

# The Contribution of Productive Safety Net Program on Household Food Security of Tach Gayint Woreda, South Gonder, Ethiopia

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## Abstract

The general objective of this study was to assess the contribution of Productive Safety Net Program on household food security. The primary and secondary data sources were the two types of data used during this study. The former was gathered through household interview, KII, and FGD. Binary logistic regression was used in order to analyze the correlation between dependent variable and independent variables. PSNP has contributed to the food security of the households in protecting asset, decreasing the rate of migration, increasing credit accessibility, improving productivity in watershed areas, increasing school attendance, and the poorest of poor survived. Despite the contribution of PSNP to food security, there are still gaps in the course of implementation. Therefore, the policies and strategies designed for the program should be revised particularly the targeting system.

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

## 1. Introduction

Ethiopia's Productive Safety Program (PSNP) is a large national social safety net program that responds to not only to chronic food insecurity among Ethiopia's poor, but also to short term shocks, drought. It targets a highly climatic vulnerable population, offering a practical model of how social safety can be designed to meet the social protection needs of the most vulnerable, while simultaneously reducing the risks from disaster and climate related impacts (The World Bank Group, 2013: 1).

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

Launched in 2005, the program has shown from 4.5 million to around 7.6 million beneficiaries in 2012, or eight percent of Ethiopia's population; there are plans to reach 8.3 million people in 2015 (World Bank, 2012). The PSNP is managed by the GoE and is largely donor funded, with government contribution mainly in the form of civil servant costs. Ten development partners have committed to approximately US\$ 2.3 billion for the third phase of implementation 2011-2015 (The World Bank Group, 2013: 2).

Food for the Hungry Ethiopia and its sub-grantee Organization for relief and development in Amhara (FH/ORDA) has been involved in the implementation of Government of Ethiopia (GoE) led Productive Safety Net Program (PSNP) since 2005. The target woredas were Tach Gayint and Simada in South Gondar Zone; and Wadla, Lasta and Bugna in North Wollo Zone. The PSNP beneficiaries in woredas are addressed through both cash and food resources. The food resource is contributed by USAID while the cash resource is contributed by government of Ethiopia. The overarching goal of MYAP was to reduce the level of food insecurity at the household and woreda levels (FHE, 2009: 3).

## Endnotes:

The World Bank Group, The Ethiopia's Productive Safety Net Program (PSNP) Integrating Disaster and Climate Risk Management (Washington DC, 2013) P-19

Tadele Mamo, Impact of Productive safety net on Asset Accumulation and Sustainable Land Management Practices in the Central Rift Valley: The case of Adamitulu Jido Kombolcha and Meskan Districts ( Addis Ababa, Addis Ababa University, 2011) P-134

FHE, Annual Results Report: Multi Year Assistance Program. (Addis Ababa, Food for the Hungry Ethiopia, 2009). P-24

## **2. LITERATURE REVIEW**

### **2.1. The origin of Social Protection**

Social protection emerged as a critical response to the ‘safety nets’ discourse of the late 1980’s and early 1990’s. In the 1990 World Development Report, for instance, safety nets were very much the third prong of the World Bank’s three-pronged approach to “attacking poverty” (World Bank, 1990 cited in Devereux et al, 2004: 1).

Although social protection has recently become mainstreamed in development discourse, it remains a term that is unfamiliar to many and carries a range of definitions, both in development studies literature and among policy makers responsible for implementing social protection programmes. One inevitable result of this proliferation of concepts and understandings is confusion: the components and boundaries of social protection are far from agreed, and different stakeholders perceive social protection in very different ways. For example, some see social protection narrowly, essentially as a new label for old style social welfare provided to “deserving poor” such as widows and orphans, or people with disabilities (Devereux et al, 2004: 3).

Social protection describes all public and private initiatives that provide income or consumption transfers to the poor in order to protect the vulnerable against livelihood risks; and enhance the social status and the rights of the marginalized; with objective of reducing the economic and social vulnerability of poor, vulnerable and marginalized (Ibid).

#### **2.1.1. Justification for Social Protection**

The research conducted by DFID (2007: 3) clearly puts the reasons behind social protection particularly in developing countries. The social protection programmes can contribute to directly addressing the poverty and hunger Millennium Development Goal (MDG). Pensions, employment guarantee schemes, and child, disability and unemployment benefits can all raise income and reduce the incidence and severity of poverty and hunger. They can also reduce a household’s vulnerability to shocks and changes in life circumstances by smoothing consumption and protecting household assets.

Social protection can play a transformative role in the lives and livelihoods of poor people. Some forms of social protection such as public works programmes and cash transfers can create community asset, stimulate local markets and generate income and employment multipliers. It has also the potential to challenge existing power relations and strengthen the social contract between citizens and the state (Ibid).

Social protection programmes can also play a significant role in the transition out of emergency relief. In circumstance of chronic poverty and food insecurity, predictable social transfers can help to address the structural dimensions of hunger and vulnerability and reduce the need for ad hoc relief appeals (Ibid).

#### **2.1.2. The social protection (Safety Net) Program in European Context**

The impact of social safety net on poverty is paramount in Europe Union as it was stated in the study of Habtamu (2011: 21). The study not only focuses on poverty and inequalities but also the impact of economic growth on poverty. Its objective was to assess the impact of social protection and economic growth on inequalities and poverty over fourteen (1994-2007) countries of EU.

It is recognized that the social transfers in cash has significantly contributed in reducing inequalities and poverty in EU countries. The transfers in cash has declined the income inequality; and poverty seems to be decisive than the role of per capita GDP. Moreover, the finding indicates that a one point percentage rise in other social transfers bring about the same decline in inequality with a rise in per capita GDP by 3-5%; and the same fall in poverty rate with an increase in per capita GDP by 8-10% (Ibid).

#### **2.1.3. Social Safety Net Program in Asia**

About 60-70 percent of households participating in India’s nationwide program and in Argentina’s Trabajar program; and 100% in Chile’s public works program belonged to poor households (Subbarao, 2003 cited in Habtamu (2011:22). Furthermore, Habtamu (2011:22) reviewed the works of Sumarto et al (2004) which focused on the impact of social safety net on poverty and welfare in Indonesia. He found that participation in social safety net programs help households increase their consumption level by the magnitudes of the coefficients range from around 0.04 for the subsidized rice, medical services, and employment creation programs to around 0.1 for scholarship program.

Furthermore, the finding of Sumarto et al (2004)cited in Habtamu (2011:22) showed that a household who participated in this program has a three percent lower probability to be currently in poverty than a household with similar characteristics but did not participate in this program.

### **2.2. Voluntarily Resettlement in Ethiopia**

The last three governments of Ethiopia have all carried out resettlement projects with different objectives and varying intensity but, broadly speaking, the premises on which each justified the need for resettlement were similar, at least in theory (Asrat Tadesse, 2009: 6). The resettlement under the government of the imperial

regime, Dergue regime, and the EPRDF are discussed as of the following.

In the 1990's and 1970's, there were few resettlement schemes run by some government departments and non-governmental organizations. Nevertheless, these were inevitably small in size, ad hoc in nature; and were mainly designed to achieve specific and limited objectives (Berhane cited in Asrat Tadesse, 2009: 6).

Under the imperial regime, resettlement was designed to achieve two objectives. The first of these two objectives was to rationalize land use on government "owned" and thus raise state revenue. The second was to provide additional resources for the hard pressed Northern peasantry by relocating them to the Southern regions (where most government land was located) which were mainly inhabited by what were regarded as 'subordinate populations'(Rahmato cited in Asrat Tadesse, 2009: 6).

Under regime, it was seen as a viable program because it was believed that it would expand the farmed area of the country and thereby increase gross agricultural production. It was also recommended as means of creating employment and addressing the problem of the growing excess labor force. The settlers comprised the landless peasants, evicted tenants, pastoralists and shifting cultivators, urban unemployed and ex-servicemen (Pankhurst cited in Asrat Tadesse, 2009: 6).

During Dergue regime, planned resettlement gained currency and gathered momentum after the commencement of the revolutionary process in 1974 (Berhane cited in Asrat Tadesse, 2009: 6). The government believed that resettlement would provide a "lasting solution" for the "hard pressed" peasantry, and particularly for the population living in the drought prone areas. It was conceived as a primary measure to rehabilitate the victims of famine. For instance, the planned relocation, involving hundreds of thousands of afflicted people, took shape in the immediate aftermath of 1984/85 famine and was greatly hoped to provide a duration solution for the victims (Rahmato cited in Asrat Tadesse, 2009: 7).

The policy was first initiated, therefore, as a means of dealing with famine problem, but gradually issue of population pressure, food production, land use etc, became major justification). In the period of 1984-86, the Dergue resettled some 600,000 people in mostly in the lowlands of Western Ethiopia. In this same period, some 33,000 settlers lost their lives due to disease, hunger, and exhaustion; and thousands of families were broken up. It was estimated that close to half a billion birr was spent on emergency resettlement, but the cost of the damage caused to the environment, of the loss of the livestock and other property, or of the distress and suffering caused to numerous people and communities would never be known (Ibid).

It is believed that voluntary planned relocation of vulnerable individuals and households is instrumental in ensuring their food security while at the same time easing overwhelming pressure on the fragile resource base in the highland in particular (Ibid). Therefore, the government considered resettlement as the cheapest and most viable solution to the problem of food insecurity on the basis of availability of land in receiving areas; labour force of re-settlers; and easing pressure of space for those remaining especially after three years (Abbute 2004 cited in Asrat, 2009: 7).

### **2.3. Other Food Security Program**

The other food security program encompassed a suite of activities designed to support agricultural production and food security, and to facilitate asset accumulation. This included access to credit, assistance in obtaining livestock, small livestock, or bees, tools, seeds; and assistance with irrigation or water harvesting schemes, soil conservation, and improvements in pasture land. In some cases, beneficiaries were provided with subsidized credit to purchase "packages," combinations of agricultural inputs sometimes based on a business plan developed with support from the extension service (ESS-II, 2013, 177).

In the first evaluation of food security program (Gilligan et al cited in ESS-II, 2013, 177) noted that outside Tigray, access to the other food security program (OFSP) was low. While this improved between 2006 and 2008, access to the OFSP remained limited and few households had consistent access to OFSP resources. According to World Bank (2010), this limited coverage reflected a number of other challenges associated with the implementation of the OFSP. One of the challenges was that the agricultural extension system was under resources and there were too few development agents with sufficient skills to play their role effectively.

The Ethiopian Strategy Support Program (2013, 177-78) finding revealed that there are variations in the targeting of the OFSP owing the absence of clear guidelines on OFSP implementation particularly who should be targeted. Some regions, concerned about the number of prospective graduate rates they would achieve by the end of the program, targeted the better-off households who more likely to graduate. For instance, during the first of the PSNP, the Amhara region gave a priority to household who could easily achieve the graduate target rather than the ultra poor. Similar situations were noticed in Tigray region as well. In oromiya region, targeting was based instructions received from the woreda Food Security Office and the DPPO, whereas in SNNPR, households were targeted in a lottery system. In addition, household's motivation and determination is seen as a positive step toward the selection criteria for the OFSP.

#### **2.3.1. Household Asset Building Programme**

The Ethiopian government in association with donors and development partners extensively redesigned the other

food security program named as new program called Household Asset Building Programme (HABP). This action was taken by the government in order to address the problems associated with other food security program. The HABP is one of the four components of the Ethiopian government's National Food Security Program. As such, it contributes to the achievement of the FSP's expected outcome of an improved food security status of male and female members of food insecure households in chronically food insecure (CFI) woredas. The specific targeted outcome of the HABP is diversified income sources and increase productive assets for food insecure households in CFI woredas (GFDRE cited in ESS-II, 20013, 181).

The HABP concentrates on diversifying the incomes and productive assets of chronically food insecure households. It bridges the transition from graduating from PSNP to complete food security (CHF cited in ESS-II, 2013, 181). The HABP differs from the OFSP in three ways. Along with injection of new resources, 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, programs for women and youth, and off-farm technical officers. Each kebele should have three development agents; one crop science development agent; one animal husbandry development agent; and one natural resource management development agent. They are supposed to disseminate "technology packages" and provide on farm technical advice. These are demand-lead 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 (GFDRE cited in ESS-II, 20013, 181).

## 2.4. Productive Safety Net Program

### 2.4.1. Food for Work

According to Arega (2012: 608), food for work commenced during the reign of regime; and currently broadened its scope to the drought prone areas of Ethiopia. The strong side of FFW is that it allows household members to work for their benefits rather than receiving the handouts. The survey result of Arega revealed that the major works accomplished were building roads (80.1%), reforestation (82%), making irrigation ditches (71%), engaging in soil conservation measures (79%) and building schools/clinics (82%).

Food for Work programs have long been used to protect households against the decline in purchasing power that often accompanies seasonal unemployment, climate induced famine, or other periodic disruptions by providing employment opportunities to the people (Subbarao 2001 cited in Ashenafi Gedamu, 2006). The FFW project, being undertaken by German Technical Cooperation Agency (GTZ) was established in 1996 and provides funds for rural roads construction and some afforestation activities in the Amhara region (Ashenafi Gedamu, 2006: 178).

According to Holden et al 2005 cited in Ashenafi Gedamu (2006: 178), food for work programs are essentially used both for short-term relief and long-term development purposes. From analysis based on data from FFW projects in early 1990s, it appears that villages with more favorable economic conditions with higher populations receive more FFW projects. Building a road or providing electricity in a remote and sparsely populated village, for example, would not be the most efficient use of poverty reduction funds. In the mid 1990s, more remote areas were said to be targeted for FFW projects, but results from these efforts have not yet been assessed

### 2.4.2. Principles of PSNP in Ethiopia

In the context of Ethiopia, there are principles which are explicitly stated by Ministry of Agriculture in 2010 for the implementation of PSNP programme. It is aimed at ensuring effective implementation of PSNP as per the objectives set so forth. The following are to be applied at all times:

**Fair and transparent client selection:** Clients are selected through community-based targeting, with an effective appealing mechanism to address the inclusion and exclusion errors. The client lists is verified through public meetings during which it is read aloud and discussed. The final client lists is also posted in public locations (PIM, 2010: 6).

**Timely, predictable and appropriate transfers:** To create an effective safety net, clients must be sure that they can depend on the PSNP at all times. Transfers can be considered predictable if PSNP clients have timely acknowledge of their eligibility for the programme, and they know what type of transfer they will receive, how much of this transfer they will receive and when they will receive it. A transfer is timely if it is provided to clients before or at the time during the year when they need the support. A timely transfer also takes place according to a planned transfer schedule. A transfer is appropriate if it meets the needs of the households: cash is provided in settings where markets function well, while food is provided in areas where there is no food to purchase or food prices are extremely high. An appropriate transfer also has the same value whether it is provided in cash or food (Ibid).

**Primacy of transfers:** Since PSNP is primarily a safety net, ensuring clients receive transfers takes priority over all considerations. Transfers should not be delayed for any reason, including those related to public works implementation.

**Productive Safety Net:** The PSNP is the Productive Safety Net Program which means that it not only includes a

commitment to providing a safety net that protects food consumption and household assets, but it is also expected to address some of the underlying causes of food insecurity and to contribute to economic growth in its own right. The productive element comes from infrastructure and improved natural resources base created through PSNP Public Works and from multiplier effects of cash transfers on the local economy.

**Integrated into local systems.** The PSNP is not a project but a key element of local development planning. PSNP plans are integrated into wider development plans at woreda, zone, region and federal levels.

**Scalable Safety Net.** The PSNP is scaled up when needed in the event of shocks to ensure assistance is available to those households who need it most in PSNP woredas, to prevent them from becoming more food insecure. The PSNP can scale up to a predetermined ceiling; any transitory needs that cannot be met through PSNP will be addressed through emergency response system.

**Cash first principle.** It says that cash should be the primary form of transfer whenever possible. This assists with the stimulation of markets- since people spend their cash in local markets- and they move away from food aid. Food transfers are provided at times and places when food is not available in the markets, or where market prices for food are very high. This protects PSNP clients from food shortages and asset depletion.

**Gender Equality.** The PSNP is designed to respond to the unique needs, interests and capabilities of men and women to ensure that they benefit equally from the programme. This is done by promoting the participation of both men and women in PSNP decision making structures and responding to women's responsibility for both productive and reproductive work and the differential access of female-headed households to resources.

#### **2.4.3. Objective of PSNP program**

This section briefly discusses about the objective of productive safety net program in context of Ethiopia. The intended goal of PSNP program is to 'to assure food consumption and prevent asset depletion for food insecure households in chronically food insecure woredas, while stimulating markets, improving access to services and natural resources; rehabilitating and enhancing the natural environment (PIM, 2010: 5).

The objective arises from the PSNP logical framework, which the strategic planning tool used by PSNP to ensure that what we do to implement the PSNP will help us achieve the desired objective of the programme. Looking deeper into the objective, it has the following elements:

- it focuses on chronically food insecure woredas;
- it focuses on food insecure households- primarily chronically food insecure households but also those who are transitory;
- it aims to ensure food consumption, so that chronically food insecure people have enough food to eat throughout the year;
- it aims to prevent asset depletion, so that chronically food insecure households do not have to lose their assets in order to provide for themselves;
- It aims to address the underlying causes of food insecurity by rehabilitating the natural resources base;
- it aims to have a positive impact by stimulating markets and injecting cash into rural economies and,
- while doing that it also aims to contribute to the creation of an enabling environment for community development by increasing access to services, such as health, education, roads, and market infrastructure.

Looking at these elements of the objective it is clear that the PSNP provides a safety net to protect people falling into further trouble, while also providing secure food and asset platform from which they may be able to improve their household status and become food secure. It is also clear from this that while everyone wishes that graduation of households from the PSNP will be as widespread and fast as possible, the PSNP is not designed to make this happen: in addition to the safety net that the PSNP provides to prevent people falling lower, other measures are also needed to help people rise higher. These other measures are provided through the Government's Food Security Programme (FSP) and other investments and services (Ibid).

#### **2.3.1. Targeting of PSNP Beneficiaries**

The Federal Government of Ethiopia has clearly stated the processes that must be involved in time of targeting. According to PIM (2010: 22), targeting under PSNP is a combined administrative and community targeting approach. The administrative elements include the provision of a PSNP client allocation (the number of clients which can be targeted in a specific region, woreda, kebele etc), input into the key targeting criteria used within a locality, and oversight of the accuracy and transparency of the targeting system. The key community elements of the approach include the actual identification of target households by the Community Food Security Task Force and the verification of the client list by a public meeting in which the entire PSNP client list is read out and discussed.

The criteria which applied during targeting session are explicitly mentioned in the Program Implementation Manual. The criteria for selection of households are:

- The household should be members of the community
- Chronically food insecure households who have faced continuous food shortages (three months of food gap or more per year) in the last three years
- Households who suddenly become more food insecure as a result of a severe loss of assets (financial, livestock,

means of production, assets), especially if linked to the onset of severe chronic illness, such as AID, and therefore unable to meet their food needs even during periods of normal rain; and,

-Household without adequate family support and other means of social protection and support

In addition to above criteria, the Ministry of Agriculture has also laid down supplementary criteria to assist in the refinement of the client list. It also indicates that further criteria may be provided by the WFSTF and forwarded by the KFSTF. The supplementary criteria include:

-Status of the household assets: land holding, quality of land, food stock, labor availability, etc

-Income from agricultural and non agricultural activities; and

-Specific vulnerabilities such as female-headed households, households with members suffering from chronic illness, such as AIDS, elderly headed households caring for orphans, etc.

There are also other rules which applied during targeting process. These are:

**-Full Family Targeting:** If a household is identified as chronically food insecure and eligible for the PSNP, all household members will be listed as clients of the programme.

**-Polygamous households:** The 'family' should be treated as the man and one wife and the children of that wife, while each other wife and her children should be treated as a separate female-headed household. Each of these separate households should be assessed as to whether or not they should be eligible for the PSNP.

**-Divorce:** In the case that a husband and wife become divorced during the course of their inclusion in the PSNP, all family members residing in the kebele should continue as clients for the year. The transfer each household receives should correctly reflect the number of family members dwelling together.

**-Duration of client eligibility:** Clients will remain in the PSNP for multiple years until they reach the graduation threshold. They will not be excluded from the PSNP through the annual retargeting exercise if they are better off than other households but have not yet reached the graduation threshold, as defined by the regional graduation benchmarks (Ibid).

#### 2.4.5. Graduation

Programme Implementation Manual (2010: 10) of PSNP states that graduation arises from the combined effects of FSP components and other development processes, not from the activities of the PSNP alone. Improvements in all of these contributors are required for graduation. Therefore, the success of the PSNP cannot be judged by graduation rates.

The critical steps for the graduation of the clients of PSNP include:

-all chronically food insecure households will receive PSNP transfers. Under the HABP, they will also receive technical and business development support Development Agents and woreda experts for the identification of potential new investment opportunities and the development of household business plans. They will then access financial services from Micro-Finance Institutions (MFIs) or Rural Credit and Savings Cooperatives (RUSACCOs) to enable them to make these investments. In addition, support will be provided to identify market outlets as well as potential value addition opportunities. In addition to this, Households will be encouraged to engage in regular savings either with village savings and credit groups or RUSACCOs (Ibid).

-The most destitute households targeted by the PSNP (the "ultra-poor" in the program; these may include female headed or labour poor households) are often unwilling and unable to take credit. In order to build their confidence as well as their creditworthiness; these households will receive not only access to extension and financial services as described above, but also an addition effort to include them in the FSP (intensive support and tailored) What form this takes will be determined during implementation as required. Following this kick-start, households should be in a position to save and access credit in similar ways to other chronically food insecure households for further undertakings in their business plan. Some ultra poor households will never move into food sufficiency and will always require unconditional food transfers to meet their food needs (Ibid).

-As their assets and incomes increase, chronically food insecure households will no longer need support from the PSNP (and may even voluntarily withdraw from the programme). This is the point at which they graduate from the PSNP (the first level of graduation). When this happens, they will continue to access HABP support from extension staff and financial institutions so that they can further build assets in order to become sustainably food secure. During this period they might take larger loans and may begin to choose financial products that are not linked with the Food Security Programme, but rather are mainstream products provided by financial institutions, particularly MFIs (PIM, 2010).

#### 2.5. Review of Food insecurity Situation

Although strong commitment of international institutions and the efforts conducted to reach the objective to half, within year 2015, the number of people suffering from hunger, food insecurity still represents one of the biggest challenges for a big part of the world population and must be treated with utmost urgency. The food and Agriculture Organization of the United Nations (FAO) State of Food Insecurity for 2010 assesses that nearly 1 billion people are estimated to be undernourished, representing almost 16% of the population of developing countries (Marion Napoli et al, 2010/11 5).

There is a clear distinction between food security and food insecurity. Food security is, however, a difficult concept to measure since it deals in very broader term with the production, distribution and consumption of food. Food insecurity, on the other hand, lends itself more readily measurement and analysis (Ibid). According to FAO 1996 cited in Marion et al (2010/11: 9) food insecurity is defined as:

“A situation that exists when people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development; and an active and healthy life.”

Any analysis of food security examines whether a change from security to insecurity or insecurity to security actually takes place and also the probability of such a change is happening. Factors that may lead to a situation of food insecurity include non-availability of food, lack of access, improper utilization and instability over a certain time period. The 1996 World Food Summit in Marion et al (2010/11: 9) declared the fight against food insecurity as one of its objectives:

“This plan of action envisages an ongoing effort to eradicate hunger in all countries, with an immediate view to reducing the number of undernourished people to half their present level no later than 2015, and a mid-term review to ascertain whether it is possible to achieve this target by 2010 (Marion Napoli et al, 2010/11, 9).”

Between 2012 and 2013, ERS estimates of food insecurity for the 76 countries analyzed remain virtually unchanged, but with some changes in the distribution of food gaps across countries. The number of food insecure people is estimated to increase from 704 million in 2012 to 707 million in 2013. The share of the population that is food insecure in these countries is expected to decrease from about 21 percent in 2012 to 20 percent in 2013. The number of food insecure people in Sub Saharan Africa (SSA) is estimated to increase by less than 2 percent and distribution gaps (the quantity of food required to reach the nutritional target of roughly 2, 100 calories/day for each income decile) to fall by more than 4 percent (USDA, 2013, V).

Specifically in Ethiopia, there is one major factor which often mentioned being necessary condition for the chronic food insecurity. Devereux in his discussion paper on “Food Insecurity in Ethiopia” (2000) stated that dependency on unreliable and low productivity rainfed agriculture may well be the primary determinant of household food insecurity in the country. There is an assumption that household food security can be achieved by increasing food production on individual farms through enhanced access to agricultural inputs i.e. fertilizers draught oxen, etc (Devereux, 2000, 5).

The livelihood components such as the social, natural, human, financial and physical are very matters in ensuring food security but if not they would cause food insecurity. The study by Befekadu and Berhanu cited in Devereux, 2000, 7), elaborates how they could bring about food insecurity when one of the elements is missing. According to them, off-farm employment opportunities in rural Ethiopia are limited in both availability and income-generating potential. The survey conducted by Ministry of Labor (1996) depicts only 44% of rural household populations are reported any non-agriculture sources of income and these contribute only 10% to household income (Devereux, 2000, 7).

Study by World Bank, 1999 (cited in Devereux, 2000, 5) depicts that the productivity of Ethiopian agriculture is among the lowest in the world which estimated to be 1.2 tons per hectare. Masefield 2004 (cited in Devereux, 2000, 5) further indicates that although higher yields are possible through agricultural intensification, the evidence suggests that “average land holdings would be insufficient to feed a family of five even if production could be successfully increased three times with application of improved technology.

The other factors contributes to food insecurity in Ethiopia is landlessness. The degree of landlessness and near landlessness is increasing. The available arable land is little in rural parts of the country. As a result of this, land pressure is evident in some parts than few parts. People should be free to settle where they choose, but rigid institutional and administrative barriers imposed severe restriction on mobility (Aklilu & Tadesse 1994 cited in Devereux 2000, 7-8).

Kataru (2011, 19) has reviewed various researches; he indicates that food insecurity comprises low food intake, variable access to food, and vulnerability- a livelihood strategy that generates adequate food in good times but was not resilient against shocks. The country has been structurally food insecure since 1980. As a result of this, food gap increased from 0.75 million tons in 1979/80 to 5 million tons in 1993/94. In 1995/96, the food gap had fallen to 2.6 million.

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### 3. Results and Discussions

The production of the area was fairly high before commencement of the PSNP program. Not surprisingly, they were not even applying agricultural inputs such as UREA, DAP, and the like- before the program. The factors that contributed to the high yield were fertile soil, and the absence of disaster such as anti-crop. The name given to the anti-crop is “Kancara” which affects the normal growth of the crops on the farm field at the initial stage.

The study result shows those who owned land are found to be more than those who have no land. Among the respondents, 69.1% were those who owned land while 30.9% were those who have no land in the study area. As one can understand from the following table, the average landholding size is two **timad** per household. In addition to this, the maximum landholding size is five (5) timad; and the minimum is one (1).

The cross tabulation analysis of plot size (timad) with food security indicated that the probability of those households who owned farmland is more likely to be food secured than those who are landless. As a result of this, there is strong relationship between plot size and food security as the former is statistically significant at p-value equals to 0.01.

Table 7: Summary of Landholding size

	Plot size in timad	Frequency	Percent	Valid Percent	Cum. %
Valid	0	28	29.8	29.8	29.8
	1	17	18.1	18.1	47.9
	2	24	25.5	25.5	73.4
	3	20	21.3	21.3	94.7
	4	4	4.3	4.3	98.9
	5	1	1.1	1.1	100
	Total		100	100	

Note: 0 value indicates that “no farm land”

After PSNP, the households who used to sell their production before the program is, to some extent, decreased (from 62.8% to 54.7%). This implies that the PSNP has supported the target group not to sell what they produce and only use for their consumption. In the same token, the rate of selling of firewood is slightly decreased in terms of percentage, which means from 5.3 before the program to 4.3 after intervention.

Table 12: Summary of Income sources of the Household after PSNP

	Description	Frequency	Percent	Valid Percent	Cum. %
Valid	Selling of production	54	54.7	54.7	54.7
	Selling of livestock	18	19.1	19.1	76.6
	Loans of cash	10	10.6	10.6	87.2
	Selling of labor	8	8.5	8.5	95.7
	Selling of firewood	4	4.3	4.3	100
	Total		94	100	100

#### 3.1. Test for Goodness of fitness of Model

Once the data entry was done, the researcher processed variables which are assumed to be the factors that affect the household food security. Accordingly, two variables (Plot size and income of the household after the intervention) which are the most powerful to improve the household food security are found to have positive association with food security. It was identified by applying Hosmer and Lemeshow Test as the explanatory variables were statistically significant at 0.1 and 0.5 precision. As a result of this, the Goodness-of-Fit Test of model was good because the significant levels of the independent variables are found within the range of best fit

model.

### 3.1.1. Binary Logistic regression results

Binary logistic regression was employed in order to see the variables that, to larger extent, contribute to the food security of the households. The explanatory variables that were selected to measure its association with food security were family size, age, sex, level of education, plot size, access to credit services, agro ecological zone, market access, farmland ownership, access to irrigation, and income after PSNP program.

These variables were entered and processed so as to measure the relationship between those independent variables and the outcome variable. The association of such variables as family size, age, sex, level of education, access to credit services, agro ecological zone, market access, farmland ownership, and access to irrigation with food security was negative. Therefore, they are ignored and the remaining two variables (i.e. plot size and income after PSNP) are taken since they were found to have positive association with food security.

The finding depicts that plot size and income are more likely to contribute to the food security of the households than other independent variables. Based on this finding, the predictors are discussed as it has shown below.

Table 15: Showing Binary Logistic regression Result

	B	S.E	Wald	df	Sig.	Exp(B)	95% C.I. for Exp(B)	
<b>plotsiz</b>	.860	.264	10.652	1	.001	2.364	1.410	3.963
<b>incomrataft</b>	.612	.292	4.412	1	.036	1.845	1.042	3.266

a. Variable(s) entered: plotsiz, incomrataft

As it is vividly indicated herein the above table, there is positive association between food security and plot size owned by the household in timad. This variable is significant at 1% level of precision. This explanatory variable is used to measure its association with household food security.

The research result mentioned in the table depicts as the plot size owned by the household increases by one timad, the chance of attaining food security at household level increases by log odds of 2.364. This finding is in conformity with the finding of Alem Shumiye (2007). In his finding, he revealed that land size has a positive association with food security status and statistically significant.

The finding of the study further shows that there is positive relationship between food security and income of the household after PSNP. Household income, as illustrated in the above table, is significant variable and has association with food security. An increase in household income by one birr can increase household food security by log odds of 0.612. So, this explanatory variable is most determinant factor in conjunction with plot size that contributes to the food security of the household in the study area.

### 3.1.2. Test for Interaction effect/Multicollinearity/

The researcher carried out test for multicollinearity between explanatory variables. As it has presented herein table-15, there is no interaction effect for the income by plot size since the p-value is insignificant at 0.316 having a confidence interval of 0.791 and 2.067 lower and upper respectively.

Table 16: Summary of Multicollinearity analysis

	B	S.E.	Wald	df	sig.	Exp(B)	95% C.I. for Exp(B)	
							Lower	Upper
<b>Income by plot size</b>	0.246	0.245	1.007	1	0.316	1.279	0.791	2.067

a. Variable(s) entered: incomrataft \* plotsiz.

### 3.2. Contribution of PSNP on food Security

What the participants of the FDG think as contributions of PSNP on their food security is thoroughly discussed as of the following.

**Asset protection:** The rate of asset depletion is slightly decreasing since they joined the PSNP program. Before the program, the number of livestock sold per household was very high than the present. Currently, they are not selling their assets as before.

**The rate of migration decreased:** thousands of households have been migrated to nearby woredas and regions with a view to sustain their life. Majority of the people in the study area used to migrate to Humera, Metema, and Wollega. The rate of migration is significantly reduced after they embraced in the Productive Safety Net program.

**Credit accessibility increased:** Being beneficiary of PSNP program is a precondition for having access to credit service in the study area. It is supported those people who had the opportunity by providing them with supplementary income to purchase food and address the food shortage they face.

**Productivity in Watershed area improved:** The investment made so far on the watershed area had improved

the production and productivity of the targeted group whose farmland located within the watershed. As a result of this, the food security of these households, to some extent, is being improved.

**School attendance increased:** Comparatively, the beneficiary households are educating their children as the program enabling them to fill their food gap. In the past times, they were not sending their children to school because of the problem attributed to food insecurity at household level.

**The poorest of the poor survived:** The provision of food commodities and cash has sustained the life of the most vulnerable social groups (i.e. elders, lactating and pregnant mothers, and children). According to them, the aid is the only sources of food for vulnerable people since they have no labor to sell in order to make a living.

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