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DETERMINANTS OF RURAL HOUSEHOLDS FOOD INSECURITY IN THE CASE OFCHEHA WOREDA.

A senior research proposal Submitted to the Department of Agricultural Economics in Partial Fulfillment of the Requirement for the Bachelor of Art Degree in Agricultural Economics

By: **ID N0**

1. Awel Ahmed…….....AGR/ 359 /09.

2. Gudeta Teresa……..AGR/144/07

Advisor: Makedes (Msc)

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Contents

Acronyms

ADLI Agricultural development led industry

AGRA African green revolution agenda

AREE Annual reports of Ethiopian economy

BARD CW Bureau of Agriculture and Rural Development of Cheha woreda

DPPCO Disaster prevention and preparedness commission office

EEA Ethiopian economic association

EEPRI Ethiopian economic policy research institute

EJBE Ethiopian journal of business and economic

FAO Food and Agricultural Organization

FDRE Federal democratic Republic of Ethiopian

GDP Gross Domestic Product

IAU Input Agricultural Use

IFAD International fund for agricultural development

IFPRI International Food Policy Research Institute

LSRO Life Sciences Research Office

MDG Millennium Development Goal

MoFED Ministry of finance and economic development

SNNP South Nation Nationality People

TLU Total livestock use

USAID United states agency international development.

WB World Bank.

WFP World food programWFS World food summit

Abstract

Improving food security in Cheha woreda closely related with the elimination and reduction of poverty at woreda and individual level. Some of the rural household in Cheha woreda is suffer by food insecurity. Therefore, this study was investigated the determinants of food insecurity in the study area through using extended primary data. The main objective of this study is to identify the main determinants of food insecurity rural household using a probit regression procedure. Descriptive statistical like mean, standard deviation, percentage, and frequency distribution and Probit model was used to address the objectives of the study. The result of the econometric analysis using probit model confirmed that age, ceremonial exp, and land size negatively and significantly but TLU is positively and significantly. The study regarding data requires collecting reliable information regarding food insecurity; data was collected from both primary and secondary data source. The primary data was collected from the rural household is 100 in Cheha rural kebeles through structured questionnaires and interview. Regarding secondary data was collected from different research papers that have do on food insecurity and also was collected from relevant institution such as Cheha woreda agriculture and rural development and Disaster prevention and preparedness commission office as well as published and un published data sources. A simple random sampling method will employed to select the sampling units. The main significant of this study is creating awareness to the rural household .In addition to these, the study is forward the concrete recommendation, which implies helping to improve food insecurity through basic policy implication and the participation of the rural household.

Key words: Food Insecurity, Food, Households, Cheha, Probit

1. INTRODUCTION

1.1. Background of the Study

People need access of enough food at all times for an active and healthy life. However, there was no food security for hundreds millions of people in the world. At world level between 340 and 730 million people suffer by chronic malnutrition such that lack of protein, lack of vitamin and essential nutrients and even large number of people suffer by under nutrition, these people are concentrated in under developed world (FAO , 2013).

The world food situation has never been better, yet more than 700 million people in the developing world did not have access to sufficient food to lead healthy and productive live, more than 180 million children are under weight, diseases of hunger and malnutrition are wide spread (Narasaiah, 2010).

Rising food price contributes to increase food insecurity at worldwide, particularly among poorer nation. Approximately one billion or one sixth of the world population subsists on less than $1 per day. At household level, increasing food price has the greatest effects on the poor and food insecure population who spends 50 to 60% or more their income on food (USAID**,** 2011).

Currently, despite an improved global cereal supply resulting from increased cereal production in 2008 and associated decline international prices, foods remain high in most developing countries (FAO, 2008/9). Increased food price continues to negatively affect access for significant number of low-income vulnerable population; contributing ongoing food emergencies in 31 countries worldwide, including 20 African countries (USAID, 2010).

The development objective of every African government at the beginning providing is enough to meet the needs and nutritional quality for everyone in Africa. Unfortunately, most African government did not see food self-sufficiency as fundamental to their developmental goals. After decades of political independence, hunger and malnutrition remain persistent problem in many African countries. The root causes of African food production lies ultimately in government policies over the year, even though the devastating effects of natural climates of some African countries (Odejide, 2009).

The growth rate of Sub -Saharan African food production during 1970 is less than two-third as it had been in the 1960's. Between 1961 and 1980 Sub-Saharan, African recorded an annual average growth rate of only 1.7 percent in major food production (FAO, 2009).

Much of Easter Africa has also affected by unfavorable climatic and drought condition particularly in the horn of Africa. These factors seriously undermined progress toward improving food security (FAO, 2015).

Ethiopia has experienced a worsening trending in level of poverty during the 1990's. Food production failed to keep pace with population growth rate in the last 30 years. The food gaps widened in the 1980's ranging between one and two million metric tons of cereal in 1985 and continued through 1995 (*Kinfe*, 2007).

Ethiopia is the largest recipient of food aid in Africa. The food aid to Ethiopia between 1984 and 2000 amounted to 10 million tons equivalent to 10 percent of annual national food grain supply (AREE, 2008/2009).

Inadequate rainfall combined with rapidly growing population, increased inflation, endemic poverty and limited government capacity on social service have led to chronic food insecurity and water shortage in large parts of Ethiopia, which includes Somalia, Afar, Oromia, Amhara and SNNPR regions (USAID, 2009).

Agricultural Development Led Industry (ADLI) is the strategy that the Ethiopian government set in 1994. This strategy has focused on maximizing agricultural growth in the initial stage of economic development, which at the ends addressed food insecurity problem. Within the context of ADLI, the government of Ethiopia launched its food security strategy in 2002(MoFED, 2002). The food security strategy identified causes of inadequate growth in food production and increasing food insecurity, which are inadequate and variable rains falls, soil degradation, conflict, poor development infrastructure, insecurity of land tenure, insufficient strategy capacity, and heavy load of work for women and special problem related to pastoralist (Wolday, 2007).

The government of Ethiopia food security strategy is depends on the two principles. First, food security strategy would be sight in relation to Ethiopia's comparative advantage in the

international trade of food crops. Secondly, food security assistance should promote greater self-sufficiency in food production (Abrham, 2008).

SNNP region harvests many types of food crops mainly during spring season. There are many cereal and commercial crops produced in Guraghe zone particularly in Cheha Woreda. This major cereal crop types are wheat, barley, maize, and sorghum and teff and commercial crop like, chat. However, some of the population lived under malnutrition and they are food insecure (DPPCO, 2017).

1.2. Statement of the Problem

The food insecurity issues in Ethiopia should be view at different levels, such as at national, regional, household and intra-household levels. An attention should been given especially to food insecurity at the household level. Moreover, poor food distribution within household results in some member (usually women and children) to have inadequate intakes, thus there is a growing concern on the issue of intra-household food security (Wolday, 2011).

In Ethiopia, minimizing food insecurity is closely relating with the elimination and reduction of poverty, hunger, and malnutrition. Minimizing food insecurity involves more than just increasing agricultural production (crop and livestock production). Rural people access to land to produce crop and the intensification of agriculture should consider as an important component of the minimizing food insecurity strategy (Wolday, 2011)

One of the consequences of the poor performance of Ethiopian agriculture is widespread food insecurity. An estimated 50 to 60 percent of the country's population is food insecure. For this reason, Ethiopia is still list among the low income and food insecure countries in the world (FAO, 20O9).

According to World Bank Report in 2012, the main causes of food insecurity in Ethiopia include adverse climate change, declining land holding per household, drought, war, flood, lack of diversity of item, inefficient and lack of credit institution, administration problem, socio-economic problems; depletion of assets, absence of income and wide spread of illiteracy in rural population in Ethiopia.

The severity of food insecurity problem in Ethiopia varies from region to region depending up on natural resources availability. Drought is the only significant cause of chronic food insecurity in Ethiopia. The most affected regions by drought and food insecurity are mainly Tigray, Amhara, Afar, Somalia and some parts of Oromia regions,(AREE,2014). The major drought affected area of SNNP is Wolkite and some woreda of Gurage zones and the zones also food insecure (AREE, 2016).

Cheha woreda is one of the Gurage zones. The accessibilities of food in some part of kebele in the woreda is not adequate due to poor education level, family size, small landholding size, crop disease , poor information market and infrastructure, problem rainfall, Ceremonial expense, age of household and absence of credit service, etc…(BARDCW ,2016).

1.3. Significance of the Study

This study was focus on identifying the major factors, which affect food insecurity. This study could add some idea to existing literature on food insecurity in Ethiopian as whole, and help to enlighten the concerned institution about the status of the district. The study can be helpful to create awareness for the society and for the local authority to provide better service. Even if the research is conduct in small area, it can be applicable to other parts of the country that faces the same problem.

The study would be providing direction for future research extension and development scheme that is benefit Cheha woreda rural people to achieve food security. In addition, this study will support to other researchers, who want to deal with determinants of food insecurity.

1.4. Scope of the Study

The study was conducted to identify the determinants of rural household food insecurity and coping mechanisms they use and also to assess the severity of the problem at this level. This study has conducted in Cheha woreda of Gurage zone of SNNP region state. The study covers only 2 kebele of the 41 kebele of the study area. Moreover, the study deal with limited number of

households and focused on the determinants of rural households food insecurity and coping mechanism, and it also determine the levels of food insecurity in the study area.

1.5 .Organization of the study

This study is organized into five major Firstly, constituted the introduction, which focuses mainly on the background, statement of the problem, objectives, significance, the scope and limitation of study as well as the organization of the study. Secondly, deals with review of different literatures on issues of determinants of house hold food insecurity status. Thirdly, described methodology of research including, brief description of the study area, data and source, sampling technique, method of data collection procedures and data analytical techniques. Fourth, contains results and discussions. Fifthy, constitutes conclusion and recommendation .

1.6. Objective of the Study

1.6.1. General Objective

- The general objective of this study is to examine the determinants of household food insecurity in Cheha woreda.

1.6.2. The specific objectives of the study are:

- ✓ To determine the level of food insecurity in the study area
- ✓ To identify the determinants of rural household food insecurity in the study area

1.7. Research question

- What extent of household food insecurity in the study area?
- What are the determinants of rural household food insecurity in the study area?
- How to the farm household assess coping mechanisms to household's food insecurity

2. REVIEW OF RELATED LITERATURE

2.1. Theoretical literature

2.1.1. Conceptual Frame Work and Definition of Food Insecurity

Since the World Food conference in 1974 due to food crises and major famines in the world, the term food insecurity is introduce, evolved, developed and diversified by different researchers. Food insecurity is defined in different ways by international organization and researchers without much change in basic concept.

Different researchers and international organizations forward food insecurity definition. According to World Bank, food insecurity can be defined as, 'the lack of capability to produce food and to provide access to all people at all time; to enough food for an active and healthy life." Hamilton defined food insecurity as limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways. In 1996, the World Food Summit held in Rome declared and broadly set the definition of food security as "all people at all times have physical and economic access to sufficient, safe and nutritious foods to meet their dietary needs and food preferences for an active and health life." Although there are agreements on some aspects of food security, controversies also existed. Food insecurity exists when people do not have adequate physical, social or economic access to food as defined above (FAO, 2005).

The broad conceptual definitions of food security and insecurity developed by the expert panel convened in 1989 by the Life Sciences Research Office (LSRO) have served as the basis for the standardized operational definitions used for estimating food security in the United States. Food security according to the LSRO definition means access to enough food for an active, healthy life. It includes at a minimum (a) the ready availability of nutritionally adequate and safe foods and (b) an assured ability to acquire acceptable foods in socially acceptable ways. Food insecurity exists whenever the availability of nutritionally adequate and safe foods or the ability to acquire acceptable foods in socially acceptable ways is limited or uncertain.

Based on the World Food Summit (1996), the definition focuses on three distinct but interrelated elements, all three of which are essential to achieving food security: food availability: having sufficient quantities of food from household production, other domestic output, commercial

imports or food assistance. Food access means having adequate resource to obtain appropriate foods for a nutritious diet, which depends on available income, distribution of income in the household and food prices. Food utilization; proper biological use of food, requiring a diet with sufficient energy and essential nutrients and adequate sanitation, as well as knowledge of food storage, processing, basic nutrition and child care and illness managements to the degree of aggregation at which food security is being considered. Food insecurity is limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways. (USDA, 2006).

Three conditions that will result in a household classified as foods insecure are: first they worried whether their food would run out before they got money to buy more. Second the food they bought didn‘t last, and they did not have money to get more. Third they could not afford to eat balanced meals.

Households are also classifying as food insecure if they report any combination of three or more conditions, including any more severe conditions.

Food security will understand as adequacy of food supply at global and national levels until the mid-1970. This view favored merely food production oriented variables and overlooked the multiple forces, which in many ways affect food access. Evidences show that during the last two decades, food production has been increasing in the world. However, large amount of food at global level does not guarantee food security at national level. Moreover, availability of enough food at national level does not necessarily ensure household food security.

The food insecurity definition defines any situation where the quantity, access or ability to prepare nutritious foods is less than certain (*Alazar*, 2003). With hunger defined as an inadequate supply of nutritious foods, these two definitions will seem to have a great deal of overlap.

A population that is not suffering from hunger may still fit the food insecurity definition should their situation be subject to rapid change or come under the negative influence of a range of circumstances. Food insecurity is the most broadly used measure of food deprivation in the United States. The USDA defines food insecurity as meaning “consistent access to adequate food is limited by a lack of money and other resources at times during the year. Acceptable shorthand terms for food insecurity are “hungry, or at risk of hunger,” and “hungry, or faced the threat of

hunger." Food insecurity can also accurately describe as "a financial juggling act, where sometimes the food ball gets drop."

2.1.2. Food Insecurity and Its Categories

In theory, household food insecurity has often classified in to two types, which is chronic and transitory food insecurity. Chronic food insecurity refers to persistently inadequate diet caused by the continual inability of household to acquire needed food either through market purchase or through production. Chronic food insecurity is deep-rooted poverty. The main factors such as the household are landless, shortages of draft animal, elderly, disabled of household head and poor pastoral. Transitory food insecurity on the other hand temporarily food decline in household access to needed food. The main factor such as instability food price, instability of income and production in its worst form of transitory food insecurity can results in famine. In short chronic food insecurity is a long term or persistent inability to meet the minimum consumption requirements. While transitory food insecurity is a short term or temporary food deficit or intermediate category of cyclical food insecurity such as seasonality. The other main causes of transitory food in security are drought, displacements of people and refugee inflows (Wolday, 2005).

2.1.3. Factor Affecting Household Food Insecurity

At household level the following factors are affect food insecurity such as wage, opportunities and levels (agriculture, building, and urban migration). Production for cash including crops, fuels, hand crafts, livestock ownership, the household saving account and sale, stable food production, stable food storage capacity and seed storage, house hold demography especially the ratio of producer to consumer, exchange of goods and service and access to credit (FAO, 2006).

Cause of food insecurity facing households in various developing nation especially in Africa , Latin America and Asia have be documented in some areas experience some degree of hunger in the rainy season when food stocks dwindle and roads become muddy and impossible. On the other hand, the study also reveals that the transition to commercial has had negative influence on food security. Deterioration in ecological condition, production has also seen cause of hunger of food shortage in several African nations .In addition climatic factors especially lowland highly

vulnerable rainfall making ,the people vary vulnerable to crop failure and demographic factors consist of high level of mortality ,varying level of fertility and vulnerability of producers to sleekness and disability (USAID, 2012).

Some of the general factors that affect household food security in rural areas of Ethiopia are poor agricultural growth, an equal distribution of production resource and income as well as rapid population growth. Both chronic and transitory problem of food in security are wider spread and sever in Ethiopia. Combination of short term and long term causal factors can explain the trained towards the increasing food insecurity at household level. Long term factor such as inter action between environments, high population growth, diminishing land holdings and lack of on farm technological innovation have led to a significant decline in land productivity per house hold (FDRE,2007).

Food insecurity is influenced by a number of factors while the cause of household food insecurity for the poor household was lack of access to the food due to lower income, for the rich households, it is reluctance to consume cereals and sugar due to their food preferences, peculiar health considerations and sedentary life-styles.

According to international fund for agricultural development (IFAD) technical paper, 1992, number of inter related factors determine food security situation varying from immediate factors which affect food supply around household level. Generally availability of food and its accessibilities are affected the household food security. A number of studies made use of various methodologies to identify causes of food insecurity in different parts of Ethiopia. According to studies conducted by IFAD livestock ownership, farmland size, family labor, farm implements, employment opportunities, market access, level of technology application, level of education, health status, Weather conditions, crop disease, rainfall, oxen ownership and family size are identified as major causes of farm households' food insecurity in Ethiopia.

According to different researchers and literatures, causes of food insecurity differ but there are some common factors between them. The following are some of them.

Increased Agricultural Land Productivity

Due to land scarcity, however, expansion is unlikely to happen. Therefore, government policies should focus on increasing productivity per unit land area through expanded use of modern farm inputs as well as improving market infrastructure.

Investments in Market Infrastructure

Farmers need reliable access to markets for selling and purchasing products. Investment in transport infrastructure, particularly roads linking farmers to markets, would reduce costs of crop production and transport, boost profits, and increase farmers' ability to buy inputs and sell outputs.

Irrigation Infrastructure

Although adequate rain may result in surplus crop, investment in irrigation infrastructure can reduce impacts of adverse weather. Lewis and Fisher's study found that availability of irrigation would reduce the probability of household food insecurity.

Extension Services

In addition to transport and irrigation infrastructure, government investment in agricultural extension activities has a significant impact on food insecurity. Lewis and Fisher's study concluded that at least one visit to each household from an agricultural extension agent during each cropping season would reduce food insecurity.

Social Safety Net Programs

Households had lower probability of food insecurity if they had access to the Malawi Social Action Fund, a social program that finances self-help community projects and transfers cash through safety- net activities.

Education of Smallholder Farmers

Extending the education of household heads would reduce food insecurity. Extending education in farm communities should incorporate skill or vocational training as part of primary and secondary education.

2.2. Empirical literature Review of Food Insecurity

2.2.1. Global Food Crises

With over 1 billion people worldwide suffering from hunger, over 30 cases of food-related unrest having erupted around the world since 2008, 25,000 children dying daily from malnutrition and projections that by 2025 food production would not be able to increase by the necessary 50% over current levels to keep up with population growth. Thus, food crisis would continue to threaten lines and livelihoods worldwide.

To have extreme poverty and hunger by 2015 on September 14, 2010, the Food and Agriculture Organization of the United Nations (FAO) published its estimates concerning the number of people suffering from hunger in 2010: 925 million. This figure was below the 1,020 billion in 2009, but it was higher than the number reached before the 2008 global food crisis. The 2010 figure corresponded to 13.5% of the world, while the 2015 objective (millennium development goal (MDG) number 1) was 8%. The FAO concluded that we are still far from achieving MDG 1, that is, having the number of hungry people worldwide by 2015 (1). In 2010, the regional distribution of people suffering from hunger is the following: 578 million in the Asia Pacific region; 239 million in sub-Saharan Africa; 53 million in Latin America and the Caribbean; 37 million in North Africa and 19 million in developed countries.

Nations on the right to food, stated 'if most poor countries are still very vulnerable, it is because their food security depends too much on food imports whose prices are increasingly high and volatile'. Since the 2008 food crisis, it is indeed true that volatility of food prices has become an important feature of the global situation.

That is why, according to Olivier de shutter, the international community should respond rapidly' by adopting regulation measures and by designing a global governance of commodity and food stocks, based on a more transparent management of the stocks every country keeps'. This crucial issue of market stability is the Focus of a meeting organized by the FAO on 24 September 2010. The regulation of the markets of agricultural commodities is also a key subject of the G20 meeting organized by France in Paris in February 2011 (1). Unfortunately, more action is needed rather than general statements, and international cooperation and solidarity must

prevail over selfish national interests if we really want to eradicate such a global shame as the starvation and under nutrition of billions of people.

2.2.2. African Food Crises and Challenges

Against a background of increasing food insecurity agriculture in developing countries must undergo a significant transformation in order to increase production and respond to climate change, it is estimated that feeding 8.2 billion people- an additional 1.4 billion in 2030. Feeding a larger urban population in a context of increasing scarcity of land and water, while also adopting more sustainable production methods, is daunting challenge. In Africa, where it is predicted that population levels would double during the same period, the challenge where even more acute. The uncertainty concerning the future of food supply has propelled a growing number of investors and finance companies to acquire large parcels of productive land in many developing countries, particularly in Africa, for the purposes of commercial production, long-term investment, or speculation. Investors expressed interest in 42 million hectare of land globally in 2009 of which 75 percent are in sub-Saharan Africa.

A conservative estimate is that at least 6 million hectare of additional land would brought in to production each year up to 2030. Of the total of underfed people in the world, at least one-fourth live in Africa. This is the only continent where agricultural production per capita has been decreasing for the past 30 years. Between 1970 and 1997, armed conflicts caused losses of agricultural production estimated at about us $52 billion that is the equivalent of 75% of the total public aid received during the same period. Africa, are people under 15 years old represent some 45% of the whole population, would have to feed a population that is expected to increase from 832 million in 2002 to more than 1.8 billion by 2050. The agricultural sector, which employs about 60% of the whole population, represents some 20% of the gross domestic product (GDP) and provides more than 10% of the export revenues. It should become the driving force of economic and social development. As a result, the number of poor and under nourished people in Africa has increased substantially in recent decades. Based on the different statistical and empirical evidence, the following are the critical factors behind African food crises.

These are; ineffective agricultural planning and policy strategies, Environmental degradation, mismatch between population growth and crop yields for feeding these people, limited a technical capability that leads to failure, Weak marketing services pre and post thrust food losses. This is due to rapid price fluctuations of agricultural food prices, other problems like; political instability and armed conflict, poor interstate cooperation, deficiency of institution on management and in adequate R & D. (IFPRI, 2005).

2.2.3. The Past Experience of Ethiopia in Food Insecurity

Ethiopia was one of the most food insecure countries of the world with at large number of population fall in food insecurity. The people have a subsistence level and dependent form of population. Drought is the main causes of food insecurity. The production volume of grains crop as well as the per capita food production is show tremendous fluctuation through the 1980's and 1990's, thus result is a severe food shortage in the country (MoFED, 2006).

In comparing nutritional requirement of citizens the availability of food is low and declining compared to other countries, for example in 1999, calories per capital in Ethiopia are 20 % lower than Uganda and 40% lower than and most disturbingly significantly below the appropriate level in 1980. Over that period both Uganda and Ghana are able to demonstrate considerable growth in calorie availability (WB, 2005).

Ethiopia was one of the poorest with low purchasing power countries. Based on income 47% rural and 32.5% urban were classified as food poor. The continue failure of markets and the recent drought might have exacerbated the level of food shortage. The physical and economic access to food market was seriously isolated. In Ethiopia crucial, market from the world poor integration and network as well as its poor maintenance. Following the availability of decline, the price of major crops has risen since the deflationary situation in 2002.For the last quarter remained stable but high indicating a continued depletion of urban purchasing power. Since emergency relief not organized for urban habits, food poverty is likely to increase (MoFED, 2006).

2.2.4. Reports of Current Situation of Ethiopia in Food Insecurity

According to FAO and WFP crop and food supply mission report of January 2015, the 2014/15spring season main harvest that contributes 90-95% the total annual crops production was 7% higher than the last years and 45% higher than the average for the last five years.

This represents the fourth consecutive spring harvest in Ethiopia. Spring season's production is one of the most important determinants of food security in Ethiopia for the majority production areas. Yet despite good overall production pockets of poor production have occurred because of weather, related hazards mainly water logging, excessive rainfall, hailstorms, landslides and flooding (USAID, 2008).

Approximately eight million chronically food insecure people continue assisted through the productive safety net programs. These groups are primarily finding in the crop producing Eastern half of the country along the rift valley and pastoral region of Afar. Small land holding, high population density, recurrent drought, limited off farm opportunities, land degradation resulted in low productivity. Use of traditional farming technology, shortage of grazing land, recurrent conflict, decline livestock holding per capita, livestock diseases and marketing problems are among the reason for chronic food insecurity for the population (USAID, 2008).

The report from field indicates that the 2009 belg rains have performed poorly, but not badly as 2008 belg, that were considered as total failure. The 2008 spring assessment has predicted that a total population of 2.2 million would need assistance for the 2008 calendar year. However, after the failure of the 2008 belg, this failure is revising upward to 4.6 million in April and again to 6.4 million in August 2009 (FAO, 2009).Despite the steady improvement in production over the years, the above estimated number of population would need emergency assistance from January to June 2009, with an estimated 592,000 tons of food aid. The population in need of food assistance is spread throughout the country. The most affected regions are Somali, Oromia, SNNP, Tigray and Afar region as the most (FAO, 2009).

2.2.5. The Causes of Food Insecurity in Ethiopia

FAO has found a combination of factors such as adverse climate change, poor technology, land degradation and policy including as well as implementation problems have resulted in serious and growing problems of food insecurity in Ethiopia (FAO, 2009).

1) Recurrent drought

Agricultural development in Ethiopia heavily depends on rainfall, where the pattern is erratic and unpredictable for most smallholders farming pastoral system. Rainfall is the major source of moisture for crop and livestock production. However, the frequency of the occurrence drought has sharply increased every three to five years.

Moreover the utilization of water resources is ill-developed, irrigation and water diversion schemes are less practical, hence food production seriously been affected (FAO, 2009).

2) Environmental degradation

The existing natural resources are the basis for the accelerated agricultural development and the food security and other necessities of its people. Cultivation of steep land, in the absence of conservation practice, poor farming practice and cropping without nutrient cycling, over grazing and improper land use practice are among the causes of soil erosion. In addition, crop residue and animal dang are increasing used to meet rural household energy needs, rather than used for ameliorating soil fertility and hence increased agricultural production (FAO, 2009).

3) Limited access to credit

Credit stimulates, supports and accelerated the use of new technological innovations, which increased production and productivity. Furthermore, improvements of marketing system and promotion of micro-enterprise and other income generating activities can be facilitate effectively only if they are backup sound credit system. Currently the development of micro-finance institutions is at infant stage, some of them lacking strong capital base, experience and capacity in credit management (FAO, 2009).

4) Limitation in technology

Agriculture intervention and followed the same pattern of service development in the area like as fertilizer, improved seed and pesticide provision. Lacking comprehensive package of innovations at household level and the rudimentary stage in production of new technologies leads to low production. Moreover, the technology multiplication center is limited to disseminate the existing technology (FAO, 2009).

5) Lack of production diversification and marketing integration

Diversification in production pattern is limited mainly focusing on food crops. Less attention is given to cash crops, livestock and livestock products. Market was not integrated as the result of price differential between farms get and terminal markets every significantly in favor of the later. The agricultural output marketing indicates that production challenged by low market prices caused by inadequate market information system and rural road network (FAO, 2009).

Generally, the food security condition in Ethiopia has always been fragile. The majors of the country's population depend on rain fed agricultural system for their livelihoods food needs constantly the risk of being victimize by vagaries of nature. Another factor exacerbating the crises of food production of developing countries including Ethiopia is global climate change. According to the Oxfam report, a temperature increase of 2.5 degree delicious by 2080 will put an estimated 60 million additional people in Africa, including Ethiopia at the risk of hanger (EEA, 2007).

2.2.6. Food security strategies and intervention in Ethiopia

The Ethiopian government has embarked sets of actions to narrow substantially the food gap over the medium term. Closing the gap would imply production rate faster than what ever be experience. To increase the food production in the area of reliable rainfall as quickly as possible; the strategy focuses on the differ diffusion of simple technology packages with in smallholder agriculture through the national extension program. In these areas, the technical opportunities for raising farm output are reasonably to well understand and there are gradually good yield responses to the use of improved seeds and fertilizers. Increasing food security in the moisture

deficit areas would come through the diversification of livelihood system and farming system in particular where markets permit the strategy would focus on optimum exploitation of traditional grain production to more labor intensive with focus on higher value crops. Relating settlement schemes to environmental protection, planting grass and cattle feed in designate grazing areas. Provision of sufficient drinking water for both people and livestock preventing over grazing and soil erosion are some of the main activities to be considered. Improvement of infrastructure would considered with promotion of competition in the transportation, trade, processing and distribution food as well as work (FDRE, 2011).

In 2013 world food day was celebrate in Ethiopia through assortments of event. As it known, the government of the federal democratic republic of Ethiopia is taking various encouraging steps to ensure food security and self-sufficiency in the country. The agenda of food security has been among the many policies and strategies packages taken on bored by the government since the early 1990s. The policy makers are fully aware of the sensitivity of the agenda, which needs urgent attention to respond to a long record of annual food appeal that embarrassed the nation.

The government of the federal democratic republic of Ethiopia drew and adopted the food security strategy in March 2002. The consolation process which development collaborates what known as the new coalition for food security followed this. The technical group composed of government, development partners under the close follow up of the senior policy, and decision makers has drafted the first plan document for endorsement and financing for all stockholders. Thus, this has laid the first foundation to the design of the tentative food security programs of 2005-2009 and 2010-2014 (Seleyabna, 2013).

3. METHODOLOGY

3.1 back ground of the study

Cheha Woreda is found in Gurage Zone; Southern Nations Nationalities and Peoples Regional state of Ethiopia. It is bordered in south by Enemorina Eaner Woreda, Guraghe zone, in west by the Oromia Region, in north by the Wabe River which separates it from Abeshge and Kebena Woreda of Guraghe zone, in the east by Ezha Woreda, Guraghe zone, and in the southeast by Gumer and Geta Woreda of Guraghe zone. The administrative center for Cheha Woreda is Endibir which is 195km far from Addis Ababa and 40 km far from the Wolkite town, the capital of Guraghe Zone (GZSA, 2014).

As it had been indicated in the same source, the altitude in the woreda ranges from 1710 to 2800 m.a.s.l. The mean annual temperature of the woreda ranges from18^{o}C to 27^{o}C. The climate of the woreda is classified in to two agro-climatological zones: dega (20%) and (80%) woyina dega. The average annual rain fall of the woreda ranges from 900 mm to 1500mm.

According to Cheha Woreda Office of Agriculture 2014 report, the Woreda covers the total land area of 69,764 ha classified in to 41 kebeles (39 rural and 2 town kebeles) and it is considered as one of the potential crop producing Woredas of the zone. According to the population projection reports of CSA (2010), the total number of rural household in 39 rural kebeles of the woreda is 18, 088, out of these 15, 047 are male headed and 3041 are female headed. The total population of the woreda is 137,665 out of which 67509 (49%) are male and 70,156 (51%) are female.

3.2. Sampling Techniques and Sample Size

The target population for this study is all households of Cheha woreda. The simple random sampling technique has applied for gathering necessary information for the study. The reason for selecting simple random sampling method is the fact that the Cheha woreda has above 80% homogeneous population. From these kebeles,we are select two kebeles. These were namely, Gasorena Karacha and Wesherbena werbachu, because some household in these kebele are affected by food insecurity as compared to the other kebeles.

Therefore, WesherbenaWerbachu has total household of 350& Gasorena Karacha has total household of 840 . In order to take a total sample size relevant to target study we are apply Yamane formula (1190) of n= N/1+N (e) ^{2}. In addition to this, we are going to use proportionate

sampling that is enabled us in taking samples from each sub strata' which are to be selected from the target population.

N = 350+840 where, N = the total number of households

N = 1190 e = the margin of error

e = 10% or 0.01 n = the total sample size of households

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

$$n = \frac{1190}{1+1190(0.1)^2}$$

$$n = 99.91 \sim 100$$

$$n=100$$

Then we have to apply proportionate sampling to obtain how many respondents are selected from each stratum by using formulas: nh=nh (Nh)/N

Where: nh = Sample size for stratu m h

Nh is the numbers of households for stratum h

N is the total numbers of households and n is the total sample size.

nh1 = n(Nh1)/N nh2 = n(Nh2)/N

= 100(350)/ 1190 = 100(840)/1190

nh1 = 29.41~29 nh2 =70.58~71

So that, nh1=29 & nh2=71, are the sample size of the strata to the kebele Weshwrbena Werbachi, and Gasorena karacha respectively.

3.3. Method of Data Collection

The primary data used for this study has collected from the representatives of the target population, sample, through questionnaires. These questionnaires are prepared in accordance with the objectives of the study and in a way that they is capture relevant data and information from the respondents. The structured interview was also being prepared for those cannot read due to different reasons.

3.4. Method of Data Analysis

The methods of analyzing data include both descriptive statistics and econometric analysis. Descriptive tools like simple statistical tools, tables and percentage have been used. In descriptive tools, the collected data was tabulated, analyzed and interpreted in terms of the percentage. While an econometrics tools, were used to analyze the determinants of household food insecurity in rural area.

3.5. Econometric Analysis

3.5.1. Model Specification

The data analysis, interpretation and discussion were depending on the dependent and explanatory variables that are listing in the following econometric model parts to analyze the determinants of household food insecurity.

3.5.2. The Probit Model

Food insecurity at the household level has measured by direct survey of income, expenditure and consumption and comparing it with the minimum requirement. The government of Ethiopia has set the minimum acceptable weighted average food requirement per adult equivalent (AE) per day at 2200 kcal (MoFED, 2002). For this study 2200 kcal per adult equivalent per day is employed as a cutoff between food secure and food insecure household. The response (dependent) variable of this study is dichotomous taking two values, 1 if the event occurs and 0 if it does not. In this regard, a probit and logit model is used to estimate the dummy variable taking two values. In most applications the models are quite similar, the main difference being that the logistic distribution has slightly fatter tails but, there is no compelling reason to choose one over the other. Probit model is one of the most, which estimate the probability of being in the household food insecurity dependent on some explanatory variables. These models are

appropriate when the dependent variable is a binary variable. In this study the response (dependent) variable is dummy variable taking two values, 1 if a household food insecurity and 0 if household food security. Because of the fact that the binomial probit model is easier to estimate and simpler to interpret, this regression model is used in this study.

3.5.3. Description of variable

3.5.3.1. Description of dependent variable

1. Food insecurity

Food insecurity is the inability to provide enough food for a health and active lifestyle. Food insecurity is a measured as a household-level concept that refers to uncertain, insufficient, or unacceptable availability of utilization of food.

3.5.3.2. Description of the explanatory variable

1. Sex of the household respondent: Sex is the categories of households who are male and female. A dummy variable taking two values, 0 if female and 1 otherwise.

2. Marital status of household: This is a discrete variable and it determines the household of food insecurity status. The study by Adekoyo in Oyo state of Nageria in 2009 found that married household to food insecure where unmarried household are founding to be food secured. Moreover, widowed and divorced female headed household according to Adugna (2011), were highly positioned to be found insecure.

3. Land size of household respondent

Land size is refers to the total farmland owned by the household and measured in hectare. Land size of household is continuous.

4. Ceremonial expense of the household respondent

Ceremonial expense refers to the total money of household spends on wedding and other traditional social status (taskar) and measured in money. Ceremonial expense of the household is continuous.

5. Livestock ownership measured in (TLU): It was treated as a continuous variable. Livestock contribute to households economy in different ways, e.g. as a source of pulling power, source cash income, source of supplementary food, and means of transport. Besides, livestock are considering as the means of security and means cop during crop failure and other climate Haile *et al*. (2005).

6. Educational level of household respondent

Education is refers to promoting awareness on the possible advantages modernizing agriculture though technological inputs and diversifying household incomes, which in turn enhance household supply and measured by literate and Illiterate. A dummy variable taking two values,0 if education of household is illiterate,1 if literate level.

7. Input agricultural use: Utilization of fertilizer could increase agricultural production and influence the household food insecurity negatively (Eden *et al*., 2009). Therefore, as a dummy variable, fertilizer utilization would be expected to have negative relation with the household food insecurity status. A dummy variable taking two values, yes if fertilizer used and no otherwise. Pesticide can save (preventing) farmers from crop losses by insects and other pests. Pre and post harvest crop losses caused by insect (pests), diseases and weeds and storage pesthave contributed much to the decline of agricultural production that tends to food insecurity in study area. A dummy variable taking two values, yes if pesticide used and no otherwise.

3.6. Hypothesis

The Sex may seem insignificant but female household headed is positive relationship with food insecurity than males. Marital status is the most indicators that determine the level of food

insecurity and food security. The households headed those are single have more power to fight food shortage than the rest. Therefore, marital status those married is positive relationship with food insecurity. Ceremonial expense are significant (positive); because they have direct relationship with food insecurity but the land size has the insignificant relationship with food insecurity, an increase in land size; the productivity of food is increase. Use of fertilizer, and education level, are negative relationship, because they are increase leads to decrease food insecurity and they affect it adversely.

Input agriculture use are significant and negative relationship, because they are increase leads to decrease food insecurity and they affect it adversely.

3.6.1. Description of variables and expected sign

The following table gives the variables, which are incorporate in the model with expected signs.

Table 3.1 Expected sign of variable

No	Variables	Description of variables	Continuous/ Discrete	Measurement	Expected sign
1	Food insecurity	Food insecurity of the house hold	Discrete	Calorie intake	
2	Sex	Sex of house hold	Discrete	Male/female	+for female
3	Marital	Marital status of household	Discrete	Single/married	-for single
4	Education level	Education level of the house holds	Discrete	Primary, secondary and tertiary	-
5	Land size	Land size	Continuous	Hectares	-
6	Ceremexp	ceremonial expense	Continuous	Money	+
7	Livestock	Livestock ownership	Continuous	TLU	-
9	Fert use	Use of fertilizer	Continuous	Kuntal	-
10	Pest use	Pesticide use	Discrete	Use/not	-

4. RESULTS AND DISCUSSION

This chapter is depending on data analysis, presentation and interpretation. It provides detail explanations of the determinants of food insecurity, level of food insecurity and the households of coping mechanism of food insecurity in the study area.

4.1. Demographic and Socio-Economic Characteristics of the Sampled Households

Table4.1. Summary statistics of sampled households' characteristics and other major variables (Overall, N=100)

Continence Variable	Obs	Mean	Std. Dev.	Min	Max
Land size hh	100	4.71	1.597315	1	9
TLU	100	4.24	1.646054	2	9
age	100	40.11	11.73348	22	70
IAU	100	.58	.496045	0	1

Dummy variables	Obs.	Freq.	Percent (%)
Food insecurity			100%
Insecurity	100	54	54%
Security		46	46%
Sex of household			
Female	100	47	47%
Male		53	53%
Marital status			
Single	100	40	40%
Married		60	60%
Education level			
Illiterate	100	51	51%
Primary		19	19%
Secondary		15	15%
certificate and above		15	15%

4.1.1. Age, sex composition and land size of sample households

Age, sex and land size are important demographic characteristics that could affect the food insecurity status at the household level.

The oldest age was participated in this study and they are most suffering by food insecurity, because the oldest age or the retired age is not able work more hours as compared to the adult age. The adult age can work more hours, and they are more producers rather than the oldest age. Nevertheless, the oldest age covered the greatest number of food insecure due to low level of productive age and high level of old and youth level of age. As the result, the productive age cannot cover or feed to the all households. Therefore, age of households was determinant of food insecurity in the study area.

According to the above table 4.1 shows, from the out of the total sample household, the mean (average) age of household is 40.11 with the maximum (largest) of 70and a minimum (smallest) of 22. Form the total sample households, the female household headed are 47 %(47) and male head are 53 %(53).

Land size of the household also has a direct impact on the household's food insecurity. From the total sample household the mean of land size were 4.71 with the 9 and 1 a maximum and minimum respectively.

4.1.2. Education, Marital Status and Total livestock use of Sample Households

Education, marital status and TLU are also identified the level of food unsecured among the household. Marital status is the most indicators that determine the level of food unsecured and food secured. As the above table 4.1 indicates, from the total sample households headed those are single, &married, are 40% (40) &60% (60) respectively. Education is important to increase the quality of live standard among the households. However, from the total sample of household headed those categorized into food unsecured and secured are 51% (51), 19% (19), 15% (15) and 15% (15) are illiterate, primary, secondary and certificate and above education respectively. Fertilizer is used for yield high productivity which, the total sample households headed those not used fertilizer (input). . From the total sample household the mean of land size were 4.24 with the 9 and 2 a maximum and minimum respectively.

4.1.3. Food Security Status of Sample Households

For examining the food security status of sample households, calorie acquisition was taken as an indicator, for computing calorie acquisition; methodology suggested by Hoddinot (1999) was followed. The total quantities of product, which used for meals prepared for the sample households that known in a monthly such as flour of Teff, wheat, etc and that brought from the market within the seven days like vegetable were computed and converted into calorie terms and divided by thirty (30) and seven (7) respectively. The food and drink, which used daily like coffee, milk, bread etc had converted into calorie terms and added on them.

Based on the summation of total calories for monthly, seven days and daily, average calorie acquisition per day for each household was computed. Finally, calorie per day per adult equivalent was computing by dividing the average per day calorie acquisition by adult equivalent units of the family. As per standard sets by the Ethiopian government, 2200 kcal per adult equivalent per day was taken as a cutoff value between food secure and insecure households. The result indicates that 46 (46%) and 54 (54%) households were food secure and food insecure respectively in study area.

4.2. Comparison of Food Insecurity between Different Groups

The comparison of food insecurity used to estimate the level of food unsecured and secured among the household between different groups in study area. On other way, they comparison the effects of variable on food insecurity that estimate in chapter three.

Descriptive analysis of Continuous variables

Variable	Food Insecurity		Difference in of food unsecured hhs	t-test
	Mean	Std. Dev.		
Age	40.11	11.73348	-39.65	-33.70917
Total Livestock Use	4.24	1.646054	-3.78	-21.9693
Input Agricultural Use	-.58	.496065	-.12	-1.7022
Land Size	4.71	1.597315	-4.25	-25.3881

4.2.1 Age of the household head:

According to the above table the mean age of the house hold food insecurity was 40.11 years with standard deviation of 11.7335. The age structure of the sample household food security were younger (average age of 46.944 years with standard deviation of 14.654) than the food insecurity (average age of 53.476 years with standard deviation of 17.377). The two groups were found to be significantly different in terms of age at 10% probability level.

4.2.2. Comparison of Food Insecurity by Land Ownership

According to the above table shows that the households who have more land are food secured than the households not have of the households who have not land the mean of food insecurity are 4.71 with the slandered deviation are 1.597 food unsecured. The mean difference of food insecurity between landowner and land less households is -4.25, which is significant at 10%.

4.2.3. Comparison of Food Insecurity IAU

Table shows that, households headed used fertilizer (input) are more food secured than households headed not used. Of households headed not used fertilizer (input) mean -.58 .the standard dev.0.49.6065 are food unsecured..The mean difference of food unsecured between household headed used fertilizer and not used are -.12, which is significant at 10%.

4.2.3.Livestock holding in TLU: Livestock is the farmers' important source of income and draught power for crop cultivation and is one of the main cash sources to purchase production inputs. In the study area livestock production constitutes an important element of the farming system of the community. As indicated in Table, the average livestock holding of the sample households was 4.24 TLU with standard deviation of 1.646054. The test statistics indicated that, the difference among food insecurity related to livestock holding was statistically significant at 10% probability level.

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4.3. Econometric Analysis

The economic analysis of this paper mainly deals with the analysis; interpretation and discussion were based on the dependent and explanatory variables that were used in econometric model parts to analyze the determinants of household food insecurity. To identify determinants of food insecurity among hypothesized explanatory variables that are influence on rural households, the binary probity model was estimated using a statistical package known as STATA version 11. Different types of goodness fit confirmed that the model fits the data well. The values of chi-square test show the overall goodness of fit of the model is significant at 10% level. Another measure of goodness fit in probity regression analysis is measured by count R^2, which works on the principle that if the predicted probability of the event is greater than 0.1, the event will occur otherwise the event will not occur (maddala, 1989). The overall prediction of the model is found to be 86%, which is greater than 0.1.

Probit regression **Number of obs = 100**

Prob > chi2 = 0.0000

Log likelihood = -9.4235269 **Pseudo R2 = 0.8634**

food in	Coef.	Std. Err.	z	P>z	[90% Conf.Interval]
Sex	.178383	1.063399	0.17	0.867	1.570753-1.927519
martialhh	-.9611478	1.451096	-0.66	0.508	3.347989-1.425693
landsizehh	-1.10772	.5434385	-2.04	0.042**	2.001597-.2138431
TLU	1.481626	.6668499	2.22	0.026**	.3847552-2.578496
Age	-.2314309	.1204266	-1.92	0.055**	.3847552-.0333468
IAU	-.2861385	.9025552	-0.32	0.751	1.77071-1.198433
educlev	.2268804	.4696743	0.48	0.629	.5456651-.9994259
cermonialexp	-1.736259	.8623889	-2.01	0.044**	3.154762-.317755
_cons	9.271919	4.628831	2.00	0.045	1.65817-16.88567

```
. mfx

Marginal effects after probit
      y  = Pr(foodin) (predict)
         =  .15581745
```

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
sex*	.0424252	.26016	0.16	0.870	-.46747	.55232	.53
martia~h*	-.2504231	.44875	-0.56	0.577	-1.12995	.629104	.6
landsi~h	-.2648738	.11807	-2.24	0.025	-.496281	-.033466	4.71
TLU	.3542807	.16637	2.13	0.033	.028201	.68036	4.24
age	-.0553389	.02496	-2.22	0.027	-.104263	-.006414	40.11
IAU*	-.0699995	.22684	-0.31	0.758	-.5146	.374601	.58
educlev	.0542508	.11701	0.46	0.643	-.175076	.283578	1.94
cermon~p	-.4151676	.23527	-1.76	0.078	-.876286	.045951	1.07

(*) dy/dx is for discrete change of dummy variable from 0 to 1

.

From the econometric model result; the Total livestock use (TLU), ,Sex &education level signs are expected to be positive; because they have direct relationship with food insecurity but the signs of martial, land size, IAU and age are expected to be negative signs, because they have inverse relationship with food insecurity and they affect it adversely. But Martial, sex,IAU and education are insignificance.

The contribution of each individual variable to the explanation of the determinants of household food insecurity, in conjunction with other independent variable using the probity regression analysis, shows that, four variables, among the eight explanatory variable that were included in the model, were found to be statistically significant at various probability levels. , age, land size, ceremonial and total livestock use were found important factors that influence household food insecurity in the study area. The remaining four variables were not statistically significant at the conventional levels of significance.

Ceremonial Expense

The model show that ceremony was a significant determinant of food insecurity at 5% probability level of significance. As expected, the relationship between ceremony expense and household food insecurity was decrease, That is the large ceremony expense is, the more the probability of a household to be food insecure. The decrease ceremony expense decreases the predicted probability of the household being food insecure. The probability of food insecurity decreases by -4.15% if the practice ceremony expenses decreases by 1%, as compared to not practice ceremony, holding all other factors constant. As the expense for different holidays, weeding and different ceremonies decrease, the expense for consumption of food item for the households (family members) increase. As the result, the high expense for different ceremonies leads to food shortage for consumption and suffers by food insecure.

Livestock

Maintaining livestock production was found an important livelihood activity for the majority of the sample households. As expected the relationship between livestock holding and household food insecurity status was positive and statistically significant at 5% probability level. The decrease livestock decrease the predicted probability of the household being food insecure. The probability of food insecurity decreases by 3.5% as the numbers of livestock increases by 1%, holding all other factors constant.

Age

It has a negative relationship with the food insecurity. it can affect adverseiy food insecurity. The model of that was a significant determinant of food insecurity at 10% the probability of a level of significance. As expected, the relationship between age and household food insecurity was negative the increase age decrease the predicted probability of the house hold being food insecure. The probability of food secured increases by 55% if the practice sax increases by 1%.

Land size

The model result showed a negative and significant relationship between determinants of food insecurity at 5% level of significance. Other variables held constant, an increase in proportion of land size for food security by 1% would result in -2.6% decreases on the probability of food insecurity.

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5. Conclusion

The main objective of the study was to identify the determinants of household food insecurity in Chaha woreda Gurage zone. The study used primary and secondary source of data. To achieve this objective the study relied on primary data, which were collected by conducting household's survey from 100 randomly selected households in three selected kebeles of the woreda.

Data were analyzed using both descriptive statistics and econometric method. The descriptive statistic were used to study the demographic, socioeconomic and institution factor in relation to food insecurity status of households. The econometric method in which probit regression model was specified and estimated was used to analyze the determinants of food insecurity in the study area. The sample households were classified in to food secure and food insecure groups based on Kcal actually consumed by household during the month, seven day and daily. According to the result the study showed that about 54 (54%) and 46 (46%) households were food secure and food insecure respectively. The binary probit model showed that, ceremonial practice, livestock, Age and land size were found to be statistically significant determinants of food insecurity status. TLU, and education were positively related to food insecurity status with the prior expectation in sign at 10% significant level. The livestock and pesticide use were found to be inversely related with the prior expectation in sign at 10% probability level of significance.

Socio-economic factors such as low level of income (income constraint), low level of education, low level of access to new technology such as improved seeds, chemical fertilizer, herbicide, pesticide, high expenditure for social ceremonies and celebrations. In addition to this, the weakness of institutional factors also one of the hindered for food self-sufficiency to rural household, such as absence of enough rural financial institutions, poor market integration and problem of land distribution by local leaders were the main challenges of the study area farmers not to have sufficient cereal production to their family members.

Demographic factors such as l low land holding size compared to family size, due to weakness of rural administration, In addition, to this the adaption of new technology such as improved seeds, chemical fertilizer, pesticides are very low due to the reasons of high input price, income constraint, and not given based on the capacity of the farmers.

There is low habit of loan (credit) use due to high interest rate in the study area. As the results of all the above factors, the agricultural productivity is very low in the study area and the households suffered by food insecurity.

During the time of food shortage, the rural households adapt various mechanisms to cope with the problems. Among those getting loan either from their relatives, friends, neighbors or from formal and informal financial institutions, selling of domestic animals for the purpose of purchasing food crops, contracting their own land to rich farmers either by money or by sharing cereals and grains as a contingency. In addition to those coping mechanisms, the rural households applied some other coping mechanisms such as selling fire wood and engaged from non-farm activities to generate daily wage. This shows that the most coping mechanisms are important for the temporarily.

6. Recommendation

The agricultural sector is the main engine of our economy which contributes much for the future growth of the country. Most of the Ethiopian's population are depends on agricultural sector and their food is from the agricultural production directly or indirectly. Therefore, the improved and modernization of agriculture through different measures would enable the country to be self-sufficient in food. Based on the discussion made throughout this paper and observed food insecurity problem in the study area, the following recommendations are forwarded.

- Government must enhance the supply of fertilizer at low price to rural farmers.
- Discourage the unnecessary expenditure for various ceremonies and celebrations to tackle the household food shortage. .
- Enhancing the output of the livestock (TUL) through the provision or supply of better veterinary service sector.
- Applied land reform policy to improve the access of the poor farm household to the land through land resettlements from densely populated area to sparsely populated area.

Generally, food insecurity is a multifaceted concept, which cannot be treated in isolation from other causes of poverty. Therefore efforts geared towards achieving foods security .and solve the problem of food insecurity .

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8. QUESTIONNAIRE

WOLKITE UNIVERSTY COLLAGE OF AGRICULTURE AND NATURAL RESOURSE

DEPARTEMENT OF AGRICULTURAL ECONOMICS

Questionnaire Prepared to collect data on Food Insecurity Situation of Households and Its Determinants in Rural Areas of chehaWoreda

This questionnaire is prepared only for academic purpose. You are kindly requested to provide appropriate and relevant information and/or response to the following questions. The information you provide will not used for other purposes but the main intention of the questionnaire is to gather relevant data, which help to achieve the main objective of the research, entitled the determinants of household food insecurity in the rural areas of cheha woreda. You should confident enough, please choice your response on the given alternatives, and mention in the blank space. We thank you very much in advance for your time and cooperation.

- **Socio-Economic and Demographic Characteristics of Household**

1. Age of household head _____

2. Sex of household head_____

3. Education level of household head

A) Illiterate C) Primary school D) Secondary school level E) Above secondary school.

4. Marital status of household head

A. Single B. married

Asset ownership and related questions

5. Do you have your own land? A. Yes B. No

6. If your answer “yes” for question No 8 how much is your total farmland size in hectare? _____

7. How do you perceive the quality or fertility of your land (duality of land)?

A. More fertile B. fertile C. less fertile D. poor fertile

8. How do you see your land size as compared to your family size?

A. land size more than family size B. Balanced C. land size less than family size

9. Do you spend for ceremonies? A. Yes B. No

10. If your answer is "yes "on the question No 17 how much do you spend for ceremonies per year on average? Birr_____

Technology Adoption

11. Did you use fertilizer during 2010? A. Yes B. No

12. If your answer is "no" on question No 19, why did not you use a fertilizer?

A. fertilizer are not arrive on time

B. The price of fertilizer is very expensive

C. fertilizer are not provided in terms of credit

D. Inability of buying fertilizer (income constrained)

13. If your answer is "yes" on question No19, how much amount of fertilizer did you use? _____

14. Did you use pesticides during 2010? A. Yes B. No

15. If your answer is "no" for question No24, why did not use pesticides?

A. pesticides are not arrive on time

B. The price of pesticide is very expensive

C. Inability of buying pesticides (income constrained)

D. Others (specify) _____

16. Did you use herbicides during 2010? A. Yes B. No

17. If your answer is “no” for question No26, why did not you use herbicides?

A. herbicides are not arrive on time

B. The price of herbicide is very expensive

C. Inability of buying herbicide (income constrained)

D. Others (specify) _____

18. How is the availability of rainfall around your rural kebele?

A. low B. medium C. high

Food Insecurity and Perception toward Causes of Food Insecurity

19. Have you worried about availability of enough food during the last 12 months?

A. Yes B. No

20. Have you faced food shortage during the last 12 months? A. Yes B. No

21. If your answer is “yes” on question No 34, when season you and your family faced a shortage of food? Explain it_____

22. In your opinion what are the causes of food insecurity in your household?

Causes	Degree of the cause			
	Very high	High	Low	Very low
Lack of land				
Lack of rain fall				

Variable	Description	Frequency	Percentage (%)
Sex	Male	111	92.5
	Female	9	7.5

Marital Status	Single	10	8.3
	Married	100	83.3
	Widowed	10	8.3
Age	Age group (24-50)	97	80.7
	Age group (>50)	23	19
Education	Primary school (0-4)	63	52.5
	Secondary school (5-8)	50	41.6
	High school (9-12)	7	5.8
Family Size	Small family size (<4)	6	4.9
	Medium family size (4-6)	49	40.9
	Large family size (7-10)	57	47.5
	Very large family size (>10)	8	6.6

Variables	**Min.**	**Max.**	**Mean**	**SD.**
Total Land Size (ha)	0.50	4.00	1.1573	0.63961
Experience of HHH on farm (Years)	5.00	45.00	17.6833	7.86331
Experience of HHH off farm(Years)	0.00	11.00	0.8833	2.19695