

**MEKELLE UNIVERSITY**

**COLLEGE OF BUSINESS AND ECONOMICS**

**DEPARTMENT OF MANAGEMENT**



**ASSESSMENT OF FACTORS AFFECTING HOUSEHOLD LEVEL GRADUATION FROM  
PRODUCTIVE SAFETY NET PROGRAM (PSNP) : (EVIDENCE FROM EMBA ALAJE  
DISTRICT OF SOUTHERN TIGRAY, NORTHERN ETHIOPIA)**

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DEVELOPMENT STUDIES SPECIALIZATION IN (REGIONAL AND LOCAL  
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Assessment of Factors Affecting Household Level Graduation from Productive  
Safety Net Program (PSNP)

(Evidence from Emba-Alaje District of Southern Tigray, Northern Ethiopia))

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## **Declaration**

The undersigned thesis entitled'', **Assessment of Factors Affecting Household Level Graduation from Productive Safety Net Program (PSNP): Evidence from Emba-Alaje District Southern Tigray, Northern Ethiopia''** submitted in partial fulfillment for the degree of Masters of Arts in Development Studies in Mekelle university is entirely my own work and has not been submitted anywhere else for the award of degree, diploma, fellowship to any other academic institution. To the best my knowledge and belief, all sources of materials used for this study are dully acknowledged.

**Hayalu Godefey**

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## Certification

This is to certify that the thesis entitled “**Assessment of Factors Affecting Household Level Graduation from Productive Safety Net Program (PSNP): (Evidence From Emba-Alaje District of Southern Tigray, Northern Ethiopia)**” submitted in partial fulfillment of the requirement for the award of the degree of Masters of Arts in Development Studies to the College of Business and Economics, Mekelle University, through the Department of Management is done by Mr. Hayalu Godefey, ID number CBE/PR/074/05 is an authentic work undertake by him under our guidance

Name of the Principal Advisor	Signature	Date
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Name of the Co-advisor	Signature	Date
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## List of Acronyms and Abbreviations

CCI	Community Complementary Investment
CSA	Central Statistical Agency Investment
CFI	Chronically food In secured
CFSTF	Community Food security Task Force
FDRE	Federal Democratic Republic of Ethiopia
FGD	Focus Group Discussion
FSP	Food Security Program
DA	Development Agent
DARDO	District Agriculture and Rural Development Office
DFID	Department of International Development
DFSTF	District Food security Task Force
DS	Direct Support
GDP	Gross Domestic Product
GFDRE	Government of Federal Democratic Republic of Ethiopia
GIS	Geographic Information System
GOE	Government of Ethiopia
HABP	Household Asset Building Program
IDS	Institute for Development Studies
IFPRI	International Food Policy Research Institute
ILO	International Labor Organization
MASL	Meter above Sea Level
NGOs	Non-government Organizations
KFSTF	Kebelle food security Task force
MOARD	Ministry of Agriculture and Rural Development
ODI	Oversee Development Institute
OECD	Organization for Economic Cooperation and Development
OFSP	Other Food Security Programs
MOARD	Ministry of Agriculture and Rural Development
MU	Mekelle University
PA	Peasant Associations

PIM	Program Implementation Manual
PSNP	Productive Safety Net Program
PW	Public Works
SNNPR	Southern Nation's Nationality People Republic
SPSSLF	Social Protection South-South Learning Forum
TRARDO	Tigray Region Agriculture and Rural Development Office
USAID	United States of America international Development
WB	World Bank
WFP	World Food Program

## **Glossary**

Dega	Highland
Kebelle	The smallest administrative unit in Ethiopia
Kolla	Lowland or a tropical type of zone.
Kushet	Village
Weina dega	Neither highland nor lowland

## **Abstract**

*PSNP is an approach to improve livelihood of more than 7.5 Million people. Graduation of beneficiaries from the program was among the measurements which show effectiveness of PSNP, determines the sustainability of PSNP client's livelihood and realizing the broader food security agenda. There is low level of graduation in the study area. The main objective of this study was to identify factors affecting household PSNP graduation in Emba Alaje district of Tigray Region, Ethiopia. Primary and secondary data were used for this study. Cross-sectional survey was employed taking a sample of 235 households selected through systematic random sampling technique to gather data using semi structured questionnaire. Moreover, focused group discussion and interview were employed to collect qualitative data. Furthermore, the study employed binary logistic regression model to identify the factors determining household level graduation from PSNP. The finding of the study shows, 78.30% of the beneficiaries didn't believe the graduated households are food self sufficient rather the respondents argue, there is no significant difference among the current and graduated beneficiaries. The binary logistic regression results showed that, sex, credit, irrigable land ownership, total crop production and targeting mechanism had a positive and significant impact on graduation, while dependency ratio and drought negatively influence graduation. Likewise, implementation of PSNP graduation is not satisfactory because the process failed to be consistent with the PSNP implementation manual and graduation guidance note. These all leads to premature graduation of program participants which change perception of graduation from being food self sufficient to matter of receiving cash or food aid for six years. To achieve food self sufficiency officials should follow the implementation manual, supporting beneficiaries beyond PSNP projects and experience need to be shared from PSNP plus projects in Ethiopia.*

*Keywords: PSNP, Graduation, Household, Emba Alaje, Tigray*

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# CHAPTER ONE: INTRODUCTION

## 1.1. Background of the Study

Following the world summit on social development in Copenhagen in 1995, 117 countries adopted a declaration and program of action with commitment to eradicate absolute poverty and reduce overall poverty (Gordon, 2005). However, still the problem needs special commitment, and efforts were not as such successful in eradicating poverty and food insecurity because of institutional, demographic, socio-economic and natural factors. Consequently, after the new millennium many countries adopted social safety net as a means of reducing poverty and food insecurity (ibid).

Social safety nets can be defined as non-contributory social protection intervention which typically overlooked by countries throughout the world. Although, before decade's safety nets only experienced in the global north, they are increasingly being adopted in the third world as a means of providing a minimum standard of livelihood and addressing for the poorest section. The social protection agenda in Africa has evolved rapidly since the new millennium, driven by a particular set of vulnerability factors. They are now being looked as attractive instruments for the poorest individuals in some part of the developing world (Dicks, 2012). As a result, Productive Safety Net Program (PSNP) in Ethiopia, Hunger and Safety Net program of Kenya and the Vision 2020 Umurenge Programme (VUP) in Rwanda are among the well known large scale social protection programs (Devereux & White, 2010: Sima, 2013 & Irungu et al., 2009).

According to Gilligan et al. (2009), chronic food insecurity remains main feature for the poor in rural Ethiopia. The main stay of the poor was rain fed agriculture accompanied by its uncertainty. Consequently, the vulnerability to weather shocks among the poor aggravates through time. For 20 years after the 1984-85 famine, the system of emergency relief was the main instrument for food insecurity in the country. This was effective at averting severe food crises but delivery of the relief was unpredictable and often failed to prevent distressed asset sales. As a result in 2005, the government of Ethiopia and a group of collaborators implemented PSNP as a social protection program whose transfers expected to provide predictable and smooth consumption insurance against food in security and economic shocks.

The Ethiopian PSNP which started operation in 2005 is one component of the overall food security program (FSP) which also includes resettlement, complementary community investment and Household Asset Building Program (former other food security program). PSNP is pro poor development strategy for promoting growth and reducing poverty which represent a shift from unpredictable food aid to smooth consumption levels and protection of assets (Uffelen, 2012). Devereux (2008), indicates PSNP operate as a social protection, targeting transfers to the chronically food insecure households in two ways, through public work (PW) and direct support (DS). Public works, which is the larger intervention of the PSNP, transfer payment to beneficiaries selected by the society (community) for work they undertake on labor-intensive works that build community assets.

Julie van and Coll-Black (2010), illustrates in 2009 the Ethiopian government re launched the food security program with enhanced efforts being made to improve a key component. The other food security program (OFSP) replaced by House hold Asset Building program (HABP), which includes a demand driven extension, support component and improvements in access to financial services. Likewise, a finding by Berhane et al. (2013) revealed about the importance of the second phase of PSNP, under implementation, mainly in ensuring food security both for chronically and transitory food in secured households of the country. The program covers up to 318 chronically food insecure districts in eight regions where by more than 7.5.million people (1.6.million households) are expected to benefit from program transfer and productive activity up to December 2014.

Graduation of beneficiary households from the PSNP is one component of wider FSP and expected to reduce the number of households requiring external food (cash) aid and assistance (Sabates-Wheeler et al., 2012). Graduation can be defined as ‘‘a household has graduated when in the absence of receiving PSNP transfers it can meet its food needs for the year or 12 months and is able to with stand modest shocks’ (MOARD, 2007:1). A household in this state described as food sufficient. Slater et al. (2006), reveals graduation of households from PSNP is not with the program control; the PSNP can only be a contributor to graduation, not its sole driver i.e. the success of PSNP depends on its alignment with other programs. Similarly Arega (2012), insists as household built assets through linkage to other agricultural and income generating programs family assets get protected and hence increase

in amount. As a result, as family's assets grow to an appropriate level, graduation from PSNP will facilitate. Sabates- Wheeler and Devereux (2011), indicate that there has been little effective graduation from the program throughout the country since the inception of the program. There are a number of enablers and constraints of graduation which include demographic factors (sex, age, education, dependency ratio), institutional factors (follow up by development agents, targeting mechanism of the PSNP, access to credit), socio-economic (total production, irrigable land, livestock ownership, farm size), and natural factors (Drought).

Emba Alaje district of Tigray regional state is one of the PSNP targeted districts define by government as chronically food insecure due to its prior experience of food insecurity and food assistance. PSNP started in 2005 in the district. From 21 sub districts of the district's 8522 households (23780 beneficiaries) are included in the PSNP. From these, 5387 households included under public work beneficiaries and 2382 households are direct beneficiaries of program. However, in relation to the other districts in the region there is level there is low level of graduation in this area and from the 5387 beneficiaries only 2918(54%) of them are graduated from 2010 up to 2013 which is low in relation to other districts in the region like Asegede tsemabela and Ahferom graduate more than 95% of the beneficiaries and the program will be expected to expire in December 2014 and all clients are required to graduate (TRARDO, 2013). Therefore, this study will try to identify factors affecting PSNP graduation at household level in Emaba Alaje district.

## 1.2. Statement of the Problem

The role of social protection in preventing people entering in to poverty, and reducing the duration of poverty is vital. For some time social protection has been recognized as instrumental to achieve greater equality and promote growth (WB, 2005). Recently, it has been recognized that when it is well designed, social protection can both redistribute the gains from growth and similarly contribute to higher growth. The proponents of the new approach see productive contribution of social protection being both as redistributive role and as an essential tool to achieve pro poor growth (ILO, 2005 & OECD, 2009).

The emergency appeal in the past two decades launched by government of Ethiopia was based on consumption needs of food insecure households which failed to identify between chronically food in secured and transitory food insecure. Furthermore, the transfers were unpredictable often arrived too late which shows the emergency relief in general was doing little (MOARD, 2010). Thus, due to limitations of the prior measures, a lot of programs had been undertaken under the umbrella of Food security Programs (FSP) which among PSNP was one.

Dicks (2012), illustrates there are positive changes that have resulted from the PSNP initiative Along with the major changes in other sectors, the program contributes to improvement of Ethiopia's human development index (HDI) (from 3.33 in 2004 to 3.65 in 2012) rating. Likewise, SPSSLF (2011), revealed the program enable households to asset protection including 62% of beneficiary households avoided selling assets. Alderman and Yemtsov(2012), finds that PSNP enable to undertake 34, 000 public work projects on social infrastructure , roads which facilitate local service delivery , improving local level investment planning and more than 23% of the participants acquired new assets.

Contrary to the positive impacts, there are also challenges in the implementation of PSNP. As a result, Limited capacities for ensuring the design and application of technical standards, community based planning, and information management and reporting are reported as the main challenges. Other challenges which negatively affect the program include dependency syndrome, way of targeting, weak institutional linkage and lack of active community participation in the decision making process (Gebru *et al.*, 2009).

According to Slater et al. (2006), the PSNP graduation is the key goal to be achieved in the program. Graduation exists when beneficiary household become food self sufficient and no more in need of transfer from the program. However, this created challenges for effective management of the program since graduation of households from the program cannot achieved without coordination with other complementary programs. As a result, success of PSNP depends on the performance of government, non government and beneficiaries own programs.

Gillingan et al. (2009), in their study in four regions of Ethiopia analyze the graduation performance has been very low. According to initial targets, all beneficiaries under the PSNP were supposed to graduate by 2009. However, only 104,846(1.3%) beneficiary households were graduated. Yibrah (2013), in his study using binary logistic regression identifies, integrated agricultural package use, male headed household, educational status of the household heads, access to credit, exercising saving culture, government follow up, access to irrigation and petty trading lead to program beneficiary households to have relatively greater probability of program graduation. Furthermore, a study by Arega (2012), adds total income, number of livestock owned, total crop production and geographical location increase the likelihood of graduation.

There are also some studies on factors affecting graduation of beneficiaries from PSNP (Barn& lane, 2010; Berhane et al., 2013& Sabates-Wheeler et al., 2012). However, these studies did not analyze the effect of dependency ratio, targeting mechanism and natural factors for graduation through quantitative approach and overlooked the perception of beneficiaries towards graduation. In addition to this, the report by TRARDO (2013) shows there is low level of graduation in the study area and a lot of questions rose regarding implementation of PSNP graduation. Thus, it is important to include the implementation of household's graduation from PSNP. Besides, majority of the investigators try to analyze at national or regional level with larger spatial recommendation and there is no any researcher with similar study in Emba Alaje which has its own specific socio-economic and natural contexts. Hence, this study has been done to fill these gaps. Therefore, the student researcher tries to identify the factors affecting PSNP graduation and describe the perception of households towards graduation in Emba Alaje district.

### **1.3. Research Questions**

**1.3.1. General Research Question:** What are the possible factors influencing household's graduation from PSNP in Emba Alaje?

#### **1.3.2. Specific Research questions**

The study tried to answer the Following Research Questions:

- What is the perception of households about PSNP graduation?
- What are the demographic factors that affect graduation of households from PSNP?
- What are the socio-economic factors that affect household PSNP graduation?
- What are the institutional factors affecting graduations of households from PSNP?
- Is occurrence of drought affecting household graduation from PSNP?
- How the process of graduating households from PSNP is implementing?

### **1.4. Research Objectives**

#### **1.4.1. General Objective**

The general objective of this study is to identify factors affecting household graduation from PSNP and describe perception of households on the program graduation.

#### **1.4.2. Specific Objectives**

- To describe perception of beneficiary households towards graduation from productive safety net program
- To identify demographic factors affecting household's PSNP graduation
- To examine socio-economic factors affecting household's PSNP graduation.

- To identify institutional factors influencing household's PSNP graduation
- To examine whether occurrence of drought influence household's PSNP graduation.
- To assess the process of household's PSNP graduation implementation.

## **1.5. Scope and Limitation of the Study**

### **1.5.1. Scope of the study**

This study specifically focus on identification of the possible factors affecting household level graduation, assessing implementation of household graduation from PSNP and description of the perception of the clients in the study area. The specific study area is Emba Alaje district of southern Tigray in the national regional state of Tigray. Accordingly, any of the analysis and findings of the study are specific to the study area. Thus, because of the study limited to Emab Alage district only, finding of the study may not represent or correspond to other areas/district of the region. In addition to this, the study did not analyze the role of PSNP to beneficiaries and to the whole community. Finally, the study did not include 2014 graduates from PSNP.

### **1.5.2. Limitation of the study**

The study conducted based on cross sectional survey but it will be better if all beneficiaries include in the study through census study. In addition to this, The direct support beneficiaries were not included in the analysis because, to the best knowledge of the student researcher there is no clear document how and when these beneficiaries will quit the program and there is no official document that relate to the graduation of these beneficiaries. Moreover, lack of modern data base in the woreda food security office creates problem to get appropriate secondary data.

## **1.6. Significance of the Study**

Identification and analysis of factors affecting household graduation from PSNP, assessing the perception of households towards the program and assessment of the implementation of household graduation from PSNP is one important area of development research. As a result,

this study could render advantages to government, policy makers and institutions working on productive safety net program and other complementary food security programs of the district. Moreover, it could assist for further strategy to develop institutional arrangement and to improve the graduation process of PSNP. Additionally, governmental and nongovernmental organizations that are intervening through their programs in PSNP could benefit from the result of this study. Finally, it expected to help researchers, research institutions and academic institutions who will make their study in the program

### **1.7. Organization of the Thesis**

The study organized in to five chapters. Chapter one introduce the study by describing the background of the study, statement of the problem, research questions, objectives, scope, limitation of the study and significance of the study. The second chapter covers literature review dealing with definition and concepts of the social protection, productive safety net, food security, household asset building, graduation, factors affecting household graduation from PSNP and ongoing process of implementation of the graduation from PSNP. The third chapter encompasses description of the study and site selection, research design and strategy, data type and sources, sample and sampling procedure, instruments of data collection and filed work and method of data analysis. The fourth chapter encompasses the results and discussions of the study. In the last chapter conclusion and recommendation are indicated.

## **CHAPTE TWO: LITERATURE REVEIEW**

### **2.1. Concepts and Definition**

#### **2.1.1. Social Protection**

Social protection is a new policy agenda. There is no agreement on the boundary of social protection, but most operational definitions include two elements: social assistance (protection against poverty) and social insurance (protection against vulnerability). A third component advocated by some definitions addresses social injustice and exclusion (social equity to protect people against social risks such as discrimination or abuse) (Devereux and Sabates, 2004) .A recent definition that includes all three components was proposed by the 2010 European report on ‘social protection for inclusive development ‘.

*‘Specific set of actions to address the vulnerability of people’s life through social insurance , offering protection against risks and adversity throughout life; through social assistance offering payments and in kind transfer to support and enable the poor, and using inclusive approach that enhance the ability of the marginalized to access social insurance and assistance’’(European Communities, 2010:1).*

The primary function of social protection is to reduce income poverty and prevent vulnerability. Poverty alleviation or reduction is achieved through raising household incomes, while income or livelihood vulnerability can be managed or reduced by stabilizing incomes vulnerability also has a social dimension, related to marginalization and exclusion, and this can be addressed through strategies that empower people. Recent paradigms on social safety nets in third world countries focus on ‘graduation ‘and self-reliance. for low income household that have labor capacity, social protection expected to provide temporary support, and should promote sustainable livelihoods rather than dependence on ‘handouts’ (Devereux, 2012).

#### **2.1.2. Theoretical Foundation of Asset Based Graduation**

In the last decade moving chronically food insecure and vulnerable households from extreme poverty helping them to accumulate assets has received greater attention in the social

protection agenda. The asset based approaches to flourish growth and reduction of poverty initiated from debate in the 1980's challenged the common poverty measurements based on expenditure, income and consumption. The new research findings describe the meaning of poverty making asset ownership and livelihood situation at their focal analysis (Sen, 1997; Ellis, 2000). As a result, from this finding many theoretical models and empirical research has emerged.

Asset accumulation model focus on ownership, preservation and transmission of assets for household's way out from poverty. Some advocators of graduation have point out the path to productive livelihoods is linear and incremental, such that enhance households revenue (income) through time and lead to increment in the number of assets (Moser, 1998). According to carter et al.(2008), A more modern approach to asset accumulation was 'asset threshold models' which argues due to non-linearity in asset accumulation the existing benchmark(threshold) need to be aligned if the households are to graduate from poverty. This study is based on 'asset threshold model' that households become food self sufficient when they reach the intended benchmark. This process mainly measure by ownership of assets and considering the number of assets the beneficiaries expected to graduate from the intervention.

### **2.1.1. What is PSNP Graduation?**

Graduation in the context of this study has two components. The first is graduation from food security program which entails food security assurance of households. On the other hand, graduation from PSNP, which is the main emphasis in this study indicates the state of food self sufficiency by beneficiary households and thus the clients are no longer eligible for the transfer from the program (MOAD, 2007). PSNP is expected to protect household assets and smooth consumption, while other complementary programs expected to help households in order to accumulate asset and generate income. PSNP has livelihood promotion and protection objectives. The former focus on filling the annual food gap and protect household's assets, where as livelihood promotion focus on graduating of transfer after subsequent support and regular transfer for more than five years(Devereux et al.,2008). White et al. (2010),reveals the public work clients are those expected to graduate from PSNP that have a potential to transform from state of chronically food insecure to food self

sufficient and participate in different livelihood packages. The direct support beneficiaries of PSNP do not expected to graduate from the program since they will not take loans and participate in complementary programs. Therefore, the direct support beneficiaries considered as ‘social welfare case load’ which exists throughout the world for those in need of permanent support.

Graduation in Ethiopia has two stage processes. The first is graduation from the PSNP and the second is graduation from the Food security Program. Therefore, in this study graduation from the PSNP was the focal point of the researcher. The notion of ‘graduation’ has been integral to thinking about PSNP since its inception. ‘Graduation’ describes a process whereby recipients of support move from a position depending on external assistance to a condition where they no longer need this support, and can therefore exit the program. A ‘Graduation Guidance Note’ describes graduation from PSNP as a transition from ‘chronically food insecure’ to ‘food sufficient’, defined as follows: ‘A household graduated when, in the absence of receiving PSNP transfers, it Can meet its food needs for all 12 months and is able to with stand modest Shocks’ (MOARD, 2007).

However, the manual also states that the graduated households will remain in the PSNP for one more additional year and will continue to receive PSNP transfer for the full year after they are evaluated to graduate (ibid).The objective of graduation has started to dominate discussions with is social protection agenda in Ethiopia as the second phase of PSNP gains pace. Phase two will end in 2014 and the intention is that the majority of public works beneficiaries will have graduated from the program by then (Sabates –Wheeler et al., 2012).

### **2.1.2. Chronic and Transitory Food Insecurity**

WB (1986), defines food insecurity as ‘the lack of capability to produce enough food and to provide access to all people at all times for an active and healthy life’ Chronic food insecurity refers to households that are regularly unable to produce or purchase enough food to meet their food needs, including at time of normal rainfall, are called chronically food insecure. The PSNP recognizes that unpredictable transfers to chronic food insecurity are not the most effective mechanism, because the same people require the same levels of support each year. Households that are chronically food in secured are the main emphasis of the productive

safety net program. These households have low capacity of adaptation to shocks, are dependent on food aid prior to the introduction of the productive safety net program. As a result, they are targeted to the productive safety net program transfer and expected to become food self-sufficient within a short period of time. Transitory food insecurity occurs when a shock has depleted the food stores and current incomes streams of household to the point that they are unable to meet their immediate food needs; these households are described as transitory food insecure. When people are subject to a shock it affects their livelihood, whether or not they are chronically food insecure. Households defined as transitory food insecurity have better livelihood than those chronically food insecure households (ibid).

### **2.1.3. Chronically food insecure Districts**

Districts defined as chronically food insecure and targeted in the PSNP. Their eligibility to the program was evaluated based on their prior experience of food insecurity and food assistance before 10 years preceding the introduction of the PSNP. Hence, there are a lot of factors for being food insecure of districts because countries are located in different geographical locations and at the same time endowed with different resources. Chronic food insecurity has been the major problem and feature of millions of Ethiopians for decades. Districts which are targeted for PSNP are those who have been failed to be out of chronic food insecurity (MOARD, 2006).

### **2.1.4. Chronically food insecure households**

According to Gilligan et al. (2008) chronically food insecure households are those who have been receiving continuous emergency food aid and failed to smooth their consumption in the last three years before targeted to the productive safety net program. The failure of households to have smooth and predictable consumption is both manmade and natural factors. Therefore, households in this state are labeled as chronically food insecure and targeted to productive safety net program in the past 10 years.

### **2.1.5. Food Sufficiency and Security**

A food self-sufficient household is described as, in the absence of receiving PSNP transfer, it can meet its food requirement for one year and was in a pole position to withstand modest

shocks, at this point household is labeled as food sufficient considered as no longer in need of transfer (except in the event of a major shocks) (MOARD, 2010). On the other hand, food security can define as "access by all people at all times to sufficient food for an active and healthy life" (FAO, 2003). In Ethiopia, food insecurity was the task still need attention and remains a widespread problem. More than 85% of Ethiopia's 80 million people live in rural areas and are heavily dependent on rain fed agriculture; this makes them extremely vulnerable to changes in weather conditions .Over the last four decades, there have been a number of severe famines due to droughts in Ethiopia. Even in years with normal rainfall, food shortages and hunger are recurrent problems for millions of people. More recently, this problem has been exacerbated by increase in food price (Anderson et al., 2008).

## **2.2. Social Protection in Africa**

The first two decades of the new millennium change the face of Africa from hopeless continent to a region with countries of fastest growing economies which resulted in reduction of poverty from 58 percent in 1995 to 48 percent in 2008(WB, 2011). However, still high poverty level expands in the rural part of the continent. Chronic poverty and vulnerability are high because of economic, economic, environmental and institutional factors. As a result, to achieve sustainable growth and reduce poverty social protections through safety nets are considered as important vehicles throughout the continent (Human Development Africa, 2012). The following are among the notable safety nets with productive approach to reduce poverty and enhance economic growth in Africa.

Alderman and Yemtsov (2012), contends Ethiopia's Productive Safety Net Program (PSNP) launched in 2005 to avert the emergency appeal system of food assistance in the country to more predictable safety net that produces productive assets in poor communities. The program provides both food and cash transfer through labor intensive works and direct support to the chronically food in secured districts. The food for work program was the largest intervention which aims to make food sufficient of those households with able bodied members. The transfer from PSNP estimated to be equal to 40 percent of the annual food needs of the chronically food insecure households. The program becomes one source of livelihood for more than 7.5 million Ethiopians or about 10 percent of the people of the

country. PSNP public work program become the rationale behind 34, 000 public work projects and was help to recover 167, 000 hectares of land.

Ghana's livelihood empowerment against poverty (LEAP) program is other safety net program in western parts of the continent which provides cash and health insurance to chronically poor households to minimize short-term poverty and enhance sustainable human capital development. The program launched in June 2013, 71, 000 households are enrolled. The objective was expected to enlarge its transfer for more than 1 million Ghanaian in the next three years (World Bank, 2012).

The Hunger and Safety Net Program of Kenya is one of the social protections interventions in the continent aimed at reducing hunger and vulnerability in the northern part of the nation via targeted cash transfer mechanism for poor and vulnerable people. The program designed because of famine and vulnerability to shocks emerged as the main challenges facing the people in the ASAL's part of Kenya. The Hunger and Safety Net Program, implemented by Kenyan government (with the help of DFID), to minimize and alleviate extreme poverty and hunger in the northern parts of the country. In Kenya emergency relief from donors was the main instrument for food assistance before the implementation of the new the hunger and safety net program. The program give priority to the chronically food in secured districts of Mandera, Marsabit, Turkana and Wajir districts. However, the social protection program in the country has not properly domesticated in the country's legal policy and framework and the emergency programs have been implemented in haphazard and knee-jerk approach with minimal strategic policy focus. (Irungu et al., 2009)

Rwanda's Umurenge Program (VUP) was the other notable social projection program with an aim to graduate households from the program at short period of time through support which combine public work program, cash transfer and microfinance credit to chronically poor households in different sub districts of the country. The program has been implementing by the ministry of local government of Uganda. The public work program similar with Ethiopian case undertakes productive works like building terraces, ditches, small dams as well as construction of roads, schools and health centers. The public work program was one

source of livelihood for 5 percent of the country's population which composed of 522, 856 people (WB 2012 & Devereux & Sabates-Wheeler, 2011).

### **2.3. Food Security in Ethiopia**

The problem of food security in Ethiopia has, to a large extent, been addressed by annual emergency aid from external donors. During the past two decades, Ethiopia has been the largest recipient of food aid in Africa and one of the largest recipients in the world (Little, 2008). For the individual beneficiary, food aid has been characterized by uncertainty, poor timing, and in appropriate. In 2005, to combat the persistent problem of food insecurity and to move away from the previous systems of annual emergency appeals, the Ethiopian government and a group of donors (including the World Bank, U.S agency for international development, Canadian international development agency, and several donors) launched a new social protection program called the productive safety net program (PSNP) With an annual budget of nearly US\$ 500 million , the PSNP is a huge program , reaching more than 7.5 million Ethiopians(Gilligan et al., 2008).

### **2.4. Food security strategy in Ethiopia**

The food security strategy of Ethiopia which designed in 1996, highlighted in the government plan to address cause and consequence of food insecurity in Ethiopia (MOARD, 1996). The strategy has 'Top down Approach 'where the regional food security programs and projects were subsequently designed on the basis of the Federal government strategy. The revised food security strategy of the country was developed in 2002 which updated the original 1996 FSS by sharpening the strategic element to address food insecurity using the lessons from previous achievements and challenges (FDRE, 2002). This strategy is mainly assisted by Agricultural Development Led Industrialization (ADLI) which focuses on creating abilities for national food self sufficiency (ibid). Thus, in an effort to ensure food security to the rapidly growing population, the Ethiopian government collaborated with institutional donors and partners in the development of an initial poverty reduction strategy paper (PRSP) in July 2001. Drawing from the first PRSP, and aligning itself with the findings of a millennium development goal (MDG) needs assessment for Ethiopia, the government has since established the plan for accelerated and sustained development to end

poverty (PASEP). The PASEDP considered as the vehicle for achievement of the MDG's and have a 5-year time frame (2005-2010) (MOARD, 2003; &Sharp & Amdissa, 2006).

In addition to the revised food security strategy, food security program (FSP) was designed in 2004 to enhance the food security status of some fifteen million rural Ethiopians within five years starting from 2005. The FSP was designed with two core objectives. The first objective was to help five million chronically food insecure people to attain food security while the second was expected to significantly improve the food security status of ten million additional food insecure people within five years. The program had three main components namely, resettlement, productive safety nets and other food security programs (the new HABP). The resettlement program aimed at enabling about 440,000 chronically food insecure households to attain food security within three years through voluntary resettlement program the other two components are OFSP (MOARD, 2004). However, recently the programs components increase to four including other food security program (OFSP) (now Household Asset Building Program), complementary community investment, resettlement, and Productive Safety Net Program (MOARD, 2009).

The new revised food security in PASDEP give a due emphasis to changing the emergency relief from food to cash and when there are conditions of demand food transfer the procurement should be conducted in domestic market. The other issues which give a new way to differentiate between chronic and transitory food insecurity. This all pave the way for the introduction of the productive safety net program (Amdissa, 2006).

## **2.5. The Productive Safety Net Program Practice in Ethiopia**

Long history of food insecurity has been prevailed in Ethiopia with corresponding continuous history of emergency reliefs. The emergency relief for long period of time is not predictable and provided in the form of emergency assistance. Even though demand for relief assistance is related to failure of rainfall but in Ethiopia it indicates an increase in the depth and extent of poverty. Ethiopia has experienced a long history of food insecurity for decades. In 2002/2003, 15 million Ethiopians were in need of emergency food relief and the government forced to undertake a consultation with collaborators called'' New Coalition for Food Security'' (MOARD, 2006). As a result, the discussion between the government and the

partners resulted in strong mind set which shift away from characterizing Ethiopia annual food needs as a short term which created as a result of specific natural shocks. Therefore, the new understanding recognizes that food assistance was a result of chronic poverty which is difficult to address in short term consumption smoothing efforts rather it requires emergency relief efforts to be complemented by other livelihood programs. Consequently, Productive Safety net program was the result of the discussion which launched in January 2005. The program was established with a promising objective of changing the traditional, short-lived approach of responding to chronic food insecurity through creation of program which not only smooth consumption but also protect household assets. The program was designed as one component of the Ethiopia government overall food security programs which give an emphasis on the household livelihood enhancing areas. In the previous phases there are two complementary components; the 2010-2014 phase of the intervention incorporates three complementary programs (Household asset building, resettlement and complementary community investment) (Barn& Lane, 2010)

The Ethiopian PSNP is a seasonal social safety net program designed to prevent famine and household assets by anticipating in advance to the food access failure of chronically food insecure rural households. In addition to this, The PSNP operates mainly as a work fare program in which transfer was provided in exchange for labor in public works or essential infrastructural projects of the community. The PSNP represents a significant logistical achievement, reaching 7.5. Million individuals, and is cost efficient in its delivery of transfers. Moreover, PSNP prevents the emergence of famine in Ethiopia since 2005. While The PSNP has been successful at addressing the predictable food gaps of the poorest 10 percent of the population, it has been less successful at addressing the underlying factors reproducing food insecurity in the long term, and there has been little effective graduation from the program since its inception (Frank, 2013)

### **2.5.1. Productive Safety Net Program Objectives and Components**

The objective of the productive safety net program (PSNP) is to provide transfers to the food insecure population in a way that prevents asset depletion to the beneficiary households and creates assets in the community. The program will thus address immediate human needs while expected to (i) support the rural transformation process (ii) prevent long term

consequences of short term consumption shortages, (iii) motivating households to engage in production and investment (iv) promoting market development by increasing household purchasing power. Furthermore, the program has two components namely, (i) labor intensive public works component; and (ii) a direct support component to ensure support to those households who have no labor at all, no other means of support, and who are chronically food insecure (MOARD, 2006).

According to Devereux and Guenthe (2009), PSNP was becoming an instrument to eight million Ethiopians to smooth their consumption and prevent their assets, either through ‘public works’ activities or as ‘direct support’ for households that are labor-constrained, with three distinct objectives including (i), Smoothing food consumption to chronically food insecure households, through food or cash transfer to purchase food in a time of ‘Hunger Gap’ months (ii), Protecting household assets: to damaging ‘coping strategies’ such as selling productive assets or taking high interest credit to purchase food, (iii) Building community assets through selecting public works activities that create infrastructure with developmental potential (e.g. feeder roads). These objectives corresponds to three functions of ‘protection’, ‘prevention’ and ‘promotion’, of the Productive Safety Net Program.

The PSNP aims to provide ‘predictable transfer to meet predictable needs.’ chronically food insecure household receive support for six months each year for up to five years, bridging their annual food consumption gap, protecting their assets against ‘distress sales’ and building their resilience against shocks. ‘Direct support’ delivers unpredictable transfer to the minority of participants (16% in 2008) in households with no able bodied members. Unlike the emergency appeals, PSNP conceived as a multi-year program so as to provide recipients with predictable and reliable transfers. In selecting these beneficiaries, geographic, administrative and community targeting is used (Sababtes-Wheeler and Devereux, 2010)

The program operates in the 318 most food insecure districts in rural Ethiopia defined in terms of their past experience of food aid needs. Within these localities local committees called ‘kebele food security task force’ with the mandate to choose beneficiaries. While there are program wide targeting criteria, these task forces have discretion in how these are applied. Most beneficiary households do public works (PW): criteria for selection in to these

are that these households are poor (for example, if they have low farm size or with few/ no productive assets) and chronically food insecure but with able bodied labor. Only few(16%) proportion of beneficiaries receive Direct support(DS); these households are poorer than those receiving public works employment and lack labor power ; this includes those whose primary income earners are elderly or disabled. From 2005-2007, the PW component paid beneficiaries either 8 birr per day in cash or 3 kilograms of cereals for work (depending on where they lived) on labor intensive projects for building community assets (Alemayehu et al., 2009).

The first phase of the PSNP was completed in 2009 after five years of implementation. The second phase, from 2010 to 2014, is currently implemented with an aim of making a substantial contribution to achieving food security for both chronically and transitory food insecure households in the rural parts of the country. The program aims to achieve improved food security for male and female members of food insecure households in chronically food insecure (CFI) districts (Sabates *et al*, 2012). The higher-level goal to which the PSNP aims was graduation of beneficiary households from the program. The PSNP is necessary but not sufficient for graduation of households. Thus a critical assumption to reach this higher-level goal is that the necessary complementary programs and investments are in place, as well as that linkages exist to a broad based rural economic growth process (Julie van & Coll-black, 2012).

## **2.6. Linkage between PSNP and HABP**

PSNP beneficiaries are benefiting from other food security program interventions. The rationale is to improve the rate and probability of graduation for clients. Furthermore, participation in the safety net program will make chronically food insecure households eligible on priority bases to participate in the other food security program interventions. Therefore, to achieve graduation and enhance food security, districts must integrate safety net intervention with other food security programs and broader districts development intervention (Alemayehu et al., 2009) .

The other food security program was redesigned through collaboration of the Ethiopian government and a group of donors with a new HABP. The HABP differs from OFSP in three

ways. Along with injection of new , there is an emphasis on increased contact and coordination with extension services as well as other actors , such as small and medium enterprise development agency, program for women and youth , and off farm technical officers. Each kebele need to have three development agents, one crop science DA, one animal husbandry DA and one natural resources management DA. Therefore, the DA's suppose to disseminate "technology Packages" and provide on farm technical advice. These are demand led with clients involved in the identification of new opportunities as well as the development of tailored business plans that can, where appropriate, include off -farm activities. Second credit services have been delinked from the extension services. Instead, credit will be provided through micro finance institutions (MFI's and rural savings and credit cooperatives. A third significant change has been the clarification of access to the HABP. The clients of the Household Asset Building Program component are food-insecure districts. The priority is given to expand the coverage of the HABP component as rapidly as possible to ensure graduation at scale. For this reason, PSNP clients need to be support Under HABP (MOARD, 2009).

### **2.6.1. Graduation Bench Mark and Criteria's**

The key source of guidance for graduation is the Graduation Guidance Note. It identifies seven core principles of the introduction and use of bench marks as well as 16 steps that regions, district, kebelles, and communities should undertake the identifying graduates. According to the guidance note, bench mark levels of assets for graduation are as follows: Oromiya, 19,187 birr per household; Tigray, 5,600 birr per capita; Amhara, 4, 2000 birr per capita; and SNNPR, 2,998 birr per capita. Additionally, among the criteria's for Graduation includes Asset based criteria, collecting information on the number or replacement value of a basket of identified productive assets owned, including animals, land, and equipment; Time based criteria, graduating households that have not experienced food shortages for three years, Consumption or nutrition based criteria, such as diet diversity, daily food consumption Patterns, or nutritional status; and/or Subjective or intangible criteria as defined by the perception of households within Participating communities(Berhane et al., 2013 & Sanford et al. ,2010, cited in Sabates et al., 2012).

## 2.7. Trend and implementation of PSNP Graduation in Ethiopia

The government of Ethiopia set an ambitious target with the goal of graduating 5 million people from food security in 2009. However, this was a political expression of its desire to transform the rural areas and avoid program dependency. Consequently, the graduation lens, performance has been very low. According to initial targets, all beneficiaries under the PSNP were supposed to graduate from it by 2009. However, only 104,846 household had done so i.e. 1.3 percent of total beneficiaries (Gilligan *et al.*, 2009). From the regional states of Ethiopia who targeted under PSNP Tigray region has better achievement with 63.6 percent of beneficiaries graduated from the program until 2013. Central zone of Tigray region has largest share of graduated households followed by eastern and north western zones. Southern zone of Tigray region scored the lowest graduated beneficiaries (TRARDO, 2013). Amhara was the only region in 2008 with above 10% of graduated households which make the region who score better achievement in relation to other regions at that time (Berhane *et al.*, 2011). Moreover, Amhara and SNPPR region has better achievement in 2010/11 and 2011/12, Oromiya 2008/09. Harari and Diredawa graduated only 601 and 757 household heads respectively up to 2012 which make the regions lowest achievers. The total number of beneficiaries in 2011/12 throughout the country are 549, 812(Assefa, 2013 & Berhane *et al.*, 2011).

Devereux *et al.* (2008) finding argues that the concept of graduation is not well understood both theoretically and in practice. In their study through panel survey, only few beneficiaries have been graduated with quantifiable improvement in their livelihood, even the well being of many beneficiaries aggravated after targeting by PSNP. This because many of the households did not have access to livelihood packages and failed to demand credit because of prior accumulated loan which need repayment –even though it is early to assess at this stage. Furthermore, most beneficiaries are not secured of emergency shocks and it is questionable whether the PSNP built measurable resilience against such emergencies. White *et al.* (2010) discusses the concept of graduation is difficult to undertake practically. The main challenges are establishment of clear indicators of food self sufficiency against future vulnerability and shocks; setting of reasonable benchmark for income or asset ownership in a situation when livelihood become unpredictable.

To promote graduation, PSNP participants need to have access to household asset building program (former OFSP) like credit to build their assets or to purchase household packages. Government targeted to achieve 30% annual coverage of PSNP beneficiaries to access of OFSP. However, the program was not successful because of the agricultural extension was under resourced, the delivery mechanisms is not always appropriate, low repayment performance of households and the overall strategy to promote graduation ignores those households without available labor and land. OFSP coverage was generally insufficient to meet the demand for loans among PSNP beneficiaries. While government reports suggest that access to a single household package should be sufficient to enable graduation, an independent study argues the process towards graduation is more complex. Thus, the overall strategy to identify households for graduation remains weak because of problems related to benchmark, the design of the process place a heavy work load on development agents required regularly to collect detail household data, low awareness creation regarding graduation, reentrance to PSNP, lack of program consideration to climate change and forced graduation are among the challenges of implementation to the program. Indeed, complementing the OFSP household package with other interventions, such as greater access to water, affordable health services and education may improve the likelihood of graduation from PSNP. Thus, local planning processes need to consider further investments to promote graduation (Julie-van & Coll-black, 2012).

Berahne et al. (2013), empirical finding indicates that the process of graduation was determined based on local perceptions that somebody has graduated (food sufficient). Household's graduation was subjective to comparison of people who are entitled to community judgment in relation to the adopted criteria's. As a result, the respondents reveal that emphasis was given to quota fulfillment rather than benchmark graduation. Furthermore, corruption of officials at the local level and fake reports DA's for competition and promotion lead to premature graduation. There is a solid understanding of the concept of graduation at regional and district levels. Below district level, the understanding of the concept becomes very loose, at times completely uninformed, and at times completely incorrect that's why the respondent households confuse to the rationale behind their graduation.

Post graduation support is needed for clients who exit the program and they are entitled to obtain support in the form of extension packages and credit for specific time. The understanding of implementing process of graduation from PSNP differs with in a community. Some of them believed it was time based, and others conceive it as specific value for graduation and for political motive of quota based graduation. Most graduates of the program stress that the implementation was not transparent and well explained (Berhane et al., 2011).

The study done by Barn et al. (2010) confirmed that on the assessment of graduation from PSNP in four regions of Ethiopia finds there are five types of graduation from PSNP including: i, benchmark graduation occurred when household exit the program according to the threshold; ii, self(voluntary) graduation when food self sufficient , related to when household leave the program that they know and are food sufficient (notably in Amhara, Tigray and Oromiya regions) ; graduation to correct inclusion errors when households are program beneficiaries without having met the entry requirement(Oromiy and Tigray); iv, self exit without food sufficiency occurs when clients leave the program without reaching food self sufficiency because of many reasons(Oromiya and Tigray); v, Graduation below benchmark(premature graduation) , when households graduated without having reach the threshold reflected in Tigray(Ofla district) and Oromiya (Oda bultum district). They also reveal that not all sixteen steps in the graduation guidance note are practicing because implementers believe that all steps are not necessary and applying them completely will be difficult and time consuming. The study also indicates that there is low level of supervision by district officials and experts regarding identification and implementation of graduation from PSNP except in Tigray region.

## **2.8. Empirical Literature on Factors Affecting Household's PSNP Graduation**

### **2.8.1. PSNP graduation and Socio-Economic Factors**

As one of the explanatory variables in this study, livestock ownership is considered in rural Ethiopia as the most crucial asset because as household's increases their number of assets

there is high likelihood of becoming food secured. In addition to this, ownership of livestock enhances the capacity of the beneficiaries to adopt shocks (Anderson, et al, 2009).

Irrigable land ownership is among the determinants of household's graduation from PSNP. Households with access to irrigation have the chance to produce more than twice in a year. The annual total production of these households will become two or three times bigger than the beneficiaries who have no irrigable land. As a result, households with irrigable land have the higher probability to leave the program within shorter period of time (Yibrah, 2012).

Land is the most crucial factor in agricultural production in least developing countries since majority of the economy is dominated by subsistence and backward agricultural sector. As a third world nation, Ethiopia has also large population engaged in this sector. Farm size one of the factors expected to determine households path to food self sufficiency because other things remains constant, difference in farm size among PSNP beneficiaries will have significant effect on their graduation. As a result, land size is one of the criteria for graduation of households (Frankenberger and Sutter, 2007).

### **2.8.2. PSNP Graduation and Institutional factors**

Institutional factors are crucial for graduating PSNP beneficiary households at specified time. Therefore, beneficiaries are expected to participate in HABP which one of the institutional factors in this study. HABP includes financial services and other technical advisory services in order to diversify beneficiaries' income and develop their potential for productive asset. Those households receiving HABP are expected to graduate from the program. Beneficiaries under HABP belong to agricultural and non-agricultural packages (Assefa, 2013). The PSNP beneficiary's accession HABP differs from one region to the other. Access to HABP was lower in Oromiya and SNNPR which is only 12 and 20 percent of the public work beneficiary households have access to HABP respectively. In Tigray region 69 percent of the public work program clients have the access to at least one component of HABP. Amhara followed by 29% of public work beneficiaries receiving support from at least one component of OFSP (Gilligan et al., 2009).

Predictability of transfer is the other institutional factor expected to affect graduation from PSNP. Transfers can be considered to be predictable if PSNP participants have timely knowledge of their eligibility for the program and know what their entitlement is comprised of (how much of what resources and when). Secure (predictable) financing is fundamental if transfers are to reach the PSNP participants predictably, but is also necessary to enable better planning, investment in institutional arrangement and implementation. Predictability is considered important as it better enables participating households to plan on the basis of their knowledge concerning transfer and to manage risk. It is hoped that predictability of transfers can act as a form of income insurance for risk averse poor households, and give them the confidence to make investments in their future(Save the children UK, 2008).

The study conducted by Fekadu and Mberengwa (2009), in SNNPR confirms that the unpredictable nature of PSNP transfer affects the livelihood of beneficiaries because the payment was not transferred during better grain markets. The transfer was given during months of little grain in the market mainly of September and October. Even if there is grain at that time it is difficult to purchase because of its expensiveness coincided with “Hungry season” – a period of chronic food shortage in most parts of the country. Generally, they conclude the transfer is not demand driven and such kind of problems should be solved by the concerned bodies in order to enhance graduation.

Slater et al. (2006), finds propose that targeting mechanism affect household’s graduation from productive safety net program. The PSNP implementation manual states each beneficiary household need to receive full family targeting. However, according to sharp et al (2006), in practice the there is dilution of transfer in all regions. This affects the graduation of households from PSNP because the transfer distributed to households with smallest amount and affect the ambition of households to be food self sufficient and dampen the positive effect of OFSP and PSNP. The common form of dilution is cutting the family size which follow inclusion family members who have the able bodied and neglecting those members unable to participate in public works.

### **2.8.3. Graduation and Occurrence of natural calamities**

Bene et al. (2012), study indicates drought as the main natural shock affected PSNP. From the four regions (Tigray, Amhara, Oromiya and SNNPR) 57% of the clients reports that they are forced to loss some assets and food gap due to subsequent drought. Loss of agricultural crops was the second natural factor affected households during their stay in PSNP which make 36% of beneficiaries vulnerable. Next was froze which affect the production of crops and other cash crops. 22 of the beneficiaries affected by natural calamities induced by fresh flood is other exogenous factor included under natural factors hampering beneficiaries and their graduation. Finally serious illness, death of relatives and family splitting affected more than 32 percent of the beneficiaries.

Devereux and Sabates –Wheeler (2011), on their study on transforming livelihoods for resilient future in Bangladesh, Rwanda and Ethiopia tries to identify the main factors enabling and constraining graduation by dividing to program specific, market specific, beneficiary specific and environment specific enablers and constrainers. Consequently, in appropriate bench mark, lack of complementary programs and partial family targeting are the major program specific constrainers. In addition to this, the study analyzes price change and lack of market for goods, labor and credit as market specific constrainers. Lack of desire to graduate, initial household asset and business know how are the beneficiary enablers and constrainers of graduation. Finally the study also considers natural shocks as the environment specific constrainer. Thus, solving the constrainers of graduation in this study considered as enablers to graduate from the program.

Similarly, Hashemi and Montesquieu (2011), assess the factors affecting graduation in the third world countries of Africa, Latin America and Asia. Their finding indicates absence of market (for selling primary products and buying agricultural inputs), lack of physical infrastructure and macro economic shocks are the main hampering factors of beneficiary graduation. On the other hand, diversified income source, asset ownership, improved housing and access to credit are the enabling factors and indicators of graduation from social protection programs. Furthermore, Chirwa and Matia (2011), adds participation in labor market, remittance; male headed households and market access as the main enablers of

graduation on his study in Malawi. This study differs from the rest of papers that remittance has been figured as determinant factor for graduation.

The study by Arega (2012), using binary logistic model reveals non farm income, total production, total livestock, kilo calorie intake, per capital income and geographical location as the main factors determining household graduation from the PSNP. In addition to this, being other variables constant, increment in total production by one unit increase the probability of graduation from PSNP by a factor of 1.59( $P < 0.05$ ). Moreover, one unit increase in total livestock increases the probability of the odds ratio to graduate from program increases by a factor of 1.15 ( $P < 0.01$ ). Additionally, an increase in the participation of nonfarm activities by one unit the odds ration of being graduation from PSNP increases by a factor of 0.312. However, in this study household size, expenditure, access to credit and off-farm income are not a significant factors of graduation from the PSNP which differ from the previous studies in which access to credit is the main enabling factor for graduation. Frankenberger and Sutter (2007) also add land, livestock and some productive equipment as indicator of graduation from productive safety net program.

Additionally, Yibrah(2013), on his study on determinant of Graduation from productive safety net program using binary logistic regression identifies irrigable land, program span, livestock holding, credit access, male adult, family size, literacy, follow up, saving experience and petty trading as the main significant factors in PSNP graduation. Hence, the regression analysis indicates access to irrigable land and graduation positively correlated. In addition to this, male households have the likelihood to graduate early with 0.371 marginal effects than female households. Moreover, households with saving experience were graduated sooner than beneficiaries with low saving habit by 0.42 marginal effects. Additionally, graduation correlates positively with integrated agricultural packages i.e. beneficiaries with access to agricultural package have the probability of graduating with 0.53 increments in marginal effect than non participants in the package. He also shows educated beneficiaries more likely to graduate than the illiterate. In addition to his, graduation decreases with households having large family size i.e. each additional unproductive member of the household decrease the probability to graduate by 5 percent level of significance. Furthermore, households who participated in petty trading and own livestock holding have

the probability to graduate reflected in the mean significance difference of 5 and 1 percent respectively among graduates and non-graduates. However, this study difference from the above study in which total production and land holding are insignificant factors and include program span , male adult and literacy over looked by other researchers.

Apart from the above studies, Sabates-Wheeler et al. (2012), suggest that their investigation on enablers and constrainers of graduation in Tigray and Oromia regions describes, graduated households were asked if they had been ready to graduate during their time of graduation 56.8 in Oromiya and 42.5 in Tigray reported their unwillingness to graduate which indicate high degree of dependency syndrome. Additionally there is low confidence among current beneficiaries (32.9 percent of the sample households in Tigray and 46.9 percent in Oromiya have no confidence to graduate from the PSNP). The reason for high dependency syndrome among the beneficiaries' households is fear of recurrent drought and limited opportunities to access easily after graduation. Furthermore, partial family targeting (only 20 percent of households in Tigray and 17% in Oromiya receive full transfer), delay of transfer (33.8 percent in Oromiya and 22.5 percent in Tigray report delay in transfer), low amount of transfers, cash transfer instead of food, lack of access to agricultural inputs, in adequate loan size, lack of complementary programs and recurrent drought are among factors hampering graduation from PSNP. On the other hand credit from other food security program, extension support from the DA's and district experts, skills training from the government and NGO's, large land size, access to irrigation facilities and availability of adequate family labor enable beneficiary households to Graduate from PSNP. The findings of this study are almost similar with the study conducted in Bnageladesh, Kenya and Ethiopia in 2011. However, this study failed to include predictability of transfer in its analysis as the main factor hampering graduation.

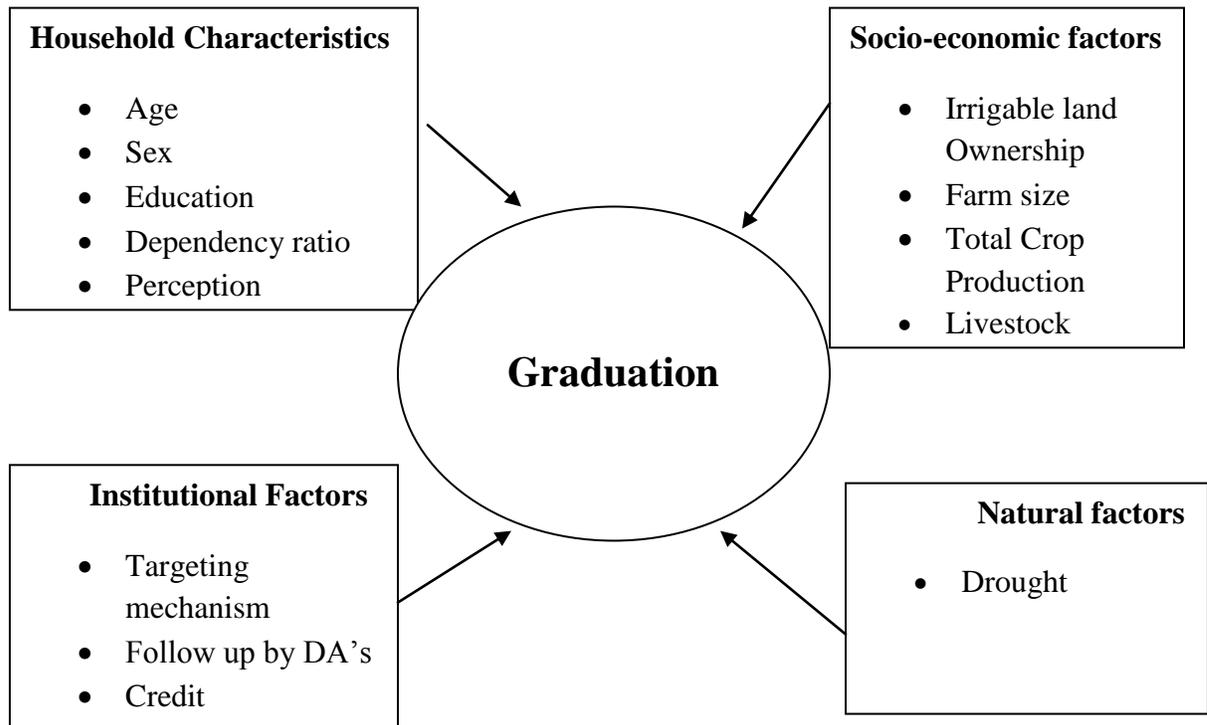
Moreover, Berhane et al. (2013), study suggest that the main incentive and disincentives of graduation from PSNP in 10 beneficiary regions in Ethiopia through Cascading approach. Pride in graduation (perception), access to agricultural inputs, external livelihood options and district level incentives are the main positive determinant for graduation. Contrary to his, dependency, lack of access to irrigation, lack of agricultural technology, lack of Kind transfer, low initial asset, price fluctuation and natural shocks (mainly drought) are examined

as disincentives for graduation from PSNP. The new finding in this study is kind transfer like oxen and cow are considered as enablers for graduation from PSNP. Moreover, the study Barn et al. (2010), reflects the same finding similar with Berhane et al. (2013), the new finding in this study is that encouragement by model farmers was considered as incentive to graduation and budget shortage. Lack of non farm income, afraid to take credit, risk prone environment and lack of confidence are considered as disincentives for graduation.

## 2.9. Conceptual Framework of the study

The dependent variable of this study is graduation from productive safety net program and expected to be influenced by independent variables which can be expressed in terms of household characteristics, socio economic, institutional and natural factors. As a result, to understand the concept of graduation and the vision of graduation the student researcher believe the following conceptual framework will give a good clue to the study.

**Figure 2.1 Conceptual Framework of the Study**



Source: Own draw, 2014

A number of factors influence household's path to state of food self sufficiency. As shown in figure 2.1. The factors are classified in to four dimensions namely household characteristics, socio-economic factors, institutional factors and natural factors. This shows that the household's likelihood for graduation depends on the household's own efforts, complementary programs, their initial resource base and their vulnerability to natural shocks. At the same time, potential support through tailored products, financial literacy and saving facilities expect to provide. As a result, beneficiaries can protect (stabilize) their assets which facilitate the way out from poverty. Thus, when households have the potential to incur costs

of extension service, access to complementary investment (if available), the economic base of households become sustainable and enable them to be food self sufficient.

As household's age increases their experience on farming and out of farm expect to increase the likelihood of self reliant and graduate early more than the younger beneficiaries. Likewise, male households have the likelihood of participating in other income generating activities and leave the program early. Education is the other household characteristics expected to determine household's path to become food self sufficient. Thus, educated beneficiaries develop culture of off farm participation, developing business plan, use modern seeds and fertilizer; this facilitates their probability to graduate from PSNP. Dependency ratio is the other factor negatively affect path to graduation negatively because large number of dependents limit the household's asset accumulation ambition. Household's initial resource base particularly size of farm size and irrigable land ownership determines their performance in graduating from the program since clients with high land size and beneficiaries having irrigable land are the clear favorites to become food self sufficient than the households with small land size and lack access to irrigation. Moreover, beneficiaries ambition of graduation is coincided with their efforts to accumulate assets particularly livestock and increment of annual total crop production.

Moreover, the household's own effort need to support by PSNP and non PSNP projects including credit, follow up by development agents and targeting mechanism. Beneficiaries with access to credit, development agents close follow up and recipient of full family targeting graduate sooner than the participants lack the access. Furthermore, drought prone households struggle to become food self sufficient and leave the intervention. To conclude the above four dimensions of factors determine beneficiaries food self sufficiency.

## CHAPTER THREE: RESEARCH METHODOLOGY

### 3.1. Site Selection and Description of the Study Area

This study was conducted at Emba Alaje district, among the nine of districts of southern zone of Tigray regional state. The student researcher selected the study area because of his prior knowledge and familiarity in the area. There is low level of graduation in the district not only in regional level but the district has low achievement even in zonal level (TRARDO, 2013). In addition to this, the plan and achievement of graduation are not compatible as shown in table 3.1. Therefore, the student researcher selected the study area to identify the factors affecting PSNP graduation.

**Table 3.1 Comparison of Graduation Plan and Achievement in the study area**

Year	Plan	%	Achievement	%
2010	254	100	108	42.51
2011	795	100	602	75.72
2012	2729	100	1139	41.73
2013	1324	100	1069	80.66
<b>Total</b>	<b>5102</b>	<b>100</b>	<b>2918</b>	<b>57.19</b>

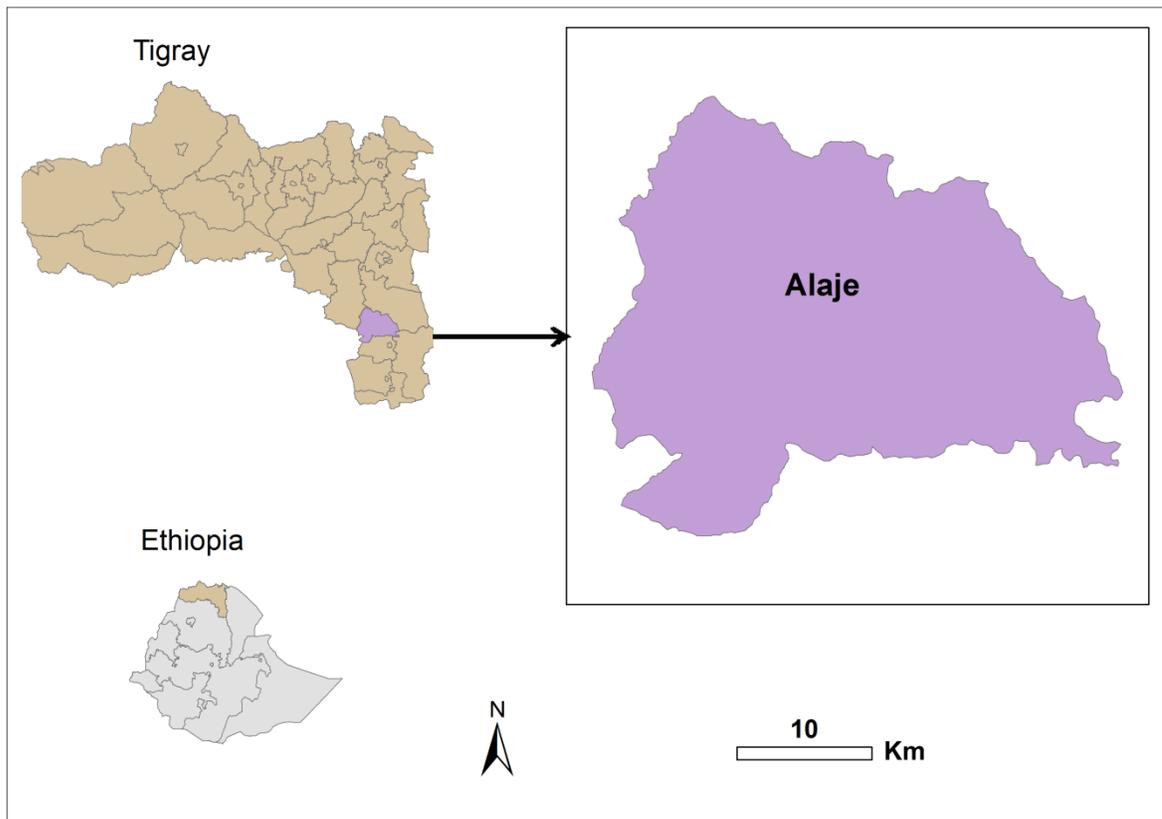
Source: WARDO, 2014

Emba Alaje is located about 90km far from Mekelle, the capital city of Tigray Regional National State. Geographically, Emba Alaje district is located 13°00'North latitude and 39°20'East and longitude. The district is bordered with south eastern in the north, Endamokoni in south, Raya Azebo in the south east and Amhara region in south west. The district covers a total land area of 1677 square kilometer (WARDO, 2009).

Emba Alaje is among one of the highlands of the country having an average altitude of 2400 m.a.s.l. The district is one of the densely populated areas and thus, small land-holding similar to most highlands of Ethiopia. According to the WARDO the area lies within three agro ecological zones including highland( 72%) ,mid latitude ( 21%) ,and lowland ( 7%) . The district has bimodal rain fall pattern, summer is the main rainy season with its peak in July

(June to August) and short rain season from February to April. Moreover, rainfall has almost the same coverage in the districts/sub-districts with an average of 380 mm annually. The maximum temperature ranges from 24 degrees Celsius to 36 degrees Celsius, while the minimum temperature ranges from -6 degrees Celsius on the peaks of Emba Alage mountain (the second highest mountain in Tigray with an altitude of 3956 m.a.s.l.) to 13 degrees Celsius (WARDO, 2009&NMA (n.d.)).

Figure 3.1: Location of the study area.



Source: MU GIS LAB, 2014

According to the CSA (2007), the total number of population of Emba Alage district is 107,972, from these 52,844 were males and 55,128 were females. In addition to this, the report showed that there are about 24,784 households with an average family size of 4.36. Furthermore, 98.18% of the woreda population is Tigray ethnic group; 1.4% constitutes the Agaw Kamyir ethnic group, and other ethnic groups make up 0.42% of the population. In

addition to his, only 10.46 % of the population are considered as literate. Meanwhile, 99.68% of the population follows Ethiopian Orthodox Christianity as their religion. Agriculture is the most dominant means of livelihood of the population of the district. There are also a considerable number of people engaged in selling livestock, petty trading, livestock products and firewood selling. The main crops grown include Wheat and teff where Wheat is the dominant crop.

## **3.2. Research Strategy and Design**

### **3.2.1. Research strategy**

The study employed combination of quantitative and qualitative approaches. These days mixed method is considered as a tool to triangulate the result of single approach through multiple methods (Johnston, 2010). Therefore, the researcher adopted mixed method in order to make the study more reliable through triangulation, in order to obtain data from different sources, harness diverse ideas about the same issue and assist to cross checks the results. Thus, it increase the validity, reliability of the finding and eases data collection .The qualitative approach is more appropriate for understanding process questions, understanding the “how’s” and “whys” regarding what is going on in practice in relation to implementation of PSNP graduation and perception of beneficiaries towards PSNP graduation. Moreover, the quantitative approach used to identify factors affecting household graduation from productive safety net program. Generally, second, third fourth and fifth objectives are analyzed using both qualitative and quantitative approach while the first and the last objective addressed using qualitative approach.

### **3.2.2. Research design**

As part of the study to address the stated objectives a cross sectional household survey was used since Cross-sectional survey enables to effectively manage and collect the data collection. According to LeUnes(2002), Survey study is preferable to undertake research employing large numbers of people or respondents questions their perception, characteristics and opinions towards a specific issue. Triangulation has been employed for it helps to

increase the reliability of the results by comparing the data obtained from one source with the other sources

### **3.3. Data Type and Sources**

The study employed both quantitative and qualitative types of data. The quantitative data used to gather information related to factors determining household level graduation from productive safety net program using semi-structured questionnaire. Additionally, the qualitative employed to get reliable information about the perception of the beneficiaries towards PSNP graduation and assess PSNP graduation implementation.

#### **3.3.1. Primary Data Sources**

To achieve the objectives of the study, primary data sources were used to collect first hand information. The sources of primary data are PSNP graduated and current beneficiary household heads in the study district from questionnaire survey of 246 households. Furthermore, key informant interviewee including WFSTF coordinator, Woreda cabinet representative and WARDO department head and focus group discussion including development agents, elders, appeal committee and KFSTF are also part of the primary data.

#### **3.3.2. Secondary Data Sources**

To enrich the cross sectional household level survey of the primary data the researcher also applied secondary data that collected from published and unpublished documents of the program office, working papers, regular and statistical reports of the MoARD, CSA, MoFED, Disaster Prevention and Preparedness commission, and PSNP graduation reports were also among the sources for secondary data.

### **3.4. Sample and Sampling Procedure**

#### **3.4.1. Target population**

The study area consists of 21 kebele's with a total population of 107972. There are 5387 public work beneficiaries in the study district. Moreover, all kebele's are benefiting from the productive safety net program. Taking these kebelles from the whole district can effectively

represent the study area. Therefore, the target populations of this study are PSNP public work beneficiary households.

### **3.4.2. Sample size**

To determine the sample size of the study area the researcher used Yamane's formula (1977) (cited in Israel, 1992), with 95 confidence levels. The reason for using formula is because this kind of formula is valid for survey researchers which compose large population. Moreover, the population under investigation is homogenous in its socio-economic and geographic context and the formula enables to get manageable sample size.

$$n = \frac{N}{1 + N(e)^2} = n = \frac{2130}{1 + 2130(0.06)^2} = 246$$

n= sample size

N= total population of the sample

e= acceptable error in social science.

### **3.4.3. Sampling Design and Sampling Frame**

Household is the unit of analysis in this study, in which, household heads were contacted to fill up the questionnaire. The study conducted using systematic random sampling of probability sampling technique. Systematic random sampling is a probability sampling technique in which sample respondents are selected from a list and all subjects have equal probability of selection. To select the household's respondents through systematic random sampling, the first step was identification of non- graduated and graduated households from the list in each kebele. Thus, the lists of household respondents were the frame of the study.

### **3.4.4. Sampling Procedure**

The study undertakes multi-stage sampling technique. The study district selected purposefully based on the researcher's prior knowledge of the area because there is low level of graduation and there are questions raised regarding the implementation of graduation among household

clients. Similarly, three rural kebele's were selected purposefully based on their number of beneficiaries because in the district the kebele's with high number of beneficiaries have high number of graduated households and are long benefited from the program which helps to analyze the factors effectively and well understand the implementation process. Totally there are 1105 graduated households starting from the first year of graduation (2010) up to 2013 in the three selected kebeles. After that, PSNP graduated and non-graduated households identified from the household list available at each kebele's and quota sampling was employed to distribute the questionnaire among the sub districts. Moreover, two villages selected using stratified random sampling technique. Finally, systematic random sampling was employed to select a specific household in each village because the population is relatively similar in socio-economic, livelihood and geographical location. Following this procedure, 246 households (127 graduated and 119 current beneficiary households) selected from the three kebele's.

**Table 3.1: Quota sampling for each selected kebele**

No	Kebelle	Population	NGHH's	GGHH's	Sample size for NGHH's	Sample GGHH's	Total Sample
1	Amedeweha	7788	496	548	57	63	120
2	Waerab	7730	169	332	20	38	58
3	Kilma	7938	360	225	42	26	68
	Total	23556	1025	1105	119	127	246

Source: WARDO (2012) and Own computation, (2014). N.B: NGHH's: non graduated households', GGHH's: Graduated households

### 3.5. Data Collection Instruments and Field Work

#### 3.5.1. Data Collection Instruments

**Questionnaire:** This method employed to cover three kebelles that consists of 2130 graduated and non-graduated household heads. To collect data, semis structured questionnaires (both open ended and close ended questions) developed in English language and translated in to Tigrigna because Tigrigna language is the only means of communication for the household heads in the study area. Question related to the determinant factors of

PSNP graduation and process of implementation of PSNP graduation and perception of beneficiaries were part of the questionnaire. The questionnaire was pre tested and modified before the execution of the survey. Three (3) experienced enumerators recruited based on their proficiency in the local language and then train on the data collection techniques and on the content of questionnaire by the student researcher. The questionnaire was administered by the enumerators.

**Key informant Interview:** Key informant interview at district undertaken with officials to assess the implementation of PSNP graduation in the district. Open ended questionnaire were prepared for the key informants. The interview was conducted ones with each interview. The respondents were district council representative, WFTSF, district agriculture and rural development office PSNP coordinator head apart from the household heads to enrich the quantitative results. The respondents selected purposefully because the graduation guidance note (2007), give the mandate of implementation of PSNP graduation for the above listed government bureaus.

**Focus Group Discussion/FGD:** This method used to check the reliability of the data collected through survey questionnaire and key informant interview. The number of participants in each focus group was 8 persons. One focused group discussion is conducted in each kebele two times. As a result development agents, elders, kebele administrators, women and youth representatives, community food security task force representative, kebele appeal committee, kebele council and representatives of the graduated and non-graduated households were participated in the discussion. The participants selected purposefully because they have active participation in PSNP issues.

### **3.6. Data Processing and Analysis**

Data processing is crucial part of the research operation including editing, coding, data entry, data cleaning and consistency checking and all activities are undertaken by the student researcher. Descriptive statistics like mean, frequency, percentages (cross tabulation) and econometric analysis was employed to study the determinant factors of graduation from PSNP presented using the STATA version 11. Furthermore, the statistical significance of the dummy/discrete variables was tested Using Chi-square test; t-test also employed for

continuous variables. In addition to his, textual analysis was used to analyze the FGD and key informant interview results.

### 3.6.1. Econometrics model specification

The study employed logistic regression model specifically binary logistic regression which is a non-linear regression model specifically designed for binary response of a dependent variable system. It is non-linear model that can be *linearized* using appropriate transformations. It is called ‘‘binary logistic regression model’’ when the dependent variable is expressed in two categories and called ‘‘multiple logistic regression model’’ when more than two categories (Gujarati, 2004). Binary logistic regression model was employed to address the likelihood of households’ PSNP graduation due largely to the binary nature of dependent variable, graduation; that can be expressed as yes or no responses.

Logistic regression model is an alternative to discriminate analysis and cross tables when certain assumptions (such as presence of normality and common co variance) cannot be obtained. When the dependent variable is a discrete one consisting of, 0 and 1, or more levels, logistic regression model can be properly used. In addition, mathematical elasticity and simplicity of interpretations increases the popularity of the model (Tathdil, 2002).

Binary logistic regression model was employed for this study, where Y is a graduation from PSNP and independent variables are depicted by X’s. In order to explain the model, the following logistic distribution function will be used (Wooldridge, 2002)

$$P_i = \Pr(Y = 1/X_i) = \frac{1}{1 + e^{-(\beta_1 + \beta_2 X_i)}} \quad (1)$$

In the logistic distribution,  $P_i$  is the dependent variable,  $X_i$  is the data,  $i$ , the possibility of response by an individual (possibility of having 1 and 0 values by  $i^{\text{th}}$  individual). When  $\beta_1 + \beta_2 X_i$  in equation 2 is obtained.

$$P_i = \frac{1}{1 + e^{-z_i}} \quad (2)$$

$Z_i$  is between  $-\infty$  and  $+\infty$ , and  $P_i$  is between 1 and 0. When  $P_i$  shows the possibility of graduating from PSNP, the possibility not graduating from PSNP is  $1 - P_i$  (Harrel, 2001). Then the possibility of not graduating can be explained as in equation 3 as follows:

$$1 - P_i = \frac{1}{1 + e^{Z_i}} \quad (3)$$

Equation 4 is obtained by dividing the graduated by non graduates:

$$\frac{P_i}{1 - P_i} = \frac{1 + e^{Z_i}}{1 + e^{-Z_i}} = e^{Z_i} \quad (4)$$

When the natural logarithm of both sides of the equation is written, Equation 1 is obtained:

$$L_i = \ln\left(\frac{P_i}{1 - P_i}\right) = Z_i = \beta_1 + \beta_2 X_i \quad (5)$$

Thus, non-linear logistic regression model is liberalized based on both its parameters and variables. ‘L’ is called ‘logit’ and models such as this called ‘logit models’ (Gujarati, 1995, 2004). When there are more than one independent variable, (X<sub>1</sub>, X<sub>2</sub>..... X<sub>K</sub>), binary and logistic models apply. In these situations, equation 1 is used for proper transformations:

$$P_i = \Pr\left(Y = \frac{1}{X_i}\right) = \frac{1}{1 + e^{-(\beta_1 + \beta_2 X_1 + \beta_3 X_2 + \dots + \beta_k X_k)}} \quad (6)$$

In logistic regression models involving a binary code, categorical dependent variable has the following assumptions (Agresti, 1996 & Tuzunturk, 2007):

- i) Conditional mean of logistic regression has a value between 0 and 1
- ii) If the data is X, the possibility of Y’s being 1 is P<sub>i</sub>, that is,  $E(Y = 1 | X_1, \dots, X_k) = P_i$
- iii) N number of observation about dependent variable are statistically independent
- iv) Defining variables are independent of each other

$$Z_i = \beta_0 + \beta_i X_i + U_i \dots \dots \dots (7)$$

Where Z<sub>i</sub> = the dependent variable (Graduation)

X<sub>i</sub> = a vector of explanatory variables

β<sub>i</sub> = a vector of estimated coefficient of the explanatory variables (parameters)

u<sub>i</sub> = disturbance term

$$Z_i = (\beta_0 + \beta_1 \text{CREDIT} + \beta_2 \text{Education} + \beta_3 \text{IRRILAND} + \beta_4 \text{SEX} + \beta_5 \text{FOLLOW UP} + \beta_6 \text{AGE} + \beta_7 \text{Dependency ratio} + \beta_8 \text{TLU} + \beta_9 \text{TARGMECH} + \beta_{10} \text{FARM SIZE} + \beta_{11} \text{TOTCROPR0} + \beta_{12} \text{Drought} . \text{ Where,}$$

CREDIT= Access to Credit

Education= Education of head in school years

IRRILAND= Ownership of irrigable land

SEX=Sex of households

FOLLOWUP=Follow Up by development agents

AGE= Age of household

Dependency ratio= dependency ratio

TLU= livestock ownership

TARMECH= Targeting Mechanism

Farm size= Land size

TOTCROPRO= annual total crop production

Drought=Drought

### **3.7. Definition of variables and hypothesis**

#### **3.7.1. Dependent variable**

The dependent variable in this study is graduation from productive safety net program at household level. This dependent variable is designed to measure the determinants of PSNP graduation in the study area. It is represented by 1 if households are graduated, and 0 otherwise.

### **3.7.2. Definition of independent variables and hypothesized relations**

The following 12 independent variables are hypothesized to determine graduation from productive safety net program.

**SEX of household (SEX):** Sex of household head is dummy variable (1 = male, 0= female)). According to Chirwa et al (2011, the likelihood of graduation of male headed households is much better and sooner than their counter parts.

**Age of Household (AGE):** age is a continuous explanatory variable. As age of household increases, it is assumed that beneficiary could acquire more knowledge and experience. On the other hand other study insists that as age increase the efficiency or productivity of households decrease. Therefore, its expected sign in affecting graduation cannot be determined in prior.

**Dependency Ratio (Dependency ratio):** is continuous variable and defined as ratio of dependents to independents or active labor force. It is hypothesized that as the number of dependents increases the likelihood of graduation will decrease.

**Education (Education):** It is a continuous variable defined as number of years of formal education. It is hypothesized that Households with better enrolment will have more likelihood to graduate.

**Farm size (FARMSIZE):** Refers to the size of cultivated land and is a continuous variable measured in hectare. Frankenberger and Sutter (2007) illustrates households with large farm size have higher probability of graduation.

**Livestock ownership (TLU):** it is a continuous variable and measured in TLU (tropical livestock unit). Household's livestock ownership after PSNP targeting (from 2005-2013) will

considered in this study, because the program started in 2005. According to Arega (2012) and Frankenberger and Sutter (2007), Household heads that have more livestock have the likelihood to graduate from PSNP.

**Irrigable land (IRRILAND):** the potential of households to irrigate their land and is dummy variable (1= households with access to irrigation land, 0=otherwise). It is expected that beneficiaries with irrigable land have more likelihood to graduate. Berhane et al (2013) finds access to irrigation as significant factor affecting graduation i.e. household with access to irrigation graduate sooner.

**Access to credit (Credit):** the likelihood of getting access to credit service and it is dummy variable (1=households with access to credit, 0 = otherwise). According to Hashemi and Montesquieu (2011) and Devereux and Sabates (2011) beneficiaries with access to credit have more likelihood of graduating.

**Targeting mechanism (TARMECH):** Whether all household members are benefiting from PSNP and is dummy variable (1 = full family targeting, 0= otherwise). It is expected that households with partial family targeting have low likelihood of graduation and vice versa.

**Total Annual Crop Production (TOTACROPRO):** is continuous variable and measured the total amount of production in quintals annually. It is hypothesized that households with high production will have higher probability of graduation.

**Follow Up by Development Agents (Follow up):** follow up is dummy variable (1= for households with access to follow up by DAs, 0=otherwise). Devereux and Sabates(2011) indicates follow up by development agents enhance the likelihood of graduation from PSNP.

**Natural calamities (Drought):** refers to occurrence of natural calamities particularly of drought. It is dummy variable (1= if natural calamities occurs, 0=otherwise). It is hypothesized that households vulnerable to drought will have low likelihood of graduation.

## **CHAPTER FOUR: RESULTS AND DISCUSSIONS**

### **4.1. Introduction**

This chapter deals with the presentation and analysis of the data collected as per the purpose and objectives of the study. In order to have relevant information about Productive safety net program, in particular determinant factors of graduation of households from the program, its implementation and Perception of households towards graduation, questionnaire, key informant interview, focus group discussion and other documents are used as data sources. The analysis was conducted using 235 questionnaires because 11 respondents refused to give response. The chapter is divided in to two subsections. The first subsection provides the characteristics of sample households and their perception on graduation from Productive safety net program. In addition to this, the section will also analyze the practical implementation of beneficiaries' graduation from the program in the area under investigation. The second subsection discusses the factors determining household level graduation from PSNP using econometric estimation results.

### **4.2. Description of Household's Demographic Characteristics**

Male headed households are more likely to get information about new technologies and undertake risky business than female headed households (Asfaw & Admassie, 2004). The survey result in table 4.1 below shows, 55.32 % of the respondents are male household heads while 44.68% are female headed households. Besides, 79(60.77%) of graduated households are male headed which indicate male headed beneficiaries graduate sooner than their female counter parts due to the fact that male headed households might have the capability to engage in other source of income which enable them enhancing their income. The chi-square result shows sex was statistically significant at 5 percent significance level. Therefore, this study indicates sex difference of the respondents influence graduation of beneficiaries from PSNP. This implies male headed households engage in other income generating activities while female are limited to home based activities. The study by Wilbert and Chimayco(2011), is in conformity with the finding of the study that, female heads households struggle to leave the program in relation to male headed clients because they have enormous responsibilities in

their family and are vulnerable to discrimination in off farm activities. Similarly, the study by Chirwa et al (2011, indicate the likelihood of graduation increases whether household head is man and male headed households graduate sooner.

**Table 4.1: Sex \* Dependency ratio \* Education \* Age \* Cross Tabulation**

Pre-Intervention		Non-Graduated		Graduated		Total		X <sup>2</sup> /T-test
	Labels	Freq	%	Freq	%	Freq	%	
Sex	Male	51	43.59	79	66.95	130	55.32	12.96**
	Female	66	56.41	39	33.05	105	44.68	
	Total	117	100	118	100	235	100	
Dependency ratio	0	7	5.98	12	10.16	19	8.09	0.095***
	< 0.5	12	10.25	24	20.33	36	15.32	
	0.6-1	70	59.83	59	50.00	129	54.80	
	>1	28	23.94	23	19.51	51	21.71	
	Total	117	100	117	100	235	100	
	Mean(STD)	1.15(0.795)		0.89(0.574)		1.02(0.703)		
Education	Illiterate	97	82.90	88	74.57	185	78.72	0.103
	1-4	15	12.83	14	20.33	29	16.59	
	5-8	5	4.27	6	5.10	11	4.69	
	Total	117	100	118	100	235	100	
	Mean(STD)	0.170(0.378)		0.212(0.410)		0.212(0.410)		
Age	25-35	25	21.27	23	19.49	48	20.43	0.000
	36-45	46	39.32	47	39.83	93	39.57	
	46-64	46	29.32	48	40.68	94	40.00	
	Total	117	100	118	100	235	100	
	Mean(STD)	43.9(9.400)		47.66(9.357)		45.87(9.21)		

Source: Field survey, 2014, N.B, Freq: Frequency, %: Percentage, x<sup>2</sup>: for sex (Dummy variable), T-test: for Age, Education and dependency ratio (Continuous variables)

Note: \*\*, P<0.05, \*\*\*, P<0.01

The average mean of dependency ratio of the two groups were 1.02 which shows there is low working population among the family of the respondents. The mean of dependency ratio for graduated households were 0.89 but for the current beneficiary the mean is even greater with 1.15 dependency ratio. Tables 4.1 above shows that, the dependency ratio of the respondents is very high which implies more than half members of the family were dependents. Moreover, the mean difference between the two groups was 0.26. As a result, the mean

average of dependency ratio was statistically significant at 1 percent significance level. The descriptive result also revealed, 83.77% of non-graduated households feed more than 0.6 ratios of dependants which show the current transfer from PSNP is devoted to family member's consumption only. There is a significant and negative correlation between dependency and the probability of graduating from PSNP

Higher level education is believed to be associated with access to information, improved technologies, better off farm income and higher productivity (Norris & Batie, 1987). Education is an important variable determining household food self sufficiency where educated households have a better chance of managing their farm through improved practices, competency, working efficiency and diversify their income. The descriptive result of table 4.1 above shows, 78.72% (185) of the household heads in this study found to be illiterate who unable to read and write. Graduated households have a mean of 0.254 while the non graduates belong to 0.170. Besides, the mean difference between the two groups was 0.084. The  $\chi^2$  shows there is no significant difference for distribution of illiterate and literate household heads of the two groups. Therefore, education has less power to influence graduation of households from PSNP in this study.

In this study as age of household increase, it is hypothesized that beneficiaries will acquire more knowledge and experience. Age is another demographic characteristics of households expected to determine households likelihood of graduation either positively or negatively. The combined mean of age of households was 44.2 as shown in table 4.1, mean ages of graduates was 47.66 while the current have a mean age square of 43.9. The mean difference of the two groups' was 3.76. The  $\chi^2$  result shows the distribution of age of the two groups was not statistically significant. The mean difference among graduated and current beneficiary were not significant in this study. More than 94 (40 %), of households found in the age group from 36-45 which have similar share between graduated and non-graduated beneficiaries. Moreover, 93(39.57), of households belong to age group of 46-64 with 46 non-graduated and 48 graduated households. In this study the age group of both graduated and non-graduated households is distributed almost equally under the three age groups.

### 4.3. Description of Socio-economic Characteristics of Household's

**Table 4.2: Respondents Irrigable Land Ownership**

Pre-Intervention		Non-Graduated		Graduated		Total		X <sup>2</sup>
	Labels	Freq.	%	Freq.	%	Freq.	%	
Irrigable land	Yes	8	17.84	58	49.16	66	28.08	52.08***
	No	109	82.16	60	50.84	169	71.92	
	Total	117	100	118	100	235	100	

Source: Author's Own computation, Note: \*\*\*, P<0.01

As shown in table 4.2 above, only 28.08% of the beneficiaries own irrigable land which indicates there is low access to irrigation in the study area. From these households with irrigable land 49.16% of them are graduated households. The x<sup>2</sup> shows, irrigable land affects graduation of beneficiaries positively and significantly at 1 percent significance level. Thus irrigable land is significant and is positively associated with the probability of graduating from PSNP.

**Table 4.3: Descriptive Statistics of Total Crop Production, TLU and Farm size**

Pre-Intervention	Total	Non-Graduated	Graduated	Mean	T-Value
	N (235)	N (117)	N (118)	Difference	
Variables	Mean (STD)	Mean (STD)	Mean (STD)	Mean (STD)	
TOTCROPRO	3.41(2.116)	2.78(1.692)	4.04(2.305)	1.26(0.613)	0.050***
TLU	0.521(0.857)	0.422(0.657)	0.619(1.010)	0.098(0.353)	0.003
FARM SIZE	0.40(0.218)	0.35(0.185)	0.44(0.236)	0.09(0.051)	0.000

Source: Own Computation Based on Survey, N.B: N: Number of respondents, STD: Standard deviation: Note: '\*\*\*', significant at 1 percent, respectively and NS= Not Significant

Households asked to list the number and type of livestock they owned after becoming PSNP beneficiary. Livestock ownership is one of the criteria's for household graduation from PSNP (Anderson et al., 2008). The survey result in table 4.3 above shows that, the mean of livestock holding by the PSNP participants were 0.521 which is less than owning one ox with

in a family level. The mean of livestock ownership for the graduated households were 0.619 while the current beneficiary entitled to mean of 0.422 which is lower in relation to the households who leave the intervention. As discussed in the implementation section livestock ownership was the leading measurement for graduating households from the program and it is expected that those households with high total livestock unit will graduate sooner.

Farm size is one of the factors influencing household graduation from PSNP. The descriptive result of table 4.3 above indicates, the mean of cultivable land size of respondents were 0.4 hectare per household. The mean averages of land size for graduated households were 0.44 while for the current beneficiary the mean were 0.35. The mean difference between the graduated and non graduated households were 0.09 and  $\chi^2$  test result shows farm size has less power to influence graduation in this study which is insignificant. The smaller farm size of the households affects their livelihood through time.

#### 4.1. Description of Institutional and natural factors

**Table 4.4: Descriptive Analysis of Institutional and Natural Factors**

Follow Up	Labels	Non-Graduated		Graduated		Total		X <sup>2</sup>
		Freq	%	Freq	%	Freq	%	
	Yes	89	76.08	98	83.5	187	79.57	1.76
	No	28	23.92	20	16.5	48	20.43	
	Total	117	100	118	100	235	100	
TARMECH	Full Family	50	42.73	72	61.01	112	48.08	7.86***
	Partial family	67	57.27	46	38.99	113	51.92	
	Total	117	100	118	100	235	100	
Credit	Yes	87	74.35	108	91.53	195	82.98	12.25***
	No	30	25.65	10	8.47	40	17.02	
	Total	117	100	118	100	235	100	
Drought	Yes	92	78.63	73	61.86	165	70.21	7.89**
	No	25	21.37	45	38.14	70	29.79	
	Total	117	100	118	100	235	100	

Source: Author's Own computation, 2014, N.B: Freq: Frequency, %: Percentage

Note: \*\*, P<0.05, \*\*\*, P<0.01

The PSNP implementation manual (2010) indicates, all members of PSNP beneficiary household should receive full family transfer from PSNP irrespective of their contribution to public works. Therefore, this implies there should be full family targeting for PSNP clients in order to graduate on time. Targeting mechanism is one of the factors influencing graduation from PSNP. According to table 4.4 below, out of the respondents in this study only 112(48.08 %) of them are benefiting full family while the rest are forced to receive partial family transfer. More than 61.01% of graduated households are targeted with all family members but 42.73 of non-graduated households have receiving full family targeting. Targeting mechanism is significant at 1 % significance level. The  $\chi^2$  test result, revealed households targeting mechanism affects graduation at 1 percent significance level. Besides, the respondents also reports the main reason behind partial family targeting is lack of adult labor, dilution of transfer(distributing transfer to large amount of people by through partial family targeting), late birth and lack of clear governance of the program in local level.

The focused group discussion participant explains there is partial family targeting in their localities. In addition to this, they also point outs the targeting mechanism itself have problems which didn't implemented with detail assessment between the livelihood standard of the households in their sub-district.

The key informant interview participants insist partial family targeting is implemented in the early periods of PSNP for some households with larger family members and lack adult labor. However, after the second phase of the PSNP (2010-2014) there is no partial family targeting.

Contrary to the finding of the study, Berhane et al. (2013), indicate full family targeting is undergoing in the chronically food in secured districts benefiting from PSNP. However, report by Save the Children UK (2008), in line with this study Point outs partial family targeting and dilution of transfer as the main problems inhibiting household graduation from PSNP. The finding of this study shows there are problems in targeting of households and households with more adult labor are benefiting from the program and dilution of transfer is also affecting beneficiaries with the aim of distributing transfer for large amount transfer which diminish the amount transfer from PSNP.

Credit has high demand in the study area and is one of the determinant factors for households to graduate from PSNP and become food self sufficient. As table 4.4 describes, from the total respondents around 195(82.98%) of them have credit access. The descriptive analysis indicates that more than 91.53% of the graduated households have access to credit service which enables them to invest in difference income generating activities. This will in turn help the participants to become food self sufficient and graduate from PSNP. Access to credit affects graduation positively at 1 percent significance level. The main reasons for those households lack of access for loan have a poor record of paying of loan.

The finding of this study shows there is promising financial access to households which have its own role in graduating households from PSNP and the larger food security program. High interest rate, lack of collateral, low access to beneficiaries failed to repay former loan and failure of credit partners to repay the loan are among the problems insisted by the focus group discussion. The participants insist access to credit were the main source of livelihood and admires the government effort to in addressing credit access. Furthermore, lack of independent financial institution to manage the credit and saving efforts of households is also raised as a problem and the respondents calls for establishment of independent institution to reduce the interest rate, cost and time of beneficiaries.

Follow up for beneficiary households in PSNP is among the complementary programs under HABP assumed to facilitate household graduation from the program. Thus, follow up is one of the factors affecting household's graduation from PSNP. The summarized response of household survey in table 4.4 displays, majority of the program participants (79.57%) have access to follow up by development agents. This is among the promising achievements in program implementation. Households were asked to illustrate their meeting with development agents majority of the respondents reports the development agents are ready made to communicate with them and they also appreciate the motivation and efforts of the development agents to help on their farm and out of the farm.

The focused group discussion participants also explain among the HABP projects the follow up by development agents was implementing successfully. The respondents gives credit to the development agents relentless efforts to enhance households food self sufficiency.

Drought is one of the natural factors hampering household's graduation from PSNP. The summarized result of table 4.4 above shows, 70.21 % of the beneficiaries are vulnerable drought. Similarly, Gillingan et al. (2009), identify drought as the main constrainer of household graduation from PSNP. Chronically food insecure districts are targeted to PSNP because they are vulnerable to natural shocks. The data in table 4.5 below displays, the type of natural factors affecting PSNP clients. The result of the descriptive analysis shows, drought is prevalent in the rural areas covered in the survey because 64.85% of the participants are vulnerable to drought.

**Table 4.5.Natural calamities affecting beneficiaries**

Pre-Intervention	Labels	Freq.	%
Natural calamities	Drought	107	64.85
	Flood	47	28.49
	Froze	7	4.24
	Pest incursion	4	2.42
	Total	165	100

Source: Field Survey, 2014 Freq: Frequency, %: Percentage

Drought is the most widespread natural calamities affecting the beneficiaries together with flood, frost, and pest incursion and crop failure. Moreover, 12.12% the beneficiaries are vulnerable to flood. Additionally, few households are also susceptible to froze and pest incursion. Bene et al. (2012) strengths the finding of this study that, households are vulnerable to natural shocks especially to drought.

All focused group discussion participants said that occurrence of natural factors especially recurrent drought were affecting their livelihood. The respondents also indicates, flood, froze and pest incursion as the main natural shocks affecting their livelihood. In addition to his, they also stress the negative impact of high food price on their livelihood which has parallel destruction on their effort to graduate from PSNP. Besides, the occurrence of drought especially fluctuation of rainfall (later on and early off) is the repeated phenomena in the PSNP periods.

## 4.2. Perception of Households to graduation from PSNP

This section briefly summarizes households perception to graduation from PSNP, role of PSNP for their livelihood, their confidence to graduate from PSNP and food self sufficiency. Additionally, perception of beneficiaries towards implementation of graduation in their sub-district, comparison of graduated household's livelihood in relation to current beneficiaries, government investment to enhance graduation and appropriateness of asset based graduation were discussed.

**Table 4.6: Livelihood Condition of households without PSNP**

Pre-Intervention		Non-graduated		Graduated		Total	
	Labels	Freq	%	Freq	%	Freq	%
Living Standard without PSNP	Very good	4	3.42	8	6.78	12	5.11
	Good	5	4.21	6	5.08	11	9.79
	The same	44	37.61	44	37.29	88	37.45
	Worse	52	44.44	47	39.83	99	42.13
	Worst	12	10.26	13	11.02	25	10.64
	<b>Total</b>	<b>117</b>	<b>100</b>	<b>118</b>	<b>100</b>	<b>235</b>	<b>100</b>
	<b>Mean</b>		<b>3.53</b>		<b>3.43</b>		<b>3.48</b>

Source: Field survey, 2013 N.B: Freq, Frequency, %: Percentage

As part of the study the researcher tried to deal with livelihood of households without PSNP. As shown in table 4.6 above, 52.77 % (42.13 worse and 10.64% worst) of the households believe that the program was the rationale behind smooth consumption and without the program their livelihood is negatively affected. Therefore, the households indicate, PSNP protect their family's vulnerability to food gap and malnutrition.

On the other hand, 88(37.45 %) of the beneficiaries describe, their livelihood was in its status quo and there is no new development after their targeting in PSNP. When we compare both graduated and non graduated households, 54.7% (44.44% worse and 10.26% very worse) of non-graduated households believes that their livelihood is at risk when they are not chosen as beneficiary of PSNP. More than 50.85% (39.83 %worse, 10.02 % very worse) of the graduated surveyed households report that, as PSNP is positively changing their standard if they are unable to get the opportunity of from the intervention of the program. Generally,

more half of the program beneficiaries reports there is some improvement in their livelihood while around one third (1/3) of the respondents claims no change in their living as a result of intervention of PSNP. The finding of this study is in line with the similar findings of Barn et al. (2010), sharp et al. (2006) and Kataru (2011), that some of the households insist their livelihood has been changed positively after introduction of PSNP..

In contrast to the findings of the study, Tadele(2011), on his observation in Adamitilu and Meskan districts of central rift valley argues, PSNP has not brought significant positive effect. The finding of this study shows that the role of PSNP is limited to smooth consumption which failed to enhance asset accumulation. Therefore, this will lag the graduation since significance number of household's reflects weak role of PSNP for better livelihood and this will lead to review of the intervention.

**Table 4.7: Beneficiaries View on Graduated Households Food Self Sufficiency and their Confidence to Graduate from PSNP**

Pre-intervention		Non-graduated		Graduated		Total	
	Labels	Freq.	%	Freq.	%	Freq	%
Graduated households food self sufficiency	Strongly Agree	2	1.71	5	4.24	7	2.98
	Agree	10	5.12	23	19.49	33	14.04
	Neither	6	8.55	5	4.24	11	4.68
	Disagree	99	84.62	86	72.94	184	78.3
	Total	<b>117</b>	<b>100</b>	<b>118</b>	<b>100</b>	<b>235</b>	<b>100</b>
Confidence to leave the Intervention	Highly confident	10	8.55	15	12.71	25	10.64
	Confident	25	21.37	26	22.04	51	21.70
	no Confidence	82	70.08	77	65.25	159	67.66
	Total	<b>117</b>	<b>100</b>	<b>118</b>	<b>100</b>	<b>235</b>	<b>100</b>

*Source Field survey, 2014 N.B: Freq: Frequency, %: Percentage*

The graduation guidance note (2007), reveals before households graduate from PSNP program they must reach the threshold or need to check their food self sufficiency status. In the summarized survey result of table 4.7 above, the beneficiaries were asked to describe their view whether the graduated households are food self sufficient. More than 184 (78.3 %)

of the beneficiaries disagrees and argues, the graduated households are not food self sufficient and are victims of premature graduation. Likewise, 84.2% of non-graduated households illustrates the graduated households were not food self sufficient and have not the capacity to absorb shocks in the future. The survey data shows that, majority of the beneficiaries believes there is premature graduation. This kind of graduation contradicts with the program vision and objectives since most of the household's are expected to leave the program within the intended benchmark.

The data gained from the focus group discussion supports the data gained from survey method. The focus group discussion participants said that, even though PSNP helps the participants to feed their family and accumulate few assets, majority of the households are not graduated according to the graduation guidance note. Hence, the manual and the guidance are in favor of matured graduation and strong capacity to adapt shocks, the practice which is going on in our locality is not promising and satisfactory.

The key informant interview underlines the implementation process is according to the quota and plan of the region. The participants assert even though few households are graduated based on the implementation manual, majority of the graduated households leave the program through quota graduation. Therefore, the response from focused group discussion, Survey and key informant interview implies irrespective of the households food self sufficiency, the main concern in the study area is to graduate the participants at the given schedule. The finding indicates that, the evaluation of the officials and the donors on the implementation of the program is very low.

The response summarized in table 4.7 above shows that, more than 67.66% of the beneficiaries have no confidence to graduate from the program. Contrary to this, 33.34 % (21.70% confident and 10.64% highly confident) of the beneficiaries have confidence to leave the public work program. The participants describes that they are not matured enough to absorb shocks and have fears about their future. The result also implies that participants have an interest to receive PSNP transfer as long as possible which directly relates to the dependency syndrome and quota based graduation in the district which forces clients to leave the program soon before they become food self sufficient. Majority of the respondents lack the confidence to leave the program at intended time which will have its own impact on the

program implementation because the plan of MoARD(2010), is ambitious to graduate all beneficiaries at the end of 2014. The perception of households to stay in the program lags the graduation and affects the household's path to the broader food security program.

**Table 4.8: Satisfaction of Respondents to Implementation of Graduation and comparison of graduated households livelihood with current beneficiaries**

	Sub-District	Waereb		Amedeweha		Kilma		Total	
	Labels	Freq	%	Freq	%	Freq	%	Freq	%
Process of graduating households	Satisfied	18	30.57	50	44.86	43	66.24	11	47.23
	Neither	7	12.28	3	2.63	2	3.17	12	5.11
	Dissatisfied	32	56.14	61	53.51	27	29.68	92	47.66
	<b>Total</b>	<b>57</b>	<b>100</b>	<b>114</b>	<b>100</b>	<b>64</b>	<b>100</b>	<b>235</b>	<b>100</b>
Livelihood of graduated households in relation to non-graduated	Very good	7	19	11	20.34	3	13.04	21	17.80
	good	11	29.18	9	25.25	6	26.08	26	22.03
	The same	15	40.4	33	55.93	12	52.17	60	50.85
	Worse	4	10.8	5	8.48	2	8.7	11	9.3
	<b>Total</b>	<b>57</b>	<b>100</b>	<b>114</b>	<b>100</b>	<b>64</b>	<b>100</b>	<b>235</b>	<b>100</b>

Source: field survey, 2014 N.B: Freq: Frequency, %: Percentage

The process of making households food self sufficient needed to coincide with households access to irrigation, credit, extension packages fair and transparent graduation process. Table 4.8 above presents, 47.66% of households are disappointed with the process of graduating households. Participants particularly Households in Waereb and Amedeweha complain the ongoing process of implementation. The households point outs that the support from the complementary programs is not effective in supporting households to accumulate assets and become food self sufficient. On the other hand, 47.23 % of the participants report that the program implementation is satisfactory. Beneficiaries in Kilma sub-district are delighted in relation to other in which 43(66.43%) of them are in favor of the implementation process.

The focus group discussion members assure that the implementation process has short comings. The participants insists, low and exaggerated asset registration, lack of public participation, failure to include shocks and price fluctuation, lack of understanding about how and who should be graduate, lack of good governance and district level pressure to achieve

the intended goal are the main implementation problems affecting the ongoing process. In addition to this, the participants also complain high interest rate, low public participation in decision making, lack of access to irrigation and unpredictable transfer are few among the problems challenging households effort to leave the program.

However, the key informant interviewee, argues there is support for households before they graduate from the program especially credit, extension packages and access to agricultural inputs. The district DARDO is trying to help the households as much as possible. The WFSTF also raises high interest rate, dilution of transfer, and unpredictability of transfer as the main problems in the process of graduating households. According to the WFSTF, some of the problems are created due to budget limitation. Likewise, lack of independent institutions which forced the program to undertake by government systems and staffs also hampers the beneficiaries path to food self sufficiency.

White et al. (2013), underlies there are bottle necks in implementation of PSNP which is consistent with the finding of this study. The main challenges are establishment of clear indicators of food self sufficiency against future vulnerability and shocks; setting of reasonable benchmark for income or asset ownership in a situation when livelihood become unpredictable. Furthermore, data obtained from the respondents implies that the implementation process is not effective and fails to follow the implementation manuals. Thus, even though households are graduating according to the regional and district plans the beneficiaries illustrates the implementation process is going on without understanding the actual condition of households. In addition to this, graduated households are expected to be supported by other food security programs in the study area. However, the beneficiaries make it clear that without credit and follow up of development agents the other food security programs give priority to the transitory food in secured households. As a result, this affects household's probability to asset accumulation and other income generating activities. Contrary to the finding of this study, the assessment report of WB (2011), illustrates there is satisfactory implementation in graduating beneficiaries from the PSNP

The response summarized in table 4.8 above shows, views of graduated households to their livelihood in relation to current beneficiaries. Accordingly, 50.8% of the respondents report

that there is no significance difference among them and the non-graduated households and asserts their living standard remains the same with the current beneficiaries. However, 39.58% of them contend there is significant change in their livelihood and they are better off in relation to the current participants. Within the sub-district more than half of the respondents in Amedeweha and kilma (55.93% and 52.17% respectively) reply, their livelihood were the same in relation to current beneficiary'. However, significant number of clients in Wareb district (48.85%) reports, there is little positive change in their living when they compare themselves with the current beneficiaries. Therefore, it is clear from the survey result that majority of the household's graduation from the program remains controversial.

The study done by Berhane et al. (2011), shows there is significant difference among graduated and non-graduated clients of the PSNP because graduated household's accumulated assets more than the current beneficiaries. Likewise, Barn et al (2010), maintains majority of the graduated households report that they are better off than those continuing as PSNP participants because they are matured enough to absorb shock and feed their family for the next 12 months after program exit.

The focus group participants reflect a diverse view. Development Agents revealed the graduated households are food self sufficient and have better livelihood in relation to the current beneficiaries. Contrary to this, other participants suggest current beneficiaries have improved livelihood condition because still they are benefiting from the transfer which helps them to protect their assets. Therefore, graduated households are more vulnerable to natural and human made shocks than current beneficiaries.

The data gained from the two methods speculates that, there is no significant difference in food security situation among the graduated and current beneficiaries' households which directly related to lack of normal or legal graduation. This finding is in line with the study conducted by Sabates-Wheeler et al. (2012), and revealed that the graduated households report that they have the same livelihood with current beneficiaries. The finding of the study clearly shows, graduation is a matter of time not a state transformation to food self sufficient.

**Table 4.9: Respondents satisfaction to government effort to enhance graduation and their view on asset based graduation**

<b>Pre-intervention</b>		<b>Non-Gradated</b>		<b>Graduated</b>		<b>Total</b>			
	<b>Labels</b>	<b>Freq</b>	<b>%</b>	<b>Freq</b>	<b>%</b>	<b>Freq</b>		<b>%</b>	
Non-PSNP government efforts to enhance graduation	Satisfied	59	50.32	54	45.76	113		47.99	
	Neither	-	-	3	2.54	3		1.31	
	Dissatisfied	58	49.59	61	51.70	119		50.69	
	Total	117	100	118	100	235		100	
Relevance of asset based graduation	<b>Sub District</b>	<b>Waereb</b>		<b>Amedeweha</b>		<b>Kilma</b>		<b>Total</b>	
	Appropriate	39	68.42	82	71.93	38	59.37	159	67.66
	Neither	5	8.77	10	8.77	8	12.5	23	9.78
	Not Appropriate	13	22.8	22	19.3	18	28.12	53	22.56
	Total	57	100	114	100	64	100	235	100

*Source: field survey, 2014* N.B: Freq: frequency, %: percentage

The PSNP beneficiary households are expected to benefit from complementary programs including, extension and other income generating activities (Devereux et al., 2008). Table 4.9 above presents households view on governments non-PSNP support. In this study 119(50.69%) of the beneficiary households were displeased with the government efforts to upgrade the food self sufficiency of the PSNP clients. On the other hand, 47.99% of the respondents are cheerful with the efforts to upgrade graduation and glorifies the districts effort in constructing roads which help them to sell their perishable goods to the nearest market. More than half (50.32%) of the graduated households are happy with the government efforts to support the PSNP beneficiaries. Likewise, 47.99% of the non-graduated households were pleased with the state duty to positively change their living.

Oposing to this, 50.21% of graduated and 49.59% of non-graduated households claim the government effort to enhance graduation remains low because there is low effort in enabling households to own irrigable land even though the area has a potential of irrigation. According to the above figures in the table, it is possible to conclude that government is playing its role to enlarge the household's effort to be food self sufficient but the household's underlines the support is not enough. The study by Dicks (2012), found that there is

weakness in government role including, failure to link beneficiaries to agricultural projects limited source of finance and lack of effort to seek other methods of finance outside the current collaborators are the main draw backs of government in his finding. Contrary to this, Slater et al (2006), government role in enhancing graduation from PSNP is promising and become the reason behind food security of households in different parts of Ethiopia.

The focused group discussion participant's expresses, there is no special support to PSNP beneficiaries by government. In contrast, the district officials want all community level works to be undertaken by PSNP beneficiaries. In addition to this, the PSNP beneficiaries are obliged to adopt new agricultural technologies and fertilizer more than any other societies in the district. Thus, there is no special support to PSNP beneficiaries undertaken by government but there are community level supports to all residents in our sub-district. The response from the above data sources implies the government support is not enough to PSNP clients. This limits the household's access to different food security program outside PSNP and HABP which in turn lags beneficiary's graduation from the PSNP. Therefore, chronically food in secured household's access to different food security programs should be diversified for effective and matured graduation. Consequently, the household's probability for graduation and food security will enhance.

Majority of the beneficiaries (67.66%) were compatible with the criteria to graduate beneficiaries from PSNP as shown in table 4.9. Clients in Amedeweha kebele are more pleased with graduation criteria having 71.93 % of the households assure the appropriateness of the measurement. The respondents admits, asset is the only possible criteria for measuring households food self sufficiency more than any other indicators. However, 22.58% of beneficiaries lament the criteria's of graduating PSNP participants. The dissatisfaction of the criteria's was larger in kilma with 28.12% of the beneficiaries complain the ongoing measurements. The main reason behind their dissatisfaction were, failure of the criteria to consider total crop production, off farm income and tree holding which is one of the criteria's in other chronically food insecure districts of Ahiferom in Tigray and sayint in Amhara (Berhane et al., 2013). The beneficiaries in Amedeweha district especially disappointed in the asset based graduation because in their sub-district, PSNP beneficiaries are in favor of selling their assets and save their money in order to avoid early graduation. The study by

Arega(2012) , also analyzes households become reluctant to register their tangible assets affects the graduation process. However, in this study majority of the households ensure asset based graduation was appropriate.

### **4.3. Econometric Model Results**

This section describes the econometric analysis. The study aimed to examine the factors determining household level graduation from PSNP and depict the magnitude of the effect of these factors. 12 potential determinants were examined in this study namely, demographic factors (Age, Education, Sex and Dependency ratio) socio-economic, (irrigable land, Farm size, total crop production and TLU), institutional (follow up, credit and targeting mechanism) and natural factors (Drought). As indicated earlier the dependent variable in this model is binary whether the household was graduated from PSNP take a value of 1 and 0 otherwise. Stata version 11 computing soft ware was used for the estimation purpose. .

Before undertaking the economic estimation, different econometrics assumptions were tested using relevant techniques. First the presence of strong multicollinearity among the independent variables, power correlation has been tested that actually lets the researcher to drop variables that correlates highly (Appendix 1.2). Secondly, the inclusion of irrelevant variable in logit regression analysis was tested by linktest(Appendix 1.1). Thirdly, to control the hetroscedasticity problem among the explanatory variable, instead of Bresch Pagan test (hettest), robust standard error calculation of logit model has been employed (Appendix 2). According to the model result there is no serious multicollienraity among the variables. Normal logistic regression results are also in Appendix 3 and for interpretation of the results the marginal coefficient of the binary logistic regression was used. Marginal effect is the partial derivative of the event probability with respect to predictor of interest. A more direct measure is the change in graduation of households for unit change in the explanatory variables.

A logistic regression is used to determine the joint effect of different independent variables and to examine why some of the beneficiaries become food self sufficient soon and others lag behind. Table 4.10 presents, the estimated model using graduation as dependent variable and demographic, socio-economic, natural and institutional factors as explanatory variables.

Moreover, the estimation result shows that, 34% of variation in the predictor variable is explained by the variation in the independent variables

#### **4.3.1. Discussion on the Significant Explanatory Variables**

The estimated coefficient result of table 4.10 below shows that, seven explanatory variables affect households' PSNP graduation. Sex, Irrigable land ownership, total crop production, Credit Access, Targeting mechanism was positively and significantly influenced households graduation from PSNP while Dependency ratio and drought were found to have significant and negative influence on beneficiary's graduation from the program. Family size was dropped from the analysis because of its high correlation with dependency ratio and it's statistically insignificant but dependency ratio is statistically significant. As a result, the student researcher used dependency ratio rather than family size.

Sex of Household Head (SEXHH): sex of household is statistically significant and is positively correlated with the probability of graduating from PSNP. The model estimation result shows, likelihood of being food self sufficient is 19% high when the household head is male headed. Male's have the capability to participate in various income generating activities while female are disadvantageous because they are often limited to certain income earning activities. The percentage mean difference between male headed and female headed households is 0.234 which statistically significant at 5 percent significance level. The major constrains for female households delayed graduation were multiple burdens like child care, cooking food and other home tasks. The finding of this study found consistent with what had been found by Yibrah (2013) male headed households are more likely to graduate from PSNP in his study in eastern Tigray. Moreover, Chirwa and Matia (2011), indicates male households have had the potential to become food self sufficient earlier than females.

Dependency Ratio (DEPENDENCY): This variable is significant at 5 percent probability level. It has negative and significant relationship with graduation of households from PSNP. The negative relation indicates that households who have high dependency ratio have low probability of graduating from PSNP. The likelihood of graduating from the program decreases by 0.204 marginal effects when the number of dependents increases by one unit other variables held constant in the model.

**Table 4.10: Binary Logistic Regression Estimates for program graduation dependent variable: Whether a household graduates or not**

Predictor Variables	Co-efficient	P> z	Marginal Effects (dy/dx)
AGE	-.0712498	0.767 <sup>NS</sup>	.0176987
Education	.0153265	0.972 <sup>NS</sup>	.0038058
GENDER	.7780918	0.027 <sup>**</sup>	.1914546
Dependency ratio	-.8192589	0.004 <sup>***</sup>	-.2035063
IRRILAND	2.647694	0.000 <sup>***</sup>	.5292351
FARMSIZE	-.7988662	0.507 <sup>NS</sup>	-.1984407
TOTCROPRO	.3594309	0.008 <sup>***</sup>	.0892837
TLU	.2074598	0.357 <sup>NS</sup>	.0515336
CREDIT	1.509232	0.004 <sup>***</sup>	.3515713
FOLLOWUP	.1371693	0.761 <sup>NS</sup>	.0341567
TARMECH	1.041903	0.003 <sup>***</sup>	.2535725
Drought	-.8851337	0.022 <sup>**</sup>	-.2118827
_cons	-2.319106	0.015	-

Sample Size Number (N) = 235      Prob >Chi2 =0.000      Log likelihood = -107.665

Pseudo R2 =0.3390      LR Chi2 (12) =110.44

Source: Own computation Based on Survey Data, 2014

\*, \*\*, \*\*\* significant at 1, 5 and 10 percent respectively and NS= Not Significant

The estimation result clearly shows households with high number of dependents struggle to graduate. This fully agrees with prior expectation.

Irrigable Land Ownership (IRRILAND): The sign of coefficient of this value showed a positive relationship with graduation and is significant at 1% probability level. The positive relationship implies that households who own irrigable land have high chance to graduate than the beneficiaries who have no irrigable land. Households with irrigable land has 53% more likelihood of being food self sufficient. This is because, the clients with irrigable land have the capability to produce more than two times in a season which will enhance their production, diversify their income and enable them to smooth their food consumption. Hashemi and Montesquieu (2011), Strengthen the finding of this study that, community infrastructure particularly irrigation enhances households path to food self sufficiency.

Total crop production is another determinant factor which affects graduation of participants positively and significantly. Households with higher crop productivity are more likely to graduate from PSNP. The result of binary logistic regression maintains this hypothesis. Being other things remains constant one unit increase in total production increase the likelihood of graduation by 0.089 marginal effects. The coefficient of this variable showed a positive relationship with graduation and is significant at 1% probability level. Contrary to the finding of the study the district PSNP implementers and the implementation manual (2010) failed to consider total crop production as criteria for graduation.

Access to Credit (CREDIT): Credit is one component of HABP, the main complementary program for PSNP in graduating households from PSNP. The model result shows that credit is a crucial predictor variable in determining household graduation from PSNP. PSNP beneficiary who have credit access graduate sooner than these household without credit access. The model result shows that, on average households with access to credit have 35 % more likelihood of graduating from PSNP than households who have no access to credit other variables remains constant in the model. Access to credit is significant at 1 percent significance level. This indicates access to credit have a strong, significant and positive relationship with households food self sufficiency. This is due to the fact that credit gives the households an opportunity to be involved in income generating activities so that derived revenue increases financial capacity and purchasing power of the beneficiaries. In addition to

this, it helps to smooth consumption when household face with temporary food problem. The finding is in line with Burns & Solomon (2010), in which credit played a key role in ensuring households food self sufficiency. In contrast, Arega(2012) observes insignificant impact of credit access for households graduation in his observation in Lay Gaint district of Amhara region.

Targeting Mechanism (TARMECH): PSNP as a social protection program aims to provide full family targeting for household under the intervention to increase their likelihood to graduate. The concept and practice of full family targeting was crucial for households which enable them to accumulate assets and enhance the way out for graduation. As illustrated in the descriptive result some of the beneficiaries' family members are not receiving full family. Targeting mechanism affects graduation positively and significantly .The marginal effect of targeting mechanism implies that , other variables remain constant, a shift in households targeting from partial to full family result in 25% higher likelihood of graduation from the program. Targeting mechanism is significant at 1 percent significance level. The study by save the children (2008), Bran & Lane (2010) were consistent with the finding of the study.

Drought: Drought negatively and significantly affects household graduation from PSNP. The binary logistic result indicates other things remain constant; the likelihood of graduation of PSNP participants affected by drought decreases by 0.212 marginal effects than those households not affected by drought. Drought is significant at 5 percent significance level. This finding is in line with the observation of Bene et al. (2012), Burns and Solomon (2012) and Gillingan (2008) that, drought prone households struggle to become food self sufficient and graduate from the program.

#### 4.4. Assessment of Practical Implementation of PSNP Graduation in the District

In this section the ongoing process of graduating households from PSNP were discussed in detail which coincided with the perception of beneficiaries and checks either the practical exit of beneficiaries from the intervention is following the graduation guidance note of 2007 and the latest PSNP implementation manual of 2010.

**Table 4.11: Awareness' Creation towards graduation and Knowledge of clients about Graduation Criteria**

Pre Intervention	Sub District	Waereb		Amedeweha		Kilma		Total	
		Freq	%	Freq	%	Freq	%	Freq	%
Awareness creation before graduating	Labels								
	Yes	25	43.86	43	37.72	22	34.37	90	38.3
	No	32	56.14	71	62.28	42	65.63	145	61.7
	Total	<b>57</b>	<b>100</b>	<b>114</b>	<b>100</b>	<b>64</b>	<b>100</b>	<b>235</b>	<b>100</b>
Graduation criteria know how	Yes	23	40.35	75	65.79	31	48.44	129	54.9
	No	34	59.55	39	34.21	33	51.56	106	45.11
	Total	<b>57</b>	<b>100</b>	<b>114</b>	<b>100</b>	<b>64</b>	<b>100</b>	<b>235</b>	<b>100</b>

*Source: Field survey, 2014* N.B: Freq, %: Percentag

The PSNP implementation manual (2010), illustrate all PSNP clients should have clear understanding of the program principles and procedures. Likewise, Barn et al.(2010) stresses in order to have effective implementation of graduation clients should have clear understanding of the concept graduation and its criteria's However, as illustrated in table 4.11 two third(61.7) of the households in this study were not oriented how they will leave the intervention. In line with the survey result, Sabates-Wheller et al. (2012) illustrates, there is low understanding of beneficiaries on how the graduation will going on. This has its own effect in the household's graduation and appeal mechanism because without information about the principles and procedures the clients will lack the capacity to appeal and become vulnerable to discrimination and early graduation.

As illustrated in table 4.11 above, even though majority of the beneficiaries were uninformed about the characteristics of food self sufficient client more than half of them (54.9%) knows

about graduation through indirect sources, out of the program implementers and experts. Beneficiaries in Amedeweha sub-district have better understanding about graduation from PSNP more than the other in which 65.79% of the clients understand the graduation concept. The source of information about graduation for these households was mainly their neighbors and few of them also describe radio as their source of information about PSNP graduation. Similar study by Devereux (2008), insists understanding objectives and process of PSNP graduation has been enhanced among beneficiaries due to information sharing and consultation with in communities. Contrary to this, the study by Berhane et al. (2013), in their study through cascading approach holds understanding of graduation was very low and there is lack of clarity on what it means for participants to graduate from the program.

**Table 4.12 Graduation criteria**

Criteria for Graduation	Sub-District	Waereb		Amedeweha		Kilma		Total	
	Labels	Freq	%	Freq	%	Freq	%	Freq	%
Crop production		2	9.09	6	8	5	16.12	12	9.3
Livestock		19	82.8	42	56	17	54.83	79	61.24
Off farm		-	-	11	14.66	-	-	11	8.52
Land Quality		1	4.34	6	8	2	6.45	15	11.62
Remittance		1	4.34	3	4	3	9.68	7	5.42
Tree Holding		-	-	7	9.34	4	12.9	5	3.87
<b>Total</b>		<b>22</b>	<b>100</b>	<b>75</b>	<b>100</b>	<b>31</b>	<b>100</b>	<b>129</b>	<b>100</b>

Source: Field survey, 2014 N.B, Freq: Frequency, %: Percentage

Table 4.12 below, describes the graduation criteria's applying in the kebelles under study. The summarized response shows that majority of graduation criteria undergo in the sub-districts was livestock ownership which account 61.24% of the criteria's being implemented. Apart from livestock, land quality, total crop production, off farm participation, remittance and tree holding which constitute among the measurement for food self sufficiency of PSNP beneficiaries. Livestock ownership were the major criteria's in all sub-districts under investigation with Waereb have the largest share in which 82.8% of the measurement for graduation decided solely on livestock ownership. The other discussed criteria are also considered in the sub-districts with low response rates. According to Frankenberger(2007) ,

graduation Criteria should be evaluate with all stakeholders to identify and implement appropriate and acceptable measures

The focus group discussion participants were in favor of livestock based graduation criteria's because households cannot hide such assets. However, the participants of Amedeweha district complains livestock based graduation because the beneficiaries are accumulating money rather assets like livestock in order to stay in the program. Therefore, the graduation process should consider land quality, house, income and consumption patterns rather than assets. In addition to his, the participants also reveal that graduation criteria should be flexible according to the potential of each district under PSNP because all PSNP beneficiaries throughout the district may possess different resources. Therefore, the participants call for flexible graduation criteria suited to each locality.

The key informant interviewees admit asset based graduation was the option to measure the status of PSNP clients because it is visible, difficult to hide and easy for registration. Therefore, similar to other district they prefer livestock based graduation. However, when the beneficiaries fail to accumulate livestock assets the DA's will forced to consider total crop production, irrigable land and year of span in the program. .

Assets are the means in which household create livelihood opportunities in rural Ethiopia and enable households to adapt shocks through selling of livestock (Tadele, 2011). Livestock based graduation criteria is the main graduation criteria's in the study district which is the case in other chronically food insecure district. This finding is in line with the government of Ethiopia and its development partner's approach of asset based graduation. Therefore, the study done by Frankenberger and Anderson et al. (2008) , is line with the finding of the study that beneficiaries' support livestock based graduation criteria since in Ethiopia households prefer to accumulate livestock assets rather than saving. As a result, the studies contend households graduation should be asset based mainly livestock ownership. Likewise, the survey conducted by Arega (2012) and Julie-Van and Coll-Black (2010) asserts asset based graduation particularly livestock ownership was the most prominent in the chronically food in secured districts for graduating households. Household's suggestion to consider resource potential of each district in graduation shows the program need to follow flexible implementation because every district have its own unique resources.

**Table 4.13: Household’s access to HABP and Asset Registration for graduation**

Pre-Intervention		Non-Graduated		Graduated		Total	
	Labels	Freq.	%	Freq	%	Freq.	%
Access to HABP	Yes	46	39.31	58	49.15	94	40
	No	71	60.69	60	50.85	141	60
	<b>Total</b>	<b>117</b>	<b>100</b>	<b>118</b>	<b>100</b>	<b>235</b>	<b>100</b>
Asset Registration	Yes	28	23.93	40	33.90	68	33.19
	No	89	76.07	78	66.10	167	71.06
	<b>Total</b>	<b>117</b>	<b>100</b>	<b>118</b>	<b>100</b>	<b>235</b>	<b>100</b>

*Source: Filed survey, 2014, %: Percentage*

Table 4.13 above presents, beneficiary’s access to HABP (Former OFSP). Accordingly, 141(60%) of the respondents have no access to HABP. Among households, graduated clients have relatively better access in relation to non-graduated households hence 49.17% of them have received the support from HABP while the non-graduated households account for 39.31% only. Gilligan et al. (2008), insists PSNP should be complemented by other food security programs in order to ensure the state of food self sufficiency to participants of the program. HABP supports households in terms of financial source, agricultural extension, training and other consulting issues. However, the access for HABP in the sub-district is very low in the study area. Berhane et al. (2011) observes lower level of HABP access in PSNP beneficiary districts which is consistent with this study through which households are especially reluctant to adopt loans. Besides, Frank (2013), indicates that poor and delayed of implementation of HABP which result in confused and early graduation of households.

The key informant interview participant shares some of the problems in addressing all projects under HABP. The main problem in HABP is lack independent financial institution which can fulfill the interest of the households. The main challenge is high interest rate because the finance is distributed through Dedebit Micro Finance Institution (DMFI) which demands some amount of payment for their services. As a result, the beneficiaries consider the credit from the DMFI outside HABP. However, the PSNP clients are benefiting from other agricultural extension programs. Credit is highly demanded in the study area beyond other household asset building projects.

The graduation guidance note (2007), asserts household's asset should be registered through DA's and those households that reach the acceptable benchmark should be leave the program. In contrast, only 33.19% of the respondent's reports their asset was registered as indicated in table 4.13. In comparing both graduated and non-graduated households the participants graduated from PSNP registered their assets more than the current beneficiaries with 33, 90%. Thus, the finding of this study indicates there is low level of asset registration since majority of households asset was not registered which implies the graduation process were not implementing according to the graduation guidance note. The result of low asset registration will be premature graduation based on period of stay in PSNP without checking the household's assets and other criteria's.

The study by Barn et al.(2010) were consistent with this finding that asset registration for graduation were rare and majority of the district were not accurately following the implementation manual and graduation guidance note. This implies the households are not identify based on their food self sufficiency and their capacity to absorb shocks. However, the study by Frankenberger et al. (2007), there is asset registration graduation from PSNP. The beneficiaries also raises a question of fairness in asset registration. The households insist, the DA's exaggerate the amount of assets to implement the plan from district for the sake of quota graduation.

**Table 4.14: Monitoring to Process of PSNP graduation by officials**

Pre-Intervention		Waereb		Amedeweha		Kilma		Total	
	Labels	Freq	%	Freq.	%	Freq	%	Freq	%
Officials follow up	Very High	7	12.28	5	4.39	1	1.56	13	5.53
	High	6	10.53	17	14.91	5	7.81	28	11.91
	Neither	9	15.79	16	14.03	8	12.50	33	14.04
	Low	35	61.40	66	66.67	40	18.13	161	68.4
	<b>Total</b>	<b>57</b>	<b>100</b>	<b>114</b>	<b>100</b>	<b>64</b>	<b>100</b>	<b>235</b>	<b>100</b>

*Source: Field survey, 2014* N.B: Freq: Frequency, %: Percentage

The objective of monitoring is to track overall implementation trends, provide feedback to program administrators and to measure both program outcomes and results. A rapid response mechanism consists of national and regional teams established to give support to local level implementation for the sake of solving critical problems (PIM, 2010). In table 4.14 above, the respondents were asked to evaluate the monitoring of higher officials in their sub-district to graduation of households from PSNP. More than 68.4 % of the clients responds the officials fail to monitor the ongoing process of household's path to food self sufficiency. Throughout the districts the evaluation was disappointing that, more than 60% of the clients in the three kebelles reports that there is stumpy supervision of the intended bodies. Julievan and Coll-Black (2010), states monitoring of PSNP graduation helps the implementers and the intended bodies to check whether the program is working efficiently and effectively and to learn how to do things better. Therefore, there should be up to date monitoring of regional and district level officials to process of graduating households from PSNP. However, the find of this study insists, there is no enough monitoring of officials to the PSNP participants which have its own impact in graduating the food self sufficient households.

The interview with CFSTF, district Cabinet and agriculture and rural development office brings mixed responses. ARDO disparage the view from the household survey that, there is enough evaluation of district level officials. Conversely, the district cabinet official makes it clear that, they are busy in undertaking their own works and assures there is failure in monitoring the graduation process. Likewise, WFSTF official also indicates, there is lack of separation between productive safety net and other food security program in their district and calls for independent administration for the program in order to change beneficiaries' livelihood. Similarly, the study by Farrington et al. (2007), in their study in Ethiopia observes, weak monitoring system of the productive safety net program and graduating beneficiaries. This low monitoring official hampers the graduation process in the study area and forced beneficiaries to leave the intervention without reaching the intended benchmark stated in the program documents.

**Table 4.15: Vulnerability to food gap during stay in PSNP and risk financing**

Pre-Intervention		Non-graduated		Graduated		Total	
	Labels	Freq.	%	Freq.	%	Freq.	%
Occurrence of food Shortage	No	76	64.96	87	73.72	90	38.30
	Yes	41	35.04	31	26.28	145	61.70
	Total		100		100		100
Risk Financing at time of shock	Yes	30		12.77			
	No	205		87.23			
	Total	235		100			

Source: Field survey, 2014 N.B: Freq: Frequency, %: Percentage

The descriptive result of table 4.15 shows, the occurrence of food shortage to households after their targeting to PSNP. Majority of the households 61.70% reports, there is no occurrence of food shortage during their stay in PSNP while 38.30% of them respond there is occurrence of food shortage even when they become beneficiaries to PSNP. The table also shows that non-graduated households are vulnerable to food shortage in relation to those participants graduated from the intervention account 35.04 %.

Result of the finding indicates, PSNP has an impact on smoothing consumption of the beneficiaries even though there are beneficiaries vulnerable to food shortage. The studies done by Slater et al. (2006) , Anderson et al.(2008), Gillingan et al. (2008), Dicks(2012) and Subbarao et al. (2010) cited in Emilie,( 2013) were consistent with this finding that, PSNP helps beneficiaries to smooth consumption. The district food security office report shows, the area is vulnerable to food shortages because of unpredictable rainfall pattern, low farm size and extravagance culture of the society within the district. Thus, food shortages is still prevailing in the chronically food insecure district even though PSNP plays its role in protecting assets, smooth consumption and food self-sufficiency of the program clients.

The PSNP implementation manual (2010) states the district should have a 5% contingency budget for from the total PSNP resource. This budget used for risk financing to both PSNP clients and non-clients with transitory food insecurity. However, in this study majority of households complain that the risk financing mechanism is very low which fail to undergo according the PIM manual. As shown in table 4.14, 205(87.23%) of the beneficiaries' reports there is no risk financing at time of shock or during households vulnerability to food

shortage. There is no significant difference among the districts in relation to risk financing in which more than 80% of the households reports there is lack of risk financing for PSNP beneficiaries. Bene et al. (2012) observes minimal risk financing mechanism in PSNP beneficiary district in Ethiopia. Nevertheless, the study by Robson and Campbell (2012), in their study on role of PSNP for humanitarian crisis bemoans the result of this study that, the risk financing mechanism is effectively responding the beneficiaries' vulnerability to natural shocks like drought, flood and pest incursion.

The key informant interviewee explains the risk financing mechanism gives priority for non-PSNP households affected by transitory food insecurity because of low budget allocated for the project. Moreover, there are also PSNP beneficiary households entitled to risk financing when there is severe vulnerability to food shortage and other shocks. Contrary to this, MOARD (2006), illustrates the transitory food insecurity problems are covered by regional contingency plan. Therefore, there is confusion and problem in addressing risk finance to households in the study area which will affect household's vision to graduation from PSNP and the broader food security.

**Table 4.16: Beneficiaries Preference to Type of Transfer and transfer in practice**

Pre-Intervention		Waereb		Amedeweha		Kilma		Total	
	Labels	Freq	%	Freq	%	Freq	%	Freq	%
PSNP transfer choice	Food Only	31	54.39	85	74.56	41	63.06	156	66.38
	Cash Only	1	1.75	-	-	2	3.13	4	1.71
	Both	15	26.32	15	13.16	11	17.19	41	17.45
	In kind	10	17.54	14	12.28	10	15.63	34	14.47
	Total	57	100	114	100	64	100	235	100
		Lables	Freq.				%		
Mode of payment	Food	4				1.70			
	Cash	198				84.26			
	Both	33				14.04			
	Total	235				100			

*Source: Field survey, 2014*

In table 4.16 above, the respondents were asked to select their preference about mode of payment. More than 66.38% of the beneficiaries are in favor of food only transferring completely different from the program objective. The main reason behind cash transfer is to avoid perception of dependency and diversify household's income generating mechanisms

White et al. (2010) illustrates, dependency syndrome leads the receipts to perception of permanent reliance on the food hand outs which affects the efforts to improve food security situation and accumulate assets. There is no significant difference in the sub-district in transfer preference since majority of the beneficiaries demand food transfer from PSNP. This study correspond with the findings of most studies in PSNP , which contends the households are in need of food only transfer notably Frank(2013) and Gebru et al. (2009) asserts ,the cash transfer is not the choice of participants. The rationale behind household's preference to food only transfer is high food price which relate to decreasing value of money coincided with lack of flexibility in the transfer. Furthermore, food transfer enhance dependency syndrome since the households will not invest in other income generating activities and continue to wait the transfer from the program. Therefore, the finding of this study clearly shows mismatch between the transfer and preference of the program beneficiaries.

The survey result shows, contrary to the preference of households with high interest on food only transfer, 198(84.26%) of the respondent's reports PSNP payment undertaking lonely via cash based preference. The cash only payment is implementing according to the implementation manual which is in favor of cash only transfer. The implementation manual further states transfer is appropriate when it have the same value whether it is provided in cash or food. While food only transfer could help household's short term consumption needs and it doesn't fully address the non-consumption needs. The reason behind cash based transfer is to avoid dependency attitude because in less developing countries food aid was creating dependency syndrome among the beneficiaries. Likewise, cash transfer can stimulate the local economy and ultimately provide more cost effective assistance. In addition to this, cash based transfer expected to enlarge household's choice for different income generating activities. However, Hashemi and Montesquieu (2011), indicates cash

based transfer is not adjusting according to the market conditions and inflation negatively affects the probability of graduation.

**Table 4.17: Respondents View on Predictability of Transfer**

Pre-Intervention		Non-graduated		Graduated		Total	
	Labels	Freq.	%	Freq.	%	Freq.	%
Payment Predictability	Predictable	16	13.67	23	19.49	39	16.59
	Unpredictable	101	86.33	95	80.51	196	83.41
	Total	117	100	118	100	235	100

*Source: Field survey, 2014, N.B: Freq: Frequency, %: Percentage*

Safety net transfers to households need to be predictable and reliable. Chronically food insecure households need to be relied on predictable and credible safety net if they are in order to avoid negative consequences such as natural and human shocks, distressed asset sales and kid's removal from school. As a result, beneficiaries should have the information about what kind of transfer, its amount and on what time they will receive the payment which expressed collectively by predictability of transfer. Predictable transfer helps participant households to purchase food at low food price seasons since the majority of the transfer is through cash. The transfer from PSNP is unpredictable since 83.41% of the beneficiaries reports the transfer is not predictable as indicated in table 4.17. Unpredictable transfer affects the household's likelihood to participate in other income generating activities

The focus group discussion and key informant interview participant's view on predictability of transfer is in line with the household survey respondents which underlines the transfer is distributed to the clients at time of high food price especially from April up to June. Thus, at this time the value of transfer from PSNP decreases in relation to the price in October up to January. This contradicts with the principles and objectives of the PSNP since it insists the value of the transfer should have equal whether it is in cash or food. However, the households report that the transfer is not flexible with the change in market prices and the transfer is increased only one's throughout the phase of the program. This has its own impact in the households ambitious to graduate from PSNP. Frank (2013), strengths the households view that, with in volatile market the transfer should be predictable, flexible and ensures the value of the transfer is not changed irrespective market changes. Therefore, the results grants,

the district perform poorly by this measure and it is worth noting that this concern is raised by all sample sub-districts.

In the survey, households are asked the timing of transfer so far from PSNP. The clients explain the transfer distributed to beneficiaries at a time of high food price particularly from March-July. As a result, the households complain the transfer should be distributed at low food price seasons in order to purchase food with relatively cheaper price. Furthermore, the participants also lament the transfer is not delivered on monthly basis which shows there is administrative lag in transfer delivery. Fekadu and Mberengwa (2009), criticizes the transfer delivery mechanism because the transfer is distributed to the participants at time of high grain markets and hungry season which corresponds with the household survey findings. Hence, time of transfer can significantly affect PSNP beneficiaries' purchasing power.

However, the key informant interview suggests the reason behind distributing the transfer in later winter is because the period in Ethiopia was a time of lowest food stores in the households stock. In addition to this, public works are carried out at that time because it a time of agricultural slack season which is relatively dry. However, the informants make it clear that the transfer is not delivering on timely basis which is ones in a year. Contrary to the finding of the study in predictability of the payment, the study by save the children UK (2008), concedes beneficiaries know what resources they expected to receive, how much they will receive and when they should be distributed.

#### **4.5. Graduated Households Perception on the Process of graduation**

In these section participants who graduated from intervention responds appropriateness of their graduation, community participation, support after graduation and who decide on their exit from the program.

The summarized household survey in table 4.18 below indicates the appropriateness of household's graduation from PSNP. About 65(55.08 %) of households respond their exit from the program was not fair. Households in kilma sub-district complain to their graduation more than the other kebelles where 60.86% of beneficiaries' reports unfairness of their graduation. The study by Anasuya (2012), is consistent with this finding, that graduating beneficiaries from PSNP is not undertaking according to the procedures and criteria's in full

fledged manner. The households in this study reports that they have low awareness about the concepts and process of graduation.

**Table 4.18: Appropriateness of Graduation, community Participation in Decision making and graduation decision makers**

	Pre-Intervention	Waereb		Amedeweha		Kilma		Total	
	Labels	Freq	%	Freq	%	Freq	%	Freq	%
Graduation relevance	Appropriate	14	37.84	34	58.62	17	60.68	65	55.08
	Not Appropriate	23	62.16	24	41.38	6	39.14	53	44.92
	Total	37	100	58	100	23	100	118	100
Responsible bodies for graduation	DA's	16	43.24	21	36.20	8	34.78	45	38.13
	CFSTF	12	32.43	20	34.48	4	17.39	36	30.51
	I don't Know	9	24.33	17	29.32	11	47.83	37	31.36
	Total	37	100	58	100	23	100	118	100
Community Participation	Yes	9				9.33			
	No	107				90.67			
	Total	118				100			

Source: Field survey, 2014, N.B: Freq: Frequency, %: Percentage

In focused group discussion the participant's underlines graduation was a time defined phenomena, after five years of support the clients will leave the program without considering the status of their livelihood. Therefore, it is difficult to say all households leave the program reached the benchmark and undertaken by evaluation of household's food security situation. In the key informant interview, PSNP coordinator in the district concluded the confusion in graduation in the following way:

*“There is a problem in graduating households from PSNP. People especially implementing bodies and officials in sub-district level undertaking the graduation process in their own way Even though the pressure from Woreda and regional level also contributes to the confusion of the program. Thus, it is difficult to say the graduation process is 100% appropriate”.*

The view of all respondents regarding appropriateness of the graduated households is homogenous which strength the implementation failures discussed earlier in the survey.

Therefore, the result calls for integrated and coordinated effort to modify the weak achievement in implementation in the district.

Table 4.18 above, displays DA's and CFSTF are the main decision makers for graduating clients from PSNP. The decision for graduating 45(38.13%) households made by development agents while CFSTF 30.51% of the decision undertaken by CFSTF. However, 37(31.36%) of the respondents are not informed about their graduation from the program. There is no significance difference among the sub-districts in graduation decision making but DA's have the upper hand in decision making in relation to CFSTF. The finding of this study implies the process of graduating household from PSNP is very complex in the sub-districts since the decision making is not clear but the responsibility of graduating households with in kebele level is given to CFSTF by the graduation guidance note (2007). However, in this study DA's are also participated in the decision making and one third (1/3) of the households uninformed about the decision makers for the graduation. In contrast, the graduation procedure states that the process should be clear and transparent to everyone. Generally, there is no single responsible body that can aware households how and why they are leave the social protection program.

Zemzem(2012), explains community participation is mandatory for sustaining asset based social protection programs because the community has better knowledge than the program implementers about the households under the intervention. Similarly, the graduation guidance note (2007) states, broad based community participation is one of the steps to be followed in graduating individuals from PSNP and community are best placed to operationalize graduation. The graduation guidance note further asserts, the name of households selected for graduation should be open for the community to give their own opinion and decide on who will exit from the program. In reality, there is little evidence of community involvement in decision making. The summarized household survey in table 4.17 above shows, low level of community participation in participant's graduation from the program accounted. About 107(90.67%) respondents report there is no community participation in their graduation which implies the implementation process is not fully following the graduation guidance note.

The data obtained from the focused group discussion and key informant interview assures there is low level community participation in graduation because it will have no impact on the decision of CFTSF because the graduation is intended to undertake based on the district plan which ignores appeal mechanisms.

**Table 4.19: Households View on their Graduation Type, One year benefit from the program and post graduation support**

Pre-Intervention	Labels	Frequency	Percentage
Type of Program exit	Benchmark Graduation	20	16.96
	Voluntary Graduation	3	2.54
	Premature Graduation	89	75.44
	Self Graduating Before Reaching Benchmark	4	3.39
	Graduation to correct inclusion error	2	1.67
	<b>Total</b>	<b>118</b>	<b>100</b>
Post Graduation transfer	Yes	110	93.22
	No	8	7.78
	<b>Total</b>	<b>118</b>	<b>100</b>
Support after exit	Yes	12	10.17
	No	106	89.83
	<b>Total</b>	<b>118</b>	<b>100</b>

*Source: Field survey, 2014*

Accordingly to the survey result of table 4.19, 89 (75.42%) of the respondents complains, their graduation was premature which occur when households exit from the intervention without reaching the reflected threshold or becoming food self sufficient. On the other hand, 20(16.96%) of the client's graduation was according to the benchmark or they can adapt any shock encountered in post graduation period The rest households leave the intervention by to correct inclusion errors which are not illegible to the program. Moreover, the others exit themselves before reaching the benchmark because the transfer from the program is very low, the PSNP public work is not compatible with productive seasons and all community works are expected to undertake by PSNP beneficiaries. Benchmark graduation, graduation to correct inclusion error, voluntary graduation and self exit without food self sufficiency are

in line with implementation manual and guidance note. Contrary to this, premature graduation violates the principles and procedures of graduating households from PSNP.

Thus, more than 84(75.44%) of the graduated households in this study are not matured enough to graduate from the program which is against the program objective and long term view. The findings of Anasuya (2012), Devereux et al. (2008), Save the Children UK(2008) strengths the finding of this study through which ambitious target of the government to graduate 80% of the beneficiaries from the program lead to quota graduation for each district which is applying in Oromiya, Tigray and Amhara regions.

The idea of key informants hold the finding of the above authors, advocates there is regional level quota annually sent to their district and they are forced to distribute the quota to the sub-districts irrespective of households food self sufficiency. This affects their relationship with the beneficiaries and is blaming them for the unfair PSNP graduation going on in their district. It indicates the regional level food security task force officials are forcing the districts to graduate households sooner in order to achieve the intended goal of graduating majority of the households at the end of 2014. Consequently, this will hamper the long term ambition of households to become food secured and alleviate poverty.

Graduated households entitled to benefit one year transfer from PSNP after reaching the benchmark. As indicated in table 4.19 above, 93.22% of the clients stay in the program for one additional year but 6.88% of the beneficiaries are unable to receive transfer from the program which will have its own impact in smoothing the consumption of the participants. Apart from the other implementation processes access to benefit households one additional year is implementing according to the manual and guidance notes. Graduated clients of PSNP are eligible to obtain support in the form of credit, creating market linkages and agricultural extension for a specific period of time which will help the households to graduate from the broader food security program.

Contrary to the PSNP objectives and procedures the qualitative data in table 4.18 above displays, 89.83% of the beneficiaries in this study continued to receive credit or agricultural extension from the intended body only 7.78% of them are obtain the support. This implies the post graduation support is very low and ignored by the food security office of the district.

Sanford et al. (2010) cited in Berhane et al. (2013) similar with this finding reports that no one of the graduated participants continue to obtain support through finance or agricultural extension programs. Focus group participants also explained that there is no support to households after leaving the intervention. The participants underlined that the support were to households out of the intervention.

Sabates-Wheeler et al. (2012) insists the graduation benchmark in Tigray region is 5600 ETB which takes in to account the family size and the threshold which is calculated based on individual household member. As indicated in table 4.20 below, from the total respondents only 19.49% of them are reported average wealth of their family member was beyond 5600 ETB (the benchmark for graduation). On the other hand, 80.51% of the graduated households respond their income was below the graduation benchmark because 37.29% of the households accumulate a total wealth of 3001-4000 while 32.2% of the clients reports their average wealth was estimated from 1000-3000 which is the lowest from the other classifications.

**Table 4.20: Estimated asset accumulated from PSNP, Interests to Re-enter to the Program and Appeal on Graduation**

	Labels	Frequency	Percentage
Accumulated asset value In ETB	1000-3000	38	32.2
	3001-4000	44	37.29
	4001-5599	13	11.02
	5600-8000	17	14.40
	above 8001	6	5.09
	Total	118	100
	Interest to return back to PSNP	Yes	48
No		70	59.33
Total		118	100
Appeal for graduation	Yes	17	14.04
	No	101	85.96
	Total	118	100

Source: Field survey, 2014, N.B: ETB: Ethiopian Birr

Note: Calculation for total Asset of the beneficiaries is based on summation of individual family member wealth accumulated from PSNP calculated to the number of family. For e.g. if the total wealth of the family received from PSNP is 11, 000 and the number of family is 4:  $11,000/4=2750\text{Birr}$

Besides, 11.02% of the participants assure their total wealth was from 4001-5500 relatively nearest to the graduation threshold. It is clear to understand from the above table that majority of the graduated households failed to reach the intended threshold for leaving the intervention. This directly coincided with low level of asset registration in the study area which lead to premature graduation without cross checking and evaluation of household's status. This driven by regional level pressures for attaining the planned graduation in short period of time irrespective of the principles and rules of the graduation guidance and the implementation manuals. Therefore, the above table is a clear indication of failure in following the PSNP manuals and guidance notes in the study area.

Table 4.20 above, indicates household's interest to become beneficiaries after their graduation. More than 59.33 % of the clients decline the preference to become a beneficiary in PSNP. The main reason for such kind of perception is low amount of transfer, incompatibility of the PSNP public works with productive seasons, unpredictable transfer which diminish the value of the money, Woreda level pressures to adopt new agricultural inputs and community works for PSNP beneficiaries are among the reasons the graduated household's motivation not to enter the program.

However, there are also households who believe they are food self sufficient and didn't want to re-enter the program. On the other hand, 40.67% of the beneficiaries report they have an interest to re-enter the program when there is opportunity. The rationale behind the interest of such beneficiaries was premature graduation, occurrence of shocks and households dependency syndrome. Households have a right to complain if they feel that they are left out of the program.

As indicated in table 4.20 above, from the total household respondents 85.96% of them replied that they didn't appeal for their graduation. According to the respondents the reason for not appealing was the low response of the appeal committee to the households raised a

question for their graduation or any other reason which create an impact on the other households not to appeal for any other reason because the experience for re-entering households were minimal and they believe that the system will not deliver the right decision. Likewise, 14.04% of the households express their grievance to the appeal committee for different reasons and decided to appeal based on different issues.

The focus group discussion strengthens the households survey results that participants together with the appeal committee indicates there is no room for households to re-enter the program because the district food security task force have no additional budget to accept the graduated households in the program. Therefore, the appeal committee insists we have no the power to hear the case of households regarding PSNP. However, the implementation manuals make it clear that there should be 5% contingency budget for both PSNP beneficiaries and non-beneficiaries households either because of premature graduation or affected by natural or human factor. Thus, still the WFSTF fails to correct the implementation problems. Studies by Barn et al. (2010) and Berhane et al. (2013) were consistent with the finding of this study that there no experience of re-entering households to PSNP in the chronically food in secured PSNP beneficiary districts.

**Table 4.21: Reasons for Appeal**

	Labels	Freq.	%
Rational for appeal	For transfer to direct support	2	11.76
	Premature graduation	11	64.80
	Vulnerability to shock	4	23.53
	Total	17	1000

*Source: Field survey, 2014, N.B: Freq.: Frequency, %: Percentage*

Table 1.21 above, describes the rationale behind households for appeal. Therefore, 64, 80% of the appeal was raised by premature graduation in the study area that households believe they are not reaching the intended threshold for leaving the program. Furthermore, 23.54 % of the appeal results from household’s susceptibility to different shocks after their graduation. Likewise, 11.76% of the households recall becoming direct support beneficiaries which is one sub-component of the productive safety net program. As discussed earlier by the households and focus group discussion participants there is no experience of re-entering

beneficiaries to PSNP in the study area. Therefore, even though the households raised their rationale for re-entering the program they are unable to become beneficiaries because of lack of budget and ambitious regional level target of graduating households at the end of 2014.

## CHAPTER FIVE: CONCLUSION and RECOMMENDATION

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*This chapter presents the summary, conclusion and recommendations based on the finding of chapter four. Hence, the overall analysis is summarized and the conclusion is depicted from the study based on the findings of the study and finally the student researcher forwarded its recommendations.*

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### **5.1. Summary**

In this study factors determining household level graduation from productive safety net program has been evaluated using cross sectional data from Emba Alaje District. In addition, the study has also assessed the perception of PSNP participants to graduation from PSNP and its implementation in the study area. The primary data for this study were collected from 117 graduated and 118 graduated households using semi-structured questionnaire and applied descriptive and econometrics approaches to analyze the data.

Taking this idea the result of the study shows , more than half of the respondents perceives, PSNP as the rationale behind their smooth consumption in the past decade and underlines their living will remain devastating when they are not targeted for the program. Additionally, dependency syndrome was the other reasons which related to waiting continued support from government though reaching the benchmark. Furthermore, the beneficiaries indicate the implementation process was confused.

Model result revealed and come up with some plausible findings, seven variables were found statistically significant (including sex, Irrigable land ownership, dependency ratio, total crop production, access to credit, targeting mechanism and occurrence of shocks) while the remaining six were found less powerful in explaining the dependent variable.

Sex is among the significant factors in which, the likelihood of graduation increases when the household head is male. This means that, male headed households graduate sooner than their female counter part. Irrigable land ownership is the other variable which correlates significantly and positively with graduation. The likelihood of graduation for program

participants increases by 0.529 marginal effects when the beneficiary owns irrigable land. A closer look at the model also shows that, dependency ratio influences households path to food self sufficiency. Beneficiaries scored high dependency ratio has low probability of graduating from the program. As dependency ratio increases by one unit, likelihood of graduation decreases by 0.203 marginal effects. The model estimation clearly shows, beneficiaries with increased annual crop production have the probability of graduation.

Credit has high demand in the households of the study district even with high interest rate. The model results also reveal the indispensable role of credit for PSNP, Program participants who have access to credit has the likelihood of graduating sooner than the households without credit access. The other significant variable is targeting mechanism. The model result indicates households receiving full family transfer have higher likelihood of graduation than those households entitled to partial family transfer. Drought negatively affects household's path to graduation. Beneficiaries who become vulnerable to shocks have low likelihood of graduating from the program.

The process of graduating households from the program disregard, the graduation guidance note and the implementation manuals. Beneficiaries have little knowledge about the concepts of food self sufficiency, majority of household's asset is not registered, rare risk financing practice, unpredictable transfer, low access of HABP and lack of post graduation support are among the manifestations in the implementation. Besides, stumpy evaluation of officials to the process, non- functional appeals committee among the challenges affecting the graduation of beneficiaries from the program. The implementation has also overlooked the role of public participation and decision making in the process. Apart from the challenges, good credit availability and keeping households one year after graduation are the promising practices observed in the study area. This all leads, to premature graduation which was massively used in the study area through quota graduation based on beneficiaries stay in the program. National and regional level pressures are the main reasons behind confused process of graduation in the local level.

## 5.2. Conclusion

Transitory and chronic food insecurity in Ethiopia generally and in the study district particularly are the main challenges facing rural households (TRARDO, 2013). This need immediate and long term interventions and policies should be aligned with and diverse measures to alleviate the problem. PSNP is among the integrated programs with the aim of enhancing food self sufficiency and asset accumulation. However, the finding of the study insists the program suffers a lot problem during implementation. PSNP support the households for smooth consumption and prevent selling of their assets. However, household's potential in accumulating assets is very low. This leads to low confidence of households to leave the program, develop sense of dependency syndrome and to believe the graduation process is a matter of time rather than reaching the food self sufficiency threshold. Moreover, the government support is limited to PSNP and lack of other development interventions in the district hamper the food self sufficiency of households.

Access to credit, full family targeting, high total production and access to irrigation increase the potential of households' to become food self sufficient and to achieve the broader food security program. While male participants in the program have had better performance, those with large number of dependents and drought prone were found to be at grass-root level to be graduated. The process of graduating households from PSNP fails to follow the procedures of graduation guidance note (2007) and program implementation manual. This leads to low asset accumulation, low community participation in decision making, lack of post graduation, non functional appeal committee, high interest to stay in the program. Consequently, the beneficiaries leave the program without reaching the appropriate graduation benchmark and remain chronically food in secured.

### **5.3. Recommendations**

The following recommendations were forwarded from the findings and conclusions drawn.

- Local level implementers should follow the graduation guidance note and the PSNP implementation manual. This helps to build the capacity of households to graduate, prepare long term business plan and achieve food self sufficiency at short period of time.
- The support from the complementary programs like complementary community investment should be fully fledged for enhancing the potential of households in accumulating assets and participate in other income generating activities.
- Diversified non-PSNP programs like formal and informal financial products and services, value chain and market linkage programs should be prepared for the chronically food insecure households to enlarge the capacity of households for threshold graduation
- Experience need to be shared from PSNP PLUS projects implementing by USAID particularly Raya Azebo district, Tigray and Sekota district, Amhara region.

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# Appendices

## Appendix 1: Model specification tests

### Appendix 1.1 Link test

```
. linktest

Iteration 0:  log likelihood = -162.88746
Iteration 1:  log likelihood = -108.16453
Iteration 2:  log likelihood = -107.63959
Iteration 3:  log likelihood = -107.62404
Iteration 4:  log likelihood = -107.62403
Iteration 5:  log likelihood = -107.62403

Logistic regression                Number of obs   =           235
                                   LR chi2(2)         =           110.53
                                   Prob > chi2        =            0.0000
Log likelihood = -107.62403        Pseudo R2       =            0.3393

-----
graduation~p |      Coef.   Std. Err.      z    P>|z|    [95% Conf. Interval]
-----+-----
      _hat |    1.007366   .1392759     7.23   0.000    .7343901    1.280342
     _hatsq |   -.0187797   .0643674    -0.29   0.770   -.1449375    .1073781
      _cons |    .029701   .197643     0.15   0.881   -.3576722    .4170742
-----
```

## Appendix1.2: Contingency coefficient test for variables included in the Logit model

pwcorr AGE Education GENDER Dependencyratio IRRILAND FARMSIZE TOTCROPRO TLU CREDIT FOLLOWUP  
TARMECH Drought

	AGE	Educate~n	GENDER	Depend~o	IRRILAND	FARMSIZE	TOTCRO~O
AGE	1.0000						
Education	-0.1629	1.0000					
GENDER	0.0404	0.1117	1.0000				
Dependency~o	-0.0511	-0.0204	-0.0722	1.0000			
IRRILAND	0.0765	0.0684	0.1807	-0.0173	1.0000		
FARMSIZE	0.3077	-0.0119	0.0982	-0.1026	0.2326	1.0000	
TOTCROPRO	0.2727	0.1238	0.2058	-0.0602	0.2487	0.7359	1.0000
TLU	-0.1182	-0.0495	0.0955	-0.0529	0.0962	-0.0042	-0.0403
CREDIT	0.0426	0.0971	0.0257	-0.0017	0.0815	0.0650	0.1270
FOLLOWUP	-0.0085	0.0571	0.1179	0.0137	0.0348	0.1187	0.1450
TARMECH	-0.1345	0.0009	-0.0940	-0.0178	0.0708	-0.0215	-0.0822
Drought	0.0829	-0.0934	-0.1362	-0.0498	-0.1106	0.0854	0.0141

	TLU	CREDIT	FOLLLO~P	TARMECH	SHOCKS
TLU	1.0000				
CREDIT	0.0881	1.0000			
FOLLOWUP	-0.1114	0.1637	1.0000		
TARMECH	0.1109	0.0400	0.0194	1.0000	
Drought	0.0198	0.0021	0.0393	-0.0868	1.0000

## APPENDIX 2: Heteroskedasticity Test: Logit robust standard error calculation

git graduationfrompsnp AGE Education GENDER Dependencyratio IRRILAND FARMSIZE TOTCROPRO TLU  
CREDIT FOLLOUP TARMECH SHOCKS, robust

Iteration 0: log pseudolikelihood = -162.88746

Iteration 1: log pseudolikelihood = -109.0335

Iteration 2: log pseudolikelihood = -107.68221

Iteration 3: log pseudolikelihood = -107.66596

Iteration 4: log pseudolikelihood = -107.66596

Logistic regression	Number of obs	=	235
	Wald chi2(12)	=	63.24
	Prob > chi2	=	0.0000
Log pseudolikelihood = -107.66596	Pseudo R2	=	0.3390

	Robust					
graduation~p	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
AGE	-.0712498	.2405097	-0.30	0.767	-.5426403	.4001406
Education	.0153265	.4169438	0.04	0.971	-.8018682	.8325213
GENDER	.7780918	.3521465	2.21	0.027	.0878974	1.468286
Dependency~o	-.8192589	.2378734	-3.44	0.001	-1.285482	-.3530356
IRRILAND	2.647694	.4896167	5.41	0.000	1.688063	3.607325
FARMSIZE	-.7988662	1.191905	-0.67	0.503	-3.134957	1.537225
TOTCROPRO	.3594309	.1239637	2.90	0.004	.1164666	.6023953
TLU	.2074598	.2435932	0.85	0.394	-.269974	.6848937
CREDIT	1.509232	.4738798	3.18	0.001	.5804446	2.438019
FOLLOWUP	.1371693	.4443154	0.31	0.758	-.7336728	1.008011
TARMECH	1.041903	.3495448	2.98	0.003	.3568073	1.726998
Drought	-.8851337	.3732161	-2.37	0.018	-1.616624	-.1536436
_cons	-2.319106	.9387923	-2.47	0.013	-4.159105	-.4791064



## Appendix 4: Marginal effects after logit for Factors determining Household Level Graduation from PSNP

. mfx

Marginal effects after logit

y = Pr(graduationfrompsnp) (predict)

= .53996331

variable	dy/dx	Std. Err.	z	P> z	[ 95% C.I. ]	X
AGE	-.0176987	.05983	-0.30	0.767	-.134971 .099573	2.19574
Educat~n*	.0038058	.10896	0.03	0.972	-.209759 .217371	.212766
GENDER*	.1914546	.08478	2.26	0.024	.025284 .357625	.553191
Depend~o	-.2035063	.07073	-2.88	0.004	-.342128 -.064884	1.02438
IRRILAND*	.5292351	.06338	8.35	0.000	.405016 .653454	.280851
FARMSIZE	-.1984407	.29883	-0.66	0.507	-.784128 .387246	.4
TOTCRO~O	.0892837	.03363	2.65	0.008	.023371 .155197	3.41702
TLU	.0515336	.05592	0.92	0.357	-.058065 .161132	.521179
CREDIT*	.3515713	.10201	3.45	0.001	.15164 .551502	.829787
FOLLO~P*	.0341567	.11252	0.30	0.761	-.186382 .254695	.795745
TARMECH*	.2535725	.08301	3.05	0.002	.090883 .416262	.519149
Drought*	-.2118827	.08731	-2.43	0.015	-.383004 -.040762	.702128

**Appendix5: Conversion factors used to estimate Tropical Livestock Unit (TLU)**

<b>Livestock Type</b>	<b>TLU value</b>
<b>1. Horse</b>	1.1
<b>2. Ox</b>	1
<b>3. Cow</b>	1
<b>4. Woyefen(weaned male calf</b>	0.34
<b>5. Heifer</b>	0.75
<b>6. Calf</b>	0.25
<b>7. Donkey (Adult)</b>	0.7
<b>8. Donkey(young)</b>	0.35
<b>9. Sheep(Adult)</b>	0.13
<b>10. Sheep(young)</b>	0.06
<b>11. Goat(Adult)</b>	0.13
<b>12. Goat(Young)</b>	0.06
<b>13. Hen</b>	0.013

Source: Strock et al. (1991), Cited in Taddele (2011)

## **Appendices 6: Questionnaire**

**Mekelle University**

**College of Business and Economics**

**Department of Management**

**Post Graduate Program in Development Studies**

### **Household Survey Questionnaire to Be Filled Out by Household Heads**

#### **Introduction:**

This questionnaire is prepared by Hayalu Godefey a post graduate student (development studies) in Mekelle University for partial fulfillment of master degree. The aim of this questionnaire is to collect data about “Factors Determining Household level Graduation from productive safety net program (PSNP): Evidence from Emba Alage District”. The information you provide will provide has both academic and policy relevant values. I confirm you that all data will be used for academic purpose and will be analyzed anonymously, and hence you are not exposed to any harm because of the information you give. I highly appreciate in advance to your kind cooperation in providing the necessary information.

Thank you!!

Hayalu Godefey

#### **General instruction:**

1. Encircle on the options that are appropriately represents your response in the multiple choice questions.
2. To the open-ended questions, please write your response on the space provided.

#### **Part I- Questionnaire Identification**

1.1. District \_\_\_\_\_

1.3. Village \_\_\_\_\_

1.2. Sub - district \_\_\_\_\_

## SECTION II – DEMOGRAPHIC INFORMATION OF HOUSEHOLDS

1. Are you graduated from PSNP? 1. =Yes 0 .=No
2. Age of household (years) \_\_\_\_\_
3. Gender 1.= Male 0.=Female
4. How many is the numbers of years of your formal education (year of schooling)\_\_\_\_\_
5. Number of Dependents: Below 15:\_\_\_\_\_
- Above 65:\_\_\_\_\_

## SECTION III- PERCEPTION OF HOUSEHOLDS TOWARDS GRADUATION FROM PSNP

6. What will happen to your livelihood if PSNP didn't implemented? Would you say:  
1. = Very good 2= Good 3=.The same 4. = Worse 5. =Very worse
7. Graduated households are food self sufficient? Do you agree:  
1. = Strongly agree 2.= Agree 3=. Neither 4=. Disagree 5=.highly Disagree
8. What is your confidence level to graduate from productive safety net program? Would you say you are:  
1. = Highly confident 2. = Confident 3=Low confidence 4=Have no confidence at all
9. Do you satisfied with the current implementation of graduation from productive safety net?  
Would say you are:  
1. = Highly Satisfied 2. =satisfied 3. =Neither 4. = Dissatisfied 5. = Highly  
Dissatisfied

10. What do You Think are the Problems in Implementation of Graduation?

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**N.B. Question 11 for graduated Households only if you are current beneficiary go to question 12**

11. How do You Compare Your Livelihood with Non-graduated households.

1. = Very Good      2. = Good      3. =The same      4. =Worse      5. =Very Worse

12. Do you satisfied with government investment to enhance graduation? Would you say you

are? 1. =Highly satisfied      2. = Satisfied      2.= Neither

4. = Dissatisfied      5. = Highly dissatisfied

13. Is asset based graduation criteria appropriate for your kebele?

0. = Appropriate    1. = Nither    2. = Dissatisfied

14. What do you think the problems in the criteria's undergo in your kebele?.

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**SECTION –IV SOCIO-ECONOMIC FACTORS AFFECTING GRADAUTION FROM PSNP**

15. Do you have farm land?    1. =Yes                      0. =No

16. If your answer for number 15 is ‘‘yes’’ how much hectare do you possess(size of farm land by hectare)\_\_\_\_\_

17. Of the land you possess do you have irrigable land? 1. =Yes 0.= No

18. If your answer for Question number 8 is No what is the reason? Please specify

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19. What is the amount of your total crop production annually (Quintals)?

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20. Which livestock types do you possess after you become PSNP beneficiary? Specify with its number

Livestock type	Number	TLU value
1. =Ox		
2. =Cow		
3. =Woyefen(weaned male calf		
4. =Heifer		
5. =Calf		
6. =Donkey (Adult)		
7. =Donkey(young)		
8. =Sheep(Adult)		
9. =Sheep(young)		

10. =Goat(Adult)		
11. =Goat(Young)		
12. =Hen		
13. =Other		

**SECTION V- INSTITUTIONAL FACTORS AFFECTING GRADUATION FROM PSNP**

21. Do you have access to credit? 1. =Yes                      0.=No

22. If you answer of number 21 is ‘‘No’’ what is the reason? Please specify

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23. Do all of your family members receiving transfer from PSNP?

1. =Yes    0. =No

24. If your answer for question number 23 is ‘‘No’’ what do you think is the reason? Please specify\_\_\_\_\_

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25. Do you have access to advice from development agents?

1. =Yes    0. =No

26. If your answer for the above question is ‘‘yes’’ how many times the development agents give you technical advice? Please specify:

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**PART VI. OCCURRENCE OF DROUGHT**

27. Are you vulnerable to Drought during your stay in PSNP?

1. = Yes

0. = No

28. What kind of natural factor hit you? 1.= Drought 2.= flood 3.= Forze 4 Crop Failure Pest incursion

### SECTION VI IMPLEMNTATION OF GRADUATION FROM PSNP

29. Is there any training or awareness creation on graduation from PSNP and its criteria?

1. =Yes

0. =No

30. Which graduation criteria are applying in your kebele? (mark X on the criteria's )

0. =Total crop production

4. = Remittance

1. =Livestock ownership

5. = Quality of Land

2. =Off farm participation

6. =Access to credit and agricultural extension

3. =Land quality

7. =Other \_\_\_\_\_

31. Do you receive support from OFSP/HABP? 1. =Yes

0.= No

32. If your answer for question 31 is 'No' What is the reason Please Specify?

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33. Do you Register Your Asset for graduation? 1. =Yes

0.=No

34. Who Register Your Assets?

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35. How do you rate the evaluation regional and District level officials and experts?

1. =Very Good

1. =Good

3. =Neither

4. = Weak

5. =Very weak

36. Do you experience any food gap during your stay in PSNP? 1. =Yes

0. =No

37. In time of shocks is there any risk financing mechanism? 1. =Yes

0. =No

38. Which mode of transfer do you prefer? 0. =Cash            1. =Food            2. =Both
39. Which transfer mode is applying in your kebele? 0. = Cash            1.= Food            2.=both
40. Is the Transfer from PSNP predictable? 1. =Yes            0. =No
41. On what time and frequency do you receive the transfer from PSNP

**Questions 43-54 for Graduated Households Only**

42. Do you believe your graduation is appropriate? 1. =Yes            2.= No
43. If your answer for the above question is number 42 is” No” what do you think is the reason?\_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
44. Does the community participate to decide on your graduation? 1. =Yes            0.=No
45. If your answer for question number 45 is “No” so who decide on your graduation?
1. =Development Agents            2. =CFSTF            3.= I don’t know
46. Which one of the following program exit type correctly expresses you?
1. =Graduated on Benchmark            2. =Graduated voluntarily            3. = Self graduated
4. =Graduation to correct inclusion errors            5. = Premature graduation
6. =Other\_\_\_\_\_
47. Do you stay in the program one year after graduation in the program?
1. =Yes            0. = No
48. Do you receive Support after graduation from the program? 1. = Yes            0.= No

49. How much do you estimate the amount of your asset accumulate from PSNP in Ethiopian birr?

- 1. = 1000-3000
- 2. =3001-4000
- 3. = 4001-5599
- 4. = 5600-8000
- 5. = More than 8000

50. Do you want to re- enter the program? 1. =Yes 0.= No

51. If your answer for question number 50 is "Yes" what is your reason? Please specify

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52. If your answer for question number 50 is "yes" do you appeal regarding your graduation?

- 1. =Yes
- 0. =No

53. If your answer for question number 38 is "Yes" What is your rationale for appeal?

- 1. =Premature graduation
- 2. = Request to transform from public works to direct beneficiary
- 3. =I have graduate for attainment of the government official's quota
- 4. = I have graduate because of remittance
- 5. = After graduation I am vulnerable to natural shock
- 6. = Because of many persons who have better livelihood than me are there
- 8. = Other \_\_\_\_\_

54. What is your suggestion for effective graduation from PSNP? \_\_\_\_\_

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=====THANK YOU VERY MUCH =====

### **Section VIII- Key informant interview Questions**

1. Do procedures conform to guidance? If No, Why?
2. Are systems fair and transparent?
3. Is full family targeting functioning? If not why?
4. Is the support from HABP/OFSP is implementing according to PIM manual? If not why
5. Is the transfer flexible, predictable and participatory?
6. Do you know the criteria to say a household head graduate or not?
7. Have graduates reached the intended benchmarks?
8. What is your benchmark for graduation and how long does this benchmark practicing?
9. Have graduates already withstood a moderate Shock or how confident do they feel about their ability to withstand such a shock?
10. What safeguards are in place and are they functioning?
11. Do you receive training regarding graduation criteria, benchmark and application?
12. What do you think are the main problems during your identification of graduation?
13. Do you incorporate gender issues in your graduation implementation?
14. Does the community participate in the graduation assessment and decision?
15. What do you think are the main problems in graduating households from PSNP
16. What should be done to have effective graduation from PSNP
17. Is there any appeal regarding graduation of households? If yes, are you implementing it according to the guidance? If NO why?

### **Section-VIII Questions for Focused Group Discussion**

1. Is there occurrence of shock starting from the implementation of PSNP (it can be natural and market related)?
2. Are the complementary programs (credit, access to extension program and others) accessible to all beneficiaries?
3. How do you compare the livelihood of graduated and current beneficiary households?
4. How do you evaluate the implementation of graduating households from PSNP?
5. What do you think are the main problems in implementation of graduating households from PSNP?
6. How do you evaluate the post-graduation monitoring of intended bodies to households?
7. Are the criteria's and benchmarks for graduation appropriate to the households targeted in PSNP?
8. What should be done in order to have effective graduation from PSNP?