



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

**THE IMPACT OF “ONE VILLAGE ONE PRODUCT (OVOP)” ON HOUSEHOLD
INCOME – IMPLICATIONS ON FOOD SECURITY: THE CASE OF BVUMBWE
OPERATION AREA, THYOLO DISTRICT, MALAWI**

**BY
JULIANA IMMACULATE CHIDUMU**

**A Thesis Submitted to the Graduate School in partial fulfillment for the requirements
of the Collaborative Master of Science Degree in Agricultural and Applied Economics
(CMAAE) of Egerton University**

OCTOBER, 2007

DECLARATION AND APPROVAL

1. DECLARATION

This thesis is my original work and has not been presented in this or any other university for the award of a degree or diploma.

JULIANA IMMACULATE CHIDUMU

Sign: -----

Date: -----

2. APPROVAL

This Thesis has been submitted with our approval as supervisors.

Dr. Benjanin. K. Mutai (Department of Agric. Economics, Egerton University)

Sign: -----

Date: -----

Dr .M.A.R. Phiri (Department of Agricultural Economics, University of Malawi -
Bunda college of Agriculture)

Sign: -----

Date: -----

COPYRIGHT

No part of this thesis may be reproduced, stored, in any retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, and recording without prior written permission of the author or Egerton University on that behalf.

Copy© 2007 Chidumu Juliana
All rights Reserved

DEDICATION

To my dear Dad Mr. A.B Chidumu for his hard work, the role of a model and an inspiring father. My beloved mother Joyce Chidumu and my sisters Chimwemwe, Maria, Madalitso and Chifundo, thanks for your support.

ACKNOWLEDGEMENTS

I would like to thank God for seeing me throughout the course of my entire study and stay in Kenya and South Africa. I give my sincere gratitude to the German Academic Exchange Service – Deutscher Akademischer Austauschdienst (DAAD) for providing me with a scholarship through the African Economic Research Consortium (AERC) / Collaborative Master of Science in Agricultural and Applied Economics (CMAAE) Programme to pursue a Master of Science degree in Agricultural and Applied Economics at Egerton University in Kenya.

I would like to sincerely thank Dr B.K Mutai and Dr. M.A.R. Phiri for tirelessly supervising the whole research work, their guidance and support is highly appreciated. I gratefully acknowledge the support I got from members of staff of Egerton University and Dr Victor Okoruwa from the University of Ibadan (Nigeria) for their invaluable support and their various contributions to the success of this work.

To my friends, Adolphus, Mike, Vivian and Beatrice, thanks for the good times, your support and for the smiles you bought unto my face during hard times. To God be the Glory!

ABSTRACT

Malawi is among the most poor and food insecure countries in the world according to UNDP's Human Development Report (2004). Agriculture is the driving force of the economy of Malawi and the backbone to food security. The government of Malawi introduced a program called One Village One Product (OVOP) in 2003 whose major objective is poverty reduction by bringing economic independence into the communities. However, no effort had been made to evaluate the program and its activities hence creating an information gap. This study was therefore conducted in OVOP operation area of Bvumbwe in Thyolo district, Malawi to assess the impact of One Village One Product (OVOP) program on households' farm income and its implications on food security. Primary data was collected from a total of 80 beneficiaries and non-beneficiaries of One Village One Product (OVOP) program. Out of the 52 beneficiaries, 40 were systematically selected and the other 40 was collected randomly from the non-beneficiaries in the area. The data were collected in April 2006 by the use of structured questionnaires and focus group discussion guide. Data was analyzed using descriptive statistics, chi – squares, t-test and the Ordinary Least Squared Technique of multiple regression method. A likert scaling technique was used to rate farmers' perception of the effect of OVOP on farm activities. The results indicated that there was a significant difference in the levels of household farm income between beneficiaries and non beneficiaries of OVOP. The OVOP beneficiaries were found to be better off in terms of household food security through increased food basket, enterprise diversification and food access which was attained through higher farm income. However, farmers' socio-economic characteristics did not adequately explain the disparity in household farm income. This implies that there are some other factors that are closely associated with agricultural production and participation in programs such as OVOP, which may require further investigation. Participation in OVOP and household size were found to be positively associated with household farm income. The study recommends expansion of the OVOP program to target the vulnerable groups and government intervention fast track infrastructural development in the area to facilitate value addition, processing and storage facilities.

TABLE OF CONTENTS

DECLARATION AND APPROVAL.....	ii
COPYRIGHT	iii
DEDICATION.....	iv
ACKNOWLEDGEMENTS	v
ABSTRACT.....	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	ix
LIST OF FIGURES	x
ACRONYMS & ABBREVIATIONS:.....	xi
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background of the study	1
1.1.1 Government intervention and Strategies (overview)	1
1.1.2 One Village One Product Program	2
1.2 Problem Statement	3
1.3 Objectives of the Study	4
1.4 Hypotheses	4
1.5 Justification of the Study	4
1.6 Scope and Limitation of the study	5
1.7 Definition of terms	5
CHAPTER TWO	7
LITERATURE REVIEW	7
2.1 Aspects of Household food security in relation to income.....	7
2.2 Indicators of food insecurity	8
2.3 Food security situation in Malawi	8
2.4 The One Village One Product programme	9
2.5 Theoretical Framework.....	10
2.5.1 Conceptual framework.....	10
2.5.2 Explanation to the conceptual frame work	12
CHAPTER THREE	13
METHODOLOGY	13
3.1 Study Area	13
3.2 Sampling Design.....	15

3.3 Data Collection	15
3.4 Data Analysis	15
3.4.1 Objective One:	16
3.4.2 Objective Two:.....	17
3.4.3 Objective three:	18
CHAPTER FOUR.....	19
RESULTS AND DISCUSSION	19
4.1 Introduction.....	19
4.2 Socio-economic Characteristics of the Sampled Farmers	19
4.2.1 Position in the household	19
4.2.2 Age of Respondents	21
4.2.3 Marital Status of Household Head	22
4.2.4 Education Level Respondents	23
4.2.5 Household Size and Number of Active Persons	24
4.2.6 Primary Activity of Household Head	24
4.2.7 Land Tenure Systems.....	26
4.2.8 Land Holding Sizes.....	27
4.3 Empirical Results	29
4.3.1 Reasons for joining OVOP	29
4.3.2 Effects of variables determining household farm Income	29
4.3.3 Household perception on the influence of OVOP program farm on activities	31
4.4 Implications of Results to food security	33
4.5 Problems Affecting Agricultural Production.....	35
4.5.1 Capital	35
4.5.2 Lack of Markets for Agricultural Produce.....	35
4.5.3 Post harvest loss	36
CHAPTER FIVE	37
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	37
5.1 Summary	37
5.2 Conclusion	38
5.3 Recommendations.....	39
APPENDIX.....	44

LIST OF TABLES

Table 1: Gender Status of Respondents	19
Table 2: Gender of household head	20
Table 3: Age of Respondents.....	21
Table 4: Marital status of household head	22
Table 5: Education Level of Respondents	23
Table 6: Primary Activity of Household Head	24
Table 7: Main source of Household Income.....	25
Table 8: Nature of Land ownership	27
Table 9: Land Holding Sizes.....	28
Table 10: Distribution of respondents by reason for Joining OVOP (Members).....	29
Table 11: OLS regression model results of Effects of variables determining amount of household farm income.....	30
Table 12: Effects of OVOP on farm activities.....	32
Table 13: Output on Household income before OVOP	33

LIST OF FIGURES

Fig 1: Definition of food security.....	6
Fig 2: Theoretical framework of food security in Malawi.....	11
Fig 3: Map of Malawi showing the location of the study area.....	14

ACRONYMS & ABBREVIATIONS:

ANOVA	: Analysis of Variance.
FAO	: Food and Agriculture Organizations of the United Nation
FGD	: Focus Group Discussion
GOM	: Government of Malawi
IFDC	: International Center for Soil Fertility and Agricultural Development
IFPRI	: International Food Policy Research Institute
IMF	: International Monetary Fund.
MOA	: Ministry of Agriculture
MPRSP	: Malawi Poverty Reduction Strategy Paper.
NGO	: Non-Governmental Organization.
OLS	: Ordinary Least Square.
OVOP	: One Village One Product
TIP	: Targeted Input Program
UNDP	: United Nation Development Programme
USAID	: United States Agency for International Development

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Malawi is among the most food insecure countries in the world. According to UNDP's Human Development Report (2004), it ranked number 162 out of the 174 countries reporting on the Human Development Index and half of these 12 countries in the bottom line were recovering from conflict and state failures. While twenty years after independence in 1964, Malawi was fully capable of producing all the food requirement but it is no longer able to either produce or commercially purchase all of the food it needs. The country is now in a near constant state of food shortage with persistent high levels of nutritional deprivation. Malawi's precarious food security situation is intimately linked to its economic development challenges, while the effects of slow economic growth and macroeconomic problems on livelihoods and food security are directly linked to poverty, (Sahley et al, 2005). The Integrated Household Survey (2005) reported that 6.3 million people of Malawi population is below poverty line, accounting for around 65.3%. In 2003, 37 percent of its GDP was derived from agriculture despite the fact that 85 percent of the economically active population was employed in agriculture. With few exceptions, agriculture continued to be rain-fed. These conditions have rendered Malawi highly vulnerable to climatic shocks that have precipitated acute food insecurity with increasing frequency over the past 20 years.

It is important to appreciate from the onset, that Agriculture is the single most important sector in the economy of Malawi. It accounts for about 40% of the country's GDP and about 90% of its export earnings. Given the importance of this sector, it is not surprising that the performance in the agricultural and rural economy is the critical component of food security and overall economic growth. It is disheartening, however, to point out that the performance of Malawi's Agriculture has been quite unsatisfactory, with low rates of growth, deepening of pervasive rural poverty and food insecurity, (GOM 2004).

1.1.1 Government intervention and Strategies (overview)

Food security is a politically charged policy issue in Malawi. Since 2000/01, it has appeared in the platforms of politicians, on the agenda of policy makers, in the programs of public bureaucracies, among the duties of village chiefs and on the pages of National news papers. The Government of Malawi has made numerous attempts to draft food security policy and

has reviewed dozens of its policies - each with numerous program actions and recommendations across different sectors such as Agriculture, (GOM 2004). One of the Government interventions to curb food security problem in Malawi was the institution of the Starter Pack Program that distributed small pockets of fertilizer, hybrid maize seeds and legumes to smallholder farmers with the aim of ensuring household food security and avoiding reliance on unstable markets. The program was scaled back after the year of 2000 to target the most needy in a program called Targeted Input Program (TIP) and other programs such One Village One Product (OVOP)

The Malawi Poverty Reduction Strategy Paper (2000) identified an enabling environment as critical to the transformation of the economy and poverty reduction. Various approaches have been articulated on the role of market-based economic development in strengthening household food security. These cover areas of agricultural production increases to attain food sufficiency, agricultural diversification especially in agro-processing activities, livestock development, Access to agricultural inputs and many more. One Village One Product (OVOP) is one of such strategies which aim to address the problem of poverty and food insecurity in Malawi. According to the speech made by the president of the Republic of Malawi Dr. Bingu Wamutharika on 20th May 2005 as quoted...

[---The funds will empower Malawians, particularly those in the rural areas to engage in business that will generate incomes. It is the Government's expectation that this fund will go along way towards raising the incomes of Malawians and thereby reducing the levels of poverty. One Village One Product will empower rural household to create small and medium enterprises that add value to our agricultural commodities and other raw Materials-----] (GOM 2004).

1.1.2 One Village One Product Program

One Village One Product (OVOP) has been adopted by the government of Malawi as a business development strategy on the basis of lessons learnt from the Oita Prefecture in Japan. The program implies zoning of production, processing and marketing of goods and services. This basically mean that communities direct their efforts towards the production of goods and services which they have a comparative advantage over other communities. On the basis of its Japanese origin, the catch phrase to the implementation of OVOP is “*thinking globally while acting locally.*” The approach thus empowers local communities to analyse

their own challenges, search for solutions and implement projects that improve their living standards using local resources. The One Village One Product program also takes recognition of the fact that Malawi has a lot of opportunities most of which are wasted and not fully exploited. By taking advantage of the globalisation, information, education and communication (IEC) strategies and democratisation, new opportunities can be exploited leading to the reduction of disparities of wealth among Malawians.

In tandem with other initiatives that have been introduced before in the country such as the VISION 2020, and the Malawi poverty reduction strategy paper (MPRSP), the main objective of the One Village One Product is poverty reduction by bringing economic independence to the communities. The OVOP programme does not literally mean that communities must produce one product or service. A village can develop more than one product or service or jointly with others, depending on available resources, (GOM 2003).

1.2 Problem Statement

One Village One Product (OVOP) program was implemented in 2003 in order to increase food production, productivity and incomes for small scale farm household. However, its impact on these areas was not known and no effort had been made to evaluate the program and its activities hence creating an information gap that needed to be filled. In spite of the government's efforts to address the issue of food insecurity, the problem still remains unabated. This study, therefore, intended to assess the impact of the OVOP program on household farm incomes and its implications on food security in the operational area Bvumbwe in Thyolo District.

1.3 Objectives of the Study

The general objective of this study was to assess the impact of One Village One Product (OVOP) program on household farm income and its implications on food security

Specific Objectives were:

1. To investigate the socio economic characteristics that affect household farm income
2. To determine the differences in farm income between beneficiaries and non beneficiaries of OVOP program.
3. To assess household perception on the influence of OVOP program on farm activities

1.4 Hypotheses

1. Household's social economic characteristics do not affect household farm income.
2. There is no significant difference in household farm incomes between beneficiaries and non beneficiaries of OVOP.
3. OVOP program has no effect on on farm activities

1.5 Justification of the Study

Since the introduction of one Village One Product in 2003, no efforts has been made to evaluate the program in terms of its effect on household income as well as the livelihoods of the beneficiaries in relation to food security. The activities and achievements of the program were not documented hence creating an information gap which this study tends to fill. Given the fact that food security is a critical issue in Malawi with agriculture as the driving force to food security, higher farm and non farming returns ensures food availability and access at household level. Therefore, any research work that aimed to better understand the strategies employed such as One Village One Product program geared to solve the problem of poverty and food insecurity was not only relevant but necessary. Furthermore, in order to formulate appropriate and effective agricultural and food security policies, there is need to keep abreast of the impact of programs implemented by government and Non governmental organizations (NGOs).

1.6 Scope and Limitation of the study

This study was confined to getting information from the beneficiaries and a selected number of non beneficiaries of One Village One Product (OVOP), in a small geographical area of the country, the results may not apply to others. The study mainly focused on the impact of One Village One Product (OVOP) on household farm incomes and its implications on food security hence setting a boundary for the study. However, it is also important to mention that food security is quite diverse and broad: It covers issues of Food access, food availability and food utilization. This study only focused on the component of food production in the category of food availability and food access. Given that food security is broad and involves diverse fields, disciplines and area specific, not all issues related to it could be fully explored with the limited time, and resources scheduled for this study.

1.7 Definition of terms

Food security

Food security is defined as the “state when all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life (USAD, 1995). There are three dimensions to this definition of food security: availability (a measure of food that is, and will be, physically available in the relevant vicinity of a population during a given period); access (a measure of the population’s ability to acquire available food during a given period); and utilization (a measure of whether a population will be able to derive sufficient nutrition during a given period (Hoddinott et.al, 2002). These overlap to characterize the unique food security problem in Malawi. Fig 1 illustrates the above definition

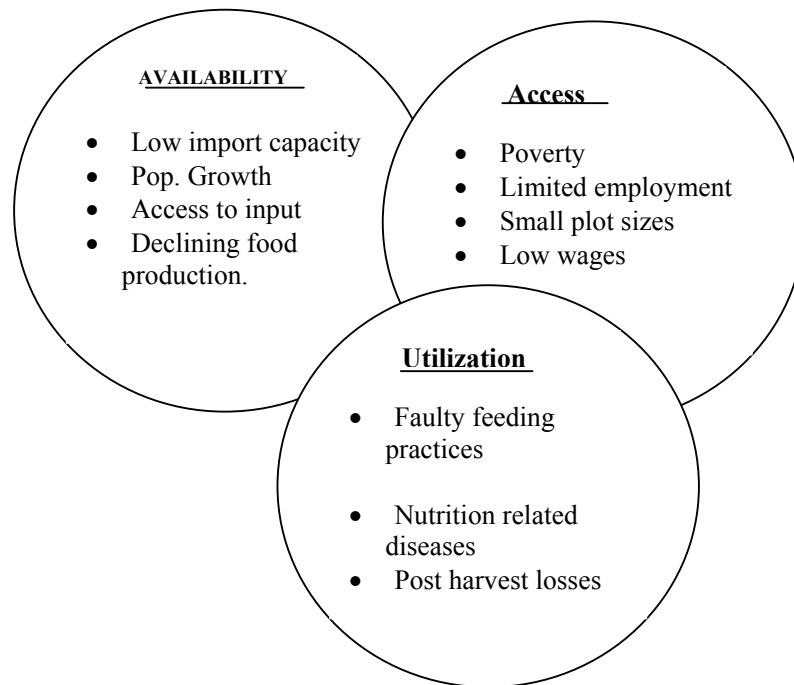


Fig 1 Characterization of Food security

Source: USAID (1995)

Household: Group of people who are generally bound together by ties, kinship, or joint financial decision, who live together under single roof or compound, are answerable to one person as the head and share the same eating arrangement.

Farm income: Income generated from farming activity accruing to an individual

Non-farming income: income generated from non farming activities which are performed on the farm .e.g. beer brewing, hand crafting, etc.

Non Salary Income: Income generated from farming and non farming activities performed on the farm

Small holder farm household: Refers to the households who own land and farm on up to a maximum of ten acres. The land ownership can either be leasehold, private or communal.

CHAPTER TWO

LITERATURE REVIEW

2.1 Aspects of Household food security in relation to income

Temporary food insecurity is the result of short term fluctuations in production and consumption brought about by fluctuations in household incomes and availability of food at the household level. Temporary food insecurity is thus a manifestation of temporary lack of access to sufficient food, (Obasanjo et.al 1992). The analysis of food security has a long history in research on poverty, living standards and income distribution, (Hadaad 2000). Relevant issues in this study were the share of specific items across different income levels, and the importance of child nutrition in poor families. Lundberg et.al (1996) discusses a number of studies that show that control over both earned and unearned income results in different expenditure patterns for males and females hence Stability of income for small holder farmers is as important as yield per hectare

According to Alberto (1981), rural food consumption patterns are substantially more diverse and involve consumption of several different crops including cassava, sorghum, millet, rice, bananas, maize etc. Access to food encompasses physical and economic aspect. Physical access to food relate both to the adequacy of supply and to the efficiency of the distribution system, including storage, preservation, transport, marketing and processing. Economic access to food relates to the ability of group of people to establish entitlements over a requisite amount of food, (Obasanjo et.al, 1992). In a study done by Vakis et al, (2004) Market failures were found to comparatively affect household behavior. These market failures often imply existence of an inverse relation between land productivity and farm size that establishes the potential gains of redistributive land reforms. These market failures may result in, households being completely autonomous in food production and or labour supply, even when they participate in other markets, (Sadoulet et al, 1995).

Jacoby (1992) states that the farm - household is conceptualized as being endowed with a stock of resources termed the household resource base. These resources are allocated to a range of activities that are required to maintain the household's level of subsistence consumption and possibly to generate a surplus. More so, a remarkable division of labor based on gender characterizes production at all levels within the household. Further more, Maxwell et al, (1992) postulated that most families access food by consuming what they produce or by purchasing food in the growing season from income earned from their harvest

time sales or from off farm work. Therefore, farmers are expected to generate income from the sale of their produce which can be used to purchase food besides consuming what they produce from any farming activity. The income generated can also be used to serve as capital for the production of other commodities such as livestock hence diversification of farm enterprise and increased food base.

2.2 Indicators of food insecurity

In the work by Maxwell et al, (1992), a distinction is made between "process indicators"—those that describe food supply and food access—and "outcome indicators" that describe food consumption ensurement. These include, dietary diversity, household caloric acquisition, and food balance sheet. This is necessary to identify the food insecure, to assess the severity of their food shortfall and to characterize the nature of their insecurity (seasonal versus chronic). Maxwell et al (1992) lists 25 broadly defined indicators. Riely et.al (1995) list 73 of such indicators, somewhat more disaggregated than those found in Maxwell and Frankenberger. Dietary diversity is one of the outcome indicators of food security. This is the sum of the number of different foods consumed by an individual over a specified time period. According to Hoddinott (1999), households become better-off if they consume a wider variety of foods. In the study conducted by Hoddinott et al (2002) in 10 countries (India, the Philippines, Mozambique, Mexico, Bangladesh, Egypt, Mali, Malawi, Ghana, and Kenya), levels of caloric acquisition was found to be correlated with dietary diversity; Dietary diversity was also found to track seasonal changes in food security and also that measures of dietary diversity are highest just after harvest time and lowest during the hungry season; and also appears to capture differences in distribution within the household

2.3 Food security situation in Malawi

In the first years of Malawi's independence since 1964, Malawi was fully capable of producing all the food it needed, it is no longer able to either produce or commercially purchase all of the food it needs. The country is now in a near constant state of food shortages with persistently high levels of nutritional deprivation (UNDP, 2004). Malawi is increasingly unable to fulfill its growing national food need through its own food production. According to Sahley et al, (2005), this lack of food availability is related to soil fertility and apparent lack of capacity to introduce sustainable production - enhancing technology, including fertilizer, improved seed and irrigation. Low incomes also reduce consumer demand for food. A recent analysis by Webb et al (2002) has added fourth a cross - cutting dimension of

“Vulnerability” which represents the susceptibility of a country or a region to food insecurity due to shocks either natural, social or economic in origin hence a robust resilience to shocks is fundamental to food security. The food crisis in 2001 - 2002 provided a stark demonstration of Malawi’s vulnerability when a relatively minor drought, combined with a dysfunctional policy environment, threatened food availability, Access and utilization, resulting in food shortages, soaring food prices and rising levels of acute malnutrition in children. The livestock sector has remained small, contributing only about 7% to GDP. Production levels and consumption of livestock products remains among the lowest in the world, (GOM, 2004). The importance of livestock activities on the reduction in poverty levels and improvements in household food security cannot be over emphasized. Small ruminants and various types of poultry, particularly scavenging chickens, make a vital contribution to household food security. Yet, even the poorest families show amazing energy and creativity in trying to provide food and income for themselves. This is an indication that there is high potential in the people of Malawi if only government set up proper policies to enable rural innovation and enhance increase in agricultural productivity among the rural poor. Thus the One Village One product (OVOP) seeks to enable these rural innovations, increase income and enhance increase in agricultural productivity among the rural poor.

2.4 The One Village One Product programme

The One Village One Product (OVOP) was started in Oita prefecture, Japan in 1979 by the then governor of the prefecture Mr Morihiko Hiramatsu. The programme encouraged local communities to develop themselves with emphasis on using local resources. In Malawi, the programme has been taken up as an approach for community empowerment and development. The concept of one village one product was already tested on a pilot phase in 2003. The objective of this phase was to assess the applicability of the concept in the country for poverty reduction. Based on the individual success stories of the pilot project, it was concluded that Malawi with its varied and rich ecological zones, offer conducive environment for the introduction of the one village one product programme that compliments poverty reduction initiatives, OVOP (2003). The one village one product programme was established to increase income generating activities in agricultural produce focusing on adding value and reducing the export of raw materials. Since prices of agricultural produce are neither stable nor guaranteed on the world or local market, it was worth while for the country to seek other avenues for sourcing revenue where it might have comparative advantage on certain products.

Summary of literature Review

Studies have been done in different areas touching different aspects of household food security. Most studies have alluded to household food insecurity as a result of lack of economic empowerment to produce and acquire sufficient food, hence setting a strong link between poverty and food insecurity. This implies that income plays a vital role in providing rural households with economic empowerment to produce and obtain sufficient food for their productive life. Given the fact that income is critical to food security and programs which aim to bring about economic independence to rural households such as OVOP in place, it was important to verify if indeed such programs are achieving the stated objectives hence filling the information gap.

2.5 Theoretical Framework

This part provides a model of how to make logical sequencing of relationships among several variables of interest in order to achieve the stated objectives of this study. It presents reviewed theories from both published and unpublished reports, both old and modern to bring about relationships of the variables.

Specifically, food security touches issues of food availability, accessibility and utilization. This study specifically underscored availability and accessibility of food by households which are the major determinant of household security. In a context of fixed land, but steadily increasing demand for food, maintaining household food self sufficiency requires increased use of the yield -enhancing inputs that will raise land productivity. Most stake holders reiterate that promoting diversification can achieve the objectives of expanding the household's source of food and income for food security, but only if it is done in such a way that is supports either what the farmers are doing or what they would like to do (GOM,2004)

2.5.1 Conceptual framework

The figure below provided a sequence of relationships that the researcher conceptualized in terms of how food security in relation to income accruing to farmers through OVOP can be achieved. (**See illustration below**). The illustration below and the methodology used were justified by Maxwell et al (1992) who postulated that most families access food by consuming what they produce or by purchasing food in the growing season from income earned from their harvest time sales or from off farm work. Therefore, farmers were expected to generate income from their sales which can be used to purchase food besides consuming

what they produce under the program. The income generated can also be used to serve as capital for the production of other commodities such as livestock which are out side the project hence diversification of farm enterprise and increased food base.

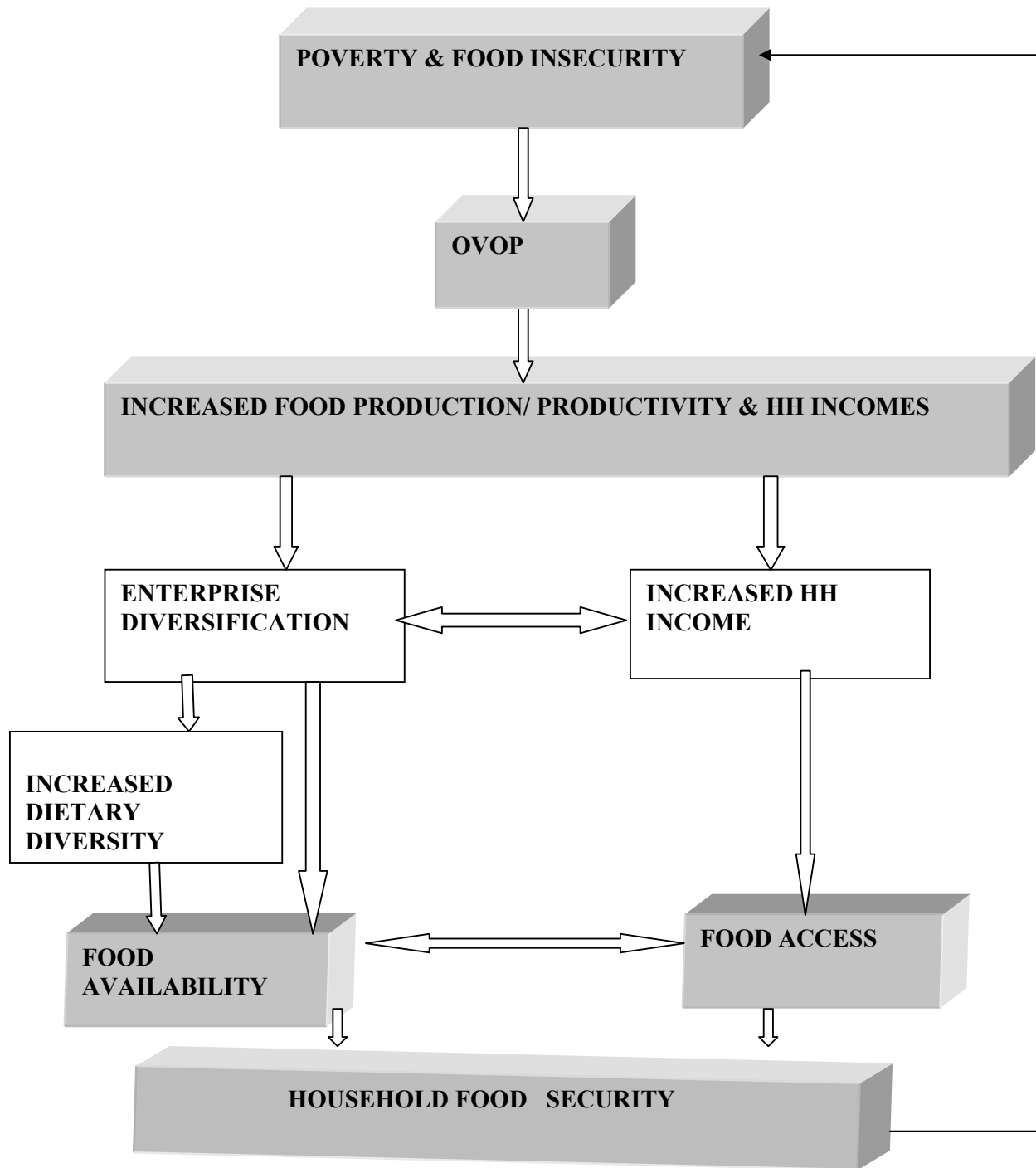


Fig 2: Conceptual framework of food security in Malawi

Source: Researcher's own

2.5.2 Explanation to the conceptual frame work

One Village One Product (OVOP) is a government project with support from Japan which aims at adding value to farmers' enterprises hence increasing their returns. Income is therefore generated from such enterprises and this enables farmers to directly have access to food from the market through purchase. Income also serves to provide inputs for the production of other enterprises such as livestock and crop husbandry, this leads to household enterprise diversification. Enterprise diversification provides an increased source of revenue which the farmer realises from.

Enterprise diversification not only secures the farmer with income but it also increases the household food basket and provides sufficient food and dietary diversity within the household, this also ensures food availability at household level. Household food availability is highly linked to access because a household has access to that which is available (Maxwell et al, 1992). Therefore, food availability and access which are the major components of household food security can be achieved with the implementation of OVOP. However or which ever way the household utilise the available food in terms of consumption patterns and utilisation is not the focus of this study.

CHAPTER THREE

METHODOLOGY

3.1 Study Area

This study was conducted in Bvumbwe area in Thyolo district which is located at the approximate latitude of $16^{\circ} 10' 0''$ and $35^{\circ} 10' 0''$ E. Thyolo is a mid altitude area which experience sub-humid climatic conditions of approximate maximum temperatures of 25.1°C and minimum temperatures of 15.4°C . Sandy-loam soils are prevalent which favor the production of mostly fruits and vegetables, maize, ground nut, cassava, cow peas, beans and sugarcane. The study specifically targeted One Village One Product (OVOP)'s operation area of Bvumbwe. OVOP program targeted this area because of its high production potential of agricultural produce hence farmers in the area were alerted on the upcoming of the program in the area where some joined the program and others did not.

Bvumbwe area has the highest household size and number of family members living on the farm. The majorities of the farming households are resource poor and practice small-scale farming with limited use of available technologies. This is in line with National AIDS Commission (1999), which reported that about 80% of the population in Malawi lives in the rural areas, where most people are resource poor, practice small holder subsistence farming and 60% are faced with food insecurity. This implies that Bvumbwe is among the rural areas in Malawi which are facing food insecurity.

Bvumbwe area is located in Thyolo district and is at the boarder with Blantyre city which is the commercial city of Malawi. Blantyre provided the nearest market niche for the farmers in Thyolo district especially those in Bvumbwe area. Fig 3 below provides a sketch map the location of the study area and their location.

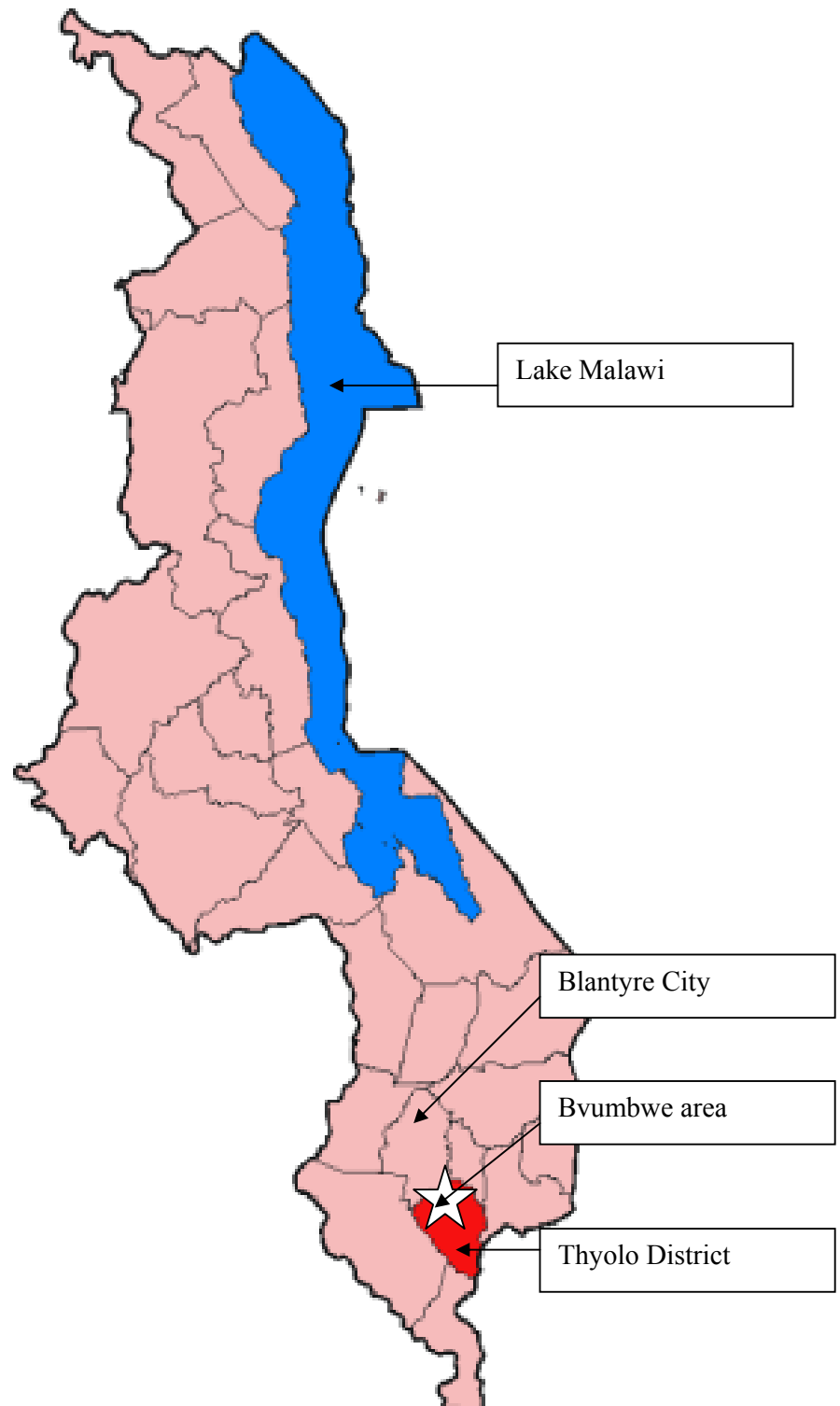


Fig 3: Map of Malawi showing the location of the study area

Source: <http://www.google.com/map> of Malawi

3.2 Sampling Design

The target population of this study was small scale farmers registered and those not registered under the OVOP program. OVOP program has drawn a list of fifty two vegetable farmers who are beneficiaries of the program in the area. From the 52 participants, a systematic random sampling procedure was employed to generate a sample size of 40. Simple random sampling was employed to generate 40 non participants of the program within the area to give a total of 80 respondents.

3.3 Data Collection

Data was collected on socio-economic and demographic characteristics by an interview schedule. All selected participants and non participants of OVOP were visited and interviewed. The researcher and three (3) enumerators carried out the exercise. Primary data was also collected through focus group interviews by the use of interview guide. Focus group discussions were employed to capture information based on consensus and to verify the responses from the individual interview. Respondents were placed in groups of 8 – 10 and a checklist of questions was used to facilitate the discussion and notes were taken. The study also made use of observation method which enabled the researcher and the enumerators to validate the household's responses

Data collected covered: bio-data of household composition, type of agricultural enterprise, objectives of the farming enterprise, yields obtained, quantities sold, quantity consumed and traded, off farm sources of income (if any), source of labor, value addition, storage, transport availability and sources of fertilizer, seeds, credit, capital, extension, pesticides, drugs, feeds, water (irrigation – if any), strength and opportunities in the farming system under OVOP, problems, constraints and personal opinions were captured.

Secondary data and other relevant information was collected from bulletins, books, journals, publications from Bunda College of agriculture library, reports from the Ministry of Agriculture (MOA) and others.

3.4 Data Analysis

Data collected were processed using SPSS and Stata packages. Descriptive statistics, Chi-square Test, t – test, Ordinary Least Square Technique of Multiple Regression and the Likert scale technique were employed to analyze the data.

3.4.1 Objective One:

To determine social economic characteristics that affect household farm income

An OLS multiple regression model was used to determine the significance of selected social economic characteristics that affect the level of farm income of the households. Socio economic characteristics, implied household composition characteristics (size, age, gender, education, occupation, participation in OVOP) and owned household resources (land, family labor, equipment and draft)

Model specification

The implicit relationship of the variables were represented and specified as follows:

$$I = f(\text{Age, HS, Edc, Gender, land size, famLabor, Equip, Draft, OVOP}) \dots \dots \dots (1)$$

The final specification of the model was represented as below. The expected nature of association between the dependent variable and the explanatory variable (owned household resources) question is shown in parentheses.

$$\text{Income} = b_0 + b_1(\text{age}) + b_2(\text{HS}) + b_3(\text{Edc}) + b_4(\text{Gender}) + b_5(\text{Land}) + b_6(\text{F Labor}) + b_7(\text{Equip}) + b_8(\text{Draft}) + b_9(\text{OVOP}) + \mu$$

Where:

Income	= Total household farm income (kwacha)	
b_0	= constant term	
Age	= Age of the respondent (years)	(+)
Size	= Household size	(+)
Edc	= Education level of the household head	(+)
Gender	= Gender of the household head (Dummy)	(+/-)
Land	= Land Size (acre)	(+)
F Labor	= members above five years	(+)
Equip	= equipment owned (kwacha)	(+)
Draft	= Draft owned (cattle equivalents)	(+)
OVOP	= Participation in OVOP (Dummy)	(+)
μ	= Error term	

3.4.2 Objective Two:

To investigate the impact of OVOP on household farm income

Total Household non salary income was computed from values of farm sales, amount consumed by the household, value of stored commodities minus variable cost. i.e

$$I = \sum_{i=1}^n \left\{ \sum \{P_i Y_i + R_i Q_i + Z_i K_i\} - \sum_{j=1}^n \sum_{i=1}^n W_i X_j \right\} \dots\dots\dots (2)$$

$i = 1, 2, 3, \dots, n$
 $j = 1, 2, 3, \dots, n$

Where;

I = total household non-salary income per year

P = price of commodity sold

Y = quantity of commodity sold

R = market price of commodity consumed

Q = quantity consumed

Z = market value of commodity stored

K = Quantity of commodity stored

W = price of variable input used

X = quantity of input used

Farming enterprises were calculated on 1 year basis since the introduction of OVOP (for the participants of OVOP) to determine the total amount of income earned by the households outside formal employment. Types of enterprises were categorized into;

- OVOP enterprise (for the participants of OVOP)
- Crop production (crops grown and harvested within the year)
- Livestock production (number livestock reared in the year)
- Non farming activities (activities performed at the farm e.g. handcrafting and beer brewing)

Examples of variable input include: labor (man days), Seed (kg/ha), Fertilizer (kg/ha), etc.

It was expected a priori that the higher the value of inputs and technology used by a farmer, the higher the household farm income. Also, high output prices will results to higher returns and the higher the input prices, the lower the returns.

A t - Test was used to test the significant difference in means between the household farm income for the participants and non participants of OVOP on 1 year basis.

3.4.3 Objective three:

To determine the effects of OVOP on income generating activities

This objective was achieved using the Likert scaling data capture technique. Predetermined effects were presented to the respondents and the likert scaling technique was used to rate the effects.

The Likert scaling technique

A four point likert scale of no effect (1), little effect (2), moderate effect (3), and high effect (4) was employed to rate farmers perceptions on the influence of OVOP on farming activities and the frequency of the responses was determined using descriptive statistics.

3.5 Expected out put

This thesis is expected to fulfill the requirements of Masters of Science Degree in Agricultural and Applied Economics. Subsequently, publications from the findings of this study will reinforce dissemination to the stakeholders. The findings from this study will also form a basis for policy action towards addressing the problem of poverty and food insecurity in Malawi. Results from this study will help revamp the OVOP program and for the program implementers to make necessary adjustments where necessary.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter outlines the findings from the research which was done to assess the impact of OVOP on household farm income – implications on food security in Bvumbwe area, Thyolo district, Malawi. The following sub- topics discusses in detail the socio-economic characteristics of the sampled OVOP and Non OVOP farmers, the empirical results and the implication of the findings to food security.

4.2 Socio-economic Characteristics of the Sampled Farmers

The socio-economic characteristics presented under this section include: gender, marital status of household head, age, major activity of household head, and formal educational level of household heads. Other characteristics include: household size, family labor availability, tenure ownership, source of income and land holding sizes.

4.2.1 Position in the household

Fifty three percent of the respondents from OVOP were male respondents while 48% were female. In the Non – OVOP category, 55 % were male and 45 % were female respondents as shown in table 1 below.

Table 1: Gender Status of Respondents

	OVOP MEMBERS		NON – OVOP MEMBERS	
	Frequency	percent	frequency	percent
male	21	52.5	22	55.0
female	19	47.5	18	45.0
total	40	100.0	40	100.0

Source: summarized from computer out put

The majority of the sampled households were male headed, accounting for about 97.5 % and 85 % for the OVOP farmers' category and Non - OVOP farmers respectively. Female-headed households accounted for small proportions of 2.5 % in OVOP category and 15 % in the Non – OVOP category as shown in table 2 below.

Table 2: Gender of household head

	OVOP MEMBERS		NON – OVOP MEMBERS	
	Frequency	percent	frequency	percent
Male	39	97.5	34	85.0
Female	1	2.5	6	15.0
total	40	100.0	40	100.0

($\chi^2 = .800$, $p = .371$).

Source: summarized from computer out put

The results above show that the working sample for the study contained a small proportion of female-headed households especially in the OVOP category. This could be explained by the fact that the majority of households (about 70 %) in the country are headed by males (GoM, 2002). The other reason could be that more female headed households have limited land and labor resources that do not allow them to produce surplus produce to earn them sufficient income and participate in commercial activities (Kherallah et al., 2001). Smale and Heisey (1994) indicated that female headed households are also more likely to be cash-and credit-constrained, thereby affecting their ability to produce. The test statistic from the chi-square at 95%level of significance to determine any differences between OVOP and Non OVOP farmers with respect to gender was not significant implying that there is no significant difference between OVOP and Non OVOP members in relation to gender. ($\chi^2 = .800$, $p = .371$). Only 2.5 % of the OVOP participants were female headed, suggesting that female heads are less likely to involve themselves in clubs and associations such as OVOP.

However, a relatively higher proportion (15 %) of female-headed households was captured in the Non – OVOP category suggesting the existence of female headed household in the study area who are unable to exploit government intervention and strategies such as OVOP to their benefit. According to Smale and Heisey (1997), female-headed households in Malawi lack adult labor for working in production work relative to male-headed households due to their high involvement in other reproductive and social engagements. Quisumbing (2003) also indicated that female-headed households' application of labor, fertilizer and manure may be different from male-headed households. Women headed households may experience labor bottlenecks more especially during the peak periods of planting and weeding, which may later affect the returns obtained and participation in other activities.

4.2.2 Age of Respondents

Table 3 below shows the distribution of age between members and non members of OVOP. It can be seen that 35% of non - OVOP members were aged between 50 and 60, 33 % were aged between 40 and 50 and 23 % aged between 30 and 40 years old. A small proportion of 10% was aged between 20 and 30 years old. The OVOP members had a minimum age of 21 and a maximum of 72 years. About 99% of the OVOP members were aged between 20 and 60 years, while only 5 % had their age above 70 years as represented below.

Table 3: Age of Respondents

Age	OVOP MEMBERS		NON – OVOP MEMBERS	
	Frequency	percent	frequency	percent
20-30	13	32.5	4	10.0
30-40	12	30.0	9	22.5
40-50	8	20.0	13	32.5
50-60	5	12.5	14	35.0
60-70	0	0.00	0	0.00
Above 70	2	5.0	0	0.00
Total	40	100.0	40	100.0

Source: summarized from computer out put

The age structure represented in table 3 above indicates that the majority of farmers under the OVOP programme were aged between 20 and 40. It also shows that the majority of those that were not involved in the OVOP programme are aged between 40 and 60 years old. According to Ali (1995) and Bravo-et al (1994), Age is one of the factors that affect the efficiency of carrying out farm activities. Age is also associated with farmer experience in farming practices as farmers gain experience over time. It can therefore be concluded in this study that the majority of non - OVOP farmers were most experienced in farming and did not find it necessary to participate in upcoming programs and interventions such as OVOP. While as indicated above, the majority of the OVOP farmers were relatively younger, less experienced in farming and participated more in programs such as the OVOP.

4.2.3 Marital Status of Household Head

People in the study area were involved in one major type of marriage arrangement, that is, monogamy-where an individual had one spouse as opposed to polygamy, where an individual, usually a man, has more than one spouse. The marital status of these households is illustrated in table 4 below where about 97 % of the OVOP respondents and 77.5 % of the non OVOP respondents were married. The other farmers were either widowed or divorced or single as presented below.

Table 4: Marital status of household head

Marital status	OVOP farmers		Non OVOP farmers	
	Frequency	Percent	Frequency	Percent
single	0	0	3	7.5
Married (monogamy)	39	97.5	31	77.5
Married (polygamy)	0	0	0	0
Widowed	1	2.5	5	12.5
Divorced	0	0	1	2.5
Total	40	100	40	100

$\chi^2 = 7.581$, $p = .056$

Source: summarized from computer out put

However, the chi-square test to assess whether there was any significant difference between OVOP and Non OVOP farmers in terms of their marital status was significant at 10% confidence level ($\chi^2 = 7.581$, $p = .056$). This implies that OVOP and Non OVOP members were significantly different in relation to their marital status. The difference in marital status came about probably because of high numbers of widowed and divorced couples in the Non OVOP category as opposed to the OVOP category. This is also an indication that vulnerable groups of people in the study area such as the widowed are not actively participating in up-coming programs such as the OVOP program. This could be due to land, credit, labor and other constraining factor which affect their ability to exploit government interventions.

4.2.4 Education Level Respondents

The majority of farmers, 75 % of the OVOP participants and 70 % of the OVOP non participants attained primary education. This was followed by those with education up to form two level and form four level accounting for about 12.5 % each in the OVOP category. In the Non OVOP category, 10 % did not participate in any formal education while another 10 % attained education up to form two and form four respectively (table 5). Chi – square tests was conducted to assess if there was any significant difference between OVOP and Non OVOP with respect to their education level and the results were not significant at 95% confidence interval ($\chi^2 = 4.291$, $p = .368$) as represented in table 5 below.

Table 5: Education Level of Respondents

Education cluster	OVOP sample		Non OVOP sample	
	Frequency	Percent	Frequency	Percent
No formal education	0	0	4	10
Primary Education	30	75	28	70
JCE (up to form 2)	5	12.5	4	10
MSCE (up to form 4)	5	12.5	4	10
Tertiary education	0	0	0	0
Total	40	100.0	40	100.0

$\chi^2 = 4.291$, $p = .368$

Source: summarized from computer out put

These results imply that there was no significant difference in the education level between OVOP beneficiaries and non beneficiaries in terms of their literacy levels. It can therefore be concluded that the majority of the respondents from the study area did not attain higher levels of education such as secondary and tertiary education. Higher attendance of primary education can be attributed to previous government regimes which promoted free primary education. Table 5 above illustrates these results. According to Mangisoni (1989), Education compliments extension advice in that educated people can understand agricultural instructions quite well and be able to apply technical skills imparted to them better than uneducated ones. Also literacy levels set a limit to the farmer's managerial ability which indicates that most farmers in the study area have not been able to fully exploit their managerial potential due to lack of education.

4.2.5 Household Size and Number of Active Persons

According to Edriss and Simtowe (2003), the average household size has a bearing on availability of labor, especially considering that most smallholder farmers depend on family labor. The more the number of people in a household, the more the family labor supply is, all other things held constant. This implicitly affects the amount of hired labor that a farmer uses on his farm to undertake farming activities. The average household size for OVOP farmers was about 6 persons with a minimum of 2 people and a maximum of 10 persons per household. Non OVOP farmers had an average household size of about 6 persons with a minimum of 2 persons and a maximum of 11 persons.

The average household sizes obtained for the OVOP and Non - OVOP farmers were all above the national average of 5.5 persons per household (Ministry of Finance and Economic Planning, 2002). Family size is more linked to family labor supply as almost all farming activities in Malawi are not mechanized (Edriss and Simtowe, 2003). Also, household size can be positively related to technical efficiency as smaller household sizes experience labor bottlenecks and thereby being inefficient (Wang et al., 1996).

4.2.6 Primary Activity of Household Head

Table 6: Primary Activity of Household Head

Activity	OVOP MEMBERS		NON - OVOP MEMBERS	
	Frequency	percent	frequency	percent
farming	37	92.5	32	80
Agricultural laborer	0	0	0	0
Off farm employment	1	2.5	1	2.5
Business owner	2	5.0	7	18
Total	40	100.0	40	100.0

$\chi^2 = 3.648$, $p = .302$

Source: summarized from computer out put

The majority of the respondents represented in table 6 above earn their living through farming and expressed farming as their occupation. However, OVOP respondents registered a higher proportion of farmers who regarded farming as their major occupation (92.5%) compared to 80% in the Non OVOP category. This implies that OVOP farmers perceived farming as a means of

generating income with a small proportion of about 5% who owned businesses outside agriculture. This was unlike in the Non OVOP category where a higher proportion (18%) earned their living through other businesses outside agriculture. Most of the Non OVOP respondents attributed this to lack of incentives in agricultural production hence other businesses served as a coping strategy to earn a living which were however not profitable. These findings agree with Sahley et al, (2005), who attributed lack of food production being related to lack of capacity to introduce sustainable production - enhancing technology, including fertilizer, improved seed and irrigation, credit and other incentive. However, there was no significant difference in the proportions between the OVOP and Non OVOP farmers with respect to their occupation ($\chi^2 = 3.648$, $p = .302$). This implies that the OVOP farmers did not differ significantly with the Non OVOP farmers in terms of their occupation from the chi - square test results. These results show low prevalence of off - farm employment in the study area which can be attributed to high levels of unemployment hence limiting households' participation in other activities outside farming as their primary activity

Table 7: Main source of Household Income

source	OVOP MEMBERS		NON - OVOP MEMBERS	
	Frequency	percent	frequency	percent
Off-farm employment	1	2.5	1	2.5
OVOP enterprise	30	75	-	-
Crop enterprise	7	17.5	28	70
Livestock enterprises	0	0	1	2.5
Other business	2	5	10	25
Total	40	100.0	40	100.0

Source: summarized from computer out put

The results on the primary activity of the household head in table 6 above are synonymous to the household main source of income represented in Table 7 where the majority of OVOP farmers, (75%) earned their income through the products produced in the programme, while 70% of the Non OVOP members earned incomes through sales of their food crops grown in the harvesting period. A higher percentage of the non OVOP farmers (25%) earned their incomes through other non agricultural businesses compared to the OVOP farmers who only registered 5%. Only 2.5% considered formal employment (outside agriculture) to be their main source of income in both cases. These findings imply that most Non - OVOP households are very dependent on

subsistence food crop activities for their income as cash crops contributed only a small share to their income. The high shares of subsistence farm income to total household income suggest that households in the Non OVOP category were still practicing subsistence coping strategies. While majority of OVOP farmers derived their revenues mainly from their OVOP enterprise which was perceived as commercial. According to Tilman Brück (2007), engaging in more subsistence activities has a negative effect on household income and Participation in at least cash crop has positive effects for income and food consumption. These findings agree with Maxwell et al (1992) who postulated that most families earn income by selling what they produce in the growing season and others earn income from their harvest time sales or from off farm work.

4.2.7 Land Tenure Systems

Land tenure system is the law or custom that relates to control and use of land by an individual or group of people. The tenure system greatly influences the organization and efficiency of agricultural production and the efficient allocation of production resources (Ahmed et al., 2002). There are a number of land tenure systems in Malawi, which include; customary, leasehold and freehold. Under customary tenure system, land is acquired mainly through inheritance from parents or through traditional leaders and the land cannot be sold as it remains community property. Leasehold is a tenure arrangement where an individual (a tenant) acquires rights to use land for some specific reason for a period agreed upon by the tenant and the owner of the land. Under leasehold arrangement, the tenant pays rent to the land owner for using the land. Under free hold tenure arrangement, the land owner enters into agreement with the state and has the right to use a piece of land for as long as 99 years. The occupier has the right to transfer the right of ownership of the land through selling. Customary land tenure is the predominant system among smallholder farmers in Malawi while leasehold is more common among estate farmers (Kachule, 1994). Customary tenure system was indeed the predominant tenure system with almost all of the OVOP farmers and 92% of the Non OVOP farmers cultivating on customary land. In the study area, the most frequent way of land acquisition was through inheritance from parents, followed by acquisition through traditional leaders. Land inheritance from parents was more prevalent among the non OVOP farmers. Rented land was the least frequent way of acquiring land. About 5% of the non OVOP farmers and none of the OVOP farmers cultivated on borrowed or rented land. Land was either borrowed from relatives for free or rented for a small amount of money. Table 8 below illustrates the above information.

Table 8: Nature of Land ownership

Mode of acquisition	OVOP farmers		Non OVOP farmers	
	Frequency	Percent	Frequency	Percent
Inherited from parents	22	55	31	77.5
Given by village head	18	45	6	15.0
Lease	-	-	2	5.0
Communal	-	-	1	2.5
Total	40	100	40	100

Source: summarized from computer out put

4.2.8 Land Holding Sizes

Malawi is classified as one of the land scarce countries and land is also a major source of livelihood for smallholder farmers in the country (Edriss and Simtowe, 2003). The national land holding size in Malawi was estimated at 1.8 acres per household in 2002 (IFDC, 2002). However, the average land holding size for the OVOP farmers was about 2 acres with a minimum of 1acre and a maximum of 10 acres. About 60% of the OVOP farmers had land holdings between 1 – 2 acres. The average land holding size for the Non OVOP farmers was about 1.77 acres with a minimum of 0.5 acres and a maximum of 6 acres. About 70% of the Non OVOP farmers had land holdings falling between 1 – 2 acres (Table 9), 17.5% had land sizes below 1acre while only 2.5% of OVOP members owned land below 1acre. Thirty five percent of the OVOP members had land holding sizes between 2- 4 acres then 2.5% with land size between 8-10 acres as represented in table 9 below.

Table 9: Land Holding Sizes

Land holding size	OVOP farmers		Non OVOP farmers	
	Frequency	Percent	Frequency	Percent
< 1.0	1	2.5	7	17.5
1 - < 2	24	60	28	70
2 - < 4	14	35	3	8
4 - < 6	-	-	2	5
6 - < 8	-	-	-	-
8 - < 10	1	2.5	-	-
Above 10	-	-	-	-
Total	40	100	40	100

Percentages may not add up to 100 because of rounding off.

Source: summarized from computer out put

The results in table 9 above suggest that very few households (2.5%) in the OVOP category controlled bigger land holdings sizes between 8 and 10 acres and about 5% owned land between 4 and 6 acres in the Non OVOP category. These results obtained suggest that land distribution among farmers in the study area was uneven, as some farmers had relatively large land holdings, with the majority of farmers controlling small land holdings. The economic implication of the prevalence of small land holdings among the majority of the farmers is that household farm incomes cannot be increased through expansion of cultivated area but only through improved land productivity and value adding technologies on produce. This could be achieved among others by efficient use of resources such as fertilizer or labor, technological advancement and reduction in post harvest loss.

The average land holding sizes obtained in this study were in line with the national average land holding of 1.8 acres or lower suggesting that farmers in the study area had relatively lower to average land holdings due to high population density in the study area. Also, these findings agree with GOM, (2004) which categorized majority of the farming households in the study area as resource poor and practice small-scale farming.

4.3 Empirical Results

4.3.1 Reasons for joining OVOP

Table 10: Distribution of respondents by reason for Joining OVOP (Members)

Reason	Frequency	Relative percentages
Access to market	32	80.0
Access to credit	28	70.0
Value adding technology	24	60.0
Training	22	55.0
Access to machinery	20	50.0
Storage facilities	15	37.5
Access to extension	13	32.5
Processing facilities	12	30.0
Quality control	8	20.0

Source: survey data (April, 2006)

Summarized from computer out put

From Table 10 above, it can be observed that majority (80%) of the respondents indicated access to market as the reason for joining the OVOP programme. About 70% indicated access to credit as the reason, about 60 % indicated that they joined the OVOP for value adding technologies. About 55% indicated need for training, 50% indicated access to machinery, while about 38%, 33% and 20% indicated need for storage facilities, extension and quality control respectively as the reason for joining the OVOP programme. This finding implies that farmers in the study area lack basic support in terms of market access or rather market which offer them better prices, and also incentives such as credit, value adding technologies and training on good husbandry practices resulting in farmers joining clubs and associations in search for such incentives.

4.3.2 Effects of variables determining household farm Income

An ordinary Least Square multiple regression model was applied and the regression results produced relatively high values of coefficient of multiple determination (R^2), t – ratios and some significant variables. The result (table 11) shows that the proportion of observed variability (farm income) explained by the combined effects of the independent variables can be regarded as a good fit, and this is supported by the high F-ratio. Both OLS functions for the OVOP and Non

OVOP farmers were significant at 1% percent level. Table 11 below illustrates the above outcomes in details.

Table 11: OLS regression model results of Effects of variables determining amount of household farm income

Variable	OVOP farmers		Non OVOP framers	
	Regression coefficients	t-ratio	Regression coefficients	t-ratio
Constant		-1.200		-.018
OVOP	.573	5.873***	.573	5.873***
Age	-.039	-.541	-.135	-1.454*
Gender	.112	1.651*	.026	.311
Household size	.527	6.979***	.645	9.211***
Level of education	-.121	-1.276*	.066	.831
Occupation	-.032	-.569	-.035	-.446
Family labor	.112	1.905**	.173	2.035**
Farm size	.100	1.413*	.046	.448
equipment	.004	.051	-.046	-.461
OVOP income	.645	9.211***	-	-
Crop income	.527	6.979***	.933	11.112***
R	0.958		0.914	
R ²	0.918		0.835	
Adj. R ²	0.893		0.792	
F	37.152***		19.599***	
N	40		40	

NOTE: ***, Significant at the 0.01 level; **, at the 0.05 level; *, at the 0.10 level.

Dependent variable = Total farm income (1 year basis)

Source: summarized from computer output

For the significant variables, household size and family labor had their signs as a priori expected. Household participation in OVOP and family labor supply are significant at the 1% level while, education level gender, and farm size are significant at the 10% level (Table 11). Significance of participation in OVOP implies that household farm income was explained by participation in the program and that those farmers who participated attained higher incomes levels than those who

did not participate. This can be attributed to the interventions by the OVOP program such as market access, storage facilities and group support system. Age did not have a significant relationship with amount of farm income. This was the case because the majority of the respondents were aged between 20 and 60 years old and that the elderly household head that were 60 and above attained lesser amount farm income. This was found to be the case since most tasks in agriculture are very tedious and require active involvement. Also this can be explained by the fact that as household grow older; they tend to reduce the land holding sizes by giving out portions to be inherited by their children and grand children for cultivation as part of the customary land acquisition. However this disagrees with most studies such as Ohajianya D.O. (2006) who alluded that most elderly households tend to have large farm sizes than young people because young people shun away from farming in preference to other jobs in urban sectors. The tenure system greatly influences the organization and efficiency of agricultural production and the efficient allocation of production resources where under customary tenure system, land is acquired mainly through inheritance from parents or through traditional leaders (Ahmed et al., 2002). This agrees with mode of land acquisition as discussed above. Household size is positive and significant, suggesting that the larger the household size the more the amount of household farm income. This can be attributed to more active members on the farm as it reflects reduced number of hired labor engaged by the household. Education is positively related to household farm income in the OVOP model indicating that as one's level of education increase, the amount of household farm income increased. Farm size was positive and significant at 10% with amount of household farm income in the, implying that the larger the farm sizes the higher the amount of income accruing to the farmer. The null hypothesis that the Household's social economic characteristics do not affect household farm income was rejected at 5% level of significance. ($F = 37.153$, $p = .001$) for the OVOP model and. ($F = 19.599$, $p = .001$) for the Non OVOP model hence accepting the alternative hypothesis. These imply that certain household economic characteristics such as participation in OVOP, household size and farm size affected household farm income.

4.3.3 Household perception on the influence of OVOP program farm on activities

Table 12 below presents a summary of the likert scale output on the household perception on the influence of OVOP program on farm activities. The table shows that most of the respondents (83%) indicated that OVOP had an influence on their marketing activities; this was the case because OVOP provided them with access to market in the urban centers and during trade fair shows hence gaining exposure to other potential buyers for their products. Seventy percent (70%)

indicated that OVOP highly influenced their technological advancement since the programme provided them with machines such as the solar driers to process their produce, 65% reported that it highly influenced their storage abilities due to the introduction of the new drying techniques, 60% indicated that it provided them with storage facilities. While 55%, 45% 49% and 30% of the OVOP farmers indicated that the programme had a positive influence on value addition, machine use, quality control and extension respectively. This result indicates that farm operations and activities have been highly positively influenced by the presence of the programme hence larger proportion of household members in the programme experiencing higher incomes.

Table 12: Effects of OVOP on farm activities

Activities	No effect (%)	Little effect (%)	Moderate effect (%)	High effect (%)
Access to market	0	10	7	83.0
Technology	11	11	8	70.0
Storage facilities	15	4	17	65.0
Processing facilities	7	9	25	60.0
Value addition	3	27	15	55.0
Access to machinery	28	11	16	45.0
Quality control	16	12	32	40.0
Access to extension	18	25	27	30.0

Source: survey data (April, 2006)

Summarized from computer out put

This study also made use of recall method on farmers to capture farm income earned by the households before the programme was implemented. Therefore household farm income for 2003 was used to assess farmers' status quo before the programme. Table 13 below summarizes the results from the output to compare the means of household farm incomes for 2003 and the results were not significant at 95% level of confidence. ($t = -2.278$, $F = .762$, $p = .385$) as represented in table 13 below.

Table 13: Output on Household income before OVOP

Income earned in 2003	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	95% Confidence Interval of the Difference	
				Lower	Upper
Equal variances assumed	.762	.385	-2.278	-43899.87	-2950.125
Equal variances not assumed			-2.278	-43918.78	-2931.212

Source: summarized from computer output

These results show that there is no significant difference between OVOP members and Non members in terms of their farm incomes before the program was implemented. This is an indication that OVOP farmers have become better off with the implementation of the programme which is witnessed by significant higher level of household farm incomes when compared to non members of OVOP.

In an analysis to compare the significant difference in means between household farm income of OVOP members and non members after implementation of OVOP, the results were significant ($F = 6.431$, $p < .001$). Therefore, the null hypothesis that there is no significant difference in household farm incomes between beneficiaries and non beneficiaries of OVOP was rejected hence accepting the alternative hypothesis. This finding implies that OVOP programme has significantly assisted farmers in the area to increase their farm income. This improvement has come about due to improved access to markets by framers, improved processing and storage facilities such as the provision of the solar driers and group action as Table 12 above illustrates impact areas.

4.4 Implications of Results to food security

According to the definition of food security: food availability implies a measure of food that is, and will be, physically available in the relevant vicinity of a population during a given period While access is a measure of the population's ability to acquire available food during a given period (Hoddinott et.al, 2002). This study also intended to relate its findings to food security to

determine the implications of the findings on food security. Therefore, it can be concluded from the above set of analysis that OVOP members experienced higher farm income as compared to the Non OVOP members. This gives an indication of disparity that exists between the two groups in terms of their access to food through purchase as the later being more constrained. Access to food encompasses physical and economic aspect. Physical access to food relate both to the adequacy of supply and to the efficiency of the distribution system, including storage, preservation, transport, marketing and processing. Economic access to food relates to the ability of group of people to establish entitlements over a requisite amount of food, (Obasanjo et.al, 1992). Therefore, the economic implications from these findings is that Non OVOP member were limited in terms of their access to food as low incomes also reduce consumer demand for food. Engaging in more subsistence activities has a negative effect on household income and Participation in at least cash crop has positive effects for income, and especially for food consumption (Tilman Brück, 2007).

According to Alberto (1981), rural food consumption patterns are substantially more diverse and involve consumption of several different crops. Maxwell et al, (1992) also postulated that most families access food by consuming what they produce or by purchasing food in the growing season from income earned from their harvest time sales or from off farm work. Therefore, OVOP farmers were able to generate income from the sale of their produce which can be used to purchase food besides consuming what they produced. The income generated also served as capital for the production of other commodities such as livestock hence diversification of farm enterprise and increased food base.

Dietary diversity is one of the outcome indicators of food security. This is the sum of the number of different foods consumed by an individual over a specified time period. According to Hoddinott (1999), households become better-off if they consume a wider variety of foods. The importance of livestock activities on the reduction in poverty levels and improvements in household food security cannot be over emphasized. Small ruminants and various types of poultry, particularly scavenging chickens, make a vital contribution to household food security. A higher percentage (95%) was recorded for the OVOP members who acquired new stocks of livestock since 2005, while only about 65% in the Non OVOP category acquired new forms of livestock in the household. Poultry, especially scavenging chicken was the most predominant type of livestock kept in both categories followed by small ruminants such as rabbits. These were acquired and stocked mainly for purposes of food (protein) for the household and for sale in

times of need. This is an indication that the OVOP group were better off in terms of food security especially on food access and availability at household level. This shows a high potential of improvement in food security situation in the study area if only government set up proper policies to enable rural innovation and enhance increase in agricultural productivity among the rural poor.

4.5 Problems Affecting Agricultural Production

Since the farmers' socio-economic characteristics did not adequately explain the disparities between participants and non participants of OVOP, in terms of agricultural production, it was important to explain some factors that negatively affected agricultural production in general in the study area. Therefore, farmers were asked to indicate the problems that constrained agricultural production in the study area.

4.5.1 Capital

Most of the respondents, both OVOP and Non OVOP participants expressed during personal interviews and focus group discussions that capital was a major constraint to their agricultural production. Farmers expressed during the focus group discussions (FDG) that the area has higher potential of producing high value crops if they have a reliable source of capital such as credit. This constrained farmers in acquiring farm inputs such as fertilizer, seeds and chemicals. The majority of farmers could not afford fertilizers or improved seed because of low incomes from crop produce, which is the main source of livelihood for the majority of farmers in the study area. Lack of credit facilities affected inputs acquisition especially among cash constrained farmers.

4.5.2 Lack of Markets for Agricultural Produce

Most of the Non OVOP members expressed lack of reliable markets as another major constrain to agricultural production. Farmers in the area grow different crops depending on the season and at each growing and harvesting season, farmers experience high competition in local markets rendering their produce vulnerable to fetching low prices than in distance and other organized markets. However, it was noticed that the OVOP farmers were better off in terms of markets since they were able to sell as a group during trade fairs and the program also enabled them secure better market in the urban sectors such as the Blantyre city.

4.5.3 Post harvest loss

The Focus Group Discussions also revealed that farmers in the study area experienced post harvest loss especially due to inadequate processing and storage technologies. Most farmers in the area produced highly perishable products such as vegetables and fruits which are more vulnerable to post harvest loss if not preserved. In order to overcome this problem, the OVOP programme introduced solar driers to the farmers to help in preserving the vegetables, however farmers under the programme expressed that these were not adequate enough hence this problem still remains partly solved.

Other problems expressed include, high transportation cost, inadequate farming inputs and materials, limited training and extension services and limited land sizes among others.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In this chapter, summary, conclusions of the study, the implications of the findings and recommendations drawn from the study are presented.

5.1 Summary

This study was aimed at assessing the impact of One Village One Product (OVOP) program on household farm income and its implications on food security in OVOP operation area of Bvumbwe in Thyolo district, Malawi. Since no effort had been made to evaluate the program's activities and the existing information gap, the specific objectives of this study were to investigate the socio economic characteristics that affect household farm income, to determine the difference between beneficiaries and non beneficiaries of OVOP program in household farm incomes, and to rate household perception on the influence of OVOP program on farm activities. Data was analyzed using descriptive statistics, chi – squares, and the Ordinary Least Squared Technique of multiple regression method. A likert scaling technique was also used to rate farmers' perception of the effect of OVOP on farm activities.

The working sample for the study contained a small proportion of female-headed households especially in the OVOP category. The majority of the respondents earn their living through farming and expressed farming as their occupation and OVOP farmers perceived farming as a means of generating income. Customary tenure system was the most predominant tenure system in the OVOP farmers the Non OVOP farmers category. Te most frequent way of land acquisition was through inheritance from parents. The study also found that land distribution among farmers in the study area was uneven, as some farmers had relatively large land holdings, with the majority of farmers controlling small land holdings.

Primary data collected in this study revealed that there was a significant difference in the levels of household farm income between beneficiaries and non beneficiaries of OVOP. The OVOP beneficiaries were found to be better off in terms of household food security through increased food basket, enterprise diversification and food access which was attained through higher farm income levels. However, farmers' socio-economic characteristics did not adequately explain the disparity in household farm income. This implies that there are some other factors that are closely associated with agricultural production and participation in programs such as OVOP, which may require further investigation. Participation in OVOP and household size were found to be

positively associated with household farm income. The study has documented that the OVOP programme has influenced positively on farming activities through increased access to market, value adding technology, storage and processing facilities among others. Most of the findings in this study agree with previous studies done such as: Obasanjo et.al (1992), Alberto (1981), Maxwell et al, (1992) among other but disagree with Ohajianya D.O. (2006) as discussed in details earlier in the passage.

5.2 Conclusion

The following conclusions are drawn from the study

First, the study has found out that OVOP farmers were better off than those who were not in the programme; this was expressed through higher household farm income as compared to those who were not in the programme. Increased household farm incomes could be achieved by introducing innovation and technologies in the study area which could prevent post harvest loss and enhance value added products. Secondly, Social economic factors such as participation in OVOP, family labor and farm sizes influenced household farm income. A relative proportion of female-headed households exist in the study area who are unable to exploit government intervention and strategies such as OVOP to their benefit. Households with high farm income were also involved in livestock production and this increased their food basket hence achieving food security at household level. However, Farmers' socio-economic characteristics did not explain much about the level of household farm income due to other constraints which were not captured in the model. Lack of efficient inputs and produce markets, post harvest loss, high inputs cost, capital, high transportation cost, inadequate farming inputs and materials, limited training and extension services, limited land sizes and others negatively affect agricultural production in the study area. Access to support services such as credit facilities and extension services was found to be limited to the majority of the farmers in the study area.

5.3 Recommendations

The following recommendations have been made from the study.

- a) OVOP program should be expanded and target even the most vulnerable groups such as female headed household in order to realize reduced rural poverty, women empowerment and increased asset ownership
- b) There is a need for OVOP to liaise with agricultural input providers to provide farmers with high yielding and better varieties at a subsidized rate to promote local production.
- c) OVOP must seek means of linking farmers to micro finance institutions to provide farmers with credit and capital to enhance their production potentials and facilitate investment in small enterprises.
- d) OVOP must train and organize farmers and facilitate them to bargain for better prices for their produce.
- e) Other Loss management and value addition techniques must be introduced in the program.
- f) Timeliness in transportation of perishable crops produced by farmers in the program must be considered and checked to prevent loss of value and low prices fetched at distant markets.
- g) Government Policy must be aim at enhancing infrastructure development in rural areas especially in high potential areas such as Bvumbwe area.
- h) A rigorous research to determine the utilization and feeding patterns of farmers in other OVOP operational areas is recommended to determine the severity of food security in the study area.
- i) Further research on the subject matter is recommended to capture other issues which this study has not been able to capture due to its limitations (e.g. adoption aspects, effects of competing interventions, secular drifts and others)

REFERENCES

- Alberto Valdes (1981); *food security for developing countries*; Ed; western viewPress/ Boulder, Colorado, USA
- Ali, M. (1995). *Institutional and Socioeconomic Constraints on the Second-Generation Green Revolution: a case study of Basmati rice production in Pakistan Punjab*. International Rice Research Institute, University of Chicago, USA.
- Bravo-Ureta, B.E., and R.E. Evenson (1994). *Efficiency in Agricultural Production: the case of peasant farmers in eastern Paraguay*. Journal of Agricultural, 10: 27-37.
- Caroline Sahley, Bob Groelsema, Tom Marchione, David Nelson (2003) *The Governance Dimensions of Food security in Malawi (USAID)*
- Deaton .A.and M. Grosh. (1998). *The consumption module in the Living Standards Measurement Survey in designing household survey questionnaires for developing countries*, Ed. P. Glewwe and M. Grosh. Washington, D.C. World Bank.
- Devereuy, S (2002) *The State of Disaster, causes and consequences of policy lessons from Malawi*, Action Aid.
- Edriss, A.K. and F. Simtowe (2003): *The dynamics of groundnut production, efficiency, profitability and adoption of technology in Sub-Saharan Africa: The Malawi Case*. International Publishers and Press, Las Vegas, USA.
- Gondwe T.N, Safalaoh A.C, Chilera (2004); *Community based promotion of rural poultry diversity, management, utilization and research in Malawi*. Bunda College of agriculture
- Government of the Republic of Malawi (2004) *Food security and national policy: Macroeconomic policies: situational analysis; draft*.
- Haddad L (2000), *Women's status: levels, determinants, consequences for malnutrition, interventions, and policy*, *Asian Development Review*, 17:1-2, 96-131.

- Hoddinott John (1999) *Choosing outcome indicators of household food security*, technical guide #7: International Food Policy Research Institute 2033 K Street, N.W. Washington, D.C. 20006 U.S.A.
- Hoddinott John and Yisehac Yohannes (2002) *Dietary Diversity as a food security indicator, FCND discussion paper no. 136*. Food consumption and nutrition division, International Food Policy Research Institute 2033 K Street, N.W. Washington, D.C. 20006 U.S.A.
- International Center for Soil Fertility and Agricultural Development (IFDC), (2002). *An Action Plan for Developing Sustainable Agricultural Input Supply System in Malawi*. Lilongwe, Malawi.
- International Food Policy Research Institute (IFPRI), (2002). *Ending Hunger in Africa: only the small farmer can do it*. Washington, USA.
- Jacoby, H.G. (1992) “*Productivity of Men and Women and the Sexual Division of Labour in Peasant Agriculture of the Peruvian Sierra*” *Journal of Development Economics*, 37: 265-287.
- Kachule, R.N. (1994) *Economic Analysis of Bean Production in Northern Malawi: Implications for Agricultural Policy*. M.Sc. Thesis. University of Malawi, Bunda College of Agriculture.
- Kherallah, M., N. Minot, R. Kachule, B.G. Soule, and P. Berry (2001) *Impact of agricultural market reforms on smallholder farmers in Benin and Malawi*. IFPRI.
- Lundberg, Shelly and Robert A. Pollack., (1996) “*Bargaining and Distribution in Marriage*”. *Journal of Economic Perspectives* 10: 139-158.

- Mangisoni, J.H., (1989). *A survey of the socio-economic constraints to smallholder dairy production in the Lilongwe milk shed area in Malawi: Implications for dairy production policy*. Bunda College of Agriculture, University of Malawi.
- Maxwell s. and FrankenBerger T.R (1992) *Household food security, concept, indicators, measurement*; UNICEF-USA, IFAD Rome, Italy.
- Maxwell, D. (1996). *Measuring food insecurity: The frequency and severity of "coping strategies."* *Food Policy* 21: 291–303.
- Ministry of Finance and Economic Planning (April, 2002) *Malawi Poverty Reduction Strategy Paper*; Final Draft. Malawi Government, Lilongwe, Malawi.
- Obasanjo Olusegun and Hans d’orville (1992) Ed; *Agricultural production and food security in Africa* CRANE RUSSAK, Washington, USA
- One Village One Product (2003) *the purpose of One village one product Strategic plan* , Lilongwe , Malawi
- Quisumbing, A.R. (2003). *Household Decisions, Gender, and Development: A Synthesis of Recent Research*. IFPRI, Washington DC. USA.
- Peters, Pauline (2004) *The Differential Effects on Rural Income and Poverty during a decade of radical change in Malawi*. Edited by BASIS CRSP (USAID) LAG- A-00-96-90016-00.
- Radimer, K., C. Olson, and C. Campbell. 1990. *Development of indicators to assess hunger*. *Journal of Nutrition* 120: 1544–1548
- Riley, F., and N. Moock. (1995). *Inventory of food security impact indicators. In Food security indicators and framework: A handbook for monitoring and evaluation of food aid programs impact*, Arlington, Va., U.S.A. Draft

- Sadoulet, E., de Janvry, A., (1995): *Quantitative Development Policy Analysis*, London. The John Hopkins University Press.
- Smale M. and P.W. Heisey (1997) *Gendered impacts of fertilizer subsidy removal programs in Malawi and Cameroon, Comment*. Agricultural Economics, 10: 95-99.
- United Nation Development Program (UNDP), 2004 – Human Development Report 2004 : *Cultural Liberty in Today's Diverse World*, UNDP, New York, NY (<http://hdr.undp.org/reports/global/2004>)
- USAID (1995) “*Policy Determination No. 19*” Bureau for Program and Policy Co-ordination, USAID, Washington DC.
- Wang. J., G.L. Cramer and E.J. Wailes (1996). *Production efficiency of Chinese agriculture: evidence rural household survey data*. Journal of Agricultural Economics, 15: 17-28.
- Webb, Patrick and Rogers, Beatrice 2002 – *Addressing the “In” in food insecurity Occasional paper number 1*, USAID office of food for peace, available at <http://www.fantaproject.org/publications/ffpopi5html>
- Vakis, R., Sadoulet, E., De Janvry, A., and Cafiero, C., (2004): *Testing separability in household models with heterogeneous behaviour: A mixture Model approach*. UCB CUDARE working Papers. Paper 990. Found at: <http://repositories>.

APPENDIX

QUESTIONNAIRE

Enumerator's name..... Date.....

Location..... District.....

1.0 Household composition characteristics

1.1 Respondent name

1.2 What is your position in the household? (Husband / wife / child)?

[1]	husband	[]
[2]	wife	[]
[3]	child	[]

1.3 Age of household head.....

[1]	Below 20	[]
[2]	20-30	[]
[3]	30-40	[]
[4]	40-50	[]
[5]	60-70	[]
[6]	Above 70	[]

1.5 Gender of household head

male	[]
female	[]

1.5 Marital status

[1]	single	[]
[2]	married	[]
[3]	divorced	[]
[4]	widowed	[]

1.6 Education level of the household head

[0]	none	[]
[1]	Primary school	[]
[2]	Junior certificate (up to form two)	[]
[3]	MSCE (up to form four)	[]
[4]	Tertiary education	[]

1.7 Occupation of the household head

[1]	Farming	[]
[2]	Employed (outside agriculture)	[]
[3]	Agricultural laborer	[]
[4]	Own business (out side agriculture)	[]
[5]	unemployed	[]

Type of business.....

1.8 Household size.....

1.9 The number and age of Household members who work on the farm

code	Age	number
[1]	5-10 years	
[2]	10-20 years	
[3]	20-30 years	
[4]	30-40 years	
[5]	40-50 years	
[6]	50-60 years	
[7]	Above 60 years	

2.0 Household Asset endowment

2.1 Farm Size (acres)

code	Size
[1]	Below 5 acres
[2]	5-10 acres
[3]	10-15 acres
[4]	15-20 acres
[5]	20-25 acres
[6]	25-30 years
[7]	Above 30 acres

2.2 Nature of ownership/land tenure

code	Tenure system	Number of acres
[1]	Personally owned	
[2]	Family owned	
[3]	leased	
[4]	communal	
[5]	Others, specify	

2.3 The type and value of farm equipment

code	Type of equipment	Value of equipment (kwacha)
[1]	tractor	
[2]	plough	
[3]	oxen	
[4]	hoes	
[5]	axe	
[6]	panga	
[7]	Others, specify	

2.4 Other type and value of asset

code	Type of asset	Value of asset (kwacha)
[1]	camel	
[2]	vehicle	
[3]	bicycle	
[4]	Wheel barrow	
[5]	TV	
[6]	Radio	
[7]	Others, specify	

2.5 What is the main source of income for the household? Rank them in order of importance

code	source	rank	Amount earned in 2005/2006	Amount earned in 2003/2004
[1]	formal employment	[]		
[2]	Income from OVOP business	[]		
[3]	income from farm product	[]		
[4]	income from livestock	[]		
[5]	Income from other businesses			
[6]	transfer earning from relatives	[]		
[7]	gifts	[]		
[8]	income from land rented out	[]		
[9]	other structures rented out	[]		
[10]	rents from motor vehicle	[]		
[11]	Others, specify.....	[]		

3.0 Household decision for participation in OVOP

3.1 Are you a member of OVOP?

Yes	[]
No	[]

3.2 If no, why are you a not member of OVOP?

- a).....
- b).....
- c).....
- d).....

3.3 Do you intend to join OVOP?

Yes	[]
No	[]

3.4 If yes, why would you want to join OVOP

- a).....
- b).....
- c).....
- d).....

3.5 If no, what are your reasons for not wishing to join OVOP?

- a).....
- b).....
- c).....

3.6 Do you have a relative or friend in OVOP?

Yes	[]
No	[]

3.7 If yes, were you impressed by the activities of OVOP

Yes	[]
No	[]

3.8 If yes, specify the activities

[1]	Value adding technologies	[]
[2]	Quality control	[]
[3]	packaging	[]
[4]	training	[]
[5]	Others, specify.....	[]

3.9 Do you practice any other farming activity?

Yes	[]
No	[]

3.10 If member of OVOP, why did you decide to join OVOP?

code	Reason for joining	Strongly agree	agree	disagree
[1]	Access to extension	[]	[]	[]
[2]	Access to credit	[]	[]	[]
[3]	storage facilities	[]	[]	[]
[4]	processing facilities	[]	[]	[]
[5]	Access to the market	[]	[]	[]
[6]	Value adding techno	[]	[]	[]
[7]	Quality control	[]	[]	[]
[8]	Access to machinery	[]	[]	[]
[9]	training	[]	[]	[]
[11]	Others, specify.....	[]	[]	[]

3.11 Give me the following details about your OVOP enterprises (see details below)

code		Reason for growing	Farm size (acres)	Total Yield /acre	Value of input used (kwacha)				Quantity consumed (kg)	Quantity sold (kg)	Quantity stored (kg)	Price sold	Value of output sold
	OVOP Product				Fertilizer	chemicals	Hired labour	others					
[1]	Pasteurized milk												
[2]	Packed milk												
[3]	Cooking oil												
[4]	Bio - diesel												
[5]	Herbs												
[6]	Carpentry products												
[7]	Jam												
[8]	bread												
[9]	Soy Milk												
[10]	Milled rice												
[11]	Packed rice												
[12]	Oyster mushroom												
[13]	Others OVOP products												
[14]													
[15]													
[16]													
	Other IGA's out side OVOP												
[17]	Beer brewing												
[18]	Art and craft												

3.12 What Effect has OVOP had on your farming activities?

code	effect	No effect	Moderate effect	Little effect	High effect
[1]	Access to extension	[]	[]	[]	[]
[2]	Access to credit	[]	[]	[]	[]
[3]	storage facilities	[]	[]	[]	[]
[4]	processing facilities	[]	[]	[]	[]
[5]	Access to the market	[]	[]	[]	[]
[6]	Access to fertiliser	[]	[]	[]	[]
[7]	Access to seed	[]	[]	[]	[]
[8]	Access to machinery	[]	[]	[]	[]
[9]	training	[]	[]	[]	[]
[10]	Pest and disease control	[]	[]	[]	[]
[11]	Others, specify.....	[]	[]	[]	[]

3.13 What have been your major challenges associated with joining OVOP

code	challenges
[1]	
[2]	
[3]	
[4]	
[5]	
[6]	
[7]	
[8]	
[9]	
[10]	
[11]	

4.0 Crop enterprise –Please tell me the different types of crops that you have grown and harvested in the growing season of 2005/2006

code	Description	Reason for growing	Farm size (acre)	Total Yield /acre	Value of input used (kwacha)				Quantity consumed (kg)	Quantity sold (kg)	Quantity stored (kg)	Price sold	Value of output sold
	cereals				Fertilizer	chemicals	Hired labour	others					
[1]	Millet												
[2]	sorghum												
[3]	rice												
[4]	maize												
[5]	Other												
	Tubers												
[6]	Sweet potatoes												
[7]	Irish potatoes												
[8]	Ground nuts												
[9]	Others												
	vegetables												
[10]	tomatoes												
[11]	Onions												
[12]	beans												
[13]	carrots												
[14]	okra												
[15]	cabbage												
[16]	Others												
	fruits												
[17]	bananas												
[18]	mangoes												
[19]	Oranges												

Others, specify

Reason for growing crop (code book, see 4.0)

Code	Description
[1]	Source of income
[2]	Social status
[3]	Food security
[4]	Ceremonial/socio-cultural

5.0 Livestock enterprise

5.1 Do you keep any form of livestock?

Yes	[]
No	[]

5.2 What is the size of your herd?

code	Description	# of herd acquired in 2005/2006	Total Number	source of stock	average earning/yr (Kwacha)
1	Bulls			[]	
2	Cows			[]	
3	Male calves <1			[]	
4	Female calves <1			[]	
5	Steers			[]	
6	Heifers			[]	
7	Sheep			[]	
8	Goats			[]	
9	Others (specify...			[]	

5.3 Why do you keep the herd? Rank them in the order of importance.

Code	Description	Rank
[1]	Source of income	[]
[2]	Social status	[]
[3]	Spiritual mediation	[]
[4]	Dowry payment	[]
[5]	Food security	[]
[6]	Ceremonial/socio-cultural	[]

	source
[1]	Bought
[2]	Inherited
[3]	Gift
[4]	Dowry received
[5]	Loaned
[6]	Others (Specify)