Consumption Habit and Food Sources in Haramaya District, Ethiopia

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Abstract: Haramaya is among the localities that considered as food insecure and poor consumption habit. The study was intended to investigate consumption habits and food patterns of Haramaya District. Data on available raw materials of food sources and the habit of consumption in four kebeles were collected. The result described that Sorghum and Maize are main cereal grains abandoned in the area and of total accessible cereals in the area, 65.6% of them are obtained from subsistent farming of own-land production and the remaining, 34.4%, from the market. *Injera*, *Shumo*, *Genfo*, *Kita*, *Wot* and *Kolo* are the main foods for consumption prepared from cereal grains. Among the legumes and pulses, Pea, Common Bean and Chickpea are the key food sources, but the majority (54.2%) consume rarely. Similarly, though a high quantity of fruit and vegetables are available, household consumption is not adequate and the same for meat and dairy products. Though sufficient distribution and availability of food sources exists, consumption habit is unbalanced due to poor diversified foods. The households entirely depend on cereal grains with minimal consumption of other food sources. Therefore, balanced food preparation and consumption education programs are needed to create awareness on diversified eating habit and its benefit. Hence, dissemination of proper food preparation, good eating habit and nutrition concepts within the community is vital.

Keywords: Food habit; Food sources; Food type; Food diversification; Haramaya district

1. Introduction

The world's population is expected to grow to almost 10 billion by 2050 boosting agricultural food demand (Chauvin *et al.*, 2012). The growth would accelerate the demand of consumption requiring proper utilization and high production to feed the future. Ethiopia is a country primarily relies on agricultural based economy where grains are the most important crops and the chief component in the diet of most Ethiopians (Abegaz, 2009). The principal grains are teff, wheat, barley, corn, sorghum and millet. It has been also reported that Ethiopia has experienced a positive growth rate in oil crops, fruit yields and tuber crops in addition to cereal grains to secure the food demand of the country (EU, 2017; Chauvin *et al.*, 2012).

According to the United Nation report, Ethiopia is the poorest country in the world with a low human development index and high vulnerability with severe food insecurity (European-commission, 2017). Although the country showed successive economic growth in the last few years, the problems are still remain on the ground. Most of these food insecure populations are subsistence farmers and vulnerable to weather fluctuation. High population growth has also contributed to the decline in farm land size and environmental degradation remains a problem. Dramatic variation in rainfall and repeated environmental shocks further contribute to poverty and food insecurity (Piguet, 2003).

Ethiopia is the second most populated nation in Africa making the weight of fighting food insecurity even heavier (Mihiretu, 2008). Studies indicated that the problems are high in East Hararghe zone of Ethiopia and could span throughout the life if intervention is delayed (Piguet, 2003). East Hararghe zone is a complex agro-ecological area in which heavy population density with a high ratio of cash to food crops existed. Food insecurity remains as the major challenges to achieve development in Ethiopia especially in the area including Haramaya districts (Gibson and Anderson, 2009). A recent study indicated that among the reasons for food insecurity in Haramaya area, in some locations, is the result of dependency on undiversified food (Mulugeta *et al.*, 2018).

The degree and distribution of under-nutrition and micronutrient deficiency in a given population depends on many factors including the economy development, education level, sanitation practices, season of production, food production volume, culture and religious food custom or taboos and effectiveness of the nutritional program (Bedeke, 2012). In addition, lack of dietary diversity and micro-nutrient dense food consumption and problematic feeding practice contribute to the high rate of undernutrition (Khaeron, 2016). To assure proper nutrition of a country good care and feeding practices, food preparation and diversity of diet and intra-household distribution of food should be guaranteed (Bedeke, 2012; Uehara, 2012). Many researches indicated that nutritional problems lead to less mental and physical development of the community (Gibson and Anderson, 2009). Proper use helps to

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reduce poverty and improve the wellbeing of the community through better access to a good diet. Failure of proper use of a food product, which is available in the area, could lead to malnutrition. There is scanty report on the availability, utilization of food source for consumption and feeding practice in the study area. Therefore, this study generally attempted to identify the availability of food source, type of foods, way of consumption and feeding practice in the Haramaya district.

2. Materials and Methods

2.1. Description of The Study Area

East Hararghe zone, located in the Oromia region, consists of 17 districts among which Haramaya is the one. It is located 18 km away from Harar City and about 508 km east of the capital city, Addis Ababa. The district has uneven rainfall distribution, short rainy season occurring between February and May while the longer occurs between the months of June to September. The mean annual rainfall is 492 mm, which vary between 118 and 866 mm and located at 420 30'E, 90 26'N. The district has 33 rural kebeles with main crops of sorghum, maize and common bean, groundnut, potato, onion, *Khat* and other vegetable crops. The most regular cash crops for the district are vegetables and *Khat*.

2.2. Approach and Data Collection

A general survey model was used to collect data through questionnaires which include series of open ended questions. Data gathering was conducted on production and utilization of cereal grains, legumes, fruit, vegetable, root-tuber and animal food source. Data on consumption habit and method of food preparation in four randomly selected kebeles (Damotta, Finqile,Tinke and GandaLafe) around Haramaya University was collected. Each kebeles contain an estimated population size less than 2000 (administrative office). A total of 150 representative sample households were interviewed based on population size of the study area (Hamed, 2017). A simple descriptive statistics used to express frequency and simple comparison. The field data collection involved a combination of a qualitative and quantitative descriptive survey.

3. Result and Discussions

3.1. Production and Consumption of Cereal Grains

Grains are energy dense food sources which is about 10-20 times more energy than from fruit and vegetables (Sidhu *et al.,* 2007). They are important sources of dietary protein, carbohydrates, the B complex of vitamins, vitamin E, iron, trace minerals and fiber (Demissie *et al.*, 2009). It has been estimated that global grain consumption directly provides about 50% of the protein and energy necessary for the human diet (Mkumbwa, 2012). Consumption of whole grain is more important than consuming the refined flour due to high minerals and fiber content of the hull and bran (Courtin, 2014).

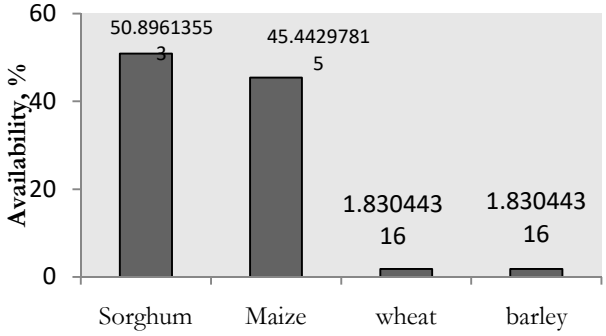

Figure 1. Common grains in the study area both on the farm and market place

The most important agricultural crops available in the area mainly are sorghum and maize (Figure 1). Sorghum and maize are the two main kinds of cereal grain abandoned in the area and obtained from farmland production. According to many literatures, the common staple grain in many small farm land owners are grains such as maize, sorghum and wheat (Gray and Abu, 2013).The common ways of obtaining the grains are both from subsistent own-farm production and purchasing from the market. From the total accessible cereals, 65.6% of them are obtained from own-land production and the remaining 34.4%, especially wheat and barley, from the nearby market. Wheat is obtained from the market and its use for household consumption, in a range of products, is vital.

From the total respondents, 65.4% of them explained that cereal grains are the main dish for daily bases but 34.6% of them add other food items beside to cereal grains.

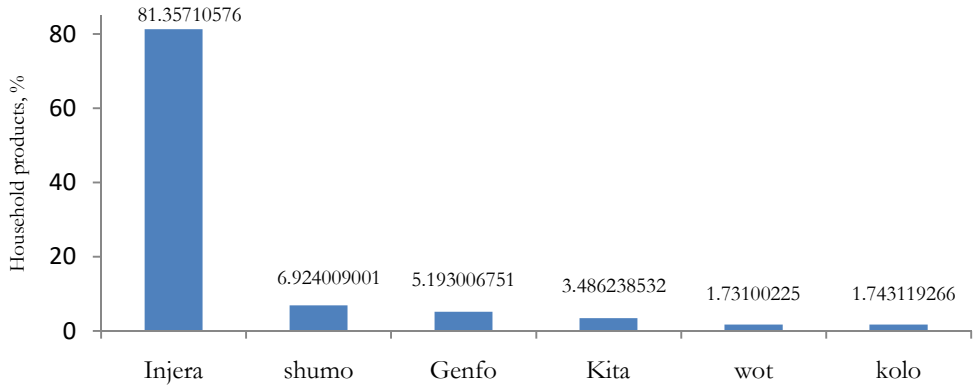

Figure 2. The main household products for consumption made from cereal grains

The common household products prepared by the community are Injera, *Shumo* (local language for boiled grain), *Genfo* (Porridge), *Kita* (unfermented bread), Wot (stew) and *Kolo* (toasted grain). Among them, *Shumo*, *Genfo* and *Kita* are produced in a high amount respectively. Including those purchased foods (bread and pasta) household food security of the community depends on these main products (Figure 2). Now a days, creation of awareness on food diversification is common in different world (Rashid, 2010). Hence, educating these communities to diversify their eating habit through different means is important.

3.2. Production and Consumption of Legumes and Pulses

Legumes and pulses contain a high amount of proteins and other components including various enzymes, protease and carbohydrase inhibitors, and lectins (Kabata *et al*., 2017)). Most of the proteins are water-soluble, functional proteins as distinct from storage protein. The various proteins are composed of essential and non-essential amino acids; some contains more of certain individual essential amino acids than others. Pulses and legumes are usually mixed with other grains such as sorghum and maize to enhance the protein content and these activities need to be promoted for a better result (Dias, 2012).

Besides the agricultural cereal grains, legumes and pulses are common for consumption (Figure 3). Pea found in high amount (80.7%) compared to the others followed by common bean (10.1%) and chickpea (7.3%). From the total respondents, only 8.3% of them use legumes and pulses in their daily food schedule. According to Gibson *et al*, (2009), including pulse and legume in the diet, helps to provide range of nutrients in addition to using as a cash crop. The majority (54.2%) consume once or twice a month and the remaining (37.5%) uses occasionally. The main products prepare from these raw materials are *Shumo* (local language for boiled grain and legumes mixes) and *Wot* indicating that no various products produced for consumption. Legumes and pulses contain nutrients which are lacking in cereal grains; therefore, incorporation of these food items in household's menu is important.

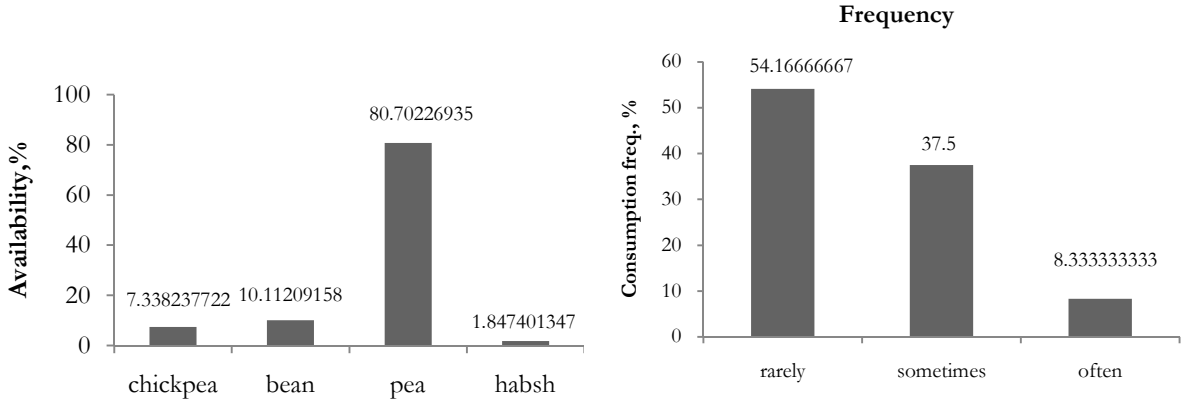

Figure 3. Common legumes and pulses found in the area both from the farm and market place (A) and consumption frequency (B). Rarely: once or twice a month, sometimes: three-ten times a month, often: more than ten times a month

3.3. Production and Consumption of Vegetables

Compared to other food group's nutrient profiles, fruits and vegetables provide the nutrient characteristics that most consumers perceive as health promoting. They contain no cholesterol, very little fat, sugar, and sodium, yet provides concentrated sources of many vitamins and minerals. Consumption of fruit and vegetables provides minerals, antioxidants, vitamins and most importantly they deliver phytochemicals (Demissie *et al.*, 2009). Most of the components such as antioxidant can scavenge free radicals before damaging cellular components preventing cancer and related disease (Jongen, 2002).

As indicated earlier, the consumption of fruit and vegetables has a vital use in providing a diversified nutrient. There are lots of fruit and vegetables in the study area; however, consumption is very minimal as confirmed by the finding indicated in the graph below (Figure 4). It can be concluded that the majority of the respondent (36%) do not consume as part of their diet, only 32% of them in a regular base. This might be due to the lack of knowledge of how vital they are for the wellbeing of their family and community. They are more focused on taking to the market for cash.

Moreover, consuming a diet high in fruit and vegetables is associated with lower risks for numerous chronic diseases, including cancer and cardiovascular disease. Replacing foods of high energy density with food such as fruits and vegetables provides an active life with healthy body weight proportion (Kader, 2001).

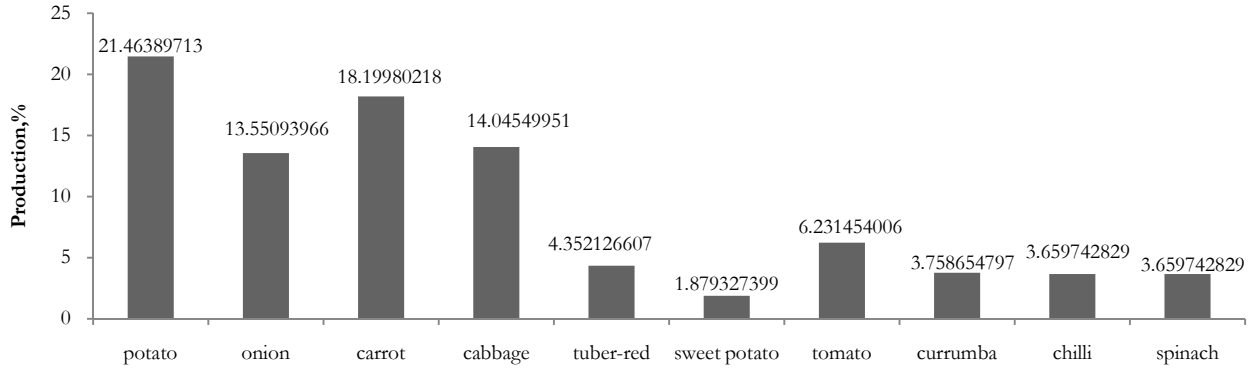

Figure 4. Major vegetables in Haramaya district (sources are both from own-farm and market)

3.4. Production and Consumption of Meat and Dairy Products

Meat and poultry are nutritious because of their high source and quality of protein, vitamins, and minerals. For example, a typical cut of beef may contain 60% water, 21% fat, 18% protein, and 1.0% ash (Lawrie and Ledward, 2006). They are also a good source of fatty acids especially omega fatty acids. A well-balanced diet that includes variety of meat and poultry can contribute to heart health and children's proper growth and development.

The increased pressure on the livestock sector to meet the demand for high-value animal protein is expanding. There is a positive relationship between the level of income and consumption of animal products. Consumption of milk in the area is relatively higher than the egg and meat. Among the total respondents, 8% of them consume meat and dairy products on a regular basis whereas 72% of them use once a month.

Consumption of meat, milk and eggs is usually in the expense of staple foods. Due to this, as a developing country, the consumption of these products is minimal in the study area even though it provides essential nutrients to the households. Through different means, it is better to create awareness in society how good these food sources are from a nutritional point of view (Lawrie and Ledward, 2006).

3.5. Overall Consumption of Foods and Drinks

The proportion of food and drinks consumed by the community varies a lot and the most frequently used food and drink items are shown in the graph below. Consumption of Injera, which is a staple food in Ethiopia, is very high (Rashid, 2010). According to the data collected, 47.7% from the total consumption is Injera. It is prepared from blends of sorghum and maize, in most case with a 70% to 30% ratio respectively. The mixing is done not for the nutritional purpose; it is for ease of processing.

Besides, *Injera*, Porridge and bread, pasta consumption is high in the community. Boiled grain-legumes-pulses mix and toasted grains are also common and have equal 2.3% shares from the total dish. Unlike *Injera*, Porridge, toasted grain and boiled grain-legumes mix which is home-made, bread and pasta are purchased from the market. According to the survey, 73.1% of them have the capacity to purchase food items from the market. Capacity to buy items from the market is developed due

to the common cash crop, *khat*, abounded in the area (Piguet, 2003). The remaining 26.9% of the respondents do not have the capacity to do that.

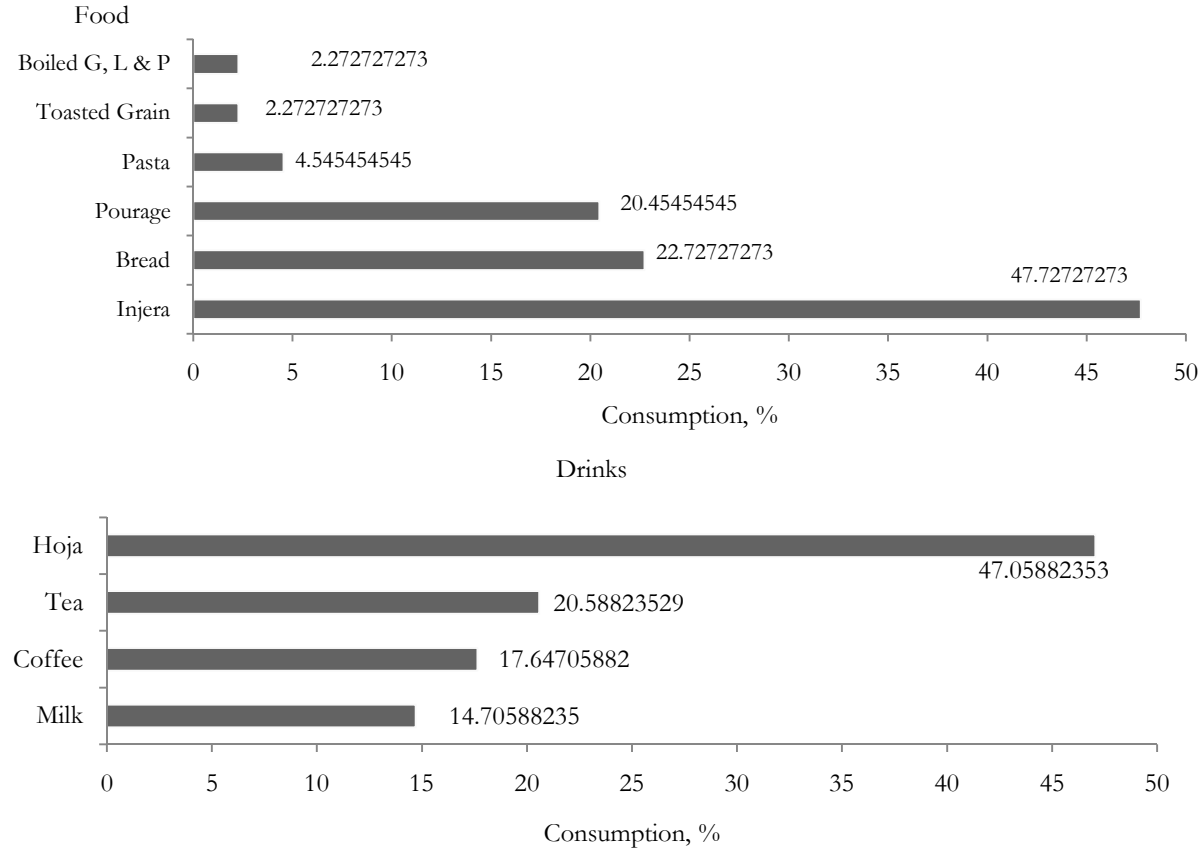

Figure 5. Major foods and drinks consumed in four kebeles of Haramaya district

Usually, the communities prepare food from sorghum and maize or a mix of the two. A habit of mixing cereals with other food items for a better nutrient is not common and should be disseminated to the community through different means such as training. Most of the respondents were replied that they have a habit of mixing not for nutritional profit. They simply added that mixing ingredients would benefit for ease of processing. The most common drinks in the area are *Hoja*, tea, coffee and milk. *Hoja* is among the traditional hot drink, which is consumed in a high amount (47.1%, compared to other drinks) followed by tea and coffee. *Hoja* is prepared by boiling dry coffee pulp (after the seed is removed) with water and salt (similar to tea boiling) rarely they add milk and sugar is added at the end. Literatures are limited about traditional hot drinks in the study area. But, due to their importance from nutritional point of view, it is recommended to use them in a daily bases.

4. Conclusion

Sorghum, maize, legumes, pulses, fruits and vegetables including cabbage, potato, carrot and tomato are commonly produced in many parts of the study areas. Though food items are not scarce in the area, there is still poor consumption habit in the community. Lack of awareness of balanced food preparation and its benefits is a reason for poor consumption and non-diversified food eating. Therefore, it is recommended to create awareness on balanced food preparation and benefit of consumption through different means, such as mass media, (radio and television) and conducting training. Besides the aforementioned factors, a combination of different factors, especially low production, lack of proper food preparation and low digestibility of proteins from major sorghum-based food products are the key areas that need technological intervention in order to improve the quality of community life. The outcome of this research can be used as a baseline for any activity to be conducted in the area.

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