sell their livestock, property, farming implements or even the harvest from the previous season in order to buy expensive medication for instance the Anti Retroviral Therapy and many items that are needed especially the required food (UNAIDS, 2009). HIV and AIDS patients were also unable to employ various coping strategies, like selling labor, due to physical inability. Excess adult mortality has led to loss of breadwinners and most of the households in the sample were female headed families. While at the same time, death of a bread winner has meant permanent loss of income, dropping out of school, and the situation would even be worse with the death of a mother (UNAIDS, 2009).

The impact of climate was heavy, especially on people's livelihoods, which included household level of production, income generating projects, and access to food on the markets. Most people in Nyanhewe who depend on brick making were affected due to lack of water in rivers and wells.

2.7 CONCLUSION

This chapter pointed that the efforts showed by different Governments in achieving food security for their citizens are very little especially in developing nations. Therefore, this led to the intervention of different partners such as NGOs to play their roles in achieving food security. It noted that decline in agricultural yield is a result of decline in men's participation with women featuring prominently as the real cultivators of the land. The chapter looked at the global, regional and local view of food insecurity in relation to the study. It also looked at the concept and importance of subsistence farming and the socio-economic challenges faced by subsistence farmers.

CHAPTER THREE

RESEARCH METHODS

3.1 INTRODUCTION

This chapter provides a discussion to be used for the purpose of this study. It describes the materials and methods applied in this study. Particularly, this chapter is concerned with research design, data collection procedures, research instruments, data presentation and analysis, delimitation and limitations of the study. The researcher used more than one instrument to collect data. This was for the purposes of increasing validity as well as achieving reliability. Research instruments used in this study include in-depth interview guides, focused group discussions, questionnaires and observations.

3.2 DELIMITATION OF THE STUDY

The research was carried out in ward 21(Nyanhewe) of Rushinga District. It is located in Mashonaland Province Northern side of Harare and shares an international border with Mozambique to the north, a district boundary with Mount Darwin to the west, Mudzi District to the south east and Uzumba Maramba Pfungwe to the north east. The area has unfavourable climatic conditions: (below average and unpredictable rainfall, very hot summer temperatures) thereby promoting malaria and tsetse infestation in addition to political marginality (Musemwa, 2011). The unfavourable climatic condition of the area exposes the residents to poverty and limited agricultural yield leading to high levels of stigma and discrimination. As such, new information and technology is made available through PAC project to counteract this problem.

Ward 21 consists of 34 villages and the PAC Project was implementing projects such as construction of weir dams, rehabilitation of a dip tank and construction of nutrition gardens in 28 villages. From 28 villages, the research investigates the impact of PAC Project in ensuring food security for subsistence farmers in 5 villages. The study area is shown by the map below in fig 3.1.

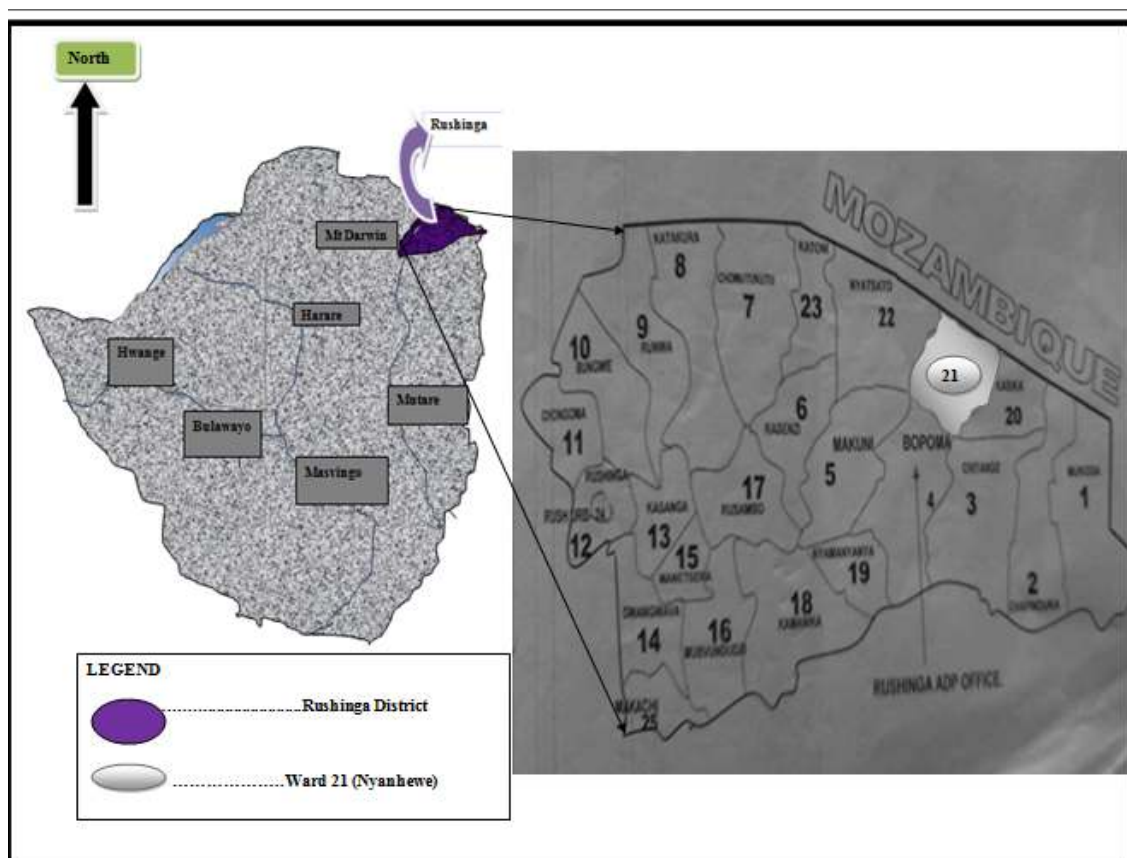


Figure 3.1: The study area map [Source: Own design with GIS]

3.3 RESEARCH DESIGN

The study made use of both quantitative and qualitative designs and case study approach was used. Adams (2007) defines a case study as a method of study in-depth rather than in breadth. It is a comprehensive study of a social unit, be that unit a person, a group, social institution, district or a community. The same author further argued that case studies enable one to understand fully the behavior pattern of the concerned unit thus deepening our perceptions of the concerned unit and gives a clear insight into life. Again, as a case study, the researcher explored a single phenomenon to have a complete understanding of the situation. The two designs (quantitative and qualitative) were used in order for valid conclusions to be made. This is supported by Haralambos and Holborn (1995), who argue

that neither qualitative nor quantitative method can provide totally valid and completely reliable data, but both can provide useful insights into social life and a more complete picture of the social group being studied.

3.3.1 Quantitative research

Quantitative research is a more logical and data-led approach which provides a measure of what people think from a statistical and numerical point of view (Adams, 2007). Quantitative research was obtained from information gathered using questionnaires. With the use of numbers, no voluminous data is collected hence it is not very expensive in terms of stationary used. Quantitative method was used because it is less time consuming since data analysis is relatively easy and fast. The problem associated with quantitative research design is the lack of validity. It has also a weakness in that since the data is normally in summary form, it tends to leave out some more important details (Bojnec and Latruffe , 2008).

3.3.2 Qualitative research

Qualitative research is the interpretive study of specified issue or problem in which the researcher is central to the sense that is made (Befring, 2004). The design was considered necessary for capturing data on the roles of PAC Project and their effectiveness in achieving food security. The information was gathered using interviews, focused group discussions and observation since it generates data which is more qualitative. The method allowed the researcher to collect information on the natural setting as the direct source of data hence coming up with physical or current events and activities on the ground. It is a subjective method that collects data that is humanistic and makes use of participatory and other non-experimental methods in which the researcher's strength underpins (Dawson, 2009). It also enabled even the illiterate to participate in the research. Despite the above mentioned strengths, qualitative method is holistic in nature hence gives a musky picture of the phenomenon for it takes everything in its full context (Bojnec and Latruffe, 2008). Again, the researcher is the key instrument that is, the researcher relies on the background, experiences and common knowledge and judgment as what to look for and select as valid data. Hence there might be interviewer bias.

3.4 TARGET POPULATION

The researcher targeted 400 households in the study area. The population was too large to deal with due to financial constraints. Therefore, 40 out of 400 households were selected in 5 villages using stratified random sampling technique. This was done following Adams (2007) suggestion that, for research findings to be generalized to the population with limited degrees of error, a sample should comprise of 10% of the population under study. Questionnaires were administered to the selected 40 subsistence farmers which are about 10% of the population. The sample was large enough to make some generalizations since the respondents were selected from different and well spaced villages within the selected ward. The key informants were also consulted.

3.5 SAMPLING PROCEDURES

Sampling is the process or method of selecting certain members to represent the whole group (Adams, 2007). Ideally every member of the group must be examined but this is practically impossible because of time, cost and manageability. The primary purpose of the research was to investigate the impact of PAC Project in achieving food security for subsistence farmers in ward 21 but to study the whole population was impossible. However, the researcher decided to sample. Stratified random sampling technique was used. For the purpose of research, 10% of the target population was sampled.

Random sampling was used to select 5 villages which constituted a representative sample of the 28 villages. The researcher made 28 pieces of papers with 5 of them written 'YES' and the remaining 23 written 'NO'. The cards were shuffled in a hat and a representative from each village was requested to pick up a card. The 5 villages which picked cards written 'YES' became the respondents. The researcher chose 40 households which are 10% of the total population. This was done in an attempt to reduce margin of error thereby increasing validity of the research. At this stage, stratified random sampling was employed. The farmers in the 5 selected villages were put into various groups according to their age and sex. Simple random sampling technique was again conducted in each village so as to come up with the final sample from each village. The procedure was just the same as in the selection of the villages above. However, the only difference was in

that, when selecting the households to give the questionnaire, the researcher first collected the data concerning the number of households in that village. A number was then assigned to each household and the number picked randomly represented the household to be interviewed. This was done at the ward centre where everyone was expected to attend. Simple random sampling was chosen because all the farmers in ward 21 were predominantly subsistence farmers and it has been assumed that they faced similar challenges.

3.6 RESEARCH INSTRUMENTS

Different research instruments were used in this study for instance questionnaires, in-depth interviews, focused group discussion as well as observation guide and these were explained below.

3.6.1 Questionnaires

A questionnaire is a form prepared and distributed to secure responses to certain questions (Befring, 2004). Bojnec and Latruffe (2008), noted that a good questionnaire should be simple, clear to solicit information and must be short enough not to annoy the interviewee. Short questions increase validity and authenticity of data. Closed questions in the form of Yes/No were used and these were fairly easy to interpret, tabulate and analyse. Yes/No questions were cheap, provided anonymity of respondents and gave them assurance of their confidentiality (Bojnec and Latruffe, 2008). Questionnaires were used as the major research instrument. Questions were drafted in such a way that all the objectives of the research project were addressed. Questionnaire was self-administered by the researcher with the assistance of the respective Development Facilitator (DF). Self-administering was done to avoid low return and to assist the respondents to understand questions. (Adams, 2007) notes that for proper analyses of the results, a lot of close ended questions are crucial. This helped in comparing the results obtained from different respondents. Open ended questions were used so as to obtain various views of people as people perceive concepts in various ways. Since English language was a second language to the community, the researcher had a Shona version of the questionnaires to enable respondents to give the required knowledge to their best advantage. Questionnaires are

more economical and can generate a large amount of data over relatively low cost and time. The use of predefined answers made it easy for respondents and also for analysis. Adams, (2007) further notes that predefined answers can cause frustration to some respondents, truthfulness cannot be verified and self administered questionnaires are not suitable where illiteracy is high.

3.6.2 In-depth interviews

Haralambos and Holborn (1995), define an in-depth interview as two person conversation initiated by the interviewer for specific purpose of getting research relevant information. The purpose of the interview as revealed by this definition is to exchange information and attitude on a particular subject. In-depth interview guide for key informants was designed for capturing data from people who were considered knowledgeable about the study. The interviews were conducted with different groups of people (a person from each department) including World Vision Zimbabwe manager, director of social welfare, AGRITEX officers, headmen, GMB manager and a representative member from Irrigation and Mechanisation department during the time they face communities. The people were interviewed at their work places and sometimes even at their homes. Face to face interviews allowed the researcher to judge the quality of response due to facial expressions of non-verbal clues. The carrying of interviews in this study ensures flexibility, as there is always the chance to restructure questions (Bojnec and Latruffe, 2008). Interviews also offered the chance for the researcher and interviewees to have a far wide ranging discussion than questionnaires would allow. However, respondents might give answers which they believe the interviewer wants to hear rather than the truth and tend to be characterised by bias if too many questions are asked (Dawson, 2009).

3.6.3 Focus group discussion

The focus group discussion as noted by Haralambos and Holborn (1995), is a collection of people numbering not more than twelve members. The people from FGDs were randomly selected from 5 villages. In this research, 5 focused group discussions were selected with subsistence farmers and traditional leaders. Each group consisted of ten households. The researcher selected equal gender units from the study to ensure that

women are involved since they are the most vulnerable group to poverty. FGDs were used to establish consensual views relating to the impact of PAC Project in food security as well as establishing the impact of food insecurity and the challenges they faced. FGDs provide an opportunity for every member of the group to air his or her views concerning the subject under discussion since the purpose was to draw comprehensive responses from the people. However, Befring (2004) argues that some people maybe unfree to give their perceptions, views and opinions in the presence of other people. This means a focus group may limit the independence one should have when giving his/her contributions in a discussion. Bojnec and Latruffe (2008), noted that FGDs may be defeated if the debate is not guided or controlled from dominant participants by the researcher.

3.6.4 Observation guide

An observation guide was prepared to focus the researcher's observation. The researcher attended the meetings and visited different projects of PAC Project within the ward. Observation were used a way of evaluating the effectiveness of PAC Project in ensuring food security. Observation enabled the researcher to gather data with some degree of independence and objectivity.

3.7 DATA COLLECTION PROCEDURE

Data collection was done using primary and secondary data methods. Secondary data was collected through analysis of published and grey documents of World Vision Zimbabwe and World Vision ADP concerning PAC Project. This was done to provide the bases of the evaluation study upon which the results were measured against. Primary data collection instruments include use of questionnaires, observations, in-depth interviews, and focused group discussions.

A number of steps were followed in data collection. First, the researcher consulted the District Administrator (DA) office in order to get permission to carry out the study in the ward. The researcher explained the purpose and importance of the study to the DA office before granted the permission. After given the permission, the researcher made a formal request to carry out interviews from World Vision Zimbabwe, GMB and the departments

of Social Welfare, AGRITEX and Irrigation and Mechanisation. When the researcher got the permission, appointments for the date for interviews were made to avoid inconveniences.

Interviews were made to all the organisations mentioned above. The researcher made it a point that he introduced himself and explained the purpose of the study each and every time he approached the interviewees. The focused group discussions with subsistence farmers and some selected key informants followed this. Five focused group discussions were held with the people from different sections of the ward. Each group consisted of ten people. Administering of the questionnaires was done at last. The questionnaires were self-administered to 40 subsistence farmers in the ward which were selected using stratified-random sampling technique.

3.8 DATA ANALYSIS AND PRESENTATION

Dawson (2009), noted that data analysis is used to reduce a mass of data into a more compact form that shows general trends and relationships between variables. The objective of statistical analysis is to provide a quantitative way of distilling the essential features from the data. Thus this research would make use of this understanding in bringing out relevant facts particularly from secondary data. After the collection and analysis of the data, it would be presented in manners that portray and bring out the purpose of each data collected. Some data would be presented in tabular, bar graphs or pie charts for summarised data. Some presentations would review some trends in the form of line graphs. Percentages would also be used for comparative advantages.

3.9 LIMITATIONS

There were several limitations to the study ranging from cultural beliefs to illiteracy. In order to overcome the problems, the researcher approached the community leaders for permission and explained the importance of the research to community. Some people in the study area were unwilling to participate for fear of political victimization and the researcher was perceived as a political spy. Other major trouble was on administering the questionnaires. It was necessary to translate questions to Shona first as semi-literate

respondents were encountering problems in comprehending some of the questionnaires. The study area is characterized by poor road network system. Most of the areas selected by the chosen sampling methods were difficult to reach during data collection using public transport. To counteract this problem, data collection was done using bush lander motorbike.

3.10 SUMMARY

This chapter is based on research methodology and aim to air out the materials and methods applied in this study. Map of the study area was shown in order to indicate its location. Particularly, research instruments, research design, data collection procedures, data analysis and limitations of the study were the main theme of the chapter. In order for increasing validity and achieving reliability of data, different instruments were used to collect data. Questionnaires were drafted in such a way that all the objectives of research project are addressed. Stratified random sampling technique was used to select the targeted population. Limitations to the study were also explored out.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 INTRODUCTION

This chapter serves to analyze, interpret and present the research findings using the aforementioned methodologies. The research questions raised in this study reduce, organize, synthesise and summarise information in order to make sense of it. In that regard, data collected by the described methods in chapter three is going to be systematically synthesized.

4.2 DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

4.2.1 Sex of respondents

Sex of respondents is very important when investigating the impact of PAC Project towards food insecurity for subsistence farmers. This is because male and female farmers respond differently to food insecurity and their vulnerability level is also different.

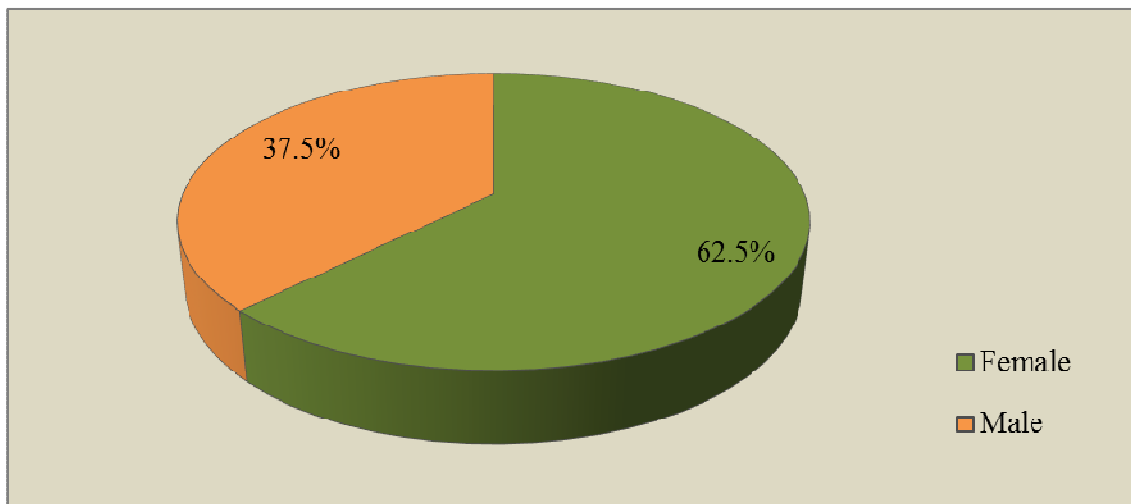


Figure 4.1 Sex of respondents for subsistence farmers (Source: Primary Data)

Figure 4.1 above shows that 62,5% of the sampled subsistence farmers were females and males constituted the remaining 37,5%. The finding explored that many females were engaged into PAC Project. These findings agree with what was pointed out by Desai and Potter (2008) in literature review that agricultural activities are now characterised by a decline in men's participation, with women featuring prominently as the real cultivators of the land.

4.2.2 Level of education

Level of education among rural people engaged in subsistence farming was deemed important in this study because it lead to improved output. Gukurume (2012) also supported that education makes training for basic life skills easy among other factors. Thus those with low levels of education among the subsistence farmers pose a potential threat to increased food security. This prompted the researcher to analyze the level of education of those involved in PAC Project in ward 21. The respondents' responses are illustrated by figure 4. 2 below.

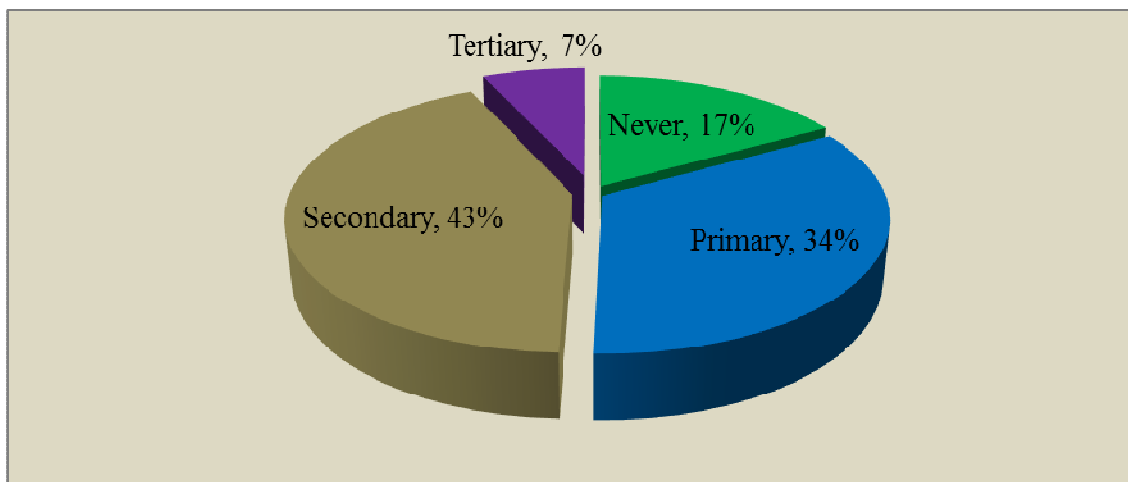


Figure 4.2 Level of education for subsistence farmers (Source: Primary Data)

Figure 4.2 indicates that most of the respondents (43%) attained secondary education, 33% attained primary school and the minority (7%) attained tertiary education, 17% did not get any schooling at all (never). From those attended secondary level, some failed to complete ordinary level. As such, the statistics allows the researcher to assume that the

farmers in the area are somehow knowledgeable and they can easily make rightful decisions of farming activities if they received agricultural training.

4.3 PROPORTION OF THE FARMERS ENGAGED IN PAC PROJECT

The villages are stationed at different localities in relation to the availability of weir dams, dip tank and nutrition gardens, people benefit differently. Out of 40 households interviewed, the following results were recorded. Table 4:1 below shows the frequency and percentages of non beneficiaries and beneficiaries of the PAC Project.

Table 4.1: Proportion of subsistence farmers that were members of PAC Project compared to those that were not members of the Project out of 40 respondents
(Source: Primary Data)

Status	Frequency	Percentage
Members of PAC Project	19	47.5
Members that were not part of PAC Project	21	52.5

4.4 PROJECTS BEING IMPLEMENTED BY PAC PROJECT

The projects implemented by PAC Project in trying to achieve food security for subsistence farmers in ward 21 were considered important for analysing their effects to food security.

4.4.1 Assistance Received by Farmers from the PAC Project

The researcher probed farmers on projects implemented by the Project in trying to solve food shortages faced by subsistence farmers in the ward. The sampled members were asked to identify the project that was offered by PAC Project in the ward. This is useful to the researcher to know whether the Project was implemented, so as to avoid biased results. The results indicated that the Project implemented different projects of crop and cattle production. Zvikomborero and Chigora (2010) also supported that in order for the

farmers to improve food security, they must practice agricultural diversification. Table 4. 2 shows the responses.

Table 4. 2: Projects being implemented by PAC Project (Source: Primary Data)

Project	Number of projects
Construction weir dams	2
Construction of nutrition gardens	4
Rehabilitation of dip tank	1

From the projects implemented by PAC Project, four nutrition gardens were constructed (Nyandoro, Chisafare, Kaeruza and Chisose nutrition gardens) covering up to two hectares each and were being supplied by irrigation water from the two constructed weir dams (Nyandoro and Kaeruza weir dams). The constructed nutrition gardens were used for growing food crops such as beans, vegetables, cabbages, onions, cucumbers, okra and tomatoes. A dip tank (Machirinje dip tank) was also rehabilitated within the ward for dipping cattle. Each weir dam supplied two constructed nutrition gardens, a dip tank and for domestic use.

4.5 USES OF WEIR DAM

Water from weir dam was used in different categories. Fig 4.4 below shows the proportion of the uses.

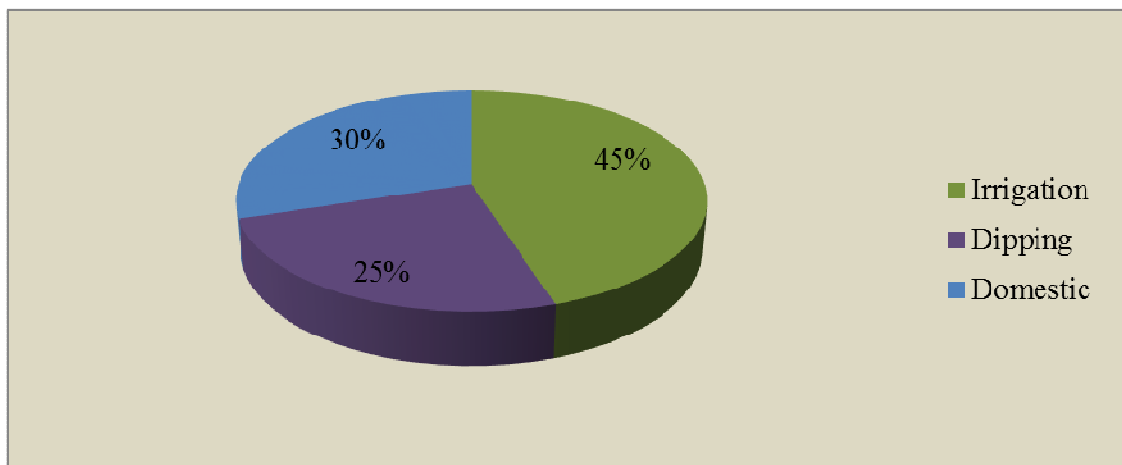


Figure4. 3: Proportion of uses of water from weir dam (Source: Primary Data)

The respondent's show that water from weir dams was used as follows, 45% for irrigation, 25% for dipping cattle and 30% for domestic purposes. They used weir dam water for domestic use especially those farmers near Nyandoro weir dam particularly in times when their boreholes were dysfunctional.

4.6 CHALLENGES FACED BY SUBSISTENCE FARMERS

Constraints usually help to determine the level of agricultural output of subsistence farming. Subsistence farmers faced a myriad of economic and socio-cultural challenges.

4.6.1 Economic challenges

Economic challenges pose the greatest problem in subsistence farming. It determines the time of planting by farmers as well as the size of land that would be under cultivation. In order to assess the extent to which these affect subsistence farming in ward 21, the researcher probed the respondents on aspects such as the adequacy of land, availability of inputs and markets. However, respondents did not dismiss other challenges that they faced as shown on figure 4. 5.

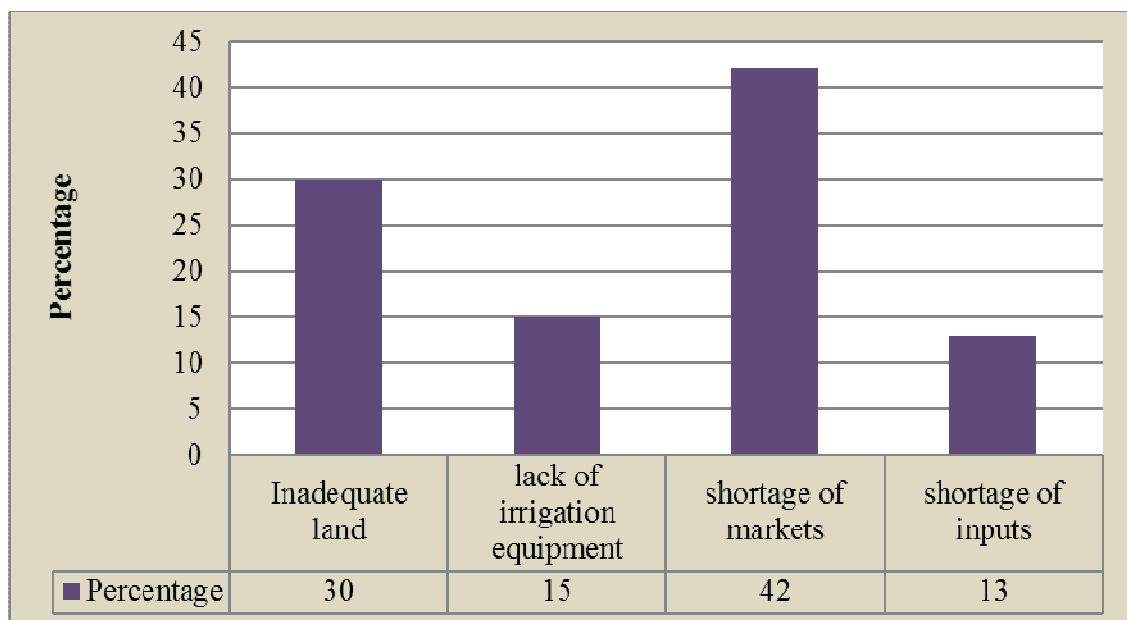


Figure 4.4: Economic challenges faced by subsistence farmers (Source: Primary Data)

Figure 4.5 shows that the majority (42%) of the respondents suggested that lack of access to markets to sell their produce from nutrition gardens was their major economic challenge. This was in line with what was cited by the members from the focused group discussion that they sell their produce (such as beans, tomatoes, onions, vegetables, cucumbers, okra and cabbages) to the local community, the people of Mozambique and to civil servants such as school teachers together with those from NGOs departments with prices below the market. These findings correspond to those of ZimVAC (2011) which stated that shortage of markets was a major challenge faced by majority of farmers in Masvingo Province. Shortage of land was another challenge (30%) cited by respondents. These findings agree with Ellis (2000) who pointed that land was a challenge in Ethiopia, with many rural farmers having land less than 0.5hectars. Shortage of land again concurs with what was noted by Narayan and Petesch (2002) in literature review who claimed that due to rising population in Okpuje village in Nigeria, land becomes scarce and a major challenge faced by the people in the village. Lack of irrigation equipment was also stated as the third constraint and it consist of 15%. Crops fail to mature well due to lack of irrigation equipment. Shortage of inputs such as seed, chemicals was also a constraint faced by subsistence farmers and contributed 13%.

4.6.2 Socio- cultural challenges faced by subsistence farmers

Socio-cultural factors pose some negative threats which were also analysed in this study. Responses are shown on the figure 4.6.

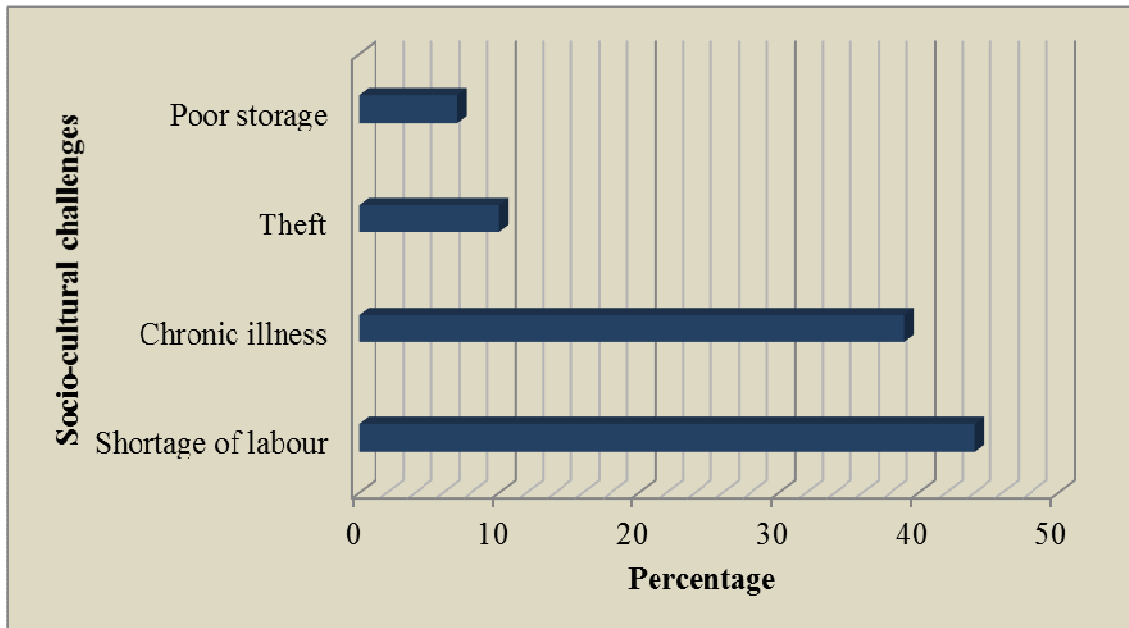


Figure 4.5: Socio-cultural challenges faced by subsistence farmers (Source: Primary Data)

Figure 4. 6 shows that a greater proportion (44%) of the sampled farmers in ward 21 cited shortage of labour as the major socio-cultural problem. This is in line with what was cited by AGRITEX officers during interviews as the major social constraint faced by subsistence farmers in the ward. This was in line with Bojneck and Latruffe (2008), who argued that availability of labour was the main limiting factor in agriculture for opening new fields in South of Niassa Province in Mozambique. The respondents cited chronic illness as another problem with 39%. This concurs with the data gathered from interviews from the AGRITEX officers that the spread of epidemic diseases tends to affect human labour. From literature review, Yusuf and Baba, (2010) noted that HIV/AIDS has affected many people and has left many people facing food accessibility challenges. Poor storage and theft also remain the challenge contributing 17%.

4.7 SOCIO-ECONOMIC IMPACTS OF FOOD INSECURITY

Food insecurity brings a myriad of problems to farmers in ward 21. The figure 4. 7 shows responses.

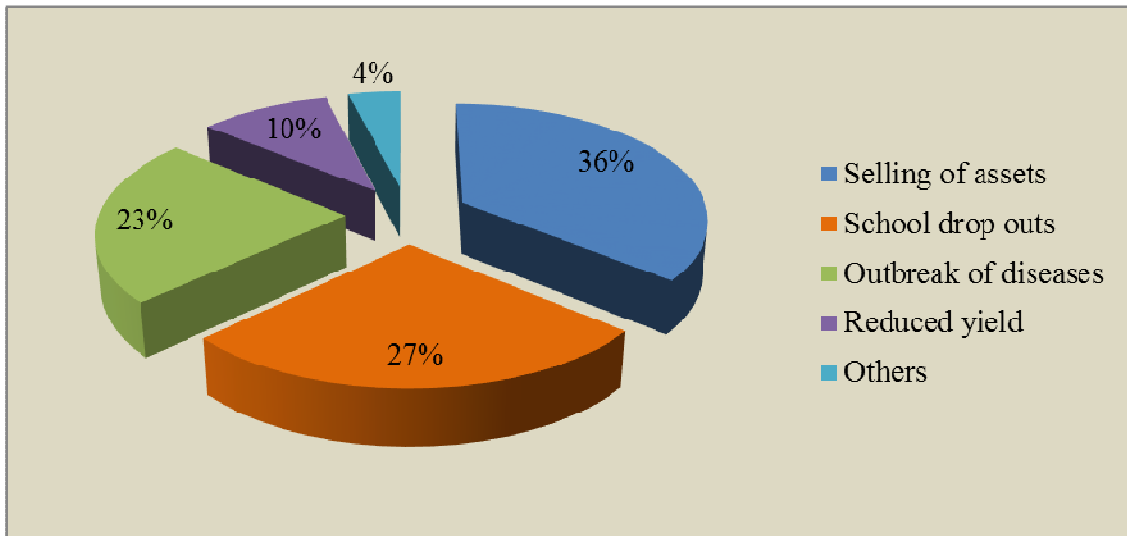


Figure 4.6: Socio-economic impacts of food insecurity (Source: Primary Data)

Figure 4.7 above shows that the greater proportion (36%) indicated that selling of assets were the major impact of food insecurity. The results tally with what has been pointed out as the major impact of food insecurity by a representative from World Vision during interview sessions that many farmers lost their farming assets during peak hunger period every year such as farming tools, cattle and other small livestock. School dropouts were indicated by 27% and the results are similar to what has been pointed out as the major impact of food insecurity by a representative from Social Welfare Department during interview sessions. Statistics from Social Welfare Department further indicated that 31% of children in ward 21 were out of school during the year 2011. This also concurs with ZimVAC (2011) findings which stated that school dropouts were a problem in areas where food insecurity prevails. Outbreak of disease was also a challenge of food insecurity that contributed to 23%. Some of the people especially women tend to engage in prostitution with the intention to earn money for a living hence the outbreak of sexually transmitted infection as well as HIV and AIDS. The people affected by HIV and AIDS were unable to provide enough human labour to farming activities, hence resulting in reduced yield (10%).

4. 8 MEMBERS OF PAC PROJECT AND THOSE THAT WERE NOT MEMBERS OF THE PROJECT

From the sampled members, those members of PAC Project and those that were not part of it benefitted differently. This is clearly indicated in fig 4. 8 below.

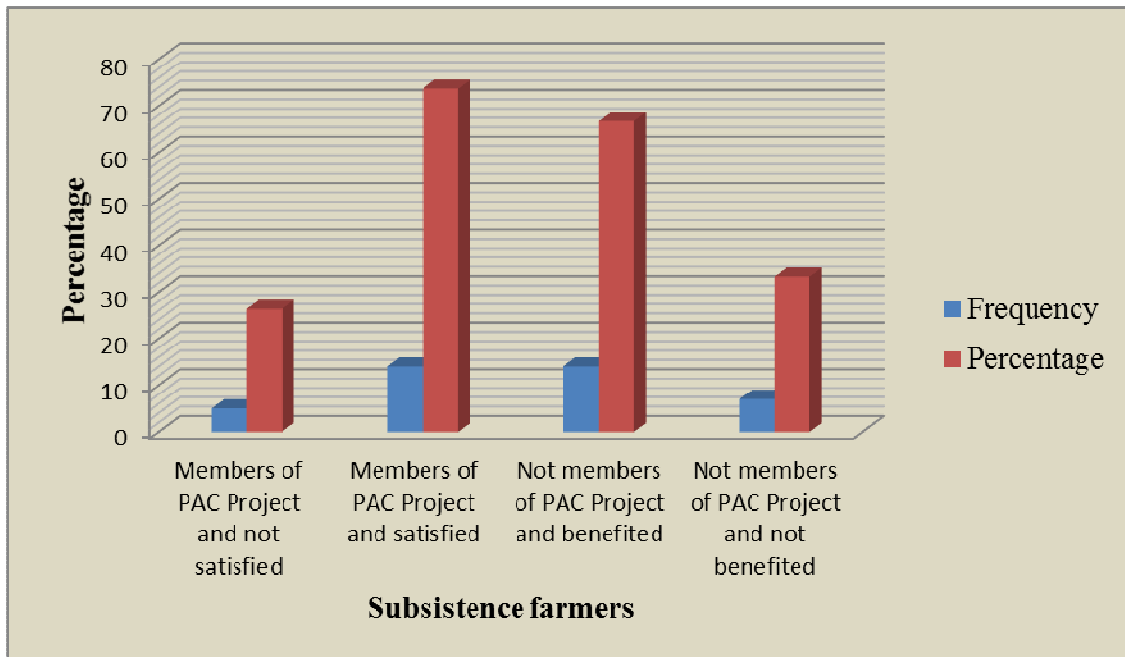


Figure 4. 7: Effects of PAC Project to various subsistence farmers (Source: Primary Data)

From the 19 (47, 5%) subsistence farmers that ventured into PAC Project, 5 (26, 3%) of them were unsatisfied with the Project as shown by figure 4. 8 above. They indicated that PAC Project was poorly resourced especially in terms of provision of training sessions on how to grow horticultural products such as tomatoes. They also showed that PAC was poorly resourced in terms of irrigation equipment. Farmers from Mazengera village indicated that their nearest nutrition garden was Nyandoro which is about 13 kilometres from where they reside. They therefore, failed to monitor their crops on regular basis and this led to poor harvest. The remaining 14 (73, 7%) members from Nyandoro, Chisafare and Katandika villages showed that they were satisfied with the Project mainly because they reside close to where the projects were situated.

Of the 21 (52, 5%) subsistence farmers that were not members of the PAC Project, 14 (66, 7%) of them indicated that they were benefiting from the Project. Most of the beneficiaries reside in Nyandoro, Chisafare, Kaeruza and Chisose villages. They indicated that there was improvement in cattle management as evidenced by the reduction of cattle death and disease outbreak which was not possible before rehabilitation of a dip tank. They again noted that everyone was allowed to dip his or her cattle regardless of being a member or not of the PAC Project. An extension worker from AGRITEX pointed out that rehabilitation of a dip tank led to reduced cattle death and diseases such as red water and liver fluke through dipping. They also managed to grow horticultural products in their own gardens using water from weir dams constructed by PAC Project. The remaining 7 (33, 3%) showed that they were non-beneficiaries of the Project since they reside far away from the project location in Chanda village. They indicated that they were sidelined by PAC.

4.9 A COMPARISON OF FOOD SECURITY BEFORE AND AFTER THE INTERVENTION OF PAC PROJECT

A comparison of food security before and after the intervention of PAC Project was done from subsistence farmers in this study as a way of measuring the effectiveness of the project in improving food security. The comparison was in form of access to maize since it is the staple food within the country. Table 4.3 shows the comparison.

Table 4. 3: A comparison of maize yield before and after PAC Project.

Average yearly harvest in bags.	Production before PAC Project (2012) intervenes.	Production after PAC Project (2014) intervenes.
<5	15	10
5-10	22.5	17.5
11-15	25	20
16-20	02	12.5
21-25	12.5	15
26+	5	25

Table 4.3 indicates that the majority (25%) of the respondents got 26 bags of maize under PAC Project as compared to the minority (5%) of respondents who used to get more than 26 bags before implementation of the project. This shows that PAC Project improved food security. These findings agree with WVZ (2012) which stated that communities and individuals who participate in PAC Projects are able to increase their own food production through soil and water conservation and fertility practices, nutrition gardens, crop diversification and food processing. AGRITEX workers in the ward also reiterated during interviews that PAC Project improves yields by 25% if its principles are well applied.

The sample done using interviews shows that the Project allows them to grow food crops two times per year (both in summer and winter) and enables them to earn income after selling their produce from their nutrition gardens such as beans, tomatoes, onions, vegetables, cucumbers, okra and cabbages. Most people earn 10 – 15 dollars per day and they mainly use this income for their livelihoods. They also sell cattle in order to purchase maize and other basic needs, thereby improving their food security.

4.10 SUGGESTIONS FOR PAC PROJECT IN ORDER TO IMPROVE FOOD SECURITY IN WARD 21

The study solicited methods and areas of improvement and what could be done to reduce food insecurity in ward 21. The suggestions of this improvement are shown on 4. 9.

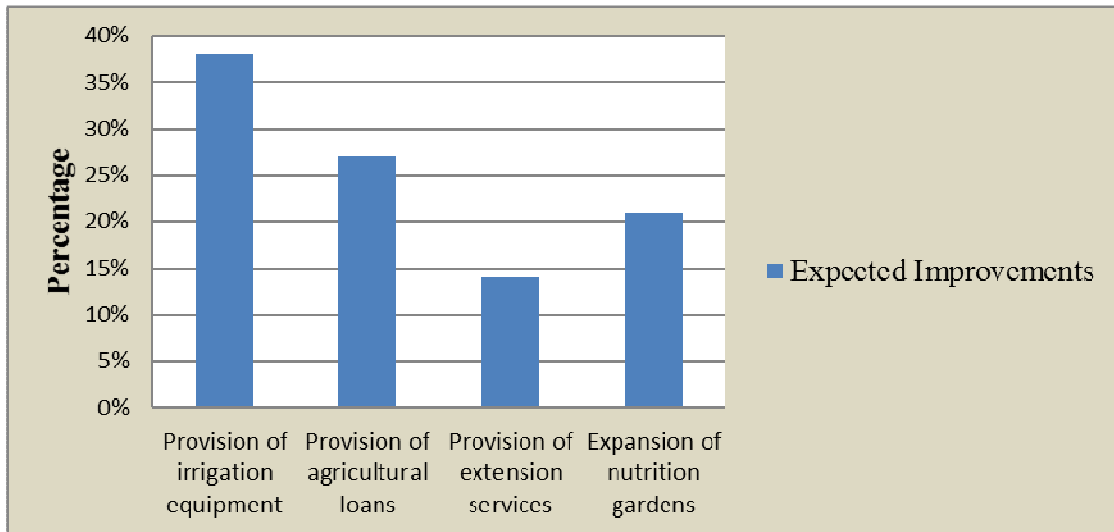


Figure 4.8: Expected improvements from Government and NGOs (Source: Primary Data)

Fig 4.8 above summarises the findings, 38% of the respondents advocated provision of irrigation equipments aimed at irrigating crops in times of water shortage, 27% advocated for provision of agricultural loans to finance human labour. The 21% indicated that Government and NGOs could work hand in hand so that they could extend hectares of nutrition gardens from two hectares to three hectares each in order for the farmers to have enough land for growing their crops. Provision of extension workers was another improvement that was suggested so that they could provide training on better farming methods to subsistence farmers such as growing of crops that were suitable within their area.

4.11 CONCLUSION

Data analysis, interpretation and presentation in this chapter were done and were related to the objectives. The results show that PAC Project played a major role in achieving food security for subsistence farmers in ward 21. Socio-economic and socio-cultural factors have significantly affected the participation of subsistence farmers in improving food security. The next chapter introduces summary of the results, discussion and recommendations of the study.

CHAPTER FIVE

DISCUSSION, RECOMMENDATIONS, SUMMARY AND CONCLUSION

5.1 INTRODUCTION

This chapter provides a summary and discussion of the research findings. Conclusion is to be drawn and recommendations are to be made from the research findings.

5.2 DISCUSSION

The main findings of the study revealed that the project was effective in improving food security as it had tried to meet the first Sustainable Development Goals (SDGs) of eradicating extreme hunger and poverty at ward level. This statement is backed by the fact that the majority (25%) of the respondents got 26 bags of maize under PAC Project as compared to the minority (5%) of respondents who used to get more than 26 bags before implementation of the project. This was mainly due to growing of crops from their nutrition gardens such as beans, tomatoes, onions, vegetables, cucumbers, okra and cabbages two times per year through irrigation.

The use of interviews in this research shows an improvement in cattle management and this was evidenced by the reduction of cattle deaths and diseases outbreak such as liver fluke and red water which was not possible before rehabilitation of a dip tank. The people also managed to increase their income after selling their produce from their nutrition gardens. The people were able to purchase basic needs such as food especially in times of peak hunger period particularly the period between January and December. The community saw the need to run from dependency and they are really grateful for the intervention of PAC Project because it is in line with the food and nutrition cluster in the Zimbabwe Agenda for Sustainable Socio-Economic Transformation (Zim Asset).

Most beneficiaries of the Project live nearer to where the projects are located than those from far away. This was evidenced by 26, 3% of the subsistence farmers that venture into PAC Project but they were unsatisfied by the Project. They indicated that they reside far away from where the projects were located. Therefore, they failed to monitor their crops on regular basis and this led to poor harvest. From those that were not part of members of the Project, 33, 3% shows that they were non-beneficiaries of the Project since they were sidelined by the Project. It is evidence that those subsistence farmers that were members and those that were not members of the PAC Project managed to improve food security.

The findings explored that many of the beneficiaries of PAC Project were females and this was evidenced by 62,5% of the females and 37,5% of males. This might be attributed to the fact that more females are in rural areas than their male counterparts, as they go to town in search of jobs. This implies that PAC Project largely benefited female farmers in ward 21 of Rushinga District. This statement is backed by the fact that the PAC Project had a positive impact on women with little or no schooling and women in the second and third asset and landholding terciles as they sell irrigated vegetables and earn income for purchasing their needs (World Bank, 2007). This also concurs with WVI, (2009) from literature review which stated that about 35 women and 25 men of Uzumba Maramba Pfungwe benefited more from Nyazhou nutrition garden project.

Of the 47.5% beneficiaries, weir dam construction was more important since it enables other projects of PAC Project to function for example provision of water for irrigation in nutrition gardens and water for dipping the cattle as well as for domestic use. This was evidenced by use of weir dam water: 45% for irrigation, 25% for dipping cattle and 30% for domestic purposes. This was in line with Topping (2000) who stated that water is a wise use of a resource. Subsistence farmers faced challenges ranging from economic to socio-economic and socio-cultural. Economic challenges such as inadequate land was mainly due to growing population. This concurs with Musemwa (2011) who noted that Rushinga district's population continues to grow geometrically. Shortage or lack of markets was another economic challenge mainly due to increased produce from the nutrition gardens. Shortage of inputs and lack of irrigation equipments was due to lack of funding. Socio-economic challenges for example shortage of labour was mainly due to

high prevalence of HIV/AIDS and rural-urban migration especially movement of the able bodied people.

Socio-economic impacts of food insecurity constraints human development and these include selling of assets, outbreak of diseases, school drop outs and reduced yield. Farmers lost their farming assets (36%) through selling, mainly during peak hunger periods every year such as farming tools, cattle and other small livestock. School drop outs were again a challenge (27%) of food insecurity thereby leading to early marriage. Outbreak of disease was also a challenge as a result of food insecurity. This was mainly due to engagement of many people into prostitution. Outbreak of disease such as STI's, HIV and AIDS were the major challenges that affected the people including school going children.

Although subsistence farmers in ward 21 of Rushinga District (RD) face different challenges, it is evidenced from the research that PAC Project remains a tool for improving household food security of the majority of subsistence farmers.

5.3 SUMMARY OF RESULTS

The study was meant to investigate the impact of PAC Project in ensuring food security for subsistence farmers in ward 21 of RD. The study showed significant differences between crop and animal production after and before the implementation of the PAC Project. The results of the study showed that the PAC Project was effective in reducing food insecurity as evidenced by increased number of maize bags and improved management of cattle production. Rehabilitation of a dip tank helped them to rear their livestock healthily and increased their income at household level. Although the study showed that the Project benefited a lot to some of the members and those that are not members of PAC Project however it tends to sideline the minority group that resides far away from where the Project was located. Female subsistence farmers were the most to venture into the Project than males as they constituted 62.5% and 37.5% males. The majority of subsistence farmers met economic, socio-cultural and socio-economic challenges. Food insecurity causes some consequences to the majority of the people.

5.4 CONCLUSION

PAC Project improved food security of subsistence farmers in ward 21 of Rushinga District as cited by different authors in literature review of the study. This study concludes that, the most common viable project is weir dam construction as it remains the main source of water that enables a dip tank and nutrition gardens projects to function effectively. Furthermore, subsistence farmers faced a number of constraints ranging from shortage of inputs, shortage of markets, lack of irrigation facilities, inadequate land, chronic illness and shortage of labour. The study also shows that food insecurity caused socio-economic impacts such as school dropouts, selling of assets, reduced yield, outbreak of diseases and prostitution. The research findings warrant the conclusion by the researcher that shortage of markets, selling of assets and shortage of labour are the core problems faced by subsistence farmers towards achieving food security.

5.5 RECOMMENDATIONS

Based on the research findings, the study recommended that:

- There is need for the Government, NGOs and other stakeholders to give subsistence farmers soft loans with low interest rates in order for them to access inputs and meet other farming expenses.
- The Government should also support organizations such as AGRITEX in the area to improve its service delivery and provide the necessary training to subsistence farmers in order to improve their productivity.
- There is need for the Government to formulate strong policies geared towards empowering NGOs so that they should involve many subsistence farmers in the PAC Project to provide lasting solutions to food insecurity faced in ward 21 of Rushinga District and rural Zimbabwe at large.
- The community should take responsibility of infrastructure such as a dip tank, weir dams and nutrition gardens and help in their maintenance.
- NGOs and the Government should provide market in ward 21 in order for the subsistence farmers to purchase their produce such as cattle sales pen. This reduces transport costs for the farmers.

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APPENDICES

APPENDIX ONE: HIGHLY CONFIDENTIAL QUESTIONNAIRE

I am Gatsi Earnmore a student at Bindura University of Science Education. I am carrying out a research project on the impact of Productive Asset Creation (PAC) Project in ensuring food security for subsistence farmers in Rushinga District ward 21 (Nyanhewe) as part of the requirements of my degree. All information that shall be released will be treated with strict confidentiality and only for academic purposes. I very much appreciate the completing and returning of the questionnaire as early as possible. Your cooperation is greatly appreciated.

Instructions.

- a) Tick in the box to indicate your answer or give a short answer.
- b) Do not write your name or append your signature anywhere in this questionnaire.

Part A: Demography and education.

1. Sex

i) Male ii) Female

2. Highest education attained

i) Never ii) Primary iii) Secondary
iv) Tertiary

Part B: PAC Project application.

3. Are you involved in PAC Project? Yes No

4. What is being done by PAC Project?

.....

Part C: Location

5. Where do you live?

6. Do you live nearer to the projects implemented by the PAC Project? If no how many kilometers from where you reside to reach the projects

Part D: Challenges faced by subsistence farmers.

7. What major challenges do you face?

i) Economic factors ii) Socio-economic factors

iii) Socio-cultural factors iv) both of these

Part E: Impacts of food insecurity.

8. What are the problems caused by food insecurity?

i) Sale of assets ii) Outbreak of diseases

iii) School dropouts

iv) Prostitution

vi)Others,specify.....

Part F: Strategies used to solve the challenges faced by subsistence farmers.

9. What are the most significant changes that have been brought by PAC Project within your community or livelihoods?

.....

.....

10. What is the major impact of PAC Project on household food security?

.....

11. When do you normally venture into the Project?

i) winter ii) summer iii) both

12. Are the roles of PAC Project a tool for food security within your livelihoods?

i) Yes ii) No

13. What was your yearly maize harvest before venturing into PAC Project?

i) Less than 5bags ii) 5-10 bags
iii) 11-15 bags iv) 16-20 bags
v) 21-25 bags vi) 26 bags and above

14. What was your yearly maize harvest after venturing into PAC Project?

i) Less than 5bags ii) 5-10 bags
iii) 11-15 bags iv) 16-20 bags
v) 21-25 bags vi) 26 bags and above

15. What strategies do you think Government and NGOs should use to improve food security amongst subsistence farmers?

.....
.....
.....

End!!! Thank you for your participation.

APPENDIX TWO: INTERVIEW GUIDE FOR KEY INFORMANTS DESIGNED TO CAPTURE DATA FROM NGOs AND GOVERNMENT DEPARTMENTS

I am Gatsi Earnmore, registration number B1129552 a third year student at the above institute. I am carrying out a research project on the impact of Productive Asset Creation (PAC) Project in ensuring food security for subsistence farmers in Rushinga District ward 21 (Nyanhewe). The work is in partial fulfillment of the Bachelor of Science Honours Degree in Development Studies as part of the requirements of my degree. All information that shall be released will be treated with strict confidentiality and only for academic purposes. I very much appreciate the completing and returning of the questionnaire at earliest possible.

Your cooperation is greatly appreciated.

1. Do you think PAC Project is relevant in reducing food insecurity in ward 21?

.....

.....

What role are you playing in the fight against food insecurity?

.....

.....

2. What is the most significant change brought by PAC Project in ward 21?

.....

.....

3. Are there areas of PAC Project that you feel should be improved to enhance its benefits in food security?

.....

.....

4. Describe the challenges faced by subsistence farmers in ward 21?

.....

.....

.....

End!!! Thank you for your participation.

APPENDIX THREE: GUIDING QUESTIONS FOR FOCUSED GROUP DISCUSSION
FOR SUBSISTENCE FARMERS

I am Gatsi Earnmore. I am a student at Bindura University of Science Education. I am carrying out a research to investigate the impact of PAC Project in ensuring food security for subsistence farmers in ward 21 of Rushinga District.

Your cooperation is greatly appreciated in answering these questions.

1. What economic challenges do you face?

.....
.....

2. What socio-cultural challenges do you face?

.....
.....

3. What socio-economic challenges do you face?

.....
.....

4. What is the impact of food insecurity on your livelihoods?

.....
.....

5. What do you think should be done to solve your problems?

.....
.....
.....

End!!! Thank you for your participation.