

Addis Ababa
University
(Since 1950)



**ADDIS ABABA UNIVERSITY OF COLLEGE OF DEVELOPMENT STUDIES
CENTER FOR FOOD SECURITY STUDIES**

**THE CONTRIBUTION OF PRODUCTIVE SAFETY NET PROGRAM TO RURAL
HOUSEHOLD FOOD SECURITY ENHANCEMENT IN KUYU WOREDA, CENTRAL
ETHIOPIA**

**A THESIS SUBMITTED TO CENTER FOR FOOD SECURITY STUDIES
IN PARTIAL FULFILLMENT OF THE DEGREE OF MSC IN FOOD SECURITY AND
DEVELOPMENT STUDIES**

BY

MESFIN W/TSADIK

June, 2018

Addis Ababa, Ethiopia

**ADDIS ABABA UNIVERSITY COLLEGE OF DEVELOPMENT STUDIES
CENTER FOR FOOD SECURITY STUDIES**

**THE CONTRIBUTION OF PRODUCTIVE SAFETY NET PROGRAM TO RURAL
HOUSEHOLDS FOOD SECURITY INHANCEMENT IN KUYU WOREDA, CENTRAL
ETHIOPIA**

**A THESIS SUBMITTED TO CENTER FOR FOOD SECURITY STUDIES
IN PARTIAL FULFILLMENT OF THE DEGREE OF MSC IN FOOD SECURITY AND
DEVELOPMENT STUDIES**

BY

MESFIN W/TSADIK

MAJOR ADVISOR TEMESGEN TILAHUN (PHD)

CO ADVISOR ANTENEH GIRMA (PHD)

May, 2018

Addis Ababa, Ethiopia

APPROVAL SHEET

As Thesis Research advisors, we hereby certify that we have read and evaluated this Thesis prepared, under our guidance, by Mesfin W/Tsadik entitled “The Contribution of Productive Safety Net Program to rural household food security enhancement in Kuyu Woreda, Central Ethiopia

We recommend that it be submitted as fulfilling the Thesis requirement

Temesgen Tilahun (PhD)

Major Advisor

Signature

Date

As members of the Board of Examiners of the MSc. Thesis Open Defense Examination, We certify that we have read, evaluated the Thesis prepared by Mesfin W/Tsadik and examined the candidate. We recommend that the Thesis be accepted as fulfilling the Thesis requirement for the Degree of Master of Science in Food security and development studies.

Chairperson

Signature

Date

Internal Examiner

Signature

Date

External Examiner

Signature

Date

DEDICATION

I dedicate this thesis manuscript to my beloved brother, Belay W/Tsadik, for his invaluable support by giving priority to me even during the hard and unharmonious times he faced that contributed a lot to the success of my fruitful effort; and to all my family members who provided me moral support.

STATEMENT OF THE AUTHOR

I, Mesfin W/Tsadik Gemed, do hereby declare to Addis Ababa University School of Graduate Studies that this thesis is a product of my original research work, and it has not been submitted to any other university for any academic degree. Materials and information other than my own are duly acknowledged.

Name: Mesfin W/Tsadik Gemed

Signature: _____

Date of Submission: June, 2018

Center for Food Security Studies,
Addis Ababa University

BIOGRAPHY

The author was born on June 21, 1985 in North Shewa zone, Oromia region. He attended his primary and secondary education at Leman Sillassie and Fitcha Senior Secondary Schools, respectively. He joined Jimma University in September 2008 and graduated with Bachelor of Science in Horticulture in June, 2011.

After graduation, the author worked in Agricultural Extension and Rural development office and irrigation development Authority. He joined Addis Ababa University in 2017 as a Government-sponsored student.

ACKNOWLEDGEMENTS

I have got helpful assistances from many persons and institutions at various levels. It is impossible to acknowledge all the individuals and institutions that supported me in conducting this study since they are so many to list by their names here. Nevertheless, I would like to take the chance to acknowledge some of them who have helped me in a special way.

I am grateful to my thesis advisors Dr. Temesgen Tilahun and Dr. Anteneh Girma, my advisors for their comments on the main idea of the paper at an early stage of the work and for their subsequent and unreserved technical support in the whole process of this study. I am indebted to Addis Ababa University, for financial assistance to materialize the study. I am also thankful for Kuyu Woreda Agriculture and Rural development office for facilitating the data collection process and providing me with required information.

Last but not least, I would like to express my heartfelt appreciation for my beloved family and for those who have close relationship with me for their moral support and encouragement.

ACRONYMS AND ABBREVIATIONS

CSA	Central Statistical Agency
FAC	Future Agricultures Consortium
FSCB	Food Security Coordination Bureau
GAPVU	Gabinete de Apoio à População Vulnerável [Mozambique]
IFPRI	International Food Policy Research Institute
MDGs	Millennium Development Goals
MoFED	Ministry of Finance and Economic Development
OFSP	Other Food Security Program
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
PSNP	Productive Safety Net Program
PW	Public Work
SDPRP	Sustainable Development and Poverty Reduction Program
SNNPR	Southern Nations, Nationalities and Peoples Region
TLU	Tropical Livestock Unit
USAID	United State Agency for International Development
WB	World Bank
WFP	World Food Program of the United Nations
FSP	Food Security Program
PPS	probability proportional to size
AE	Adult Equivalent
CIDA	Canadian International Development Agency
AFS	Average Family Size
CCI	Complementary Community Investment
CFSTF	Community Food Security Task Force
DA	Development Agent
FAO	Food and Agriculture Organization
FDRE	Federal Democratic Republic of Ethiopia
FGD	Focus Group Discussion
HABP	Household Asset Building Program

AGE	Age of household head
EDU	Status of education
FER	Use of chemical fertilizer
IMS	Improved seeds
EXT	Extension service
LS	land size
CRE	Credit service
HLPE	High level of panel of experts on food security and nutrition.
WCED	World commission of environment and development
KII	Key Informant Interview
IFAD	International Fund for Agricultural Development
KWOA	Kuyu <i>Wereda</i> Office of Agriculture
KWOEPLM	Kuyu <i>Wereda</i> Office of Environmental Protection and Land Management
KWOFED	Kuyu <i>Wereda</i> finance and Economic Development
MoARD	Ministry of Agriculture and Rural Development
NGO	Non-Governmental Organization
NMA	National Meteorological Agency
ShZOA	North Shewa Zone Office of Agriculture
ONRS	Oromia National Regional State
SSA	Sub-Saharan Africa
WFSTF	<i>Wereda</i> Food Security Task Force
HDI	Human Development Index
HH	Household
HHH	Household Head

Content

DEDICATION	IV
STATEMENT OF THE AUTHOR	V
BIOGRAPHY	VI
ACKNOWLEDGEMENTS	VII
ACRONYMS AND ABBREVIATIONS	VIII
ABSTRACT	XV
1. INTRODUCTION	1
1.1. Background	1
1.2. Statement of the Problem	2
1.3. Objectives of the Study	4
1.3.1. General objective	4
1.3.2. Specific objectives	4
1.4. Research Questions	4
1.5. Scope and Limitation of the Study	4
1.6. Significance of the Study	5
1.7. Thesis organization	5
2. REVIEW OF RELATED LITERATURE	6
2.1. Theoretical framework of safety net	6
2.1.1. Food Security	7
2.1.2. Definitions of food security	8
2.1.3. Food security situation in the world	9
2.1.4. Food security situation in Ethiopia	10
2.2. Food Security Programs (FSPs) of Ethiopia	10
2.2.1. Definition and concept of PSNP	12
2.2.2. PSNP in Ethiopia	12
2.2.3. Components of productive safety net program (PSNP)	14
2.2.4. Types of PSNP transfers	15
2.2.5. Timeliness of PSNP transfer payment	16
2.2.6. Graduation out of PSN	17
2.3. Sustainable livelihood as analytical framework	18

2.4. Empirical Evidences on Impacts of Safety Net Program.....	21
2.4.2. Safety net program in Latin America.....	22
2.4.3. Safety net program in Africa.....	23
2.4.4. Productive Safety net program in Ethiopia	24
3. RESEARCH METHODOLOGY.....	27
3.1. Description of the study area	27
3.1.1. Climate	28
3.1.2. Rainfall.....	28
3.1.3 Temperature	28
3.1.4. Population size of the wereda	29
3.1.5. Crop production practices in the study area.....	29
3.1.6. Livestock rearing practices in the study area	29
3.2. Study Methodology.....	30
3.2.1. Selection of the study area.....	30
3.2.2. Data collection methods and instruments.....	31
3.2.3. Sampling design and sampling technique	33
3.2.4 Method of Data Analysis	34
3.2.5. Variables Definitions and Working Hypotheses.....	36
3.2.6. Dependent variable	36
3.2.7. Independent variables of the model	36
3.4. Ethical Consideration.....	39
4. RESULTS AND DISCUSSION	40
4.1. Descriptive Analysis of Sample Households' Characteristics	40
4.1.2. Livelihood characteristics	43
4.1.4. Daily calorie intake	49
4.2.2. Binary Logistic regression results.....	50
5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	54
5.1. Summary.....	54
5.2. Conclusions.....	56
5.3. Recommendations	57
6. References.....	58

Appendix D.....	82
Appendix E.....	83
Appendix F.....	84

List of figures

Figure	page
Figure 1: Analytical frame work	21
Figure.2 Map of study area.....	27
Figure 3. Educational Status of HH Head.....	43

List of tables

Table	Page
Table 1. Sex of household head	40
Table 2. Age and family size	41
Table 3. Educational Status of HH Head	42
Table 4. Farm Size and extension contact	44
Table 5 . Access to Irrigation use.....	44
Table 6. Access to Fertilizer use.....	45
Table 7. Access to Manure use	45
Table 8. Access to Improved seed	46
Table 9. Distance from Extension and credit service	46
Table 10. Access to Credit Service	47
Table 11. Income from farm and non-farm activities.	48
Table 12. TLU, Value of house and Household Asset	49
Table 13. Kcal Consumption per Day.....	50
Table 14. Showing Binary Logistic regression Result.....	51

LIST OF TABLES IN THE APPENDIX

Appendix Table	page
Appendix Table 1 Conversion factor used to compute adult equivalent (AE)	65
Appendix Table 2. Conversion factor used to compute tropical livestock unit (TLU)	65
Appendix Table 3 . Conversion factor for computing calorie intake	65

ABSTRACT

The general objective of this study was to assess the contribution of Productive Safety Net Program on household food security. The primary and secondary data sources were the two types of data used during this study. The former was gathered through household interview, KII, and FGD. Binary logistic regression was used in order to analyze the correlation between dependent variable and independent variables. The paper revealed that the program has positive and significant effect on consumption, livestock holdings, and productive assets. Moreover, contribution of the program on total consumption expenditure per adult equivalent was found to be positive and significant. Despite the contribution of PSNP to food security there are still gaps in the course of implementation. Finally, it was recommended that the program should be able to include more female-headed households or at least in the same proportion as that of the male-headed households. Moreover, PSNP should expand the opportunity of off-farm and non-farm activities through investment that generate employment and increase the wages to attract rural households in order to diversify their income sources thereby reduce their vulnerability to food insecurity and asset depletion.

Keywords: *Food Security, Productive Safety Net Program, Household*

1. INTRODUCTION

1. 1. Background

In all parts of the world the rural poor are vulnerable to both internal and external shocks like natural disasters, seasonal hardship etc. They lack enough resource capabilities to sustain their livelihood which is emanated from limited access to credit and their engagement in low income generating activities. This vulnerability to external shocks and almost negligible capacity to mitigate those shocks forces them to sell their asset and destroy their environment and these reaction pushes them to deeper dimness of poverty (Khaleque et al., 2011). Worldwide, Government and Nongovernmental organizations adopts social protection measures that aims to help the poor households to sustain their minimum livelihood, deals with shocks and thus preserve their natural endowments (Ibid, 2007).

In an attempt to break the cycle of annual appeal of food aid and achieve an acceptable level of food security at macro (national) and micro (household) level, the government of Ethiopia developed a food security strategy (FSS) in November, 1996 (FDRE, 1996). The FSS highlighted the government plans to address the causes and effects of food insecurity in Ethiopia. Based on the FSS, the government designed the regional food security programs and projects in 2002 (FDRE, 2002a cited in Tadele Mamo, 2011: 2). Subsequently, to address the long term problem of food insecurity and to change the previous system of annual emergency appeals, the Ethiopian government together with an association of donors like World Bank, USAID, Canadian International Development Agency (CIDA), and several Europeans donors initiated a new social protection known as PSNP in 2005 (Tadele Mamo, 2011: 2).

The Productive Safety Net Program (PSNP) was launched by the Government with support of development partners, in January 2005. Initially 4.8 million chronically food insecure people were targeted in 192 food-insecure weredas in six regions: Amhara, Oromia, SNNP and Tigray as well as Dire Dawa and Harari regions. This was increased in 2006 to 7.19 million people selected from 234 weredas in 7 regions, with Afar region added to the previous six. In 2007 the operation targeting 7.19 million people in 274 weredas in 7 regions. Since January 2008 PSNP

has also involved a pilot pastoral program in Afar, Oromia and SNNP and Somali regions (Haile *et al.*, 2008; Gilligan *et al.*, 2008).

The PSNP delivers cash or food transfers to about 7.19 million Ethiopians for six months each year, either through ‘public works’ or as ‘direct support’ for households that are labor constrained, with three objectives: (i) smoothing food consumption in food insecure households; (ii) protecting household assets by minimizing adoption of damaging ‘coping strategies’; (iii) building community assets through ‘developmental’ public works activities (MoARD, 2009a).

The increasing coverage and numbers involved in the PSNP raises the question of whether and if so how households could ‘graduate’ from dependence on the safety-nets program and thereby attain self-sufficiency and allow for other households to be included in the program in line with the objectives of the PASDEP, Ethiopia’s second poverty reduction strategy program (MoFED, 2006). It was expected that over the course of the program the caseloads should decrease, reflecting the success of the program in assisting households to graduate. Graduation decreases the PSNP caseload first, then the size of the broader target group of the food security program (FSP), when households reach food security (MoARD, 2009b).

1.2. Statement of the Problem

As cited in Habtamu (2011), “ When poor people encounter shocks, they suffer from the direct effect of poverty and hunger making them less productive and less able to earn a living. They are also forced to employ negative coping strategies such as reducing food consumption, selling productive assets, and removing children from school (Barret, 2001). These strategies further diminish their asset base and make them more vulnerable to the next shock, which leads them to further worse condition. This vicious cycle is referred to as poverty trap. It is difficult for the poor to escape the poverty trap unaided. They require a combination of development activities complemented by social protection transfers such as safety nets (Yadete, 2008).”

Based on the above concept a wide body of evidence now exists that indicates there are many circumstances in which productive safety net program as part of carefully planned social protection policies can be a springboard to escape from food insecurity. Most importantly, productive safety net program as a newly developed social safety net program, Alemayehu *et al.* (2008) discussed that Productive Safety Net Program together with the Other Food Security

Program, reduced household food insecurity; raised consumption levels; encouraged households to engage in production and investment through enhanced access to credit, increased use of modern farming techniques, and entry into nonfarm own business activities; and whether it has led to sustained asset accumulation as well as participants relative to the control group, they are more likely to be food secure, and are more likely to borrow for productive purposes, use improved agricultural technologies, and operate nonfarm own business activities.

There are some empirical studies that have been worked by different researchers to assess the contribution of PSNP in Ethiopia at household level. Among these studies some of them tried to assess the contribution of the program one year after the onset of the program using cross sectional data, for instance the studies, Devereux *et al.* (2006) and Gilligan *et al.* (2006). But according to Devereux *et al.* (2006), since contribution might not accrue in the short run, to fully and rigorously evaluate the PSNP, longitudinal data is needed. Moreover, a study conducted by Andersson *et al.* (2009) evaluated the impacts of the Ethiopian PSNP on rural households' holdings of livestock and forest assets including trees and found that program participation did not have effect on livestock holdings.

Kuyu is one of the chronically food insecure *Woreda* where PSNP has actively been implemented to change the life of households. Even though several attempts have been made to evaluate the general impact of PSNP countrywide, there are limited empirical evidences whether or not the program efforts has the intended effect on food security particularly in the study area. Therefore, this study is conducted to assess the contribution of PSNP on food security of Kuyu Woreda, Oromia Region, and central Ethiopia.

1.3. Objectives of the Study

1.3.1. General objective

The general objective of the study was to assess the contribution of productive safety net program to rural households' food security enhancement in Kuyu Woreda, central Ethiopia.

1.3.2. Specific objectives

The specific objectives of this study were:

1. To describe the food security status of study area.
2. To assess the role of PSNP in improving the source of incomes of beneficiary households.
3. Assess perception of beneficiaries towards the program.

1.4. Research Questions

Based on the above statement, the following questions were formulated in which this research attempts to answer:

1. What was the food security status study area?
2. Does PSNP help to improve the sources of incomes of beneficiary households'?
3. How beneficiaries perceive the program?

1.5. Scope and Limitation of the Study

The program has been operating in all 20 kebeles for selected households in the district. Though there were many kebeles where program activities have been undertaken in the district three of them were included to the sample due to time and resource limitations. The analysis was also limited to the contribution of food security by the program. Data were collected from both households, participating and non-participating in the program using the same survey questionnaires at the same time. A variety of topics such as resource endowments, consumption, productive assets, income, production, and demographic characteristics were covered in the data collection. Moreover, the study was constrained by lack of baseline survey data in the study area on evaluation of household food security status before and after program implementation.

1.6. Significance of the Study

The findings of the study would give some feedback on effectiveness of the program i.e. to know how much the program has achieved its stated objectives. The study is intended to contribute to awareness of the actual contribution of PSNP on food security and its success in achieving its goals. In other words, it was hoped that this study will contribute to the understanding of the contribution of PSNP for different stakeholders as well as for anyone who want to use it. In addition, it will inform some realities both to the community and policy makers and implementers how to achieve success in reduction of food insecurity. Finally, the study will serve as a bridge for other studies in the future and will serve as a reference material for student of food security and anyone else who want to refer it.

1.7. Thesis organization

This study is organized into five chapters. The first chapter deals with background of the study, statement of the problem, objective of the study, research hypotheses, significance of the study and the scope and limitation of the study. The second chapter covers relevant literature review. Chapter three comprises on discussion regarding description of the study area; its geographical location, climate condition, demographic characteristics, livelihood strategy, and related issues. While in the other section of the chapter, employed research methods were discussed. Chapter four discussions on major findings and summarizing discussions. Finally chapter five presents some concluding remarks, research suggestions and recommendations were presented.

2. REVIEW OF RELATED LITERATURE

2.1. Theoretical framework of safety net

The promotion of Safety Net program went back to 1980s when countries tried to respond to transitory shocks (IFPRI, 2004). During 1990s social safety nets had been criticized in that it was not comprehensive in addressing peoples' vulnerability to shocks and tackling the problems associated with poverty. Following this, the concept of social protection was emerged (HLPE, 2012). Social protection is a broader approach than safety net in that it encompasses safety net program, social assistances and social insurances (IFPRI, 2004). The High Level Panel of Experts on Food Security and Nutrition (HLPE) (2012) indicated different types of social protection instruments which include input subsidies, crop and livestock insurance, public works programs, food price stabilization, food subsidies, grain reserves, school feeding, supplementary feeding, conditional and unconditional transfers.

The institutionalization of safety net programs as a social protection in a given country involves the selection of adoptable one from the different safety net options based on country's own specific situation. This is because poor countries cannot implement multiple types of safety net programs at a time as the program entails administrative capacity, costs, considering wide ranges of target groups and availability of resources. Hence, for specific social groups that have specific problems the placement of specific type of safety net program is required. The specific social groups that need special consideration are the elderly, children, malnourished, pregnant women, the disables and the very poor (IFPRI, 2004).

Different types of social protection instruments have their own contribution in reducing vulnerability and poverty. According to (Devereux, 2012; HLPE, 2012; IFPRI, 2004) agricultural inputs subsidization such as fertilizers and seeds for targeted smallholder and marginalized farmers help increase their production and income. Direct feeding program that involves the distribution of meals and supplementary nutrients to malnourished pre-school children and women of child bearing age is another form of safety net program. It is a program that emphasizes investment in future human capital development through focusing on reducing long- term impact of malnutrition. The school feeding program that focuses on provision of prepared food like the fortified ones to children in school is also another form of safety net

program. Such a program has the advantages of increasing the enrollment of children, reducing the rate of dropouts by reducing hunger and enhancing students' performance at school. However, it entails the inclusion of non-needy children in the program and creates additional workload on teachers to feed the children. Cash transfer as a safety net program option involves direct transfer of cash to poor households. The cash transfer provides benefits through stimulating the local market, enabling the targeted people to participate in their own small-scale businesses and encouragement of the poor in receiving loan for further investment. But the potential effectiveness of cash transfer program is challenged particularly in regions like Africa by the prevalence of high number of needy people to be addressed, lack of management skill and logistics, socio-political barriers to generate demographic and income position information of the communities. On the other hand, safety net program advocates the provision of food transfer than cash transfer when the objective of the intervention is to address undernourishment (IFPRI, 2004).

Another type of social protection instrument through which the poorest portion of the society can be addressed is the public work component of safety net program. It involves targeting of physically capable and able-bodied poor individuals that can participate in the implementation of physical activities and earn income from public work wage payment. Public work has the role of providing short-term employment option for the poor. It also facilitates the construction of socio-economic infrastructures like schools, clinics, water supply and irrigation networks, access to markets through construction of roads and arrangement of market places that has significant contribution to overall economic development. To achieve this, there should be careful design and actualization of the program. Public work is the dominant type of safety net program that is widely implemented in Africa including Ethiopia to address the problems of deep-rooted poverty that has been affecting rural poor households greatly (Devereux and Guenther, 2009; IFPRI, 2004).

2.1.1. Food Security

The development of the concept of food security was launched at the time with a relatively clear focus on national and international food supply. In the 1970s, food security was mostly concerned with national and global food supply and then in the 1980s the focus shifted to

questions of access to food at household and individual levels (Maxwell and Frankenber, 1992).

As an objective of policy, planning, and programming, the term food security must be quite clearly defined in order to focus the strategy for achieving it. From the mid-1970s to the early 2000s the term has been defined and used in many different ways: as a conceptual framework, an organizing premise for defining and enacting policy, as a goal of development programming and as a justification for launching many program proposals having dubious connections to the core concept. It has been used as a proxy for poverty as a “counterweight” to the “structural adjustment” agenda of the 1990s, as a tool for finding and filling gaps in integrated approaches to rural development focused on the poorest, and as a linking mechanism between concern for the poor, malnourished individual and the need to fix non-working economic systems (USAID, 2001).

2.1.2. Definitions of food security

The most commonly used definition is the one that developed by the World Bank (2009), 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. It should be noted that the definition requires focus on availability, access and utilization. The latter incorporates proper food processing and storage techniques; adequate knowledge, application of nutrition, child care techniques, and the existence of adequate health and sanitation services those are important. The essential elements are the availability of food and the ability to acquire it. Food insecurity, in turn, is the lack of access to enough food. There are two kinds of food insecurity: chronic and transitory. Chronic food insecurity is a continuously inadequate diet caused by the inability to acquire food and transitory food insecurity is a temporary decline in a household’s access to enough food (USAID, 2002).

According to FAO (2005), food insecurity is a situation that exists when people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development and an active and healthy life. It may be caused by the unavailability of food, insufficient purchasing power, inappropriate distribution, or inadequate use of food at the household level. Food insecurity, poor conditions of health and sanitation, and

inappropriate care and feeding practices are the major causes of poor nutritional status. Food insecurity may be chronic, seasonal or transitory. At times when an individual, household, or community is unable to avail and access food for the above mentioned reasons then the situation could be described as a state of food insecurity.

2.1.3. Food security situation in the world

According to FAO 2005 hunger hotspots are increasingly a manifestation of the consequences of conflict or economic failures. Natural disasters also undermine people's food security in various regions of the world. In many cases natural and human-induced factors reinforce each other, leading to complex emergencies and protracted crises. Pests and diseases add to the complexity of providing sufficient and safe food to all populations and test the ability of countries and the international community to cope with crisis. In the long run, all countries are likely to be affected by the climate changes as a result of the global warming phenomenon. The nature and severity of these shocks are being better understood over time, and some essential policy imperatives are emerging.

The number of countries facing serious food shortages throughout the world stood at 36, with 23 in Africa, seven in Asia/Near East, five in Latin America and one in Europe. The causes are varied but civil strife and adverse weather predominate. The outbreak of desert locusts in western Africa and the recent tsunami disaster in South and South East Asia have also had serious food security consequences. FAO estimates that 852 million people worldwide were undernourished in 2000-2002; 815 million in developing countries, 28 million in the countries in transition and nine million in the industrialized countries. South Asia and Sub-Saharan Africa have disproportionate share of the world's hungry. The number of undernourished people in developing countries decreased by only nine million during the decade following the World Food Summit baseline period of 1990-1992. During the second half of the decade, the number of chronically hungry in developing countries increased at a rate of almost four million per year, wiping out two thirds of the reduction of 27 million achieved during the previous five years (FAO and WFP, 2009).

Nearly all evaluations of social protection programs have centered on programs found in Latin America and, to a lesser extent, South Asia. Evidence from sub-Saharan Africa is

much more limited and so it is of interest to examine the impact of social protection program in an African setting. Recent work has speculated that social protection programs may, in fact, be integral to policy frameworks that attempt to stimulate economic growth. Particularly in rural areas of Africa, there are pervasive credit and insurance market failures. This has two adverse consequences for agriculture: farmers are liquidity constrained (and therefore, for example find it difficult to purchase fertilizers) and farmers are reluctant to take risks (for example, adopt new crops). Social protection, by providing liquidity and a reliable source of income addresses both types of market failures (Gilligan *et al.*, 2008).

2.1.4. Food security situation in Ethiopia

Poverty is widespread in Ethiopia. The major causes of poverty and food insecurity in rural areas include land degradation, recurrent drought, population pressure, low input subsistence agricultural practices, lack of employment opportunities and limited access to services. As a result more than 38% of rural households fall below the food poverty line and 47% of children under five suffer from stunting (MoARD, 2009).

Fifteen percent of the rural population in Ethiopia report that they experience a food gap of greater than three months. The lowest prevalence can be found in the rural areas around Addis Ababa and Benishangul (3% and 7% respectively) where the PSNP is not operational, while the highest rates can be found in Dire Dawa, Oromiya and Afar (23%,20% and 14% respectively). Critical to achieving food security are asset holdings. In most settings in rural Ethiopia lack of assets in terms of livestock holdings, land and labour are repeatedly cited as the major causes of poverty. Furthermore, changes in these asset holdings are commonly mentioned by people whose food security status has recently.

2.2. Food Security Programs (FSPs) of Ethiopia

In Ethiopia, poverty is highly deep rooted at all levels (national and local) showing that almost half of the population is characterized as being chronically poor (Degefa, 2005). According to MoARD (2009), most rural parts of Ethiopia are characterized by the prevalence of persistent food insecurity, which has been a defining feature of poverty, is resulted from land degradation, high population pressure, recurrent drought, erratic rainfall, limited household assets, and traditional ways of farming system. The severity of the situation is higher in drought prone rural

areas of the country where the livelihood of the people is entirely reliant on rain-fed agricultural practices. Consequently, a failure in rainfall in a year would increase the occurrence of hunger to a higher degree (MoARD, 2009).

According to World Bank (2004, as cited in Gilligan et al., 2008) the number of people in need of emergency food aid because of adverse rainfall shock in Ethiopia increased from approximately 2.1 million people in 1996 to 13.2 million in 2003, which again dropped back to 7.1 million in 2004. Considering the food insecurity problem as one of the obstacles to development plans of the country, the government of Ethiopia has been addressing these critical issues in PSNP under its Food Security Program (MoARD, 2010) and currently about 8.3 million rural people that have chronic food insecurity have been targeted by the PSNP (Devereux and Guenther, 2009).

According to MoARD (2010), the major components of the food security programs of Ethiopia include Productive Safety Net Program (PSNP), Household Asset Building Program (HABP), Complementary Community Infrastructure Program (CCI) and the Resettlement Program. These components are designed in an integrated manner in order to attain household food security over a five year period (Devereux and Guenther, 2009). The combined effects of the FSP components are aimed at moving people with chronic food insecurity to the status of food security (MoARD, 2010). To do so, each of the food security programs has its own contribution.

The PSNP provides safety net for households that are chronically and transitory food insecure. The HABP enables the food insecure households to get involved in on-farm and off-farm income generating activities which in turn help enhance households income and asset accumulation status. The CCI program is aimed at the development of capital-intensive large infrastructures such as large irrigation schemes that helps to increase production in chronically food insecure weredas. The resettlement program involves voluntary based relocation of food insecure households from areas of highly degraded to more productive and relatively sparsely populated areas within the region (MoARD, 2009; MoARD, 2010).

2.2.1. Definition and concept of PSNP

There have been multiple causes of persistent poverty and increased vulnerability in developing countries. Erratic rainfall, personal illness, harvest failure, and other calamities that can devastate crop production and other income sources can affect the livelihoods of the people to the level of its irreversibility. Poor households from developing countries lack the capacity to cope with such shocks due to lack of formal insurance systems. The existing informal risk-sharing arrangements and savings also can't fully help to smoothening consumption gaps (Devereux, 2012).

Devereux and Guenther (2009) also indicated that to overcome those problems that debilitate rural poor households' means of livelihoods, social protection policies have been identified in recent years as one potential approach. They also explained that safety net intervention, which was originated in 1980s with the effort to mitigate transitory poverty, has contributed a lot for the evolution of the concept of social protection to a broader concept. The PSNP has been implemented not only to mitigate transitory poverty related issues but also to play a decisive role in helping reduce the risk associated with chronic poverty plus facilitating long-term investment in human index and physical capital developments (IFP RI, 2004).

2.2.2. PSNP in Ethiopia

Ethiopia has a recorded history of being the victim of different disasters that hit the country at different times and places. These disasters include epidemic diseases of human and livestock, crop pests, drought, flooding, infrequent earthquake, land slide, forest fire, war and conflict that caused people to dislocate (evacuate) from their home ground. The frequency and intensity of disasters vary by areas within the country. However, drought has remained the top and the most cause of disaster and human suffering in Ethiopia. Because of drought induced severe food shortage, millions of Ethiopians have been starved, died, and displaced from their locality (DPPC, 2004; Mulugeta, 2010).

Consequently, chronic poverty and food insecurity have been remained the defining features of Ethiopia. Even though Ethiopia experienced a decline in rural poverty by about 6 per cent during the year 1999 -2005, still there are about 38.5 percent of rural households living below the food poverty line. S subsistence agriculture which is practiced on degraded fragmented plots of land

and highly subjected to climate variability particularly the rainfall has been the mainstay of the majority of poor rural households. The recurrent occurrence of drought induced famine has depleted the asset holdings of households because of crop production failure and livestock losses. On top of these, it has debilitated the livelihoods of the most vulnerable households to the level they cannot withstand even a slight shock (IDL group et al., 2006; MoARD, 2010).

And response mechanism was the dominant measure that had been taken by the then governments of Ethiopia. This was apparent during the years before 2005. Hence, the ex post facto humanitarian emergency food aid was used to save the lives of millions of people suffering from both transitory and chronic food insecurity problems. However, this approach was characterized by its unpredictability, inability to distinguish between different types of food insecurities and also did little to recover and protect livelihoods, fail to prevent environmental degradation, generate community assets and preserve deterioration of households' human capitals (MoARD, 2010). Devereux and Guenther (2009) also pointed out that the response mechanisms used to curb the problem in Ethiopia could not enable the people even to sustain with their poverty. As a result, the government of Ethiopia reached to a consensus with development partners and joint donor groups to shift this approach to a productive and development-oriented safety net approach (Mulat et al., 2009). The IDL group et al. (2006) study report also indicated that the PSNP is the program that the government of Ethiopia has designed to shift the response mechanisms that was implemented haphazardly to a development-oriented strategy that involves the use of predictable responses and resources to address the identified problems. Consequently, the PSNP has been materialized as one of country's food security program.

As Devereux and Guenther (2009) explained in their working paper entitled Growth and Social Protection focusing on Agriculture and Social Protection in Ethiopia, the PSNP has three distinct objectives: S smoothing food consumption by providing transfers (cash , food, or the combination of both) during the hunger months; protecting household assets by building households resilience to shocks and preventing productive assets selling; and building community assets through public work activities that enhance the construction of useful economic infrastructures like roads that facilitate farmers access to markets and linkage with traders. They summarized these objectives as protection against hunger through smoothing food

consumption, prevention of impoverishment through protecting household assets, and promotion of livelihoods through building community assets.

2.2.3. Components of productive safety net program (PSNP)

The PSNP has two major components: the public work (PW) and the Direct Support (DS) components. The public work is the largest component in terms of the number of beneficiaries it encompasses and the amount of transfer it supplies (Gilligan et al., 2008). The implementation of the public work physical activities are designed to be undertaken from the month of January to June assuming that the rural farmer PSNP beneficiary households are relatively free of other own farm activities and thus the PSNP activities do not compete with time of farmers regular farm activities (Gilligan et al., 2008; MoARD, 2009). The community food security task force determines which households have to participate in which of the program components. Public worker beneficiaries are those individuals who are able-bodied to participate in community development activities but have resource constraints (MoARD, 2004; MoARD, 2010). Public work is not the recent approach that came along with the PSNP, but it has a long history in Ethiopia. During the previous emergency food aid response mechanism, the government of Ethiopia was trying to involve able-bodied individuals to participate in community infrastructure development activities. This was to avoid free delivery of food that may help prevent dependency syndrome in the community. However, the then constructed public work infrastructures were criticized for lacking sustainability in maintenances and the benefits they were providing to the local communities (DPPC, 2004).

Devereux and Guenther (2009) also argued that besides to providing social transfer to program participants, the public work activities play a crucial role in promoting agricultural production and enhancing investments in human capital. They also indicated that the activities like small-scale irrigation, micro-dams, and soil and water conservation are directly contributing to agricultural production through increasing crop yields and farmers' income. The construction of rural access roads, farmers training centers (FTCs) and improved water supplies (spring development, ponds and shallow well constructions) could enhance peoples' income indirectly earned from agriculture. The construction of additional classrooms and health posts has a long-term effect in benefiting the rural families rather than providing an immediate income. These

infrastructures provide access to improved education and health facilities that would help in human capital development in the future. The IDL group et al. (2006) also indicated that households being accessed to PSNP cash income are able to spend more on education and health services and these households also able to keep more children in school and use more health services which are considered as a direct effect of PSNP. This implies that food transfer is more likely to be used for direct consumption than being invested on future human capita development expenses like school and medical fees.

On contrary, the direct support beneficiaries are those individuals who are resource poor and unable-bodied. In most cases they are elderly, disables or sick (MoARD, 2004). The PSNP provides these people with unconditional transfers and services as a long-term social protection because these individuals cannot participate in any development activities and almost the majority of them cannot achieve their own food self-sufficiency (MoARD, 2009). But there are exceptional situations when pregnant women after the first six months and lactating mothers in the first ten months after birth are shifted temporarily from public worker beneficiary to direct support (MoARD, 2004).

2.2.4. Types of PSNP transfers

There are two types of transfers cash and food. The type of transfer provided to beneficiaries depends up on the type of resource management capacity of the weredas and the market situation of the area. For cash type of transfer to be provided factors to be taken into account include the availability of surplus food in the wereda or in neighboring wereda, availability of active food markets, preference of the community, cash management capacity of the wereda (availability of finance officer, cashiers, safes, transport, security). For food type of transfer to be provided factors to be considered include preference of the community, absence of food market near food insecure kebeles, lack of experience in cash management and better food management capacity of the weredas (MoARD, 2004). On top of the aforementioned criteria, Sabates-Wheeler et al., (2011) indicated that the type of transfer provided to PSNP beneficiaries in Ethiopia also depends on the type of livelihood of the beneficiaries and the agro-ecology in which they live. Accordingly, most of the highlander PSNP beneficiaries are provided cash as they are crop producer and also being access to the availability of food grains in the local market as compared

to the lowlander PSNP beneficiaries who are almost pastoralists and prefer the provision of food transfer particularly in the regions of Afar, Somali and the lowland parts of Oromia.

2.2.5. Timeliness of PSNP transfer payment

The PSNP has principles to follow for the attainment of its objectives. Timeliness of transfer payment is one of the principles that can affect the role of the program. The timeliness of public work transfer wage payment has a significant role in increasing households asset holding status and building resilience to shocks (MoARD, 2010) and the reverse process results in households to fail in debit particularly those who have no labour and other sources of livelihood as well as it also slows down the graduation pace of beneficiary households (IDL Group et al., 2006). The beneficiary households can benefit from the program provided that the PSNP transfer is predictable, appropriate and provided timely. The beneficiaries should know in advance that they are eligible for the program participation, the amount of transfer they will receive and when and where they will be paid. These help them have plan ahead of time for what purpose they have to use the transfer if it is in cash. The type of transfer to be provided should take into account the situation of the local market which is to mean that in area where there is shortage of food supply, food transfer has to be provided whereas in areas where food is dequately available in the local market the cash first principle has to be put in place (MoARD,2010).

Sabates-Wheeler et al. (2011) also noted the effect of delays in PSNP transfer payment as follows: It enforces the beneficiary households to enter into debt, seeking assistance and share from the neighbour and sell their productive assets. These again cause asset depletion at the household level. Consequently, the households cannot graduate from the program and they are forced to rely on and stay under the PSNP assistance for extended duration of time. Gilligan et al. (2010) also depicted that the size of the transfer that is received by households also matters the food gaps and asset accumulation of beneficiary households. He explained that the larger the size of the transfer the households receive, the greater the reduction in food gaps and distress sell off productive assets. On top of these, the effect of the program on households' asset accumulation can be greater when they receive more amounts of transfer and being the participants of both the PSNP and OFSPs. Similarly, the study conducted on the impact of Ethiopia's PSNP and HABP by Guush et al. (2011) revealed how the duration of years for which

the beneficiary households received PW transfer payment brought remarkable differences in their food security improvement. The study result showed that the PSNP beneficiary households who received PW transfer for five years registered an improvement in their food security by 1.05 months than those households who received the PW transfer for only one year. Different study findings pointed out the reasons that are attributed to delays in transfer payment. Gilligan et al. (2008) stated that extended process of public work attendance sheet and payroll preparation as the major problems and Sabates-Wheeler et al., (2011) on the one hand, indicated that late release of allocated budget by the Federal Government and absenteeism of concerned authorized individual at the wereda level for signature and to command over the budget which is mainly associated to be occupied by the meetings.

2.2.6. Graduation out of PSN

Graduating of the productive safety net beneficiaries out of the program is the ultimate goal of the program (MoARD, 2004). This can be attained if the PSNP is implemented in integration with other food security programs and ongoing other development projects of the weredas. The combined effects of these programs enhance the rate of graduation of beneficiaries (IDL group et al., 2006; MoARD, 2010). According to Devereux et al, (2008) the PSNP participant households are expected to graduate within 5 years of duration in the program. This is mainly for public work component participants of the program. The graduation of the PSNP beneficiary households out of the program is a crucial indicator of the success of the program. Because, it is presumed that these households have accumulated assets, attained the level of food self-sufficiency and have built resilient livelihood means. This in turn indicates that the PSNP has prevented asset depletion at households' level and built their resilience to moderate shocks.

There are two levels of graduation: graduation from PSNP and graduation from FSP. Households can graduate from PSNP when they are able to meet their annual food requirement but they are still remained being the beneficiary of OFSPs such as HABP for further household asset building. Graduation from FSP is referred to as the second level of graduation of beneficiary households. Such households are sustainably food secured, thus, they need no more support from PSNP as well as OFSP. These households are assumed to have developed the capacity to resist shocks that have the potential to debilitate their food security (MoARD, 2010).The IDL group et

al. (2006) indicated that complementarities between PSNP and OFSP have the role to bring upward the households to graduation. But for further efficacy in graduation there should be other enabling environment conditions in place besides to the actualization of PSNP and OFSP. These enabling environments include the enhancement of the capacity of the poor to resist the effect of drought, realization of economic growth that makes the poor equally benefit at all levels, provision of adequate and sustainable agricultural extension services, access to water and irrigation services, access to credit facilities and affordable health and education services.

Sabates Wheeler et al. (2011) also indicated that full family targeting process has its own contribution in speeding up households' graduation from the PSNP because it can help prevent asset depletion. Fail to materialize full family targeting of beneficiary households ends up in constraining the contribution of the PSNP in reducing households' food gaps that in turn entails the beneficiary households to sell assets to fill the gaps. This means that the absence of full family targeting facilitates the situation in which targeted households stay under the PSNP support for extended duration of time.

2.3. Sustainable livelihood as analytical framework

Chambers and Conway (1991) modified the definition of sustainable livelihood which was coined by an Advisory Panel of the World Commission of Environment and Development (WCED) and proposed other working definition that was stated "the first elaborated definition by Knutsson (2006: 90) and they defined it as follows:

A livelihood comprises the capabilities, assets (stores, resources, claims, and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term (Chambers and Conway, 1991:6).

The livelihood strategies on which people rely are largely determined by existing socio-economic and environmental factors. In some societies the livelihood of the people is predetermined based on socially assigned specific role to their parents and they are forced to inherit this role from their birth. For example, an individual born from pottery families will be

forced to live on this activity. The development in human capital of the people like in education and access to employment opportunities elsewhere make them to have alternative livelihood means (Chambers and Conway, 1991). The five livelihood assets such as the human, social, natural, financial and physical assets serve as the capital bases from which means of livelihood sources are generated and constructed (Scopes, 1998). Frankenberger (1996) added that households that make use of more of the three livelihood intervention strategies (livelihood promotion, protection and provisioning) can have improved food, nutrition and income security.

Degefa (2008) explained that there is a strong bi-directional interplay between poverty and food insecurity in which one strengthens the effect of the other in such a way that poverty brings about household food insecurity and food insecurity in turn causes household impoverishment. He also argued that the complex interaction and multifaceted nature of both poverty and food insecurity can best be understood through adopting and employing sustainable livelihood framework owing to its capacity to explore the livelihood activities and survival strategies of people living under different contexts, resource accessibilities, government policies and existing local institutions. Krantz (2001) also pointed out that sustainable livelihood approach helps understand poverty because it addresses how the poor can get access to the benefits generated from economic growth as economic growth alone does not guarantee poverty reduction; it contextualizes poverty from the poor people themselves point of view ; and it recognizes the need for the active involvement of the poor in all stages and processes of poverty reduction related activities such as design of policies and development of projects that fit to their needs.

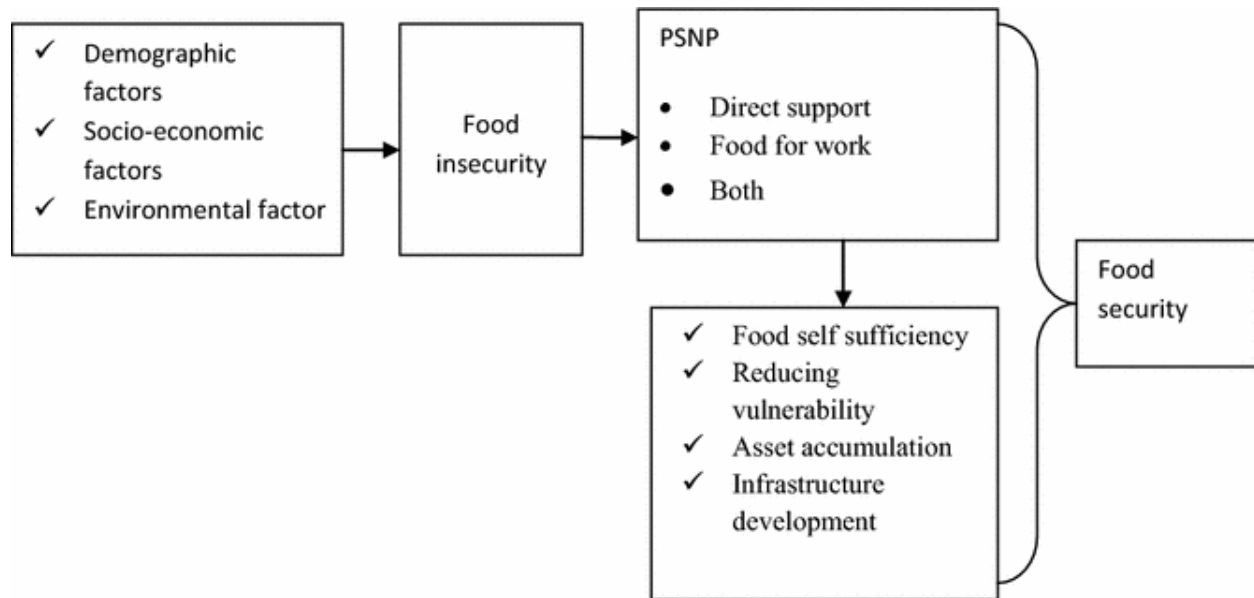
Accordingly, the use of sustainable livelihood as an analytical framework for this study has been employed with the intention to analyze how shocks and trends in the study area entailed the outset of development intervention like PSNP and also how the actualized intervention has brought about improvement in livelihoods of targeted households in the study area. Shocks and trends like drought, erratic rainfall, population pressure followed by deforestation, poor soil fertility and land degradation directly affected production and productivity. Drought caused shortage of water and loss of crop production and livestock resources. During such conditions the people relied on income from forest resources. They were selling fire wood, charcoal and other wood products to fill their food requirement. These in turn facilitated the rate of deforestation that again resulted in poor soil fertility and land degradation. It was those

households who were landless, poorly accessed to credit facilities, physically disabled and old aged that had precarious livelihoods. Moreover, these households were lacking employment opportunity from where they can generate income and they were also poorly access to credit facilities to run some income generating activities. These made them lack savings either in cash or in kind like livestock assets. Finally, these households reached to the point where external intervention was needed. Consequently, they had been supported by food aid at least for consecutive three years before they were targeted by the PSNP. Participants of the PSNP were selected based on their land holding size, presence of active labor force in the household, marital status (priority for widowed and divorced female-headed households), family size, physical capability (disability, old age), and health situation (status) of the households. The PSNP has been commenced with the objective of improving the livelihoods of targeted households that include improving the food security, asset holding position, income and savings.

Aside from improving the livelihoods of targeted households in particular, it was assumed that the PSNP has provided common benefits to the whole communities in the targeted areas (wereda and kebeles) through facilitating the development of socio-economic infrastructures such as schools, health posts, rural roads and drinking water supplies. The developments of these infrastructures have rendered equal services to both PSNP beneficiaries and other communities in the area. Thus, the benefits generated from these infrastructures would not be considered in the analysis of this study.

Thus the analytical framework for this study implies that regular and reliable social transfers (such as Productive Safety Net Program) can reduce household food insecurity, firstly through supplementing household food consumption and secondly through protecting households productive assets and generating small infrastructures through rehabilitating natural environment at community level.

Figure 1: Analytical frame work



Source: Adopted from (Diriba, 2017)

2.4. Empirical Evidences on Impacts of Safety Net Program

In this section review of empirical studies that are studied to assess different kinds of social safety net program implemented by different developing countries are presented. The reviewed studies are classified under the regions; Asia, Latin America, Africa, and finally in specific focus in Ethiopia.

2.4.1. Safety net program in Asia

There are evidences which assert that social safety net can mitigate poverty and the adverse effects of policy change, such as agricultural liberalization in Asian countries. Social transfers can be designed so as to improve insurance protection, enabling recipients to engage in higher-risk, higher-return investment. For example, in Maharashtra, India, the insurance provided under the Employment Guarantee Scheme enabled farmers to plant high-yield crops, rather than the low-yield, drought-resistant varieties used elsewhere (Barrientos and Scott 2008).

When Walle (2003) tested the welfare and poverty impact of Vietnam's public safety net program, he found that Poverty fell quite dramatically in Vietnam between 1993 and 1998. Nevertheless, he concluded, that the government's safety net programs made only negligible

contribution to that favorable outcome. The finding result indicates that these programs did not fulfill a genuine safety net role in protecting those who faced falling living standards during this period. Part of the reason is low overall spending on these programs. However, the evidence also suggests that that poor targeting is a fundamental problem on top of low total outlays.

Moreover, Sumarto et al. (2004) demonstrate the impact of participation in social safety net on poverty and welfare in Indonesia. They found that participation in the social safety net programs helps households to increase their consumption level by the magnitudes of the coefficients range from around 0.04 for the subsidized rice, medical services, and employment creation programs to around 0.1 for the scholarship program. On the other hand, to examine the impact of participation in the social safety net programs on the probability of a household to be in poverty, they estimated a probit model. And again the social safety net participation variables are also instrumented by the total number of households which participated in each social safety net program in each village, to solve endogenic problem in this model. The result by Sumarto et.al. (2004) showed that a household which participated in this program has a three percent lower probability to be currently in poverty than a household with similar characteristics but did not participate in this program.

2.4.2. Safety net program in Latin America

Washburn et al. (2000) cited in Barrientos (2003) discussed the impact of PROGRESA (one of the major programs of the Mexican government aimed at developing the human capital of poor households), which is one of social safety net program in Mexico. And they concluded that the PROGRESA program appears to have sizeable and significant effects on the consumption of beneficiary households. Like the above research the study by Skoufias (2001) found that consumption of PROGRESA households is higher when compared with comparable control households. Child health and nutrition has also improved as a result of CCT programs in Latin Americans, In Mexico, and the PROGRESA evaluation shows a significant increase in nutrition monitoring and immunization rates. Infants under three years old participating in PROGRESA increased their growth monitoring visits between 30 to 60 percent, and beneficiaries aged 0 to 5 had a 12 percent lower incidence of illness compared to non-PROGRESA children (Gertler 2000 cited in Rawlings 2004). In addition, the data suggest that PROGRESA has had a significant

impact on increasing child growth and lowered the probability of child stunting for children aged 12 to 36 months old. Consumption levels have also improved as a result of participating in CCT programs (Behrman and Hoddinott 2000) cited in Rawlings (2004).

Empirical study in Nicaragua, to assess the impact of Safety net programs, CCT control households experienced a sharp decline in consumption due in part to low coffee prices and a drought, whereas the average per capita annual household expenditures of those beneficiaries did not change (IFPRI 2002a cited in Rawlings 2004). The net program impact translates into a 19 percent increase in per capita consumption and suggests that CCT programs may help poor people protect consumption in times of crisis, a risk management role worthy of further analysis (Rawlings 2004). If we look the impact of safety net in another country of Latin America other than Mexico, we found the study by Barrientos (2003). The author, in his analysis of impact of non-contributory pensions on poverty, found that Poverty headcount would be 4.2 percent higher for the Brazil if pension income is removed and there are no off-setting changes. In addition he also arrived to a finding that the poverty gap would be 40 percent larger for the Brazil sample if pension income is removed and there are no off-setting changes.

2.4.3. Safety net program in Africa

South Africa's experience with social safety net program provides important lessons for other African countries concerning the practical implementation of social security schemes with regard to poverty reduction, reduction of gender inequalities, incentive effects, and improvements in education and health and also in terms of financing and fiscal sustainability (Devereux 2002). A study that examined two social safety-net interventions in Southern Africa namely cash transfers in Namibia (social pensions), Mozambique (cash payments to urban destitute (GAPVU)). Both programs comprise social safety nets in that they protect poor citizens against income shocks associated with old age, destitution caused by war, and drought, respectively (Devereux 2002).

Accordingly, in Mozambique, survey found that the number of beneficiary households living in absolute poverty had fallen from 71% to 65% as a result of GAPVU. GAPVU also made a greater contribution to total household income rise in the small, poor town of Chimoio (41%) than in the large wealthier city of Maputo (Low et al 1998 cited in Deverux 2002). In Namibia, the delivery of social pension income over several decades to isolated rural communities has

provided a permanent stimulus to local trade, with many grocery stores being established even in the smallest villages that would not survive without the business that pensioners bring every month. Social pensioners account for between one-third and two-thirds of turnover at retail stores in southern Namibia. More than half these pensioners were granted credit facilities at these stores because of their guaranteed monthly transfer income (Deverux 2002). In Malawi the descriptive study by Miller et al. (2006) to analyze the impact of cash transfer on household food security or welfare. They also used separate regression models to examine, for instance, the differential impact of the transfer depending upon the gender of the household head. The results from this study show that intervention households in Malawi allocated 62% of total expenditures to food purchases. The study also pointed that, although the evaluation was relatively short-term in length, conducted over the course of one year, recipients were able to reach what they reported as an acceptable level of food security. According to the authors by end line, 13% of intervention versus 81% of comparison households reported that food consumption was less than enough. On average, cash recipients consumed a variety and adequate amount of foods per day, without experiencing many days of food shortages, which is in striking contrast to the comparison group.

2.4.4. Productive Safety net program in Ethiopia

The PSNP is one of several components of the Ethiopian government's Food Security Program. The other components are subsidies for voluntary resettlement and a package of programs jointly called Other Food Security Programs (OFSP). OFSP includes a wide range of activities that differ by regions, but the main element is a package of loans for agricultural and non-agricultural activities (Slater et al. 2006). The federal plan is that 30% of the PSNP beneficiaries should also be covered by OFSP. During the 2006–2007 seasons, 70% of OFSP funds were slated for household credit packages. The anticipated effect of this set of programs is that, since households will no longer need to sell off assets as a result of income shocks, their productive assets will increase over time. With the help of the PSNP and other programs, these food-insecure households are expected to graduate from their chronic situation in five years (Slater et al. 2006).

In Ethiopia, the PSNP is already having a significant impact and there is clear evidence that several important changes have taken place in study areas in terms of nutrition, asset protection, asset building, and allowing people to feel secure enough in their income to take productive

loans which they previously found too risky (Slater et al. 2006). A comparative study by Alemayehu et al. (2008) pointed, access to the PSNP improves two measures of household food security: it reduces the likelihood that a household has very low caloric intake and it increases mean calorie availability. Relative to the control group, beneficiaries are more likely to be food secure, and are more likely to borrow for productive purposes, use improved agricultural technologies, and operate non-farm own business activities.

Additional empirical evidence reveals that Safety net activities are integrated with *Woreda* development plans of targeted regions of the country and ensured quality assets which built within the necessary budget allocated. These activities include public works, on-farm improvements, and environmental protection measures such as tree planting on public land and soil/water conservation measures. And the study finally recommended that Safety net resources should be flexible enough to offer a wide range of activities that fit the food security plan of the *Woreda* and also ensure timely and efficient use of these resources (Alemu et al. 2009). Yadete (2008) also conduct a study to assess the impact of PSNP in Oromiya region using cross-section data set. He concludes that the welfare of beneficiary households is significantly affected by PSNP in the study *Woreda*. The study by Alemtsehay et al. (2007) also found that Ethiopia's PSNP, unlike Vietnam's safety net program which is discussed by Walle (2003), is (now) reaching the poor. This is an interesting finding that the paper came up with regarding the targeting of the program. The study identified that institutional structure for combined administrative and community targeting are in place in most areas (though not all), and are functioning with varying degrees of success. Some major misinterpretations and confusions in targeting during the first year have now been corrected. No systematic corruption or large-scale abuse of the targeting system was found.

Anderson et.al. (2009) have also conducted a study on Impacts of Productive Safety Net Program in Ethiopia on livestock and tree holdings of rural households using panel data. They evaluated the impacts of the Ethiopian Productive Safety Net Program (PSNP) on rural households' holdings of livestock and forest assets/trees. They found no indication that participation in PSNP induces households to disinvest in livestock or trees. In fact, households that participated in the program increased the number of trees planted, but there was no increase in their livestock holdings. They found no strong evidence that the PSNP protects livestock in times of shock.

Shocks appear to lead households to disinvest in livestock, but not in trees. Their results suggest that there is increased forestry activity as a result of PSNP, and that improved credit access encourages households to increase their livestock holdings. In spite of the fact that the study employed panel data in its regression, it did not directly focus on welfare or poverty situation of the rural households.

The above studies are evidence for encouraging impact of PSNP in alleviation of food insecurity. However the program impact on beneficiaries' working behavior was not addressed considerably since conditionality tendency of the program (distributing the transfer because of participating in development activities) may affect beneficiaries' perception towards the program. Even the intensity of the contribution is differing from place to place and even it depends on the variation of developmental projects planned in respective site.

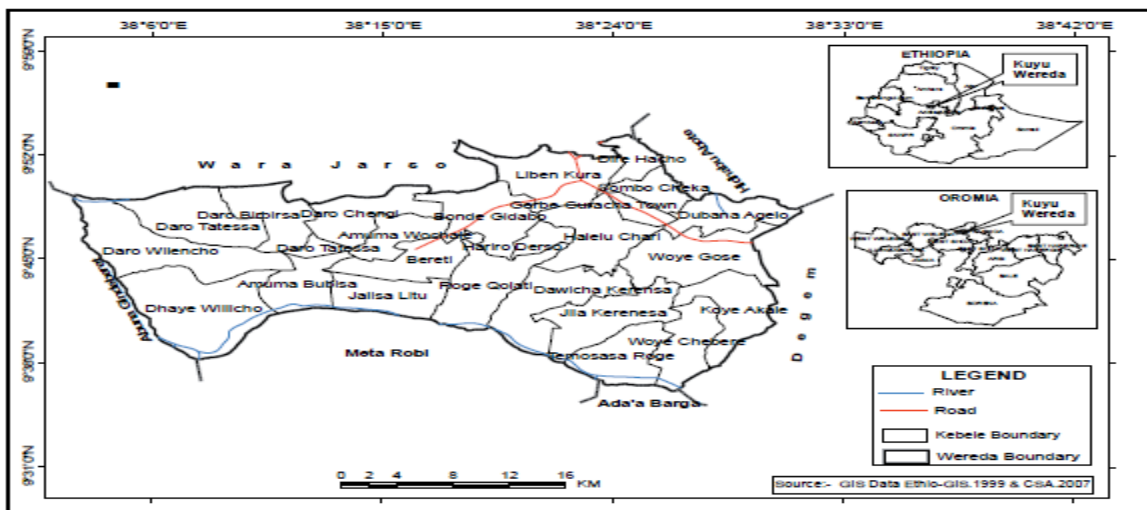
A study result conducted in the study area (Kuyu Wereda) by Fekadu (2009) on challenges of PSNP implementation pointed out factors that negatively affected the effectiveness of the program which include poor targeting process of beneficiaries, poor linkage among institutions, and delays in transfer payment and too farness of the place where the payment is affected. The study result revealed that the process of targeting is based on nepotism, corruption and political participation of the households (being political membership of the ruling party). These resulted in the inclusion of non-poor households that account for 25 percent of the total beneficiaries and the exclusion of relevant chronically food insecure households. The presence of weak institutional linkages from kebele to wereda level prohibited the eligible households from submitting and processing their appeal on unfair targeting processes. The study result also indicated that the beneficiary households were enforced to come to wereda town (Gabra Gurracha) that is located far away from their home to receive the transfer payment. As a result they were exposed to unnecessary costs like transportation, food and accommodation during the course of stay in the town. On top of these, the study result also emphasized that the time when the transfer payment was effected did not coincide with the time when surplus grain is available in the market. This in turn made households to fail to purchase adequate food grains with the money they got owing to the rise in grain price.

3. RESEARCH METHODOLOGY

3.1. Description of the study area

Kuyu Woreda is one of the 13 districts in North Shewa administrative zone of Oromiya National Regional State /ONRS/ (CSA, 2010:32). It is composed of 23 rural administrative units (kebeles) and two urban kebeles. It is found at about 150 km from Addis Ababa in northwestern direction on the main road to the town of Bahr Dar, the capital of Amhara National Regional State (ANRS). The wereda is bounded by Abuna Gindeberet Wereda in the West, Wara Jarso Wereda in the North, Hidhebu Abote Wereda in the Northeast, Degem Wereda in the Southeast and Meta Robi and Ada'a Berga Weredas in the South (KWOFED, 2013). The total land area coverage of the wereda is 950.75 square kilometres. It is the third largest wereda and accounts for 9.8 percent of the total land area of the zone (CSA, 2011). The land use pattern of Kuyu Woreda indicates that 57,140.1 hectares (60.1 %) are cultivated land, 13,976 hectares (14.7%) are grazing land, 10,458.3 hectares (11%) are covered by forest which include both man-made forest and bush and shrub, 7,130.6 hectares (7.5%) are areas of the land that have been used for different constructions and the rest 6,370 hectares (6.7%) are categorized as barren land (KWOEPLM, 2018).

Figure.2 Map of study area



Source: Ethio-GIS

3.1.1. Climate

The study area, Kuyu *Wereda*, has an altitude ranging from 1280 to 3000 meter above sea level (KWOA, 2018) indicating that *Wurch* and *Bereha* climatic zones are not found. Thus, the *Wereda* has only three agro-climatic zones such as *Dega*, *Weina Dega* and *Kolla* which are locally known as *Bedda*, *Bedda Dare*, and *Gammojji* in the study area respectively. According to the information obtained from Kuyu *Wereda* Office of Agriculture (2018) these agro-climatic zones, the *Bedda*, *Bedda Dare*, and *Gammojji* account for 30.8 %, 53.7% and 15.5 % of the *Wereda*'s total area respectively.

3.1.2. Rainfall

The *wereda* gets rainfall twice in a year during two consecutive seasons. This happens when there is normal rainfall distribution pattern. The summer rain (*ganna* –the main rain season) occurs during the months of June, July, August, and September. *Arfasa* is the short rain season that occurs during the months of March, April and May. The *wereda* gets maximum amount of rainfall during the main rain season -summer. The results of computed rainfall data also revealed that the amount of mean annual rainfall that the *wereda* gets during the main rain season alone is 997mm which accounts for 79.3 percent of the total amount of annual rainfall. The highest and the lowest amount of rainfall that the *wereda* gets in a year on average is 338.9 mm and 10.3 mm respectively. The months during which the *wereda* gets its highest and lowest amount of rainfall are August and December respectively. (NMA, 2018)

3.1.3 Temperature

The result of computed data of temperature for 40 years (1980 to 2009) from National Meteorological Agency (NMA) indicated that the annual average temperature of the *wereda* was found to be 15.4 degree Celsius. The annual mean minimum and maximum temperature of the *wereda* was found to be 7.8 and 22.9 degree Celsius (0C) respectively. The mean maximum temperature of the *wereda* which is 24.6 0C was registered during the month of February whereas the mean minimum temperature is 4.92 that was registered during the month of December.

3.1.4. Population size of the wereda

Based on information obtained from CSA (2011), the total population of Kuyu *Wereda* is 140,760 of which 70,054 are males and 70,706 are females. Of the total population of the *wereda* 116,254 (82.6%) are rural and 24,506 (17.4%) are urban dwellers. Sex wise the male accounts for 49.8% and the female 50.2% of the *wereda's* total population. The population density of the *wereda* in per square kilo metre is 148.1 which make it ranks sixth from the zonal *weredas* (CSA, 2011). The *wereda* has a total of 25,808 household heads. Of this figure the male-headed households are 22,293 that accounts for 86.4% and the rest 13.6% is female-headed households (KWOA, 2018).

3.1.5. Crop production practices in the study area

Crop production is the dominant agricultural activities that most of the population of the study area engaged in and are earning their life. Majority of food crops grown in the area include *teff* (*Eragrostis tef*), wheat, barley, *nug* (*Guizotia abyssinica*), field pea and horse bean and others. These food crops are grown mostly through rain water. Food crops like fruits and vegetables are grown using traditional small-scale irrigation systems (KWOA, 2018).

According to the research findings of Messay (2011) majority of the farmers in Kuyu *Wereda* plough their land using drought power (oxen) whereas farmers in the lowland agro-climatic zone use both drought power and hoe-culture. He also explained that coupled with these traditional farming systems, the crop productivity potential of the area is being hindered back due to the fact that the farmers in the study area have limited access to modern productivity enhancing farm inputs, below optimal rate of fertilizer application, lack of modern threshing and harvesting facilities, absence of modern large scale irrigation practices and poor utilization of untapped perennial water resources. Some of the farmers of the *wereda* are unable to afford the hiking price of fertilizer, thus, they could not apply it to their farmland.

3.1.6. Livestock rearing practices in the study area

The livestock sub-sector plays an important role in the livelihood of the rural people in terms of providing alternative income sources, as a strategy in building resilience to shocks, stress and also in contributing to their food security (Teferi, 2011). However, regarding the study area as

revealed by Messay (2011) only a limited number of farmers have been introduced to improved breeds of livestock which are either exotics or crossbreeds and also there are no selected breeds of small ruminants (sheep and goats) and equines (horse, donkey) yet introduced to the area. According to Kuyu *Wereda* Office Livestock Development and Health (KWOLDH) (2018), the *wereda* has various livestock resources. Of the total livestock population of the *wereda*, about 135,333 is cattle and it accounts for 37.4% that makes it rank first. Poultry is the second populated livestock type in the *wereda*. The total number of poultry is 122,443 that accounts for 33.8%. Mule is the least populated which accounts for 0.1% of the total livestock population. The equines all together account for 9.3% of the total livestock herds of the *wereda*.

3.2. Study Methodology

According to Barret (2004) employing the mixed method approach of qualitative and quantitative in poverty related research help enhance the efficiency of the methods by minimizing the weakness that each method has. Hence, this study used qualitative mixed with quantitative methods. In this case, the first two of the specific objectives of the study were dealt with quantitative method whereas the last one was dealt with qualitative method.

3.2.1. Selection of the study area

The study area, Kuyu *Wereda*, is among the first *weredas* of the country that had been selected for the implementation of PSNP in 2005. As indicated in table 3.3, it is one of the *weredas* of the North Shewa Zone of Oromia National Region State (ONRS) that has more number of targeted kebeles, current and graduated public worker beneficiary households than other *weredas* under the PSNP in the zone. On top of these, the *wereda*'s accessibility to transportation facilities and familiarity of me with the area made the *wereda* to be selected purposively. From a total of 20 kebeles targeted by the PSNP in the *wereda* three sample kebeles were selected using random sampling technique based on their agro-ecology. The Three sample kebeles that constitute the three types of agro-ecologies were selected purposively in considering that they can be representative of the rest of the kebeles. Specific sample respondent households from each kebele were selected using probability proportional to size (PPS) random sampling technique.

3.2.2. Data collection methods and instruments

Both primary and secondary data were used for this study. The study also used both quantitative and qualitative data types. To generate the necessary primary quantitative data from sample respondents a structured questionnaire was used. The questionnaire was translated into Afan Oromo as the respondents of the study area exclusively speak the language and they can express their ideas without any communication barriers and discrepancies that would in turn help to generate the required information correctly. Enumerators from the study area who have brought up within the culture of the community and are proficient in Afan Oromo were recruited and instructed on how to conduct an interview and gather the required information.

I collected the primary qualitative data through focus group discussion and personal observation. An interview guide was used to conduct focus group discussion. The focus group discussions were held with a group of women and men at kebele level. The participants of the discussion were from PSNP and non-PSNP beneficiaries. The non-PSNP beneficiary households also include the kebele food security task forces (KFSTF). The resource persons for focus group discussions that were held at the kebele level were selected being with DAs, kebele administrators and experts from *wereda* level. Generally, the qualitative data were required to substantiate the quantitative data. To supplement the primary data being collected, the secondary data were also gathered from different sources such as government officials' reports, CSA, NMA, books and journals. Moreover, field trip was made before undertaking the actual survey to observe the overall features of the kebeles.

Key informant interview (KII)

Among important source of data collections, Key informant interview was used in the study. Key informant interviews use in order to understand the perceptions of different stakeholders who were directly or indirectly affect the program. For this purpose, semi-structured questions were used because it allows the researcher to go beyond systematically prepared questions. Moreover, the way respondents act and answer may lead the researcher to ask indifferent ways. Therefore, individuals who were expected to have background information on PSNP were interviewed. The potential respondents of KIIs were four PSNP task forces members from Woreda agriculture and

rural development office, four development agents (DAs) working in each kebele, and four Kebele chair persons from respective Kebeles. I have also conducted in-depth interview with the key informants in order to gather clear and detail information and to countercheck the problem of responses set when other techniques of data collecting methods used.

Focus Group Discussion (FGD)

Focus groups are often used to collect qualitative data. It is a method which offers the researcher the opportunity to study the ways in which individuals collectively make sense of a phenomenon and construct meanings around it (Patton 2002). In this study, the role of focus group discussion was significant, it was found vivid and most agreed upon information with regard to background of the community, identification process of beneficiaries to PSNP, and general impacts of the program. The community was essential for the group discussion as far as they have had similar lifestyles. Taking in to account age, religion and language the researcher carried out four focus group discussion (one FGD per Kebele) on the time available by selecting discussants based on the aforementioned criteria. Each FGD composed of 6-8 participants. The participants are members of committee for identification process of beneficiary households. For this purpose checklist was prepared and each discussion were facilitated by the researcher.

Observation

In the contemporary field research, observation is the most important technique to collect original data that maximize the validity of our data. This method helped me to have close contact with the subject of the study. Therefore, observation is better to get firsthand information from the original sources. That is, observation was used beside interviews and discussions in order to see the ongoing activities because of the program. It helps to catch the situation on ground. Photographs and notes were taken during observation. Observation by the researcher also contributed in strengthening the information obtained through the other methods and to minimize contradiction of data. Thus, observations method was used in the study particularly to look the status of livestock and community assets in the study areas.

Household survey

A survey is a method of obtaining large amounts of data, usually in a statistical form, from a large number of people in a relatively short period of time. It usually takes two forms: (a) self-completion questionnaire and (b) interviewer read the questions to the respondent and fill in the questionnaire on behalf of the respondent (structured interview) (Bryman 2004). According to Yeraswork (2010), the main advantage of surveys over other research methods is that they allow the gathering of large amount of information from representative samples.

The household survey method is believed to provide data that is reliable and most importantly used to address the majority of variables which are important to meet the specific objectives of the study. The researcher prepared and administered both close and open ended structured questionnaire which was filled by trained enumerators at household level. Majority of the open ended questions are provided to give respondents a chance to give explanation for close ended questions. For this purpose survey was conducted with 160 beneficiary households.

Documentary analysis

Secondary materials in the issue at hand were reviewed to supplement the primary sources of information. Any documents and literature that adds value in answering the research objectives such as concepts and empirical frameworks were reviewed.

3.2.3. Sampling design and sampling technique

Both probability and non-probability sampling methods were employed in order to match with the selected approach. Probability sampling was used to select sample for survey method while non-probability sampling are employed to select respondents for qualitative data collection. For the purpose of quantitative approach, a multistage cluster sampling procedure was used to select sample households. This sampling design is used when it is either impossible or impractical to compile an exhaustive list of elements comprising the target population (Yeraswork 2010). Accordingly, at first stage, 3 *Kebeles* were selected among 20 program intervention *Kebeles* of the *Woreda* using simple random sampling technique. These *Jilakernsa*, HaliluChari and

sombocheka. Then, beneficiary households were selected randomly from each targeted *Kebeles*. Thus, a total of 160 households were selected for the survey. The respondents were both women and men.

Yamanes (1967:886) provides a simplified formula to calculate sample sizes.

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

Where n is the sample size, N is the population size, and e is the level of precision. When this formula is applied

$$n = \frac{3385}{1 + 3385(.08)^2} = 160$$

Using the above sampling 160 households (80 participants and 80 non-participants) were assigned from the selected kebeles based on the above formula.

3.2.4 Method of Data Analysis

Data were analyzed using logistic regression analysis, and descriptive statistics. The descriptive statistics such as frequency and percentage was used to describe the categorical variables of sample respondents whereas the descriptive statistics like mean, standard deviation, modes and variances were used to describe the continues variables of the sample respondents. Generally in using descriptive statistics the categorical and continuous variables of sample respondents were described. The chi-square test was used to examine the relationship between the categorical variables (age, sex, marital status, education level) of sample households. The independent sample t-test was used to compare the difference between the sample mean of PSNP and non-PSNP beneficiary households. This t-test is preferred as it provides rigorous statistical significance difference between the means of two independent (unrelated) groups like PSNP participants and non-participants than other t-tests. Besides to descriptive statistics, this study involved the use of binary Regression Model to analyze factors affecting assets holding position of PSNP sample beneficiary households.

The binary logistic regression was used to determine the effects of some socio-economic characteristics of the households on their food security status. The parameter of the logistic regression model was estimated with the Maximum Likelihood Estimation (MLE) technique. A binary response function (food secure and food insecure) was

specified and estimated by the logistic procedure. The binary logistic specification is suited to models where the endogenous variable is dichotomous, which in this case are the households who are food secure and those who are food insecure.

Food security status was measured using a bid value of one or zero, where one represents food secure and zero represents food insecure. The logistic regression then provides a model of observing the probability of a household becoming food secure or food insecure. The logistic model is specified explicitly as:

$$Y = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + b_8 X_8 + b_9 X_9 + b_{10} X_{10} + b_{11} X_{11} + b_{12} X_{12}.$$

Where Y= Food security status (1, if household is food secure; 0, if household is food insecure)

- X₁ = Sex of household head (Male =1; Female=0) 0
- X₂ = Household size (Number of dependents)
- X₃ = Income of household head (birr)
- X₄ = Access to credit (Access = 1; No access = 0)
- X₅ = Age of household head (Yea
- X₆ = Level of education of household head (Years)
- X₇ = Irrigation use (Access = 1; No access = 0)
- X₈ = Manure use (Access = 1; No access = 0)
- X₉ =Use of improved seeds (Access = 1; No access = 0)
- X₁₀ = Extension Service (Access = 1; No access = 0)
- X₁₁ = Plot size (Hectares)
- X₁₂ = Use of chemical fertilizer (Access = 1; No access = 0)

3.2.5. Variables Definitions and Working Hypotheses

Economic theory and empirical studies are used as a guide to know which observables (explanatory variables) affect both participation and the outcomes of interest (Bryson *et al.*, 2002). A combination of socioeconomic, demographic, institutional and location factors that explain household participation in the PSNP as well as the outcomes in terms of calorie intake and asset accumulation were identified and presented below.

3.2.6. Dependent variable

Food security (FS): The household food security, which is, the variable representing the daily per capita calorie acquisition.

3.2.7. Independent variables of the model

The independent variables expected to have association with participation in the program was presented below:

Age of Household Head (AGE): It is defined as the period from the respondent birth to the time of the interview and is measured in years. Rural households mostly devoted their time or base their livelihoods agriculture. Age of household head also matters for household food security. The older the household head, limited working capacity and other related factors. As result, the chance for such a household to be food insecure is high and hypothesized that it has a positive relationship with dependent variable.

Sex of Household Head (SEX): It refers to the sex of the household head taking a value of 1 for male and 0 for female. Labor supply plays a great role; due to lack of labor female headed household they are forced to rent their land. Male-headed households are in a better position to pull more labor force than the female-headed ones; sex of the household head is an important determinant of food insecurity in the study area. Women farmers may need a long adjustment period to diversify their income sources (Gladwin *et al.*, 2001). Based on this assumption, it is hypothesized that households who are female-headed, were more likely to gain from the program and probability of household to be participant will be higher for female headed than male headed.

Income: HH income refers to the total income of household members who live in the same household and is expressed in birr. Sources of incomes are on farm income, off farm incomes, income from migration.

Household Size (HHS): Household size refers to the total number of household members who live and consume from the same household and is expressed in adult equivalent. A study in Mozambique, for instance, shows that a large household size is negatively associated with food security (Garrett and Ruel, 1999). Thus, it is hypothesized that the family with relatively large number of family members negatively affects household food security status and more likely to be participant i.e. positive relationship with dependent variable.

Status of Education (EDC): It refers to the status of the household head education. Education equips individuals with the necessary knowledge of how to make living. Literate individuals are very ambitious to get information and use it. Hence, it is supposed that households who have had at least primary education or informal education are the ones to be more likely to benefit from agricultural technologies and thus become food secure. It is assumed that a literate household head often tends to adopt new skills and ideas which in turn have positive effects on food security (Garrett and Ruel, 1999). In this context, the educational status of the household head is hypothesized to have negative relationship with the dependent variable.

Use of Chemical Fertilizer (FER): It is represented by a dummy variable taking value 1, if the farmers used; 0, otherwise. Fertilizer use has often been perceived as improving yield per unit area. Fertilizer use improves productivity per unit of cultivated area. Households using fertilizer are expected to have better food production capacity than the non-users (Babu and Tashmatov, 1999). Therefore, it is hypothesized that households using fertilizer are expected to have better food security than the non-users and expected negatively related with the dependent variable.

Irrigation (IRR): It is represented by a dummy variable taking value 1, if the household have access to irrigation; 0, otherwise. It is hypothesized that access to irrigation has a positive relationship with the participation.

Manure (MAN): It is a type of organic matter that is used as fertilizer in agriculture. It is mainly used to make the soil more fertile by adding nutrients and organic matter like nitrogen, which is trapped by bacteria in the soil. It is represented by a dummy variable taking value 1, if the household use manure; 0, otherwise. It has often been perceived as improving the yield per unit

and better food security. Therefore, it is hypothesized that households using fertilizer are expected to have a negative relationship with participation to the program.

Use of improved seeds (IMS): it is an important source to increase production of crops. Hence, it is expected that the availability of improved seed is positively associated with household food security status. They can increase agricultural productivity by boosting overall production, which in turn contributes to attaining food security at the household level (Lipton, 2005). It is hypothesized that negative relationship with participation of the program.

Extension Service (EXT): Technological advances, attained through agricultural research and development have made substantial contributions to the spectacular increase of food production. Farm households who use advisory services provided by development practitioners are more likely to adopt better technologies and improve production. Hence, household's use of extension service is expected positively related with food security and hypothesized that negatively related with participation in the program.

Land Size (LS): This variable stands for the total land area cultivated by the household in hectare. Total cultivated land owned by the household is taken as proxy for farm size is an indicator of wealth and income and is expected to be associated with food security.

As the cultivated land size increases, provide other production factor remains normal, the livelihood that the holder gets more output. Farm size, and land quality as significant determinants of household food security (Shiferaw *et al.* 2005). Because of this, it is hypothesized that farmers who have larger farmland are more likely to be food secure than those with smaller land area and has negative relationship with the dependent variable.

Credit Service (CRE): Credit is an important source of investment for expansion of agricultural production and food security. Credit may also serve as an important source of income. Those households which receive the credit they requested have better possibility to spend on activities they wish. Credit use by public workers PSNP-OFSP beneficiaries was 12 percentage points higher than the control group, an increase driven entirely by the increase in demand for credit for production purposes (Gilligan, 2008). Hypothesized that access to credit expected positively related with both food security and asset holdings of the households.

Own definition (2018)

3.4. Ethical Consideration

One of the main concerns in scientific research, that incorporates human subjects in the study, is ethical considerations for the research subjects. The researcher, cognizant of this will recognize the ethical principles of scientific research declared in Belmont Report¹ of 1979. These principles were shading light on issues like informed consent, beneficence, anonymity and respect for the respondents.

Cognizant of this truth the researcher is planning to get the consent of household questionnaire survey respondents, focus group discussants and key informants. They will also be informed about the objectives and outcomes of the research quite adequately. They will also be informed that their personal information will be kept confidentially that will not be publicized nor given to any third party without their full willingness in case the need arises. This will be vividly expressed in the forward part of the questionnaire booklet. Both researcher and the enumerators inform the respondents that their responses will be kept utmost confidential level. Beyond the ethics on human subjects, research ethics also considers acknowledgement of data generated by others and appropriate citations of scholarly research outputs, books, websites, and any other related documents in order to assure intellectual and scientific integrity of the research/er.

4. RESULTS AND DISCUSSION

4.1. Descriptive Analysis of Sample Households' Characteristics

This chapter presents the findings of productive safety net program contribution on household food security using both descriptive and econometric analyses. Binary logistic regression was employed to estimate the contribution of the program on household Food security. The results of the descriptive analyses are presented in the form of mean, standard deviations and percentages as discussed below.

4.1.1. Socio-demographic characteristics

Sex of the household head: Out of the 160 respondents, 76.9 percent are male-headed and 23.1 percent are female-headed households. About 16.3 and 83.8 percepts from beneficiaries were female and male headed households respectively. About 24 and 56 percepts of non-beneficiary households were female and male headed households respectively. However, the statistical test (p-value) analysis shows that there is statistically significant difference in the sex of the household head between beneficiary and non-beneficiary households. Male headed household participate more than female headed. See (Table 1).

Table1. Sex of household head

Variable		PSNP	HH	Non PSNP	Chi-squared	P-value
Sex of HH Head	Male	Total	67	56	4.254	0.039
		Percentage	83.8%	70.0%		
	Female	Total	13	24		
		Percentage	16.3%	30.0%		

Source: Own calculation based on household response (2018).

Age of the household head: The mean age of the sampled household heads was 44.73 years with the maximum age of 75 and the minimum of 25years. The mean age of beneficiary households was 44.38 years and that of non-beneficiary households was 45.08 years. As the p-

value result reveals, there is no significant difference in age of the household head between beneficiary and non-beneficiary groups (Table 2).

Family size: The result in Table 2 shows that the average family size of sample households was 6 with the maximum family size of 11 and the minimum of 1. The mean family size of beneficiary was 5.34 and that of non-beneficiary was 5.58 Even though, it seems that non beneficiaries’ households have larger family size than beneficiaries’ households, the p-value shows that there is no significant statistical difference in family size between two groups. See (Table 2).

Table 2. Age and family size

	Non-PSNP			Chi-square	P-value
	PSNP Mean	PSNP Mean	Total Mean		
Age	44	45	44.73	48.385	0.265
Family Size	5	6	6	10.405	0.406

Source: Own calculation based on household response (2018).

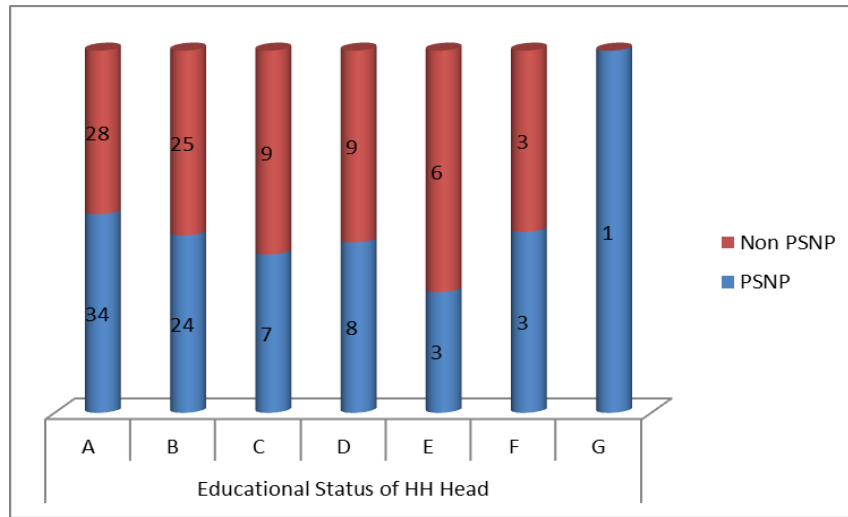
Educational Level: The survey result shows that, Out of the 160 respondents, 42.5% and 35.0% from beneficiaries and non-beneficiaries were illiterate, 31.3% and 30.0% from beneficiaries and non-beneficiaries were read and write, 8.8% and 11.3% from beneficiaries and non-beneficiaries were primary level one up to four, 10.0% and 11.3% from beneficiaries and non-beneficiaries were lower secondary level 5 up to 8, 3.8% and 7.5% from beneficiaries and non-beneficiaries were secondary level 9 up to 10, 3.8% and 3.8% from beneficiaries and non-beneficiaries were preparatory level, and 1.3.0% from non-beneficiaries were degree or higher, households respectively. The p-value for the equality of mean of education level shows not statistically significant mean difference between beneficiaries and non-beneficiaries. See (Table 3).

Table 3. Educational Status of HH Head

			PSNP	Non PSNP	Chi-square	P-value
Educational Status of HH Head	illiterate	Total	34	28	3.317	.768
		Percentage	42.5%	35.0%		
	read and write	Total	25	24		
		Percentage	31.3%	30.0%		
	primary level one up to four	Total	7	9		
		Percentage	8.8%	11.3%		
	lower secondary level 5 up to 8	Total	8	9		
		Percentage	10.0%	11.3%		
	secondary level 9 up to 10	Total	3	6		
		Percentage	3.8%	7.5%		
	preparatory	Total	3	3		
		Percentage	3.8%	3.8%		
	degree or higher	Total	0	1		
		Percentage	0.0%	1.3%		

Source: Own calculation based on household response (2018).

Figure 3. Educational Status of HH Head



Source: Own calculation based on household response (2018).

Where: A; illiterate, B; read and write, C; primary level one up to four, D; lower secondary level 5 up to 8, E; secondary level 9 up to 10, F; preparatory, G; degree or higher level.

4.1.2. Livelihood characteristics

Farm size: Crop production requires primarily the availability of suitable cultivable land. The mean land size of the beneficiary and non-beneficiary is 2 and 4 respectively in hectare. The mean comparison of the two groups in terms of mean farm size reveals that there is significant difference between the groups non beneficiary hold more Farm size than beneficiaries (Table 4).

Extension Contact: According to results in Table 5, the mean extension contact of the surveyed households was 3.53. The results also show that the mean extension contact was 3 and 4 for beneficiary and non beneficiary households respectively. The comparisons of the mean extension contact of the two groups may seem that non beneficiary households have more extension contact than beneficiary. However, the statistical P-value for the equality of the mean extension contact of the two groups shows statistically significant difference. Non- beneficiary households have more extension contact than beneficiaries. See (Table 4).

Table 4. Farm Size and extension contact

	Non-PSNP			t-value	P-value
	PSNP	PSNP	Total		
	Mean	Mean	Mean		
Farm Size (Hecht)	2	4	3.02	-3.706	0.0002
Extension contact	3	4	3.53	-0.248	0.804

Source: Own calculation based on household response (2018).

Access to Irrigation: About 23.1 percent of the total sampled households have access to irrigation. With regard to access to irrigation within the groups, about 55.4% were from the beneficiaries whereas 80.0% were from non-beneficiaries households. The p-value shows statistical significant difference between beneficiaries and non-beneficiaries' households in their access to Irrigation use. Non-beneficiaries households have more access to Irrigation than beneficiaries' households. See (Table 5).

Table 5 . Access to Irrigation use

		PSNP	HH	Non PSNP	Chi-squared	P-value
Access to Irrigation use	Yes	Total	41	60	10.318	0.001
		Percentage	55.4%	80.0%		
	No	Total	33	15		
		Percentage	44.6%	20.0%		

Source: Own calculation based on household response (2018).

Access to fertilizer use: About 59.5 percent of the total sampled households have access to fertilizer use. With regard access to fertilizer use within the groups, about 52.1% were from the beneficiaries whereas 66.7% were from non-beneficiaries households. The p-value show statistical significant difference between beneficiaries and non-beneficiaries' households in their access to fertilizer use. Non-beneficiaries households have more access to fertilizer use than beneficiaries' households. See (Table 6).

Table 6. Access to Fertilizer use

			PSNP HH	Non PSNP	Chi-squared	P-value
Access to Fertilizer use	Yes	Total	38	50	3.277	0.07
		Percentage	52.1%	66.7%		
	No	Total	35	25		
		Percentage	47.9%	33.3%		

Source: Own calculation based on household response (2018).

Access to Manure use: About 67.8 percent of the total sampled households have access to fertilizer use. With regard access to fertilizer use within the groups, about 9.6 % were from the beneficiaries whereas 36.5% were from non-beneficiaries households. The p-value shows statistical significant difference between beneficiaries and non-beneficiaries' households in their access to Manure use. Non-beneficiaries households have more access to Manure use than beneficiaries' households. See (Table 7)

Table 7. Access to Manure use

			PSNP HH	Non PSNP	Chi-squared	P-value
Access to Manure use	Yes	Total	7	27	14.853	0.0001
		Percentage	9.6%	36.5%		
	No	Total	66	47		
		Percentage	90.4%	63.5%		

Source: Own calculation based on household response (2018).

Access to Improved seed: About 30.2 percent of the total sampled households have access to improved seed. With regard access to improved seed within the groups, about 25.7% were from the beneficiaries whereas 34.7% were from non-beneficiaries households. The p-value shows statistical no significant difference between beneficiaries and non-beneficiaries' households in their access to Improved seed use. Non-beneficiaries households have more access to improved seed use than beneficiaries' households. See (Table 8).

Table 8. Access to Improved seed

			PSNP HH	Non PSNP	Chi-squared	P-value
Access to Improved seed	Yes	Total	19	26	1.428	0.155
		Percentage	25.7%	34.7%		
	No	Total	55	49		
		Percentage	74.3%	65.3%		

Source: Own calculation based on household response (2018).

Distance from Extension: Table 9 depicts the statistical results of the mean distance of the total respondent extension center which is 3.06 km. The results show that the mean distance is 3 km and 3 km for beneficiary and non-beneficiary households respectively. However, the mean distance of the two groups is statistically significant. Beneficiary households living in lowland (Gammojji) than non- Beneficiaries. See (Table 9).

Distance from Credit Service: Table 9 depicts the statistical results of the mean distance of the total respondent from market center which is 7.20 km. The results show that the mean distance is 7 km and 7 km for beneficiary and non-beneficiary households respectively. However, the mean distance of the two groups is statistically significant. Beneficiary households living in lowland (Gammojji) than non- Beneficiaries. See (Table 9).

Table 9. Distance from Extension and credit service

	Non-			t-value	P-value
	PSNP	PSNP	Total		
	Mean	Mean	Mean		
Distance from Extension	3.27	2.86	3.06	1.047	0.297
Distance from Cred. Serv.	7.34	7.01	7.2	0.314	0.754

Source: Own calculation based on household response (2018).

Participation in credit service

From the total of sample respondents, only 25% of the households participated in to credit service in the study area. Among the program beneficiary households 36.7 % used credit service while 50.0 % of respondent from non-program households used a credit service. The result shows that there was no statistically significant difference between the program beneficiary and non-beneficiary households regarding the use of credit service. See (Table 10).

Table 10. Access to Credit Service

		PSNP	HH	Non PSNP	Chi-squared	P-value
Access to Credit Service	Yes	Total	18	15	1.346	0.177
		Percentage	36.7%	50.0%		
	No	Total	31	15		
		Percentage	63.3%	50.0%		

Source: Own calculation based on household response (2018).

On Farm Income: In the study area, the mean annual income from farm activity is 3915.76 birr. The result also shows that from the total beneficiary respondents 1252.62 birr and from non-beneficiary respondents' 6054.35 birr mean annual income respectively have access farm activities. t- test (p-value <0.001) shows statistically significant difference between beneficiary and non-beneficiary household in their access to on-farm activities.

Off Farm Income: In the study area, the mean annual income from non-farm activity is 5054.05 birr. The result also shows that from the total beneficiary respondents 4878.41 birr and from non-beneficiary respondent's 5229.69 birr mean annual income respectively have access non-farm activities. t- test (p-value 0.729) shows statistically not significant difference between beneficiary and non-beneficiary household in their access to on-farm activities.

Income from remittance, gift or other transfer: In the study area, the mean annual income from income from remittance, gift or other transfer is 3061.16 birr. The result also shows that from the total beneficiary respondents 3724.04 birr and from non-beneficiary respondents 2398.29 birr respectively have mean annual income from remittance, gift or other transfer. t-test

(p-value 0.064) shows statistically significant difference between beneficiary and non-beneficiary household in their access to income from remittance, gift or other transfer.

Income from migration: In the study area, the mean annual income from income from migration is 1867.85 birr. The result also shows that from the total beneficiary respondents 997.85 birr and from non-beneficiary respondents 2737.95 birr respectively have mean annual income from migration.t-test (p-value 0.013) shows statistically significant difference between beneficiary and non-beneficiary household in their access to income migration.

Table 11.Income from farm and non-farm activities.

Variable	Non-			t-value	P-value
	PSNP	PSNP	Total		
	Mean	Mean	Mean		
On farm income	1252.62	6054.35	3915.76	-4.371	<0.001
Off farm income	4878.41	5229.69	5054.05	-0.347	0.729
Income from remittance, gift or other transfer	3724.04	2398.29	3061.16	1.867	0.064
Income from migration	997.85	2737.95	1867.85	-2.521	0.013

Source: Own calculation based on household response (2018).

4.1.3. Livestock holding and household asset

Livestock holding: The main Livestock owned by the sample households include cattle, sheep and goat, and poultry. The numbers of livestock owned by the beneficiary and non-beneficiary groups of households were converted into tropical livestock unit (TLU).Average TLU of the respondent was 3.73.Beneficiary group was 3.42 TLU. Similarly, for the non-beneficiary group the average TLU of 4.03.It is possible to say that non-beneficiary group’s had better rate of change in livestock’s holding. The statistical test for the equality of the mean of TLU shows statistical significant difference between beneficiaries and non- beneficiaries’ households at p-value 0.065 probability level.

Household asset: The value of household assets were measured using 2018 market price as base year prices to avoid the impact of the current price inflation on value of the assets. It

helps to avoid over or under estimation of a similar unit values of household assets. Table 12.shows household the asset values of the sampled household was 5208.15 Birr. The beneficiary households’ mean asset values was 5101.49 Birr and The beneficiary households’ mean asset values was Birr increased from5314.81 Birr. The mean difference between beneficiary and non-beneficiary households is statistically not significant. (Table 12).

Value of house: In the study area, the mean value of respondent’s house is 18237.94 birr. The result also shows that from the beneficiary 14374.85 birr and from non-beneficiary respondents 22101.03 birr respectively have mean value of house ,t-test (p-value<0.0001) shows statistically significant difference between beneficiary and non-beneficiary household in their house value.

Table 12. TLU, Value of house and Household Asset

Variable	PSNP	Non-PSNP	Total	t-value	P-value
	Mean	Mean	Mean		
Total Asset in Birr	5101.49	5314.81	5208.15	-0.391	0.697
Livestock ownership in TLU	3.42	4.03	3.73	-1.860	0.065
Total Value of House	14374.85	22101.03	18237.94	-3.644	<0.0001

Source: Own calculation based on household response (2018).

4.1.4. Daily calorie intake

Table 13 presents’ descriptive statistics results of sample households based on their calorie intake. As the survey results in Table 13 shows, beneficiary and non-beneficiary households have an intake of 2219.29 and 2278.2 kilocalories respectively. This indicates that households in the non-beneficiary have better calorie intake than beneficiary households. The average kilo calorie intake of the households in general is 2248.74. The comparison of calorie intake of the households in the district with the nation’s minimum requirement (kilo calorie per AE per day is 2200 for the nation as stated in (MoFED, 2008)) shows the household calorie intake in the district is above the national level.

Although the mean kilo calorie intake of the beneficiary and non-beneficiary groups are above the minimum requirement of recommended level, there is significant number of households who are still food insecure and below the national food security line (2,200 kilo

calories/AE/day). As far as calorie intake is concerned, there is not statistically significant difference between the two groups.(Table 13).

Table 13. Kcal Consumption per Day.

Variable	Non-PSNP			t-value	P-value
	PSNP	PSNP	Total		
	Mean	Mean	Mean		
Kcal Consumption per Day	2219.29	2278.2	2248.74	-0.627	0.531

Source: Own calculation based on household response (2018).

4.2. Binary Logistic regression

4.2.1. Test for Goodness of fitness of Model

Once the data entry was done, the researcher processed variables which are assumed to be the factors that affect the household food security .It was identified by applying Hosmer and Lemeshow Test as the explanatory variables were statistically significant at test (p-value 0.809) which indicate that binary logistic regression fit the data well. As a result of this, the Goodness of-Fit Test of model was good because the significant levels of the independent variables are found within the range of best fit.

4.2.2. Binary Logistic regression results

Binary logistic regression was employed in order to see the variables that, to larger extent, contribute to the food security of the households. The explanatory variables that were selected to measure its association with food security were family size, age, sex, level of education, plot size, access to credit services, access to irrigation, access to improved seeds, access manure, access to extension service, access to fertilizer and income after PSNP program. These variables were entered and processed so as to measure the relationship between those independent variables and the outcome variable.

The finding depicts among possible predictor variables stated by the researcher only agricultural extension use has significant effect on food security at 10 percent level of significance. The final output of this analysis indicates that odds of being food secured for households those do not use

PSNP are about 0.175 time odds of those who use. See Table 14.

Table 14. Showing Binary Logistic regression Result

Variables		Coefficient	S.E.	Wald	Sig.	Exp(B)
Sex	Female	.130	.655	.039	.843	1.139
Age		-.021	.033	.401	.527	.979
	illiterate			1.668	.893	
	read and write	-19.447	19626.574	.000	.999	.000
	primary level					
	one up to four	-19.625	19626.574	.000	.999	.000
	lower					
Educational	secondary	-18.552	19626.574	.000	.999	.000
Status	level 5 up to 8					
	secondary					
	level 9 up to	-19.128	19626.574	.000	.999	.000
	10					
	preparatory	-20.238	19626.574	.000	.999	.000
HH size		-.060	.147	.165	.685	.942
Farm size		-.082	.177	.217	.642	.921
Irrigation Use		.137	.800	.029	.864	1.147
Fertilizer Use	No	.049	.676	.005	.942	1.050
Animal	No					
manure Use		.381	.641	.353	.552	1.463
Improved seed	No					
Use		.662	.717	.851	.356	1.939
Agricultural	No					
Extension Use		-1.742	.775	5.045	0.0247***	.175
Credit Service	No	-.330	.580	.324	.569	.719
Income		.000	.000	1.683	.195	1.000
	Constant	22.900	19626.574	.000	.999	

Source: Own calculation based on household response (2018).

4.3. "PSNP" as seen by beneficiary households

As mentioned earlier PSNP as government social protection policy intended to alleviate chronic food insecurity through creation and protection of assets at household and community level respectively. The preceding sections tried to look the contribution of PSNP in relation to food security in light with its objectives. Moreover, in this section perception of respondents towards the program; programs contribution on food insecurity reduction and its contribution on their working behavior were assessed.

Majority of (88%) respondents believe that, even if its small contribution currently have on food consumption and social services (particularly, on health, road, education, water), PSNP is in the right position to address chronic food insecurity problem in their respective *kebeles* however the rest 10.5% of household heads opposed this idea and they claimed that PSNP have do nothing for reduction of food insecurity in this *Woreda* even they have better food intake status only during the food distribution time. According to them without addressing the existing food gap for the poor households, it is difficult to assume that PSNP is in the way of addressing poverty in the *Woreda*. In relation to this, as DAs revealed, PSNP might have negative impacts for some of beneficiaries because of expectation of the transfers, it discourage hardworking as a result they becomes dependent on PSNP food aid and this expectation reduce their commitment to produce food items and other household assets. This has challenging effect on persisting poverty among these households. Therefore, from this, one can understand that despite the aforementioned gaps, for significant majority of respondents PSNP is working in order to alleviate poverty in the *Woreda*.

Respondents were also asked whether the program have contribution on their value towards work .Accordingly, 78% of them asserts that the transfer being creating initiation towards work, avoid feeling of charity, even they considered the transfer as reward for their labor involvement. They considered the benefits of PSNP in two ways; on the one hand raising households food consumption status and in the other hand rehabilitation of natural environment through their labor involvements in public work activities thus, no more poverty in the *Woreda* if these activities done well in the long run.

Furthermore, as *Woreda* agriculture and rural development office, giving food transfer to them don't negatively affect their working behavior. They consider it as something that additionally contributes to their efforts to change their life and hence it motivates them to work

hard and earn better than before. PSNP also have been bringing success in terms of evading community's attitudes of waiting assistances without condition.

Generally speaking, form the above scenario, we can understand that majority of respondent believes that PSNP positively affecting the working behavior of beneficiaries and it changes their attitudes associated with dependency syndrome on emergency relief to livelihood improving through development activities.

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Summary

This research was carried out to assess the contribution of PSNP on household food security. In order to gather available information for this study, both primary and secondary data collection methods were used. The primary data was collected from 160 households using survey questionnaires. The sample respondents were taken from both program beneficiaries and non-beneficiary households. It was also tried to examine different documents to support the primary sources.

As the result from descriptive analysis shows, majority of beneficiary households own less access to fertilizer use, improved seed use, Manure use, access to on farm income and non-farm income compared to non-beneficiary households. Similarly, most of beneficiary households do not have better access to irrigation. However, majority of beneficiary households have better access to credit compared to non-beneficiaries. The result shows that there was significant difference on value of house. On the other hand, the result indicated that relatively small number of respondents participates in off farm activities. Because of less access to irrigation and owning less farm size, they produced less crop yields than non-beneficiary group.

As far as livestock holding and asset creation is concerned, on average, there was a significant difference between two groups. In addition, the beneficiary group shows promising improvement on asset creation. Even if there was an improvement on beneficiary households' livestock holding and asset creation, there was a significant difference on annual income. Non beneficiary households had better annual income. Although both beneficiary and non-beneficiary household's calorie intake was above the minimum requirement index at national level, non-beneficiary group had better calorie intake than beneficiaries.

The main research question of the study was "To what extent did the program improve beneficiary households' food security and could the beneficiaries become capable of building asset?" Answering these questions requires comparison for program households and non-program households which might be biased. In addition, the data gathered from households by simply asking about changes the program brings in their life would be ambiguous or misleading. In order to avoid confounding data, the study applied binary logistic regression.

.Based on the results PSNP has brought significant improvement on food security of chronically food insecure households and ultimately it can create incentives for the household not to be dependent on food aid. However, parallel implementation of other productive food security program i.e. OFSP within PSNP beneficiaries is highly recommended in order to avoid the underlying causes of food insecurity. Furthermore, such types of poverty reduction program have a paramount importance for the achievement of growth and transformation plan of the country

5.2. Conclusions

The study revealed that the program has positive and statistically significant contribution on productive assets, durable goods, and household assets. Positive and statistically significant results were obtained for food consumption per adult equivalent and total consumption per adult equivalent. PSNP likely brings improvement in terms of calorie intake. As the result shows, on average, participants' calorie intake was above the minimum requirement of the national level and there was not significant difference comparing to non-participants. The participant's better calorie intake and asset preservation manifests that the program acts to brought contribution on household food security. Generally, this study revealed that the contribution of the Productive Safety Net Program (PSNP) has positive and statistically significant effect on food security through increasing households overall family income, consumption expenditure and in protecting assets of the rural households.

5.3. Recommendations

Most of the program participants were male-headed households relative to the female-headed households. Hence, the program should be able to include more female-headed households or at least in the same proportion as that of the male-headed households.

Ministry of Agriculture should create options to ensure household food security, work on different household asset creation program and plan alternative food security programs in addition to the existing one to detach from this foreign dependency.

Every member of the program participants should be fully targeted into the program so that improved their food insecurity problems and to ensure self-food sufficiency (the program should be individual focused than household based).

In order to bring significant economic change and thereby positively contribute to meet country's food security objectives, financial institutions need to scale up their outreach through delivering sufficient credit to farmers. As they were confirmed to have positive impact on households' income diversification, build assets, and reduce vulnerability to food insecurity.

The Productive Safety Net Program (PSNP) should expand the opportunity of off-farm and non-farm activities through investments that generate employment and increase the wages to attract rural households in order to diversify their income sources thereby reduce their vulnerability to food insecurity and asset depletion

6. References

- Alemayehu Seyoum., Hoddinott Jone, and O, Daniel Gilligan. 2008. “An analysis of Ethiopia”s Alemu Mekonnen., Andersson Camila, and Stage Jesper. 2009. “Impacts of the Productive Safety Net Program in Ethiopia on livestock and tree holdings of rural= households.” *Journal of Development Economics* 94 (2011) 119-126
- Anderson, A., Mekonnen, A., and J.Stage, (2009). Impacts of the Productive Safety Net Program in Ethiopia on Livestock and Tree Holdings of Rural Household. Environment for Development, Discussion Paper Series.
- Andersson, C., Alemu Mekonnen, and J. Stage, 2009. Impacts of the productive safety net program in Ethiopia on livestock and tree holdings of rural households: Environment for Development discussion paper series. University of Gothenburg, Sweden.
- Andersson, C., Alemu, M. and S. Stage, 2009. Impacts of the productive safety net program in Ethiopia on livestock and tree holdings of rural households. Discussion Paper Series. Environment for Development (EfD) Initiative. EfD DP 09-05.
- Barrett C.B. 2001. “Income Diversification and Livelihood in Rural Africa: Cause and Consequence of Change.” *Food Policy* 26(4), 315-333.
- Barrett, C.B., 2006. Food aid as part of a coherent strategy to advance food security objectives. USA: Agricultural and Development Economics Division: The Food and Agriculture Organization of the United Nations. Cornell University, USA.
- Barrett, C.B. 2004. “Income Diversification and Livelihood in Rural Africa: Cause and Consequence of Change.” *Food Policy* 26(4), 315-333. Ministry of Agriculture and Rural Development. 2006. “Productive Safety Net Program: Program Implementation Manual (Revised)”. Addis Ababa, Ethiopia. Ministry of Agriculture and Rural Development
- Barrientos, Amando and Scott J. 2008. “Social Transfers and Growth: A Review.” *Brooks World Poverty Institute Working Paper 52*, University of Manchester.
- Barrientos, Amando and Scott J. 2008. “Social Transfers and Growth: A Review.” *Brooks World Poverty Institute Working Paper 52*, University of Manchester.

- Barrientos, Amando. 2003. "What is the impact of non-contributory Pensions on Poverty? Estimates from Brazil and south Africa." *Institute for Development policy and Management*, University of Manchester.
- Becker, S. O. and A. Ichino, 2002. Estimation of average treatment effects based on Propensity scores: *The Stata J.*, 2 (4): 1-19.
- Berhane, G., J. Hoddinott, N. Kumar, and A. Seyoum Taffesse, 2011. The Impact of Ethiopia's Productive Safety Nets and Household Asset Building Program: 2006-2010. Washington DC: International Food Policy Research Institute.
- Bryson, A., Dorsett, R. and S. Purdon, 2002. The use of propensity score matching in the evaluation of labour market policies, working paper no. 4, department for work and pensions.
- Bryson, A., R. Dorsett and S. Purdon, 2002. The Use of Propensity Score Matching in the Evaluation of Labour Market Policies: Working Paper No. 4. Department for Work and Pensions: Washington DC
- Bryceson, D.F., 2005. Rural livelihoods and agrarian change in Sub-Saharan Africa: processes and policies. In: F. Ellis and H.A. Freeman (Eds), *Rural Livelihoods and Poverty Reduction Policies*, London: Routledge: 48–61
- Caliendo, M. and S. Kopeinig, 2005. Some practical guidance for the implementation of propensity score matching, discussion paper no. 1588, University of Cologne CSA (Central Statistical Agency), 2008. *Statistical Abstract*
- Central Statistical Authority (2008). *Ethiopia: Statistical Abstract*. Addis Ababa.
- Central Statistical Authority (2010). *Ethiopia: Statistical Abstract*. Addis Ababa
- Practices in the Central Rift Valley: The case of Adamitulu Jido Kombolcha and Meskan Districts, Addis Ababa University, Ethiopia. P-134
- Chambers, P., and Conway, R.G. (1991). *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century*. IDS Discussion Paper 296.
- CSA (Central Statistical Agency), 2004. *Welfare monitoring survey analytical report*, Addis
- Degefa Tolossa (2005). *Rural Livelihoods, Poverty and Food Insecurity in Ethiopia: A Case Study at Erenssa and Garbi Communities in Oromiya Zone, Amhara National Regional State*. PhD, Thesis, Norwegian University of Science and Technology, NTNU Trondheim

- Devereux, S., & Guenther, B. (2009). Agriculture and Social Protection in Ethiopia. Growth and Social Protection Working Paper No. 03.
- Devereux, Stephen. 2000a. "Social safety nets for poverty alleviation in southern Africa." Department for International Development. ESCOR Report R7017.
- Devereux, Stephen., Vital B., and Haunstein Swans. 2008. *Seasons of hunger: fighting cycles of quiet starvation among the world's rural poor*. London: Pluto Press.
- FAC (Future Agricultures Consortium), 2009. Agriculture and social protection in Ethiopia:
- FAO (Food and Agricultural Organization) and WFP (World Food Program), 2010. Crop and Food Security Assessment Mission to Ethiopia. FAO: Rome.
- Fekadu Nigussie, 2008. Determinants of household food security with a particular focus on rainwater harvesting: the case of Bulbula in Adami-Tulu Jido Kombolcha district, Oromia Region. A MSc. Thesis presented to the School of Graduate Studies. Addis Ababa University, Ethiopia.
- Food and Agriculture Organization of the United Nations (2005). Impacts of Policies on Poverty: The Definition of Poverty. Accessed on 11/10/2012, available at: www.fao.org/tc/easypol
- Gertler, P. 2000. "Final Report: The impact of PROGRESA on Health." *International Food Policy Research Institute*. Washington, DC.
- Gilligan, D.,Hoddinott,J. and Alemayehu Seyoum, 2008. The impact of Ethiopia's productive safety net program and its linkages. IFPRI Discussion Paper 00839.
- Gilligan, Daniel., Hoddiniott J., and Alemayehu Seyum Tafesse. 2008. "An analysis of Ethiopia's Productive Safety Net Program and its linkage." *International Food Policy Institute*. Washington, D.C.
- Guush B. et al .2013. Evaluation of Ethiopia's Food Security Program: Documenting Progress in the Implementation of the Productive Safety Net Program and the Household Asset Building Program. Addis Ababa, Ethiopia. P-235
- Habitu Ali. 2011. "Impacts of Productive Safety Net Program on Household Welfare and Labor Supply in Rural Ethiopia: A Panel Data Approach." M.Sc. thesis, Department of Economics, Addis Ababa University.

- Heckman, J.J., Ichimura, H. and P. Todd, 1997. Matching as an econometric evaluation estimator: evidence from evaluating a job training program, *The Review of Economic Studies*, 64:605-654.
- High Level Panel of Experts on Food Security and Nutrition /HLPE/ (2012). Social Protection for Food Security. A Report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security. Rome.
- IDL Group, Overseas Development Institute (ODI) and Indak International (2006). PSNP Policy, Program and Institutional Linkages. Ethiopian's Productive Safety Net Program Final Report, Addis Ababa.
- in Seasonal Deprivation.
- International Food Policy Research Institute (2004). Linking Safety Nets, Social Protection, and Poverty Reduction- Direction for Africa. Washington, DC.
- International Food Policy Research Institute (2004). Linking Safety Nets, Social Protection, and Poverty Reduction- Direction for Africa. Washington, DC.
- Jalan, J. and M. Ravallion, 1999. Income gains to the poor from workfare: Estimates for Argentina's Trabajar Program. Indian statistical institute and World Bank. Policy research working paper 2149. Washington, DC.
- Khaleque, A., Barua, S., and Baqui Khalily, M.A. (undated). Impact of Social Safety Net Programs
- Knutsson, P. (2006). The Sustainable Livelihood Approach: A Framework for Knowledge Integration. *Journal of Society for Human Ecology*, 13: 90-99.
- Kuyu Woreda Office of Environmental Protection and Land Management /KWOEPLM/ (2018). Annual Report (Unpublished). Gebre Gurracha, Ethiopia.
- Kuyu Woreda Office of Agriculture /KWOA/ (2018). Annual Report (Unpublished). Gebre Gurracha, Ethiopia.
- Kuyu Woreda Office of Environmental Protection and Land Management /KWOEPLM/ (2018). Annual Report (Unpublished). Gebre Gurracha, Ethiopia.
- Kuyu Woreda Office of Finance and Economic Development /KWOFED/ (2018). Annual Report (Unpublished). Gebre Gurracha, Ethiopia.
- Lipton, M. 2002. Editorial: "Poverty-Are There Holes in the Consensus." *World Development Institute*.

- Maxwell, S. and T. Frankenberger. 1992. "Household Food Security: Concepts, Indicators, Measurement." A Technical Review. New York: UNICEF and Rome.
- Mendola, M., 2007. Agricultural technology adoption and poverty reduction: A propensity score matching analysis for rural Bangladesh. *J. of Food Policy*, 32:372–393.
- Mesfin Wolde-Mariam (1984). Rural Vulnerability to Famine in Ethiopia 1958-1977. Addis Ababa University Press: Addis Ababa.
- Messay Mulugeta (2011). Determinants of Agricultural Productivity and Household Food Security: Case Studies from Kuyu District, Central Ethiopia. LAP LAMBERT Academic Publishing GmbH & Co. KG, Germany.
- Miller, C., Maveton T., and Kathryn R. 2006. "The Impact of the Social Cash Transfer Scheme on Food Security in Malawi." *Management Science for Health*. University of Boston, Malawi, York and Cambridge.
- Ministry of Agriculture and Rural Development (2009). Productive Safety Net Program Implementation Manual. Addis Ababa, Ethiopia.
- MoARD (Ministry of Agriculture and Rural Development), 2009a. Food security program 2010-2014: Productive safety net. Addis Ababa, Ethiopia.
- MoARD, 2010. Household Asset Building Program. Program Implementation Manual. MoARD: Addis Ababa.
- MoARD. (2010). Productive Safety Net Program Component. Ministry of Agriculture and
- Mulugeta Abebe (2010). Disaster Management in Ethiopia: A Review of Its Checkered History, Its Transformation and Some Implications for a Vibrant Disaster Management System, 1975-2008. *Journal of Sustainable Development in Africa* 12:237-254. North Shewa Zone Office of Agriculture (NShZOA) (2013). Mid-term PSNP Report. (Unpublished). Fitcha, Ethiopia.
- Patton, M. 2002. *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Phase of the Productive Safety Net Program. World Bank: Addis Ababa.
- Ponniah, A., Martella, D. R. and M. Rukuni, 1996. A training manual on R & D evaluation and impact assessment of investments in agricultural and natural resources research, SACCAR, Gaborone, Botswana.
- Practices in the Central Rift Valley: The case of Adamitulu Jido Kombolcha and Meskan

- Districts, Addis Ababa University, Ethiopia. P-134
- Productive Safety Net Program and its linkages.” *International Food Policy Research Institute*. Washington, D.C.
- Rawlings, Laura. 2004. “A New Approach to Social Assistance: Latin America’s Experience with Conditional Cash Transfer Program.” Social Protection Discussion Paper Series. World Bank
- Rosembaum, P.R. and D.B. Rubin, 1983. The central role of the propensity score in observational studies for causal effects, *J. Biometrika*, 70 (1): 41–55.
- Rural Development, Government of the Federal democratic republic of Ethiopia.
- Scoones, I. (1998). Sustainable Rural Livelihoods: A Framework for Analysis. IDS Working Paper No. 72
- Skoufias, E. 2001. “Progesa and its impact on the human capital and welfare of households in rural Mexico.” *International Food Policy Research Institute*. Washington, D.C.
- Skoufias, E. 2001. “Progesa and its impact on the human capital and welfare of households in rural Mexico.” *International Food Policy Research Institute*. Washington, D.C.
- Slater, Rachel., Steven Ashley, Mulugeta Tefera, Mengistu Buta, and Delelegne Esubalew. 2006. “Ethiopia Productive Safety Net Program PSNP Policy, Program and Institutional Linkages.” *Overseas Development Institute, the IDL group, UK, and Indak International*.
- Sumarto, Sudarno., Asep Suryahadi, and Wenefrida Widyanti. 2004. “Assessing the Impact of Indonesian Social Safety net Programs on Household Welfare and Poverty Dynamics.” *The SMERU Research Institute*.
- Tadele Mamo.2011. Impact of Productive safety net on Asset Accumulation and Sustainable Land Management
- Teferi Garedeew (2011). Impact of Microfinance on the Livelihoods Of Rural Households : The Case of Oromia Credit and Savings S hare Company (OCSSCO) in Degam District. M.Sc. Thesis, Mekelle University, Ethiopia.
- The politics of land and ‘graduation’ growth & social protection working paper 03. 2009.
- The World Bank Group (2013). The Ethiopia’s Productive Safety Net Program (PSNP) Integrating Disaster andClimate Risk Management. Washington DC, USA. P-19.
- The World Bank Group. 2004. “Project Appraisal Document for a Productive Safety Net

- Project.” Report No. 29767-ET.Washington, D.C. World Bank.
- USAID, 2001. Relief, Recovery, and Vulnerability Mitigation: Contingency Plan for Assistance in 2001. USAID: Addis Ababa.
- USAID, 2002. The Impact of Title II Food Aid on Food Security in Ethiopia. Food and Humanitarian Affairs Office. USAID: Addis Ababa.
- Venetoklis, T., 2004. An evaluation of wage subsidy programs to SMEs utilizing propensity score matching: Government Institute of Economic Research, Helsinki.
- Walle, D. 2003. “Testing Vietnam’s Public Safety Net”. *World bank Institution*.
- WB (World Bank), 2009. Productive Safety Net Apple III Project in Support of the Third Wheeler and Devereux (2010), —Cash transfers and high food prices: Explaining outcomes on Ethiopia’s Productive Safety Net Program, Institute of Development Studies and Centre for Social Protection, University of Sussex, Brighton BN1 9RE, United Kingdom.
- Yadete 2008. “Assessment of the impact of productive safety net program on household welfare: the case of Adami Tulu Jido Kombolcha woreda, East Shoa, Oromiya regional state.” M.Sc. thesis, Department of Economics, Addis Ababa University Thesis.
- Yeraswork Admassie. 2010. *Social Research Methods*. Office of chief academic officer for research, CAOR: Office of the Vice President for Research and Dean of the School of Graduate Studies, Addis Ababa: Addis Ababa University.

7. APPENDICES

Appendix Table 1 Conversion factor used to compute adult equivalent (AE)

Age group (years)	Male	Female
<10 years	0.6	0.6
10-13	0.9	0.8
14-16	1	0.75
17-50	1	0.75
>50	1	0.75

Source: Storck, et al. (1991)

Appendix Table 2. Conversion factor used to compute tropical livestock unit (TLU)

Animal category	TLU	Animal category	TLU
Calf	0.50	Donkey (young)	0.35
Weaned calf	0.34	Sheep and goat (adult)	0.13
Heifer	0.75	Sheep and goat(young)	0.06
Cow and ox	1	Chicken	0.013
Donkey(adult)	0.70	Horse	1.1

Source: Storck, et al. (1991)

Appendix Table 3 . Conversion factor for computing calorie intake

Food item	Unit	Calorie	Food item	Unit	Calorie
Wheat	Kg	3574	Beef	Kg	1148
Teff	Kg	3589	Milk	Litter	737
Barely	Kg	3723	Butter	Kg	7363
Lentil	Kg	3522	Egg	No	61
Hose bean	Kg	3514	Honey	Kg	3605
Sorghum	Kg	3805	Pepper	Kg	933
Peas	Kg	3553	Maize	Kg	3560
Vetch	Kg	3470	Millet	Kg	3260

Linseed	Kg	5109	Check pea	Kg	3630
Sugar	Kg	3850	Garlic	Kg	118
Coffee	Kg	1103	Edible oil	Kg	8964

Source: EHNRI, 2000

Appendices HH Survey questionnaires

CODE _____

General Introduction

Dear respondent, my name is Mesfin W/Tsadik. I am master's student at Addis Ababa University in the department of Food security and development study. Currently, I am conducting research topic entitled "Contribution of productive safety net program (PSNP) to rural household food security in Kuyu Woreda , Central Ethiopia".

The objective of this study is to assess contribution of productive safety net program on of food security. The answer given by the respondents for this research will be kept confidentially and only used for the purpose of this study. The researcher also believes that real answers that the respondents give possess high importance that might be used by policy makers, planners and other aid and development agents that work on PSNP as poverty reduction program of the country hence, I ask you to be honest and forthcoming in your response. Furthermore, any information that you provide is valuable to this study. I would like to extend my appreciation and thanks for your cooperation and committing your precious time.

Part One: General Information

1. Zone north shewa 2.Woreda _____
2. Kebele _____
3. Tabia /Gotti/Village_____
4. Agro-climate 1.Dega 2.Woinadega 3.Qolla
5. Sex of the household head 1. Male 2. Female
6. Religion of the HHH 1.Muslim 2.orthodox 3 .protestant 4. Wakefata 5.Other, specify--

Part Two: Demographic Information

7. Age (specify it in complete years) _____
3. Your marital status? 1. Single 2. Married 3. Divorces 4. Widowed
8. Forms of the Marriage 1: Polygamy 2: Monogamy

9. What is your educational status 1. Illiterate 2. Read & write/literacy program 3. Primary level (1-4) 4. Lower secondary level (5-8) 5. Secondary levels (9-10) 6. Higher secondary levels or Preparatory (11-12) 7. Bachelor degrees or higher
10. Household size (in number) _____

Age	Male	Female	Total
11. Under 15 years			
12. Between 15-64 years			
13. Above 64 years			

Part Three: House hold asset, equipments and Land holdings

3.1. Household asset

General Equipment	1. Item before five	Number Owned	3. Number Owned at present	4. how you obtained	5. If someone wants to buy a similar item, how much	6. When did you obtained the most recent
14. Saddle (korcha)						
15. mills/Weficho						
16. horse/mule cart						
17. Others						
Agricultural equipments						
18. Hoe (mekoferia) /Doma						
19. Ploughing set (marasha)						
20. Sickle/matchid						
21. /Axe/Mesar, metrabria						
22. Hammer/ Martello medosha						
23. Saw/ megaz						
Others = 17, etc specify						

Non -agricultural equipment					
24. Carpenter equipment					
25. Black smith equipment					
26. Weaving equipment					
27. Building equipment					
28. Brewery equipment					
29. Others = ,etc.,specify					

3.2. Household equipments'

1.Item	Number Owned before	3.Number owned at present	4.how you obtained	5.If someone wants to buy a similar item, how much	6. When did you obtained the most recent
30. Kurbet					
31. Agoza					
32. Silicha					
33. Bed (alga)/ tefiralga					
34. Tables					
35. Radio/tape recorder					
36. Fanos /Kuraz					
37. Gas medega					
Other Kitchen equipment (plates, Iron pots,wanchaetc.)					

38. Mesob, sefed, lemat, enkeb, wonfit					
39. Tefer					
40. Sanduk, kumsatin,					
Valuables					
41. Jewelry (yebir)					
42. Gold					
43. Wrist watches					

3.3. House type

Type of rooms	Number Of rooms	Main construction Material	How much it cost You to replace	Year constructed (year_ E.C.)
44. Bedrooms and kitchen	Wall =			
	Roof =			
45. Food store	Wall =			
	Roof =			
46. Rooms for sheep and goat	Wall =			
	Roof =			
47. Rooms for Cattle	Wall =			
	Roof =			
48. Rooms for Cattle	Wall =			
	Roof =			
49. Others	Wall =			
	Roof =			

3.4. Livestock ownerships

Type of livestock	Number Owned before five years	Number Owned at present And present at you farm	If you Would sell now, how Much would you receive?
50. Oxen Bull			
51. Young bull			
52. Cows			
53. Heifer			
54. Calves			
55. Calves			
56. Imp. Sheep			
57. Loc. Sheep			
58. Goat			
59. Horses			
60. Donkey			
61. Mules			
62. Imp. chicken			

3.5. Land holding and crop production

63. Do you (or any other member of your household) own any land?

1) Yes 2) No

64. Total farm land _____ Cultivated land size _____ hectares. Rent or borrow out _____ rent or borrow in _____ Grazing land size: _____ hectares.

65. Did you use irrigation for your farm's productivity in the past? 1) Yes 2) No

66. Did you use fertilizer to improve your farm's productivity in the past? 1) Yes 2) No

67. Past farming seasons, did you use animal manure to improve your farm productivity?

1) Yes 2) No

68. Did you use improved seed to improve productivity of your farm in the past?

1) yes 2) No

69. We would like to ask some question about all the land used by the household (your) this year.

Plot number	Plot size in		Do you own This plot or lease it	Type of crop(s) You planted	Yield in KG	Value of Yield in Birr	Is irrigation possible? [yes=1;no=2]
	Timad	ha					

Part Four: Household income

4.1. Household on farm income

70. Gross income from the sale of household's animal products during this cropping year?

Type	Did you sell any? 1=yes, 2=no	If yes Amount sold	Unit price	Total revenue in Birr.
Sheep				
Goat				
Oxen				
Hides /skin				
Butter/cheese				
Milk/cream				
Chicken				
Eggs				
Others				

4.2. Income from Crop output

71. Fill for each crop harvested during the season. For permanent crops, mention the harvest during the period since the beginning of Meskerem of this year.

Crop	Have you Sold part of The Irrigation harvest? (Yes=1,no=2)	Have you Sold part of The Meher's harvest? (Yes=1, no=2)	If you sell part of your out put What amount you sold and at what price?		
			Amount in KG	Price per KG	Total revenue

4.3. Non-farm income

72. Would like to ask you about your income earning activities such as craft, trades, or other business, carried out by any of the household members this year.

Activities	HH member responsible	How much has the household earned net? If given in kind, Change to cash in birr.
Weaving (shimena)		
Handicraft, in pottery		
Trade in grain/general		
Trade in livestock		
Traditional healer/ Religious teacher		

Selling wood and charcoal		
others		

73. Has the household received any other income (such as remittance, gifts or other transfers) this year? _____

74. Has any of the member left the household to seek work this year? (For at least a season)?
Explain in Birr _____

Part Five: Extension, Credit and Cooperative services

5.1. Extension services

75. Do you get agricultural extension service / advice by the DA's? 1 yes 2.No

76. The distance from extension agent (hrs) _____

77. The number of times the house hold members have contact with extension agents _____/week or / month or /year

78. Has any member of the household has taken training in any field? (Yes/No) _____

79. If yes what field for how long _____

80. Did you meet technical assistance other than DA? 1.yes 2.no

81. If yes, what where the major factors that made you to communicate with your DA's

1. _____ 2. _____ 3. _____

4. _____

82. How often for each factors mentioned? 1. _____ 2. _____

3. _____

83. If Yes, is there any change in your agricultural yields /productivity? 1. Yes, increased 2. No, decreased 3. No change

5.2. Credit service

84. Is there any credit facility /institute in this area /woreda? 1 .Ye 2. No

85. If yes, please indicate source of credit (code a)

86. Have you been trained about credit, interest rate and commitment that you had to fulfill

1. Yes, 2.no

87. This years, have you taken out a loan? Yes 1 No 2. _____

88. If yes, would you please give us the following details?

Type of loan	Year borrowed	Reason for loan	Total Amount Birr	Interest Amount In Birr

89. This years, have you ever given a loan to another household? 1. Yes 2. No.

90. Does any member of the household have a bank account? 1 .Yes 2.no

91. Are any of the household members, members of 1.Yes 2. no

92. If yes, contribution per (week/month) =_____Birr.

93. Total Contribution in the whole year =_____Birr.

94. Why don't you borrow more?_____

95. If you get some who lends you would you borrow?: 1. Yes 2.no

96. Did you use production credit for consumption purpose ? 1. Yes 2. no

97. If yes, why? _____

98. How much?_____

99. Did you get formal credit service in time? 1.yes 2.no

100. What are the main problems affecting your saving and investment decision?

According to priority Natural disaster=1; Extended family obligation=2 Low price of agricultural commodities=3 ; Limited marketing opportunity=4 Others=5, specify_____

101. Distance from institutional credit (hrs)_____

102. How many times was the formal credit source of your branch visited you?_____

103. Was credit received adequate and timeliness? _____

5.3. Participation in informal institutions

Are you or your family member are Participating in?	1. Yes 2.no
104. Equb	
105. Idir	
106. Livestock local insurance	

107. Other specify	
--------------------	--

Part Six: Households food consumption and food security status

6.1. Food consumption.

108. Do you tell us the consumption of each of the food items in your family for the last week in kcal?

	Food type consumed	Total food consumed[KG, Birr]		Consumed from purchased		Consumed from Own harvest		Consumed from Food aid		Consumed from gift/remittance	
Cereals	Teff										
	Barley										
	Wheat										
	Maize										
	Sorghum										
	Others										
Pulses	Lentils										
	chickpeas										
	beans										
	peas										
Oil crops	Linseed										
	Nug										
	Sunflower										
Milk and animal products	Milk/yoghurt , cheese										
	Beef meat										
	Mutton/goat meet										

	Chicken										
	eggs										
Beverage (liters)	Tella										

109. How many meals per day did your household eat in this year? _____

110. Is all the food belonging to your household kept together and shared out at meal times?
Or do some members of your household (beteseb) have their own separate stock of food,
which they use separately from others? [All together =1, Separate stock= 2]_____

Indicate number of meals per day during normal and deficit period for different members of the household

111. Children below the age of 5 Normal Times_____Deficit Times_____

112. Children between the age of 6&15 Normal Times_____Deficit Times_____

113. Adult males above 16 Normal Times_____Deficit Times_____

114. Adult women above 16 Normal Times_____Deficit Times_____

115. Elderly Normal Times_____Deficit Times_____

6.2. Food security

116. During the last year (12 months), did your household suffer any shortage of food to eat?
1) Yes 2) No

117. If Yes, this shortage of food (as compared to back 5 year) now, 1. Decreasing 2. No
Change 3. Increasing

118. Which months in the last year did your household have problems in satisfying its food
needs?

119. During the worst month in a year, how many times a day the adults and children in your
Household eat

Part Seven: PSNP participation

120. Are you or one of your family member are PSNP beneficiary? 1) Yes 2) No

62. Reasons for Joining PSNP (Please put “X” mark for your reason)

Reasons for selection	
A. My household is poor: we can't get enough food to eat; we own no land and livestock, or only a few livestock (Low productivity)	
B. There is no labor power in my household: Members of my household are sick, disabled or mentally challenged. (Dependency)	
C. We faced to risks and consequences of sudden collapses in income and consumption e.g. climatic shocks, natural disasters, economic crises or conflict. (Vulnerability)	
D. Other reason(specify)	

121. When were you firstly joining the program? _____

122. If your answer in question number 11 is public work, how many household members engage in public work activities? _____

123. Has your household received any services from the new government Safety Net Program (PSNP)? 1. Yes 2. No

124. If you (your housed members) have ever received food aid during the last 12 months (2010 E.C), please indicate the type and amount received

No	Type of aid	Amount received by months											
	Items received	Se	Oc	No	De	Ja	Fe	M	Ap	M	Ju	Jul	Au
1	Grain(kg) a)Wheat												
2	b)Other grains/specify												
3	Edible oil (lit.)												
4	Hand tools (specify)												
5	Cash in birr												
	Others, specify												

“PSNP” as seen by beneficiary households

125. Do you think PSNP is contributing to the alleviation of food insecurity in your *kebele*?

Yes: 1 No: 2

126. If “yes” please indicate its contribution

127. If “No” what problem you observe while implementing the program

128. Do you think that PSNP (public work) have an impact on communities’ working value?

Yes: 1 No: 2 xvii

29. If “yes” please indicate the impact?

30. Are there problems that you observe in the whole process of PSNP implementation?

Yes: 1 No: 2

31. If “yes” please indicate them?

Appendix B: Focus Group Discussion Checklist

What looks like general background (tradition, social relation, value...etc.) of your community

What looks like livelihood strategy of your community?

What looks like identifying process of beneficiary households to PSNP?

- In the process of identifying food insecure households, what is the role of community elders?
- What mechanisms have been used to identify household’s ether for direct support or public work
- Was there challenges while identifying food insecure households for PSNP initiative

What is the purpose of PSNP in your community?

- In terms of food consumption status
- In terms of prevention and generation of asset.

What outcomes PSNP has been brought regarding protection of household asset

- In terms of livestock protection, financial (credit) service, household and production materials
- In terms of infrastructure: transport, water, and extension services.
- In terms of environment protection

Do you have any other comments on our discussion?

Thank the group for their time!

Appendix C: Checklist for Observation

I. Environment

1. Area
2. Relief (plain, plateau, mountain, cliff and steep slopes)
3. Agro-climate

II. Population and Mediating processes

1. Settlement patterns
2. Religion
3. Culture, value, traditions, social relation
4. Mobility and migration
5. Social relations neighborhoods, network, reciprocity

III. Sources of livelihood

1. Income generating activities of the household
2. Food items mostly common in the community and its availability

IV. PSNP outcomes

1. Situation of livestock protection, household and production materials
2. Situations of infrastructure: transport, water, health, education marketing, extension services
3. Situation of environment protection

**Appendix D: Key informant Interview Guideline for Local Administrator
(Kebele chair persons)**

Name: _____

Date: _____

1. When PSNP started in the *kebele*
2. What contribution PSNP brought for the community
 - In consumption level (food security)
 - Infrastructures (road, water ...etc.)
 - Livestock protection, household and production materials
 - Employment opportunity
 - Financial (credit) service
 - Environment protection
 - Other achievement
3. How beneficiary households identified for PSNP
4. What instructions or training did in this *Kebele* for the village decision-makers on targeting the safety net?
5. What mechanisms have been used to identify households" ether for direct support or public work?
6. Were there challenges in targeting process (i.e. were complaints in targeting process) if there, what action has been taken to resolve
7. Local governments role to achieve PSNP objective
8. Role of community
9. Do you have any other comments on our discussion?

Thank the interviewee for their time!

**Appendix E: Key Informant Interview Guideline for Woreda PSNP Officials
(PSNP task force members)**

Name: _____

Position: _____

Date: _____

1. When PSNP started in this Woreda
2. How beneficiary households are identified for PSNP
3. What instructions or training did in this *Kebele* for the village decision-makers on targeting the safety net?
4. What mechanisms have been used to identify households either for direct support or public work
5. How many households were identified for PSNP in each program (DS and PW)
6. Were there challenges in targeting process (i.e. were complaints in targeting process) if there, what action has been taken to resolve.
7. What outcomes registered because of PSNP
 - In consumption level (food security)
 - Infrastructures (road, water ...etc.)
 - Employment opportunity
 - Livestock protection, household and production materials
 - Financial (credit service)
 - Environment protection
 - Other achievement
8. Challenges in implementation process
9. Do you have any other comments on our discussion?

Thank the interviewee for their time!

Appendix F: Key Informant Interview Guideline for Development Agents (DAs)

Name: _____

Role\Position: _____

Date: _____

1. The role of DAs in enhancing community development
2. What looks like livelihood strategy of community?
3. What is the purpose of PSNP in this community?
4. Does it have an impact of community
 - In consumption level (food security)
 - Infrastructures (road, water ...etc.
 - working behavior
 - Livestock protection, household and production materials
 - Environment protection
 - Other achievements
5. What looks like Targeting process of beneficiary households to PSNP
 - In the process of targeting what is your role as DA
 - Were there challenges in targeting process (i.e. were complaints in targeting process) if there, what action has been taken to resolve.
6. Do you have any other comments on our discussion?

Thank the interviewee for their time