



**ASSESSMENT OF DETERMINANTS OF HOUSEHOLD FOOD SECURITY IN SORO
DISTRICT OF HADIYA ZONE, ETHIOPIA**

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Abstract: Most households especially in developing nations are food insecure partly due to the rapid increase in human population, climatic variability, and environmental degradation. Small land holding and fragmented farm size coupled with low level of technology, soil degradation and poor infrastructure have reduced the capacity of smallholder farmers in the area to purchase food as well as to produce in sustainable manner. The objective of this study was to assess determinants of household food security in Soro district of Hadiya zone. The analysis was made using the households data collected from 4/four/ Peasant associations as that are representing the district. For this study, 100 households were selected by random sampling technique from four kebeles'. Both primary and secondary data were collected for this study. Primary data was collected by direct interview of sample respondents and secondary data was collected from published and unpublished documents. For data analysis, descriptive statistics (frequency distribution, percentages and pie charts) were used. The study illustrated that eight socio-economic factors (family size, herd size, farm land size, credit service, age of household head, use of irrigation, educational level of household head and income) and environmental factors such as erratic rain, erosion hazard and soil fertility decline determine household food security. Family size negatively affected food security and is the major causes for decrease of land, which ultimately leads to shortage of food in household level. The study result indicated that 63 percent of the sample households were found to be food insecure. It is therefore suggested that among other things focus on holistic approach is vital, to improve and develop the economic and natural resources base of food insecure households by introducing activities such as soil fertility management measures, intensive farming practice, family planning, and off-farm employment opportunities to maximize productivity and income.

Key words: Determinants. Food security, Hadiya, Soro, Household

Introduction: Household food security has been defined as “access at all times to the food necessary for a healthy life for all members of the household” (Brouwer, 1994, p. 13). Food security in Africa is already under stress as a

result of physical factors (e.g., climatic limitations and low water availability), political factors (e.g., insufficient rural infrastructures, lack of sound governance and the need for political reform), and socioeconomic factors

(e.g., distance from markets, lack of empowerment) (Rosegrant et al., 2005). Climate change has the potential for further negative impacts on food security (Schade & Pimentel, 2009; Lobell *et al.*, 2008; Schmidhuber & Tubiello, 2007). Some studies further argue that socio-economic problems pose a major obstacle for African farmers in their attempts to adapt to climate change (Bryan *et al.*, 2009; Jones & Thornton, 2009; Brown & Funk, 2008; IFPRI, 2006). In drought-prone areas of Ethiopia, the relationship between environmental degradation (unreliable rainfall, deforestation and soil degradation), declining agricultural productivity and high population growth have negatively affected the food security situation (Ezra, 2001). Garedew *et al.* (2009) documented that erratic rain fall, frequent droughts, population growth, deforestation, soil degradation, and declining crop productivity have been a major challenge for the present study area and society.

The state of household livelihood outcomes (sustainable/food secure or vulnerable /food insecure) is determined by the interaction of different factors such as household assets (capital (natural, economic, human, social, physical), policies, practices and institutions that relate to how a household is able to access and utilize them over time (Scoones 1998: 3, Lautze *et al.* 2003: 77). Although the overwhelming majority of rural livelihoods in Africa are agriculture oriented, studies have shown that 'agriculture is not the only, and in many cases not even the main, source of food security and income'. Rather, earnings from 'non-farm activities' are becoming increasingly important sources of income (Swift and Hamilton 2001: 67; Reardon 1997, Turner *et al.*

(1993) cited in Carswell 2000: 3).

Household food security depends on the reliability of food production, access and supplies. Achieving food security means ensuring availability of sufficient food with relatively stable supply & accessible for those in need of it. However, many people still suffer from malnutrition due to food in security, which is caused by low productivity in agriculture instability of food supply and lack of off- farm employment opportunities.

Different factors were identified in various studies that aggravate food insecurity problem in Ethiopia. These are poor soil fertility, land shortage, occasional droughts and degradation of farm lands, shortage of cash income, poor farming technologies, weak extension services, high labour wastage and poor social and infrastructural situation. The combinations of those factors have resulted in serious and growing problem of household level food insecurity in Ethiopia (Hussein, 2006; Gilligan *et al.*, 2008).

The performance of agriculture in terms of feeding the country's population is poor. Currently in Ethiopia, more than 10 million people have been affected by drought. Some 4.6 million people are threatened by hunger and malnutrition and require urgent food assistance. The deteriorating situation is compounded by high food prices (WFP, 2009).

The study area, Soro is one of food insecure districts in the Southern Nations, Nationalities and People's Regional state, many people still suffering from malnutrition due to food in security. So the study trace on assessment of major factors influencing household food security.

Materials and Methods

Description of the study area: The study area, Soro district is found in Hadiya zone of Southern Nations, Nationalities and People's Regional state. Soro district is located between 7^o23' - 7^o 46' N latitude and 37^o 18'-37^o 23' E longitude. The district is bordered by Gonbora district in north, Lemo district in east, Duna

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district in South and Oromiya Administrative region and yem Special district in west. According to annual report of the office of Agriculture (2016), Soro has an estimated total Land area of 68834 hectares of which 50,454 hectares are cultivated, 6000 hectares are forest covered, 3087 hectares are Pasture, land 3726 cultivable, 1782 uncultivable and the remaining 3785 hectares are roads, settlements and different institutions.

The district encompasses 46 Peasant associations. Gimbichu the town of the district is located about 262 kms southwest of Addis Ababa and 32 kms away from Hosanna.

Population: Based on the (CSA, 2007) population and housing census results the Soro district has a total population of 235099. From this 221159 (94%) of the population lives in the rural areas depending on agriculture, while the remaining 13,940 (6%) lives in the urban areas. Children, whose age is 14 or less accounts 54%. Economically active population, whose age between 15 and 64 years accounts for 42% and the aged 65 years and above are 4% and the average family size is 7.

Farming System: The farming system of the study district is governed by the agro-ecology of the area, which consists of highlands, midlands and low lands. In the high lands, mixed farming is practiced and cultivates cereals as their major crop and animal husbandry as their minor on farm activity. In midland, mixed farming is also practiced. In low lands, crops like Maize, Teff and Sorghum are dominantly grown.

Crop production: The major crops that grow in the area are Wheat, Teff, Maize, Sorghum, Barley, Bean, Pea, Enset etc. Under normal climatic condition, the cultivation of crops is possible during both belg (spring) and meher (summer) season.

Livestock: According to Soro district office of Agriculture (2016) the total population of livestock and poultry is estimated to be 449877. Out of this, poultry accounts for 53.79% followed by cattle 32.24% and sheep 6.14%

Goat 5.41%. The proportion of equines 2.42%. Spatially majority of cattle and Goat population is in the low lands of the district. Here oxen are the major source of farm power for ploughing and threshing as well as for manure supply. The large number of sheep and equines are found in the high lands because of disease problem in the low lands.

Agricultural Extension: Agricultural Extension is one of the most important inputs, which encourages farmers to use improved technologies and creates an enabling environment for Agricultural inputs and outputs markets in the case of Hadiya zone in general and Soro district in particular. Agricultural Extension focuses on use of improved varieties of seed, fertilizer, and to some extent crop protection Chemicals and provision of credit.

Sampling Techniques: For this study, simple random sampling technique was used to select target farmers and purposive sampling was used to select sample peasant association. In order to collect primary data for this study 100 farming households were selected; out of these about 12 were female headed households while 88 were male headed households.

Method of Data Collection: Primary and secondary data were the main sources of data for this study. Primary data were gathered through observation, interviewing and questioning. However, secondary data were collected from reports as well as published and unpublished documents.

Method of Data Analysis: The data used in this study were analyzed using descriptive statistics. The study showed that different socio-economic and environmental factors, which were hypothesized to be the determinants of the household food security in the study area, were selected and analyzed. Socio-economic factors were education, Farmland size, Irrigation, Herd size, family size, income, age, and Credit facility and environmental factors were erratic rain, erosion hazard and soil fertility decline.

Educational level of household head: As the level of education increase the adoption of the new technologies, that is the use of improved agricultural practices increases, as the result productivity increases. In other words, literate farmers are more effective in securing household food relatively.

Farmland size: It is an important determinant of household food security. Farm size is the total area of land cultivated to produce both food and cash crop by households, measured in hectares. There is positive relationship between farm size and improvement in household's income and food security. The majority (45%) of the respondents posses the land size of ≤ 0.5 hectares, which 32% of the respondents possess the land size that ranges 0.51 to 1 hectars. It is therefore, a household with a larger farm size is more food secured than a household with a smaller farm size does.

Irrigation: Irrigation is an important intervention for an area like Soro with good potential of irrigable land and rivers. It enables the households to produce more from a unit area of land.

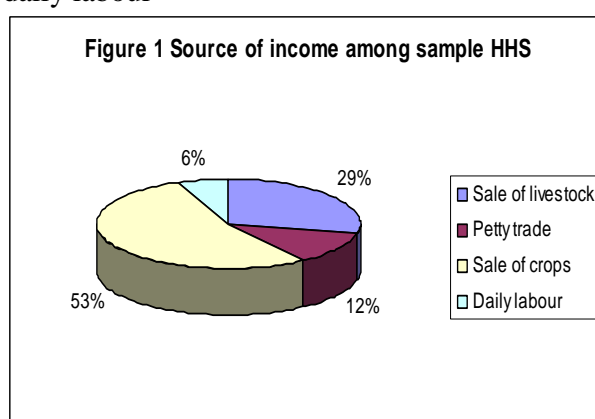
The study revealed that the size of present land holding is less than enough when compared with the need of a family and there is no extra land in most peasant associations of the district that could meant for further redistribution. Therefore, irrigation is very important determinant of household food security.

Herd (Livestock) size: Livestock is a means of accumulation of capital to safeguard the livelihood. However, if a household has a small land holding, it is unlikely will maintain a reasonable number of livestock if no livestock the house hold would likely be food insecured.

Family size: It is an important determinant of household food security, which negatively affects household food security and is the major causes for decrease of land size, which ultimately leads to shortage of food in household level. Sampled farmers of the study area are characterized by high family size, 42.5% of the sample households have 8 to 10

people per family. Generally, the average size of the family of the study area is 7, which is greater than the national average of 5. In order to address food security problems family size need to be restricted.

Income: The more household head engage in gainful employment, the higher he/she earns income and the greater the chances of being food secure. The income in the study area is collected from sale of crop produce, sale of livestock and livestock products, petty trade and daily labour



Source: survey data of 2016

Age of household head: Older headed household have better access to land than younger headed households, because younger men have to share land with their families. Therefore, it is concluded that age of the household heads and household food security are positively correlated.

Credit facility: Households with better access to credit with reasonable interest will have a greater capacity to absorb the risk of food insecurity. It is a part of social services that ensures food security at household level. Therefore, providing credit services to support farm and off-farm activities to generate additional income should be taken in to consideration.

The major Environmental factors reported by the respondents that affect livestock production and crop production and productivity are erratic rain, erosion hazard and soil fertility decline. Erratic rain affects livestock production and productivity by its effect on forage availability.

Conclusion: The study identified that eight socio-economic factors (family size, herd size, farmland size, credit service, Irrigation, educational level of household head, age of household head and income) determine /affect/ household food security. The study found out that out of the 100 surveyed households 63% of households had experienced food insecurity, characterized by low harvest and the main causes being unpredictable weather and inadequate arable land. The prevalence of food insecurity is higher in large sized family, uneducated and young headed households. Land shortage, household size coupled with limited off-farm opportunities to generate income for purchase of food drive local people into food insecurity.

The result of this study shows that food insecurity is the outcome of the interaction between these environmental factors and socio-economic conditions. Over the last 2 decades because of the growing local population in the study area majority of farmers have never produced enough food for their subsistence. In many households, even in a year of normal rainfall, food insecurity is persistent. The situation is worst in large households with small land holdings and low crop productivity. In addition, no suitable land is left for cropland expansion to any household. As a result, young headed households are landless or may share or acquire only small plots from their parents, meaning that per capita land holdings and food production are being diminished.

Irrigation is an important intervention for an area like Soro with good potential of irrigable land and rivers. It enables the households to produce more from a unit area of land. Therefore, to ensure food security, irrigable lands and rivers should be brought under utilization.

In general, by taking the importance of ensuring the availability of sufficient food with stable supply and accessible for those in need of it in to account, resettlement program should be practiced based on individuals need, expanding

family planning services to reduce rapid population growth and giving short term trainings on environmental resource management including soil and water conservation are vitally important.

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References

- Brouwer, I, 1994, Food & Fuel: a hidden dimension in human nutrition. Wageningen, 1994, 192p.
- Brown, M.E. & Funk, C.C. (2008). CLIMATE: Food Security Under Climate Change. *Science* 319(5863), 580-581.
- CSA, 2007. Population and housing census of Ethiopia 2007. Central Statistical Agency (CSA), Ethiopia.
- Ezra, M. (2001). Demographic Responses To Environmental Stress in the Drought and Famine-Prone areas in Northern Ethiopia. *International Journal of Population Geography* 7, 259-279.
- Garedew, E., Sandewall, M., Söderberg, U. & Campbell, B. (2009). Land- Use and Land-Cover Dynamics in the Central Rift Valley of Ethiopia. *Environmental Management* 44(4), 683-694..
- Gilligan, D.O., J. Hoddinott and A.S. Tafesse, 2008. An analysis of Ethiopia's productive safety net program and its linkages. Report for the International Food Policy Research Institute, Washington, DC., USA., February 15, 2008, pp: 1-42.

- Hussein, B., 2006. Major causes of household food insecurity in Wuchale-Jidda Woreda, Oromiya national regional state. M.A. Thesis, Addis Ababa University, Ethiopia. IFPRI (2006). *How Will Agriculture Adapt to a Shifting Climate?* Washington, DC: International Food Policy Research Institute [online]. Available from: <http://www.ifpri.org/sites/default/files/publications/if17.pdf>.
- Jones, P.G. & Thornton, P.K. (2009). Croppers to livestock keepers: livelihood transitions to 2050 in Africa due to climate change. *Environmental Science & Policy* 12(4), 427-437.
- Lobell, D.B., Burke, M.B., Tebaldi, C., Mastrandrea, M.D., Falcon, W.P. & Naylor, R.L. (2008). Prioritizing Climate Change Adaptation Needs for Food Security in 2030. *Science* 319(5863), 607-610.
- Rosegrant, M.W., Clein, S.A., Sulser, T.B. & Valmonte-Santos, R.A. (2005). *Looking ahead: long-term prospects for Africa's agricultural development and food security*. Washington, DC: International food policy research Institute.
- Schade, C. & Pimentel, D. (2009). Population crash: prospects for famine in the twenty-first century. *Environment, Development and Sustainability*. DOI 10.1007/s10668-007-9129-9.
- Scoones, I. (1998) 'Sustainable Rural Livelihoods: A Framework for Analysis', *IDS Working Paper 72*, Brighton: Institute of Development Studies. WFP, 2009. Food security and vulnerability in Addis Ababa. WFP-Ethiopia, September 2009. <http://www.alnap.org/pool/files/wfp221390.pdf>.