

## Household Food Insecurity and Coping Mechanism: Review

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### Abstract

The objective of this study is to review the household food insecurity and coping mechanism from Jigjiga town. The review conducted in Jigjiga town, a city of fafan zone Somali region, Ethiopia, located about 600km from Addis Ababa. Food insecurity, chronic and transitory can be recognized, but in reality they are closely interwined. Chronic food insecurity is a persistently inadequate diet caused by the continual inability of household to acquire needed food either through market purchase or through production. Ethiopia was one of the most food insecure of the world with a large number of its population falls in food insecurity. Having at subsistence level and dependent on forms of production which is highly vulnerable to severe droughts its emphasis was on food grain crops. The most causes of food insecurity are drought, conflict, environmental and degradation. Such as environmental constraints, socio-economic factors, and institutional weaknesses failure of rainfall at critical time, soil erosion, livestock disease and insect pests were among the environmental constraints. Socio-economic factors such as lack sufficient oxen, inability to purchase new technologies, excessive expenditure, poor saving habits, low level of education Etc. We're challenging the household not to have sufficient cereal throughout the year during the face of seasonal food shortage household adapted various coping mechanism; mostly sales of livestock assets. Generally awareness building towards natural resource conservation, involvement in off-farm activities, diversification of production, working in group and expansion of rural basic infrastructure to all remote areas with institutional capacity building are concluded as important areas of interventions.

**Keywords:** Household; Food Insecurity; Mechanism

### Introduction background

Food insecurity is range from food secure situations to full-scale famine. Between March 2007 and 2008 global food prices increased on average 43% rising in food price contributes to a significant in food increased in food insecurity worldwide, particularly among poorer nations approximately one billion or one sixth of the world populations subsist on less than \$ 1 per day. At house hold level increasing food price have the greatest effect on the poor and food and food insecure populations, who spend 50 to 60% or more their income on food [1]. Currently despite an improved global cereal supply resulting from increased cereal production in 2008 and associated decline in international price, food price remain high in most developing countries.

Coping mechanisms, actions, or strategies can be used to manage food insecurity and hunger. Coping mechanisms often include "formal" or "informal" approaches. An example of a formal approach is the use of institutional food resources, such as food banks

and soup kitchens, and examples of an informal approach include food sharing and reduced food consumption.

According to FAO report, domestic food price remain in 78% of 58 developing countries surveyed remained above early 2008 price levels. Increased food price continue to negatively affect access for significant number of low income vulnerable populations, contributing to ongoing emergencies in 31 countries worldwide, including 20 Africa nations [1]. Consecutive seasons of failed rains, combined with rapidly growing population, increased inflation endemic poverty and limited government capacity, have led to chronic food insecurity and water shortage in large areas of Ethiopia, including Somali region and areas of oromia, afar, tigray, amhara, and SNNPR regions [1].

Among the populations those needs emergency food assistance Amhara region accounts 995095 populations from the total beneficiaries of the next to Somali region which is estimated 1,550,143 populations. The regions mainly on meher crop but some eastern

parts of Amhara are belg dependent. In the eastern zones much of the area allotted for long cycle crop plantation had to be left fallow because of the failure of 2008 belg rains. Consequently the area under high yielding maize and sorghum dropped sharply. This necessitated among shift in the cropping pattern to short cycle but low yielding crops such as teff, sorghum and pulses like chickpeas and vetch later in the meher Food insecurity, chronic and transitory can be recognized, but in reality they are closely interwined. Chronic food insecurity is a persistently inadequate diet caused by the continual inability of household to acquire needed food either through market purchase or through production.

Ethiopia was one of the most food insecure of the world with a large number of its population falls in food insecurity. Having at subsistence level and dependent on forms of production which is highly vulnerable to severe droughts its emphasis was on food grain crops. The most causes of food insecurity are drought, conflict, environmental and degradation. The general objectives of this study is to review the causes of transitory household food insecurity and households coping mechanisms among the farm households in Jigjiga town.

### The significance of the study

The study was expecting the following significances:

Investigating the assessment of the household food insecurity and coping mechanism and knowing the causes of food insecurity like drought, environmental degradation and limitation of technology helps to promote confidence among people that have food insecurity.

Finally, the study play role and motivated me to do research in order to have knowledge such as causes of food insecurity and its categories and how the society give high understanding food insecurity and coping mechanism.

### Literature Review

Food security is defined as the availability of food and one's access to it. A household is considered food secure when its occupants do not live in hunger or fear of starvation. Stages of food insecurity range from food secure situations to full-scale famine. The World Food Summit of 1996 defined food security as existing "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life".

At last four similar definitions of food security has been used by international organizations and USAID, access by all people at all times to enough food for active life (WB, 1986); all people at all times have both physical and economical access to the basic food need (FAO). Access by all people at all times to sufficient food and

nutrition for a healthy and productive live and when all people at all times access to sufficient food to meet their basic dietary needs for productive and healthy life [2]. Food requirements must meet both qualitative and quantitative terms. The concept of sufficient food can be defined in terms of a given number of consequences of under nourishment (genetic, physiological, or behavioral) changes or in term of an estimated needed by household or individual. Qualitative satisfaction presupposes a nutritional balance in diet (protein, fats and carbohydrates), but also a sufficient intake of micro-nutrients, further more food must meet certain satisfactory health and hygiene standards [3] Access to needed food is sufficient when it includes all other conditions for healthy life.

A number of other factor, the health and sanitation environment and household or public capacity to care for vulnerable number of society, also come in to play. The food security concept address people risks of no having access to needed food. Situation with no crisis such as war or shock, sudden rice changes are typical higher the closer a household is in adequate dietary intake. Thus at a household level, food security is the ability of household to secure enough food to ensure adequate dietary intake for all its members [4].

### Food insecurity and its categories

In theory, two types of household food insecurity, chronic and transitory can be recognized, but in reality they are closely interwined. Chronic food insecurity is a 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 rooted in poverty transitory food insecurity on the other hand, is a temporary food decline in household access to needed food, due to factors such as instability in food price, production or income, in its worst form transitory food insecurity can result in famine. The different causes and characteristics of food insecurity among households may require corresponding differences in response (WB, 1986). In the same manner chronic and transitory food insecurity were also defined that, 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 intermediate category cyclical food insecurity such as seasonality. Despite being conceptualized in term of duration definition of transitory and chronic food insecurity rarely specify time period. Another source of ambiguity related to temporal and severity dimension of food insecurity. Although chronic and transitory are linked together, implying different duration temporary often used to imply "acute" with corollary assumption that chronic equates to "mild" or moderate food

insecurity [5]. Food insecurity is a situation in which individuals have neither physical nor economic access to the nourishment they need. A household is said to be food insecure when its consumption falls to less than 80% of the dietary minimum recommended allowance of caloric intake for an individual to be active and health [6].

### Factors affecting household food security

At household level the following factors or process affect food security

#### WAGE/opportunity

According to Ndhleve, *et al.* (2012) who found that households with inadequate access to food were less educated and earned low incomes. The United Nations Development Programme (Report of 2006) indicated that food insecurity is linked to income and unemployment however; Labadarios, *et al.* (2009) found that when incomes are low and food prices are high, employment will not help much in improving access to food. Van der Merwe (2011) states that households need secure living wages to ensure food security. Living wage is the minimum wage sufficient to cover the basic needs of humans. However, the Congress of South African Trade Unions (2011) states that the introduction of minimum wages led to employment levels declining. The setting of minimum wages resulted in the decrease in demand for labour and given that South Africa has a high level of unemployment, minimum wage setting puts pressure on employment growth (Congress of South African Trade Unions 2011). According to Gindling and Terrell (2010) the challenge is therefore put to policy makers to set a minimum wage that is fair given the worker's needs and cost of living but that will not harm employment growth.

#### Agriculture

It is one of the main sectors affecting the environment through its direct impacts on land cover and ecosystems, and on global and regional cycles of carbon, nutrients and water. At the global level, agriculture contributes to climate change through emission of greenhouse gases and reduction of carbon storage in vegetation and soil. Locally, agriculture reduces biodiversity and affects natural habitats through land conversion, eutrophication, pesticide inputs, irrigation and drainage. Unsustainable agricultural practices may also lead to direct environmental feed-backs such as soil erosion and loss of pollinators (because of excessive pesticide application).

Households differ widely in terms of their wages/opportunities and levels (agricultural, building, urban, migration), production for cash including, crops, fuel, handicraft, livestock ownership (the household saving account) and sales, staple food production staple food storage capacity and seed storage, household demography,

specially the ratio of producers to consumers, exchange of goods and services, and access to credit and its terms [7]. Causes of food insecurity facing household in various developing nations specially in Africa, Latin America and Asia have been documented in some areas experience some degree of hunger the rainy seasons when food stocks dwindle and roads become muddy and impossible, on the other hand the also reveal that the transition to commercial agriculture has had negative influence on food security. Deterioration in the ecological conditions, production has also been seen cause of hunger or food shortage in several Africa nations. In addition climatic factors especially low land highly vulnerable rainfall making the people vary vulnerable to crop failure and vulnerability of producers to sleekness and disability [8]. Some of the general factors that affect household food security in rural areas of Ethiopia are poor agricultural growth, unequal distribution of production resource and income and rapid population growth.

Both chronic and transitory problem of food security are wider spread and sever in Ethiopia. Combination of short term and long term causal factors can explain the trend towards the increasing food insecurity at household level. Long term factors such as interaction between environments, high population growth, diminishing land holdings and lack of on farm technological innovation have led to a significant decline in land productively per household (FDRE, 2001).

#### World food security situation

More than one billion people worldwide suffer from chronic hunger. Global food supplies will need to increase by an estimated 50% to meet demand increase in the coming 20 years. At G8 summit, in July, 2009, United States and other nations agreed to commit \$20 billion over the next three years to seek long term solutions to food security. The chronically tight food supply the world is now facing in driven by the cumulative effect of several well established trends that are affecting both global demand and supply. On the demand side, the trends include the continuing addition of 70 million people per year to the earth's population, the desire of some 4 billion people to move up the food chain and consume more grain-intensive livestock products, And the recent sharp acceleration in the U.S. use of grain to produce ethanol for cars. Since 2005, this last source of demand has raised the annual growth in world grain consumption from roughly 20 million tons to 50 million tons [9].

#### The food security situation of developing countries

Generally speaking world food resources have been increased significantly since 1974. However 840 million people were living in alarming situation of food security. Seven million children die each year because their malnourishment. The situation was due

to uneven distribution of food resources between nations and peoples [10]. Too old date for date facts! Food production has been increased in third world countries as has been in the case of the world. However, the inadequate technical and financial resources devoted to agriculture, and unending structural adjustment programmes imposed by financial bodies were impeding third world countries from adequately meeting the food needs of rapidly growing population (ibid). Adequately food consumption as food accessibility is interrupted by pestilence such as drought, disease and war. Asia has the greatest number of food insecure people, while Africa has the highest proportion of its people rated as food insecure [6].

### Food security situation in Africa

Africa policy makers are grappling with what these unstable world food prices and high fertilizer prices mean for their countries, how these price movement will affect food security situation in the coming lean seasons, how private sectors is likely to respond and how government themselves should respond (Longabu, 2008). According to the recent information available (August end August, 2009) the situation is deteriorating and projections through December show a large part of great horn of Africa (GHOA) in acute food and livelihood crisis to humanitarian assistance [11]. Food price in GHOA are still abnormally high despite some sign of decrease. A similar pattern is visible in Kenya, Uganda, Ethiopia and Tanzania, where the pick of prices has passed and the situation has either stabilized or in the decrease but well above in the last year's average (ibid). According to the recent analysis remote sensed information, precipitation was between 20-50% below the average in the several areas of HoA. These severe dry condition have constrained agricultural and livestock production and are among the main drivers of food insecurity in the region. Due to the prevailing dry conditions abnormal movement of livestock has been noted and it has reported that approximately 250,000 animals moved from Kenya in to southern Ethiopia. It is feared that this movement may trigger outbreak of disease [11]. Most of the Africa countries are severely affected by environmental catastrophe, despite the continent contributes only about 3.8% of the total greenhouse gases emission and yet, it is one of the most vulnerable to climate change impacts. It is the majority of the poor countries and communities will make Africa suffer early and hardest due to weaker resilience and great on climate sensitive sector like agriculture. By many accounts, coastal cities in Africa will likely disappeared under present conditions [12]. Food security will deteriorating further unless leading countries can collectively mobilize to establish the population, restrict the use of grain to produce automotive fuel stabilize climate, stabilize water table and aquifers, protect crop land and conserve soils [9].

### The food security situation of Ethiopia

This section presents both the past and current food insecurity situation of Ethiopia.

#### Past experience of Ethiopia in food insecurity

Ethiopia was one of the most food insecure of the world with a large number of its population falls in food insecurity. Having at subsistence level and dependent on forms of production which is highly vulnerable to severe droughts its emphasis was on food grain crops. The productive volume of grains crops as well as the per capita food production was show tremendous fluctuations through the 1980's and 1990's thus resulting in severe food shortage in the country (Mo FED, 1992). As a result, food production in Ethiopia has significantly increased during the 1990's. However the total agricultural production grew very slowly and hence was not able to meet domestic demand. In comparing nutritional requirement of citizens, the availability of is low and declining compared to other countries. For example, in 1999, calories percapita in Ethiopia were 20 percent lower than Uganda and 40 percent lower than Ghana, and most disturbingly significantly below level in 1980. Over that period both Uganda and Ghana were able to demonstrate considerable growth in calorie availability [8]. Ethiopia was one of the poorest with low purchasing power. Based on income 42 percent (47% rural and 32.5% urban) are classified as food poor. The continued failure of coffee markets and the recent drought might have exacerbated the level of food poverty. The physical and economic access to food market was seriously by isolation of Ethiopia curial market from the world, poor integration and network as well as its poor maintenance. Following the decline, the price of major crops had risen since the deflationary situation in 2002. For the last quarters, remained fairly stable but high but high indicating a continued depletion of urban purchasing power. Since emergency relief not organized for urban habitats, food poverty is likely to increase (MoFED., *et al.* 1992).

#### Current food security situation of Ethiopia

According to FOA crop and food supply mission report of January 2008, the 2007/08 meher season (main harvest that contributes 90-95% the total annual crop) production was 7% higher than the last years and 45% higher than the average for the last five years.

This represents the fourth consecutive bumper meher harvest in Ethiopia meher. Season's production is one of the most important determinants of food security in Ethiopia for the majority producing areas. Yet, despite good overall production, pockets of poor production have occurred as a result of weather related hazards mainly water logging, excessive rainfall, hailstorm, landslides and



flooding [1]. Approximately 8 million chronically food insecure people continue to be assisted through the productive safety net programs. These groups are primarily found in the crop producing eastern half of the country along the rift valley and the pastoral regions afar. Small land holdings, 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 conflicts, decline livestock holding per capita, livestock disease and market problems are among for chronic food insecurity for the populations (ibid) reports from field indicate that the 2009 belg rains have performed poorly but not as badly as 2008 belg that were considered as total failure.

The 2008 meher assessment had 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 was revised upward to 4.6 million in April million and again to 6.4 million by August 2009 [11].

Despite the steady improvement in production over the years, the above estimated number of population will need emergency assistance (from January to June 2009).

#### Cause of food insecurity in Ethiopia

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 [13]. Some of the major causes of both transitory food insecurity and chronic food insecurity in the country are out lined as discussed by FAO.

#### Recurrent drought

Agricultural development in Ethiopia heavily depends on rainfall, where the pattern is erratic and unpredictable for most small holder farming pastoral system. Rainfall is the major source of moisture for crop 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 divers on schemes are less practical; hence food production seriously been affected [13].

#### Environmental degradation

The existing natural resources are the basis for the accelerated agricultural development and the food security and other basic 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 accelerated soil erosion. In addition crop residue and animal dang are increased being used to meet rural

household energy needs, rather than being used for ameliorating soil fertility and hence increased agricultural production [13].

#### Limited access to credit

Credit stimulates, supports and accelerated the use of new technological innovations, which will increased production and productivity. Furthermore, improvement of marketing system and promotion of micro-enterprise and other income generating activities can be facilitated effectively only if they are backup sound credit system. Currently the development of micro-finance institutions is at infant stages, some of them lacking strong capital base, experience and capacity in credit management [13].

#### Limitation in technology

Agricultural intervention had followed the same pattern of service development in the area of fertilizer, improved seed and pesticides provision. Lacking comprehensive package of innovations at household level, provision of new technologies is rudimentary stages. Moreover, the technology multiplication center is limited to disseminate the existing technology [13].

#### Lack of production diversification and market integration

Diversification in production pattern is limited mainly focusing on food crops. Less attention is given to cash crops, livestock products. A market is not integrated as a result, price differential between farms get and terminal markets very significantly in the favor of the later. The agricultural output marketing indicates that production is challenged by low market prices caused by inadequate market information system and rural road network (ibid). Generally, the food security conditions in Ethiopia has always been fragile the majorities of the country's population depend on rain fed agricultural system for their livelihoods food needs and constantly the risk of being victimized 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 [14].

#### Coping Mechanisms to Deal with Hunger

Various coping mechanisms, actions, or strategies can be used to manage food insecurity and hunger. Coping mechanisms often include "formal" or "informal" approaches. An example of a formal approach is the use of institutional food resources, such as food banks and soup kitchens, and examples of an informal approach include food sharing and reduced food consumption. We examined the reported use of these three coping mechanisms for hunger among parents of Aboriginal and Canadian children in general:

seeking help from institutions, seeking assistance from relatives and/or friends, and skipping meals and/or cutting back on food consumption. The next section describes our findings based on the Aboriginal Children's.

Survey (ACS) for Métis, off-reserve First Nations, and Inuit children and the National Longitudinal Survey of Children and Youth (NLSCY) for Canadian children in terms of formal and informal coping mechanisms, taking into consideration differences in geography.

### Formal Approach: Institutional Food Resources

Formal approach is the use of institutional food resources, such as food banks and soup kitchens, institutional food resources are classified as a formal redistribution of food installed by governments to reduce the rate of food insecurity [15]. Examples include food banks, food stamp programs, meal programs, and community gardens [15]. In the USA, for example, low-income areas in particular have a greater reliance on food stamp programs than high income areas [16]. The effectiveness of institutional food assistance programs, however, has been questioned, as not all households in need are able to access such resources, and individuals participating in such programs are not always able to obtain nutritious foods such as fruits and vegetables [17].

### Informal Approach: Food Sharing

Food sharing, perhaps with family and friends, is an example of an informal coping strategy which may be employed to deal with food insecurity and hunger. Informal coping mechanisms may include a redistribution of food, where individuals participate in a reciprocal exchange of resources [15]. Reciprocal exchanges of resources include exchanging food for domestic help (e.g., gardening), sharing food, and lending money to purchase food. Such reciprocal practices stem from social responsibility, which tend to be more prominent among kin groups and rural communities [18,19]. Seeking assistance from relatives and/or friends is an informal reciprocal exchange of food resources that may increase food intake [20,21].

## Conclusion and Recommendations

### Summary

In the study area the food security status of was considered as the accessibilities of all individuals with in the household to sufficient food throughout the year. Being in line with this, it was recognized that out 40 respondents 70% of them were face food shortage there by categorized as food insecure. Multitude factors were obstacles to the Jigjiga woreda farmers not to have sufficient food throughout the years. Among these factors environmental factors;

unexpected flooding, animal diseases such as fasciola, insect pests and birds, and erosion problems were exacerbating the problem of food security in the woreda; socio-economic factors such as low level of income, lack of sufficient livestock resources, low level of education, lower saving habits and high expenditure for social ceremonies and celebrations; institutional factors such as absence of participatory cooperatives. Absence of rural financial institutions, poor market integration and problems of land distribution by local leaders, were the main handicaps of Jigjiga woreda farmers not to have sufficient cereals to their family members. During the time of food shortage the farm household adapt various mechanisms to cope with the problems among these strategies, getting loan sales of domestic animals, contracting out uncultivated own land and through storing cereals as a contingency.

### Conclusion

As expected the combination of environmental stress, the prevalence of social and economic constrains and institutional factors were seen to be the major cause of household food security in Jigjiga Woreda. Therefore, the following areas of intervention and strategies are forwarded to narrow the intensity of the problems; Awareness building towards natural resource conservation and rehabilitation to reduce the prevalence of environmental constraints of the Woreda. Encouraging the rural farm households not only to rely on agriculture, but also off-farm and on-farm employment alternatives so as to supplement household expenditure Diversification of agricultural is a promising strategy to reduce production risks and helps to create employment opportunities for the underutilized household labour. Working with group and formation of associations will offer the rural to collectively develop their skills, bargain power in the market, to influence the nature and direction of development activities, thereby increasing agricultural production and food security status of the household.

The establishment of rural basic infrastructure such as roads, schools, rural financial saving and credit institutions, and stations of agricultural and rural development must be considered the remote and geographically constrained areas of the Woreda, in line with these institutional capacity building should be focused.

Finally un proportion expenditure of money and household assets to various ceremonies and celebrations as well as marriage should be minimized to tackle household food shortage.

### Recommendation

Based on this study the following points were recommended

It is better if modern and traditional small scale of food process

is established to the society in suitable way. Coordination between government and NGO are very important in developing and implementing development policies on food security particularly, government and NGO have to contribute by joining together to reduce food deficit.

Local community should work together and exchange their experience which they get from the training Centre in how to practice modern farm, family planning, animal production and grouping by micro-enterprise to reduce unemployment and dependency on food aid recipients every time and to overcome the problem of food insecurity.

It is better if the government tries to develop infrastructure to the society and encourage to participation and engaged by themselves in the development program and self-sufficient food security.

It is better if government stabilize rising price level of goods and services by establishing public services in every society to reduce high cost of living in the community. Increasing irrigation to reduce risk and natural disaster like drought, flooding and hunger and improving the living standard of the society.

Society should be activity participation on their jobs in order to improve food insecurity in the area. Government has to expand infrastructural activities to attract different NGO from foreign country to increase investments activities and to solve problem of food insecurity in the country.

Community and government should join together to improve food shortage and to increase production and reduce the problem of food insecurity in the area.

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