



Master Thesis
International Development Studies

“LET THEM EAT MACARONI!”

Food security and the Importance of Teff in Addis Ababa

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Abstract

This research is concerned with urban food security in Addis Ababa, Ethiopia. Traditionally food security research has mainly been focussed upon rural areas, endorsing small-holder farmer productivity (Crush and Frayne, 2011). It is largely recognized that such focus upon small-holder farmer availability of food is ignoring the multidimensional nature of food security. Therefore, the FAO Food Security Programme (2008) has proposed here a food security framework that takes into account multiple aspects of food security: availability, accessibility, utilization and stability. Others endorse more explicitly the social aspect the social and cultural value of food (Ingram, 2011). This research adopts such all-encompassing approach to the case of teff in Ethiopia. Results are twofold. First, it was found that the government of Ethiopia continuous to endorse the availability aspect of food security, resulting in false assumptions about future food security and the production of teff. Second, the literature on the case of teff is also ill-informed, rather approaching teff in terms of accessibility, ignoring the social and cultural value of teff in Ethiopia (Demeke and Di Marcantonio, 2013) (Minten et al., 2013).

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List of abbreviations

ADLI	Agricultural Development Led Industrialization
EIAR	Ethiopian Institute of Agricultural Research
FAO	Food and Agricultural Organization of the United Nations
FDI	Foreign Direct Investments
FFP	Follow the Food Programme
FSAS	Fair and Sustainable Advisory Services
GTP	Growth and Transformation Plan
IMF	International Monetary Fund
INGO	International Non-Governmental Organization
NGO	Non-Governmental Organization
NOW	the Netherlands Organization for Scientific Research
UU	Utrecht University
VCA	Value Chain Approach
WB	World Bank
WSETVC	Working Strategy on Ethiopia Teff Value Chain

1 Introduction

In 2050, the world population will count over nine billion people and the realization that those mouths need to be fed has triggered profound research on the topic of food security. Food security research has traditionally focused rural areas, almost automatically giving the impression that that an increase in smallholder farmer productivity will result in the final food security solution for feeding those nine billion (Crush and Frayne, 2011). This focus on rural areas is problematic as the world is undergoing rapid urbanization and knowledge about urban food security will be of crucial importance the forthcoming decade.

The quantitative approach that aims at increasing agricultural production and finally the availability of food is therefore not sufficient and other food security components are equally important (Capone et al., 2014). One of those components is accessibility. Urban food security differs from rural food security, in a sense that food often is available, but not accessible for substantial parts of the population (Sen, 1988). The focus on natural causes for food shortages therefore has shifted to societal causes, as food accessibility problems are often anchored in social, political and economic characteristics of a society (Pinstrup-Andersen, 2009).

Finally, when food is available and accessible, not automatically the objective of well-fed nutritious individual is reached (Capone et al., 2014). Nutritional value, or rather how the body makes use of nutrients obtained, is proposed here (FAO food security programme, 2008). This points to a wide range of considerations, such as health, living conditions and social and cultural habits regarding food (FAO food security programme, 2008) (Ingram, 2011) (Ericksen, 2008). The latter component being of crucial importance in this research.

Teff is an Ethiopian grain that is strongly related to such social and cultural habits. Teff is the oldest cultivated crop in Ethiopia and is deeply entrenched in social and cultural habits of many in the Ethiopian society. The country is made up out of over eighty ethnicities and teff is what glues the nation. Teff is the main ingredient in the spongy pancake-like flat bread injera. Eating injera is a social event, as a group of kin or friends gather around a large round plate on which the injera is served, topped with other ingredients, such as *tibs* (pieces of lamb or chicken) or *beyenyatu* (a range of vegetables). This ritual is part of what is Ethiopian: “it is consumed with an almost religious devotion, often three times a day” (Geeska Afrika Online, 2015).

Teff is also considered a new potential superfood, being gluten free and highly nutritional. Once launched into the western market, it can deliver serious profits, following the ongoing demand of the western consumer for healthy, nutritious and gluten-free products. Something the Ethiopian government is aware of; though in 2006 the Ethiopian government banned the export of teff as local prices increased, that same government changed its policy and was planning to start exporting this crop on a large scale at the beginning of 2016 (Demeke and Di Marcantonio, 2013) (Working Strategy on Ethiopia’s Teff Value Chain (WSETVC), 2013).

To be able to organize such export-led teff sector, large investments in the agricultural sector are needed. Such large investments in an agricultural sector are not without consequences for local food security, as one can imagine. Many point here to the increased competition on natural resources that lead to social in-equality and corroding food security (Baumgartner et al., 2015) (Weissleider, 2009).

More interesting here is the question how the local population is missing out on the benefits of such large investments.

Thus, this research is concerned with urban food security and the case of teff in Ethiopia. The research was implemented in the highly-urbanized area of Addis Ababa.

The main question of this research reads as follows:

How are the changes in the food chain of teff affecting food security of urban households in Addis Ababa?

2 Theoretical framework

2.1 Food security definition and dimensions

Food security: definition and framework

Food security is a central topic in the development debate and the discussion about what it involves and how to best address this feature has evolved over the last decades, resulting in multiple definitions and concepts. However, one definition of food security has become wide-spread accepted and used:

“When all people, at all times have physical and economic access to sufficient and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (Rome Declaration on World Food Security and World Food Summit Plan of Action, 1996).

This definition is the result from the ongoing debate and several shifts in the discourse about food security during the last decades. These shifts are discussed below to be able to understand the multi-dimensional nature of the topic as food security.

In addition, the multidimensional nature of food security also asks for a tool that can help researchers to analyse this topic. The Food and Agriculture Organization of the United Nations Food Security Programme (FAO) (2008) developed such a tool: the food security framework. This framework includes four dimensions of food security: the availability, accessibility and utilization of food. Hence, the fourth dimension underpins these three aspects over time: the stability of food security. This framework is explained in further detail below by connecting it to several shifts in the debate about food security the last decades. Furthermore, this framework is central to the design of this research (FAO Food Security Programme, 2008).

Initial perspectives on food security: the availability of food

After the second world war, food security was defined by means of the availability of food in a country. This perspective endorsed the supply side of the food system and questioned whether a country was sufficient in delivering food to the local population through the food markets present, to meet the dietary and energy needs of its population (Pinstrup-Andersen, 2009). When supply and demand was balanced equally, a country could claim to be self-sufficient in delivering food and was therefore considered food secure. Definitions of food security stemming from that era are reflecting this vision, for instance: “availability at all times of adequate world supplies of basic food-stuffs..., to sustain a steady expansion of food consumption... (Report of the World Food Conference, 1974). The FAO finally paraphrased this in the food security framework as: “the level of food production in a country, the stock levels and net trade” (FAO Food Security Programme, 2008). This can relate to production, or how much and which types of food are available through local production; distribution, or how food for consumption is physically moved to be available, in what form, where, when and to whom, and finally exchange, how much of the food is available through exchange mechanisms such as barter, trade, purchase or loans rather than local production (Ericksen, 2008) (Ingram, 2011)

Much of the food security debate still revolves around food production and the availability of food, as the most prominent solution remains growing more food (Crush and Frayne, 2011). However, this

approach hides the multi-complex dimensions of food security and has been, and still is, contested on a regular basis.

From food-first to livelihood perspectives: the accessibility to food

In the early eighties, multiple famines in developing countries made clear that despite adequate food stocks on national levels, food insecurity was still prevalent. Perceiving food security by means of focusing on the (national) availability was not sufficient: many people in developing countries were still food insecure. Often shops are well-equipped with food, while on the doorsteps the urban poor struggle to make enough money to be able to eat at least one time a day (Crush and Frayne, 2011). This pointed to issues deriving from the accessibility to food for some household. These new insights were underpinned and steered by the work of Sen (1988), endorsing the personal entitlements of households and individuals, such as labour and assets, as indicators for food security. Overall, this meant that the focus on natural causes for food shortages, shifted to societal causes, as food accessibility problems are more often anchored in social, political and economic characteristics of any given society (Pinstrup-Andersen, 2009).

Consequently, it was questioned whether food was of primary importance for many people. It was argued that food was just one of the objectives people pursue (Maxwell, 1996). This was supported by studies that showed that people went hungry for a time in order to save household assets, preventing damage to future livelihoods. In sum, this was a shift away from a food-first perspective to a livelihood perspective, simultaneously demonstrating the long-term resilience of households and addressing livelihood security as a condition for food security (Maxwell, 1996).

This insight has resulted in an additional focus on the accessibility to food, or rather on incomes, expenditures, markets and prices (FAO Food Security Programme, 2008). The FAO Food Security Programme (2008) straightforwardly divides this aspect in economic and physical access. Ericksen (2008) distinguishes three categories, the first being the affordability of food, including issues deriving from income or unemployment, or more straightforward: purchasing power of households relative to the price of food. Second category is the allocation of food: all mechanisms determining where, when and how food is purchased by consumers, main driver being the local markets. The final category and additional to the FAO Food Security Programme's (2008) perspective, is the preferences of households to the food they purchase. This can be described as social or cultural norms and values that result in the choice for certain types of food, emphasizing features as religion, season, advertising, preparation requirements, taste and customs (Ericksen, 2008).

From objective to subjective: the utilization of food

Finally, it became clear that even though enough food was available in a region, and people are able to access that food, this did not automatically result in well-fed and nutritious individuals. Too often food security was measured in terms of levels of consumption or required calorie intake. This ignores individual differences in food needs, deriving from factors as age, health or occupation. Any calculation of adequate calorie intake for adults and children is therefore constantly revised, rendering the measurement of food security difficult (Maxwell, 1996).

Moreover, objective measurement of food insecurity leaves aside notions of nutritional value (Pinstrup-Andersen, 2009). For instance, when a person is able to maintain a certain calorie intake, this is not automatically translated into healthy and nutrient individuals, as, for instance, poor food choices can result in a monotone diet (Maxwell, 1996). This is something the framework of the FAO

Food Security Programme (2008) takes into account when defining the additional utilization aspect of food security: “how the body makes the most of various nutrients in food”. The outcome of nutrient individuals is defined by many factors: good health care, solid feeding practices such as hygienic food preparation, diversity of diet, intra-household distribution of food and good biological utilization of food (FAO Food Security Programme, 2008).

To be able to include all facets of the utilization aspect of food and nutrition security, others use here more including categories. First, nutritional value; how much of the daily requirements of nutrients are provided by the food consumed, determined by diversity of diets, type of proteins (animal or vegetable), overall health condition, education facilities for feeding practises and access to clean water (Ingram, 2011). Second, social value, or al social and cultural aspects to food consumption, for instance special food can be part of a celebration or households always have food put aside for guests (Ingram, 2011). Moreover, food habits and the preferences for certain types of food can be of crucial importance to a local culture. For instance, food preparation and consumption can contribute to the creation of the concept of ‘home’, or what it means for an individual to belong to a certain group in society or broader: being part of that whole society. For example, immigrants in foreign countries often aim at regaining a state of ‘normalcy’ by the act of preparing and consuming foods that are considered to be ‘part of home’, often as a group. Preparing meals and consuming those meals become rituals that feed remembrance, supporting the collective identity and by this restore the feeling of unity, which migrants often miss in foreign countries (Rabikowska, 2010). Third and final category is food safety, or the danger deriving from chemicals added throughout production, processing and packaging and food-borne diseases (Ingram, 2011).

The final aspect: stability over time

The last aspect of food security derives from more practical notions from the field: the stability of the former three aspects over time. Due to weather conditions, political (in)stability and the economic situation in a region or country a household can differ in their food security status throughout a certain period of time (FAO Food Security Programme, 2008). When a household is able to maintain an adequate food intake today, that same household is still considered to be food insecure when lacking adequate intake of food during a certain amount of time, risking the deterioration of the individual’s nutritional status over time (FAO Food Security Programme, 2008). People can be either chronically or temporarily food insecure. Another example is seasonality, food that is the main source of calories, can strongly vary in price, rendering a household more or less food insecure throughout the year.

The hierarchy of the aspects

In sum, these insights lead to the conclusion that the different aspects of food security are somewhat hierarchical. After food is available, it can be accessed and despite food is accessible, not automatically the ultimate objective of healthy and nutritious individuals is fulfilled (FAO Food Security Programme, 2008). Individual, household, social and cultural choices, opportunities and limitations regarding food habits do determine a large share of the outcome of food security. The last food security aspect of stability underpins these three former aspects over time.

2.2 Food systems and food chains

Food security is often considered as the outcome of a food system. A food system can be described

as: “all processes involved in feeding a population, and include the input required and output generated at each step” (Goodman and Watts, 1997). As this definition implies, a food system is holistic of nature, encompassing multiple interacting processes (Capone et al., 2014).

To be able to distinguish between these ‘multiple interacting processes’, it is useful to first differentiate between the various product groups in a food system, such as cereals and dairy products. These products groups all need a set of activities to finally arrive at market to be consumed. Four different categories can be used to describe those activities: the production of food, the processing and packaging of food, the distribution and retailing of food, and the consumption of that food (Ericksen, 2008) (Ingram, 2011). These activities are often employed in a sequent and linear order and are referred to as a food chain (Capone et al., 2014). Moreover, a food chain is defined as “the continuum from the production of a certain product to the consumption by the consumer” (Ingram, 2011). Together all food chains of different product groups make up the wider food system (Grefthenhuis, 2015).

The world comprises of a wide range of food systems and taken together these systems are frequently referred to as “the global food system”. Compressing such complex systems into one broad definition is somewhat simplistic, however to able put a name on the wider context of any given food system, this concept is nevertheless utilized in this research.

2.3 Food systems: categorization and food security

Modern and globalised: the value chain approach

When describing food systems often the terms ‘modern and globalized’ and ‘traditional and local’ is what comes to the table. These concepts are also central to Value Chain Analysis (VCA): and are rooted in world system theory (Laven, 2010). Central to this theory is that in the past, colonies exported primary products of which the profits were invested in the industrialization of colonizing countries (Wallerstein, 2011). This has put the former colonized countries at a continuing disadvantage vis-à-vis the former colonizing countries: industrialized or rather manufactured products will over the long run return more profits compared to primary products (Cypher and Dietz, 2009). VCA is thus rooted in these ideas and as such firstly concerned with agricultural products (Laven, 2010).

Deriving from this definition, traditional food systems are often considered as the counterpart of global and modernized food systems that are extended through boundaries and deliver processed products to consumers (Maxwell, and Slater, 2003). Investments in these traditional food systems are aligned with the continuing neo-colonial relationship between the developed and developing countries, or rather actors. Due to the more complex reality, after colonial times the global economic system have given rise to more powerful actors, such as countries from the middle east (Baumgartner et al., 2015).

Value chain as a concept was first coined by Michael Porter (1985). First focus was upon single firms in which all activities are verified by its value addition (Laven, 2010). Or rather competitive advantage: the leverage that a firm has over its competitors (Porter, 1985). In Porter’s (1985) explanation of value chains, it is coined that activities that are not adding value at the site of production should be outsourced to geographic sites that are able to more cost-efficient exploit such specific activities. This idea gave flesh to the rising global competitiveness between geographic sites

in an era of globalization. This approach has triggered critique as it focusses upon firms as isolated islands and rather ignores local context and above structural neo-colonial forces (Laven, 2010). Hence, the focus of VCA on the agricultural sector has become marginal as VCA was further developed to explain power relations within globalized commodity chains in general (Gereffi and Korzeniewicz, 1994).

Hereafter the following definition for a value chain was coined: “the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), to the deliverance to final consumers, and final disposal after use” (Kaplinsky and Morris, 2001). This definition is more or less in line with the above definition for food chains, but more extended as it also focusses upon the transformation of the final product. In sum, VCA concerned with agricultural products focusses upon food chains as the globalized and value adding entities they are today.

The development of the global food system is rooted in above mentioned structural global forces and underlying proposition of the VCA. Large investments were made in the intensification of agriculture, for instance: mechanization, increased control over inputs such as fertilizer, and the implementation of large farms (Ericksen, 2008). Under this growing food producing efficiency, food production became a marginal branch of the global food system, more specific: food manufacturing and marketing activities increasingly were initiated and implemented by the companies from the developed world (Maxwell and Slater, 2003). This deviation of power in the global food system has turned farmers, often in developing countries, into contractors that never own the product, as it is moved up the supply chain and value-added, branded and marketed by more powerful actors (Maxwell and Slater, 2003).

Local and traditional: local food chains and their importance for food security

To increase agricultural output and finally feed the growing demand for food, often large-scale land investments are made in the agricultural sector in developing countries. These investments are frequently operating in the field of traditional food systems. Traditional food systems are mostly characterised as a set of family-based food chains that moves basic staple commodities, such as grains vegetables and fruits, from farm to the, often, local plate (Maxwell and Slater, 2003), or ‘from farm to fork’ (Ingram 2011).

Deriving from this definition, traditional food systems are often considered as the counterpart of global and modernized food systems that are extended through boundaries and deliver processed products to consumers (Maxwell, and Slater, 2003). Investments in these traditional food systems are aligned with the continuing neo-colonial relationship between the developed and developing countries, or rather actors. Due to the more complex reality, after colonial times the global economic system have given rise to more powerful actors, such as countries from the middle east (Baumgartner et al., 2015).

Often it is coined that large scale land investments in developing countries deliver the right knowledge, technical support and job-opportunities that are lacking in such regions, creating economic synergy and subsequently also poverty alleviation and better food security (Baumgartner et al., 2015). However, others argue here that such investments lead to increased competition on the natural resources put to use for self-subsistence by many, finally corroding such advantages (Weissleider, 2009). In addition, these investments also can contribute to aggravating local inequality

as the already wealthier group achieves greater growth, possibly resulting in (violent) conflict (Baumgartner et al., 2015).

It is the perception that traditional food systems have missed out on the upsides of modernization: farmers lack access to technical knowledge and finances that are necessary to invest and to obtain increased production (Ericksen, 2008). To make matters worse, these traditional food chains rely on local environmental conditions and are therefore more vulnerable to production shocks through adverse weather conditions, the degradation of land and soil or political instability (Ericksen, 2008). This is in contrast to modern food systems that have spread such risk under global competitiveness around the world. People relying on such food systems are considered as more food insecure than people relying on modern food systems (Maxwell and Slater, 2003).

However, this vision is outdated and concerned with the old perspective on food security: the availability of food produced by small-holder farmers for consumers in rural areas. The reality contemporary is much more complex. Traditional and modern food systems now co-exist in many countries. For instance, supermarkets that deliver a stable supply of food throughout the year have spread across the developed world (Rischke et al., 2014). Food security of urban consumers exists in this field of both traditional and modern food systems and is rather anchored in other food security aspects than solely the availability of food. Something the FAO Food Security Framework (2008) is explaining when coining the supplementing aspects for food security.

To disregard local traditional food chains as unproductive, inefficient and underdeveloped, finally resulting in food insecurity, ignores the fact that traditional food chains actually produce valuable supplies. Many people rely on traditional food chains for their daily supply of food (Neven et al., 2006). The debate about the current spread of supermarkets illustrates this latter point. One stance argues that because supermarkets often offer large quantity discounts a lower price is paid per calorie, subsequently increasing food security (Rischke et al., 2015) (Neven et al., 2006). However, others argue that when a supermarket enters the market, they force other types of food retail out of the market finally decreasing food security (Tschirley et al., 2014). Local food markets are frequently employing the option of smaller quantities, and are favoured because of social ties, resulting in the option of buying on credit (Grootenhuys, 2015). In addition, products from local traditional food shops are frequently more fresh and healthy, as contrary to the mainly processed foods in supermarkets (Rischke et al., 2015). These latter clear advantages of supermarkets in the retail sector renders the continuation of local traditional food chains necessary (Tschirley et al., 2014).

2.4 Conclusion

The main solution to food insecurity remains growing more food by small-holder farmers, or rather an improvement in the availability of food (Crush and Frayne, 2011). However, often shops are well-equipped with food, while on the doorsteps the poor struggle to make enough money to be able to eat at least one time a day (Crush and Frayne, 2011). This stresses the incorporation of the accessibility aspect in the food security debate, or rather the social, political and economic characteristics of a society (Pinstrup-Andersen 2009). Following this shift in the food security debate it was coined that despite food is available and accessible, this not automatically leads to healthy and well-fed individuals. Rather the focus shifted to food and nutrition security, in which the latter nutritional aspect is explained by the utilization of food, or: "how the body makes the most of various nutrients in food"

(FAO Food Security Programme, 2008). This utilization aspects points to many issues, among others: good health care, solid feeding practices and diversity of diet (FAO Food Security Programme, 2008). To be able to include all facets of the utilization aspect of food and nutrition security, others use here more including categories: nutritional value, social and cultural value and finally food safety (Ingram, 2011). Finally, the last aspect underpins the three above over time: stability of food security anchored in features such as climate circumstances and political stability (FAO Food Security Programme, 2008).

Food security is the outcome of a food system and is often defined by the nature of that food system: either traditional or modern. Modern food chains have reduced food production risks such as weather conditions and political instability by the fragmentation of activities around the globe. Traditional food chains in contrast suffer from to production shocks due to its bounded area (Ericksen, 2008). However, this perspective is somewhat outdated. as the rise of supermarkets in developing countries show. Hence, to simply disregards traditional food chains as unproductive, underdeveloped and backwards is to turn a blind eye to the many people that rely on these food chains for their daily food supply (Neven et al., 2006). Multiple scholars point here to the continuing importance of local food chains (Rischke et al., 2015) (Crush and Frayne, 2011) (Grefthenhuis, 2015).

2.5 Conceptual model

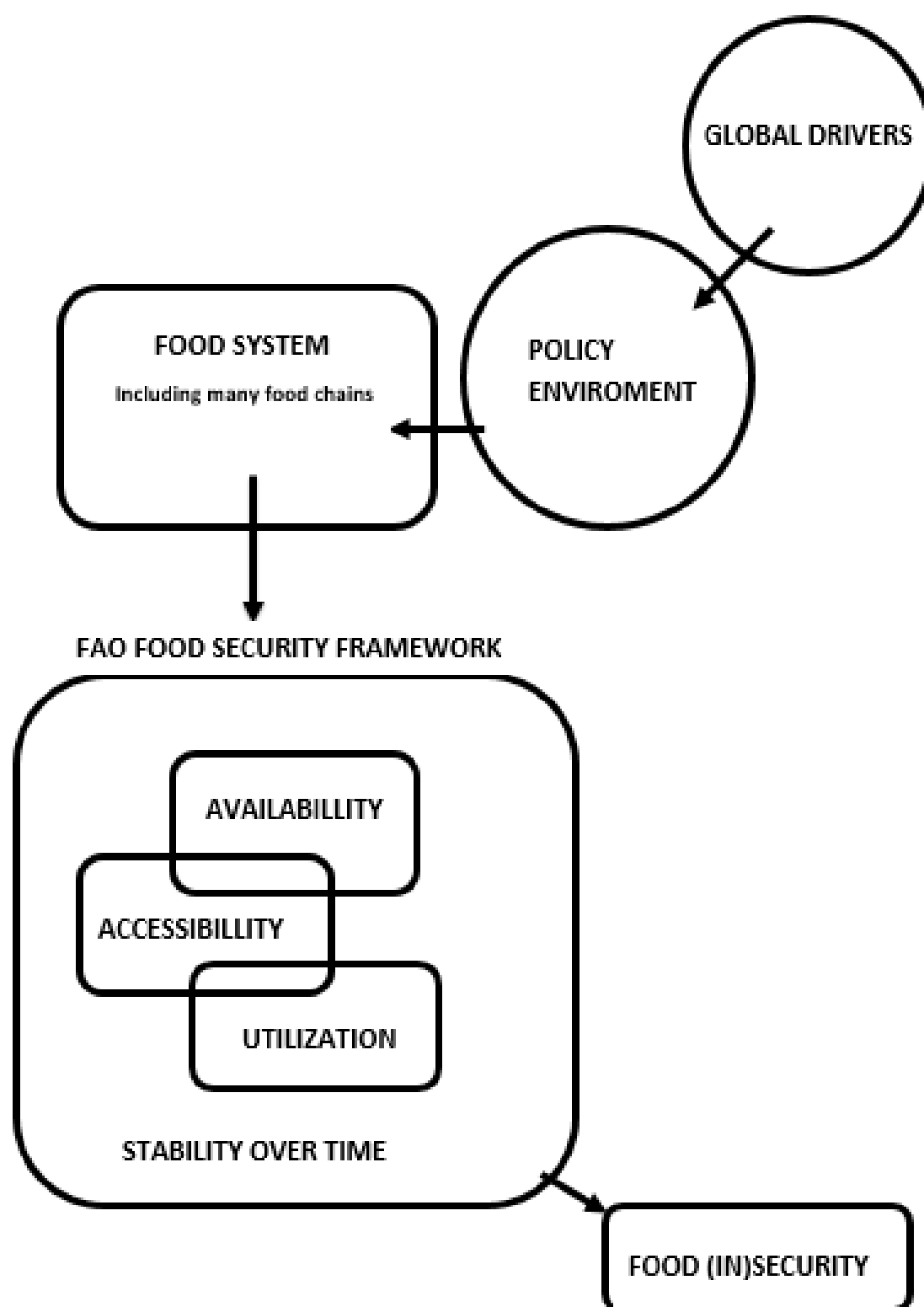
This research id divided into two pillars: food security and a food chain rooted in a food system. Main emphasis of this research is the influence of the global and modern food system on a local and traditional food system. The impact of the global integration of an agricultural sector to a traditional food system and finally food security. Global integration of any agricultural sector is not without consequences for a local food system and the outcome of that system: food security, whether beneficial or disadvantaging. A conceptual model is depicted below in figure 2.1

As will become clear below, policy became a central feature in this research. By connecting changes in the wider food system, here the modernization and globalization of a food chain and policy environment, to activities in the food chain a first analytical step is made. This analysis will be finally connected to the focus of this research: food security. In this manner, the policy environment of a food system is connected to a food chain and the impact of that policy on the food security of a local urban population is studied by means of the framework of the FAO Food Security Programme (2008).

This research is concerned with urban food security concerns in the developing country Ethiopia, the central question being:

How are the changes in the teff food chain affecting local food security in Addis Ababa?

Figure 2.1 conceptual model of this research



3 Regional context

3.1 Food security in Ethiopia

Food security in Ethiopia is and has been a persistent topic for the Ethiopian government. Ethiopia is internationally infamous for its famines. Often these famines are displayed as the outcome of severe droughts. Today it is recognized that these famines are largely a result of a mix of droughts, resource mismanagement and conflicts and wars (Famine in Ethiopia: Of Wars, Droughts and Flawed Aid, 2013). This is easily explained by the famines of the mid-eighties, rooted in the instalment of a communist regime, rather socialist in name but was rather military in style (Ethiopian Government portal, 2016). This regime firmly controlled the Ethiopian population by brutal repression while exercising a failing policy on agriculture and food security. For instance, the area of Addis Ababa was strongly favoured in terms of internal food distribution, to the disadvantage of other regions (Ethiopian Government portal, 2016). The final insurrections that toppled the regime in 1989 were justified by these famines (Ethiopian Government Portal, 2016).

However, with the exit of this Marxists regime, the country was not automatically freed from hunger. In 2007, 2008 and 2011 Ethiopia had to cope with sudden and sharp rising food prices. These rising food prices were related to an overall food crisis on the world market (Alem and Söderbom, 2012). Apparently internal food production and distribution remained inadequate after the nineties. Food security is thus a persistent and troublesome topic in Ethiopia.

3.2 Agricultural and economic context

The problems with food security in Ethiopia are somewhat surprising, since the country has an abundance of arable land. Two-third of the country is situated at a high altitude and therefore escapes the droughts that plaques the lower regions of the country (Minten et al., 2013). The agricultural sector is dominated by small-holder farmers whom are mostly located in the Ethiopian highlands. These small-holder farmers produce mostly for self-subsistence (Ethiopian Government Portal, 2016). Some regions are dedicated to the export of products. Examples of these export products are coffee and cotton. More recently the government is implementing supporting regulations, such as the advantageous conditions for taxes and import, for agricultural investments to attract international investors. This is, for instance, currently resulting in the construction of a flower industry and Heineken and Bavaria are currently investing in the production of barley.

The recent developments in the agricultural sector are set in motion by the economic strategy of the government. Since the nineties agricultural development is a central topic in the overall economic vision. By investing in the agricultural sector the government aims at increasing the agricultural output, and to enhance the quality of those harvested crops. The government expects the agricultural sector to deliver serious profits in the future. The government claims that these profits will be invested in the industrial sector, and the idea is that industrialization and economic growth will follow agricultural growth (Ethiopian Government Portal, 2016). According to this governmental strategy, bettering the agricultural output automatically results in an improved food security status of the country. This strategy is going under the bricks of Agricultural Development Led

Industrialization (ADLI) and is implemented under auspice of the World Bank (WB) and the International Monetary Fund (IMF).

This governmental economical and agricultural strategy that started in the early '90's and continues until today has indeed resulted in an impressive economic growth. Contemporary Ethiopia is compared to the so-called 'Asian Tigers' (Dori, 2014). According to the government this growth and investments in the agricultural sector leads to a transfer of knowledge and job-opportunities and contribute to poverty alleviation and therefore better food security (GTP II). However, such accelerating economical and agricultural growth can also contribute to the rise of poverty through the intensified competition on fertile land and water, which will finally that corrode achieved food security (Weissleider, 2009).

3.3 Topic and site of research

These governmental investments in the agricultural sector and how these relate to local food security, is a central topic in the Follow the Food Programme (FFP). FFP is a multi-stake holder project carried out by several organizations: Utrecht University (UU), Solidaridad, Netherlands Organization for Scientific Research (NWO), the Dutch ministry of foreign affairs and Fair and Sustainable Advisory Services (FSAS). The central aim of the FFP is to generate knowledge about the impact of agribusiness investments on food security in Ghana, Ethiopia and Kenya.

This master thesis is part of the FFP. For this thesis, the researcher conducted thirteen weeks of research to the effects of governmental investment on food security in relation to the grain of Teff. Teff in Ethiopia is currently subjected to governmental agricultural investments. Teff is endemic to Ethiopia and Eritrea (which was once part of Ethiopia) and is preferable consumed multiple times a day by many Ethiopians. Hence, teff is an important crop Ethiopia by more indicators: in 2012, it was estimated that teff made up 20 per cent of all the cultivated area, covering about 2.7 million hectares and grown by 6.3 million farmers (Minten et al., 2013). Teff prices were relatively high and in 2006 the export of this product was banned, as local price increases became too severe (Minten et al, 2013). However, Teff is gluten-free and highly nutritional and seen the current demand for such products on the world market, the grain is expected to deliver serious profits. In 2016, the ban on export was lifted and it is the expected that in future this grain will serve as a key-component in the ADLI (WSETVC, 2013).

The site of the research conducted for this thesis is Addis Ababa. This capital city's local economy is thriving which sparks internal migration to this economic centre. Fortune seekers and internal refugees arrive each day in the city. Any calculation or estimation of the population is therefore extremely difficult, but estimations range from three to seven million (Waldo et al., 2013). Land prices are sky-rocketing and the city is undergoing a profound urban restructuring. Malls, hotels and expensive apartment buildings and other lucrative buildings are mushrooming throughout the city, replacing the small slums. Teff being the preferred food by all income groups is sold in outlets throughout the city, despite its current high price.

4 Methodology

4.1 Research questions and population

To be able to give structure to the research, main and sub-questions were formulated. These are listed in the textbox below.

Main question

How are the changes in the teff food chain affecting food security of households in Addis Ababa?

Sub-questions

How is the teff food chain structured: what are the different players and what role do they fulfil in the supply on the market?

What are the changes in the teff food chain and how is this affecting the structure of this food chain?

How are these changes affecting the accessibility to and utilization of teff of households in Addis Ababa?

How is this impact on the accessibility to and utilization of teff affecting the food security status of households in Addis Ababa?

Again, the research is divided into two pillars: the food chain of teff and food security of inhabitants of Addis Ababa. The research population naturally deriving from this are all players in the teff food chain and all households in Addis Ababa. To include all actors of the food chain of teff and all inhabitants of Addis Ababa by means of random samples is a bridge too far for a master thesis in terms of financial and time restrictions.

Therefore, it was decided to first acquire a clear overview of the teff food chain by the method of convenience sampling. By simply going to the largest market of Africa, Mercato, and 'find' the actors in the teff food chain, first necessary information was acquired: structure, activities and changes in the food chain. This task was completed while being accompanied by a research assistant, as it is not save for a white female researcher to visit those places alone and most respondents do not speak English. These retailers at different shops at Mercato suggested were to find new and willing respondents, resulting in snow-ball sampling. The actors approached next were mills- and cereal shop owners and staff, small informal shop staff, injera bakery staff, kebele shop staff. Most of these actors derive from a specific neighbourhood, due to the choice of sampling.

After the actors in the food chain were interviewed and the structure of the food chain of teff was clear to the researcher, attention was turned to the policy environment. As became clear from the

actors in the teff food chain, main changes were implemented by government. This resulted in multiple interviews with government officials from the Ethiopian Institute of Agricultural Research (EIAR) in Addis Ababa and Debre Zeit and the ministry of agriculture in Addis Ababa.

Finally, an analysis of a food chain is not complete without the perspective of farmers, and therefore this group of actors were approached near the city with the same method of convenience and snow-ball sampling.

For the second part of the research, food security of inhabitants of Addis Ababa, a survey was implemented. It was decided that the respondents should be drawn from the same neighbourhood of which most of the actors of the food chain were approached, as to consolidate the connection between food chain and food security analysis.

This neighbourhood, as many other in the city, is characterized by its mix of low, middle class and high income households. Therefore, respondents from all income-groups were included, as to compare food security status.

4.2 Methods

Empirical chapter I

Open and unstructured interviewing

After informed consent, the teff retail actors were interviewed at Mercato. The researcher was often encroached by a crowd. After about ten minutes attention usually declined and the researcher was able to speak in peace with the teff retailer. The retailer usually offered a stool to the researcher and was during the interview doing business with others. Interviewing retailers in other places than Mercato was usually more private, though some bystanders were involved usually. It was not an option to arrange an appointment at a private place at a different time. Such invitation is regarded as a date-invitation and even more important, the retailers were too busy during these months. These actors of the food chain of teff were questioned by means of open and unstructured interviewing. The researcher carried a topic-list, but the conversation flowed naturally and, but was steered where necessary. Though the research assistant spoke both Amharic as English well, it is inevitable that valuable information is lost in translation.

Farmers were approached around the city. During one day, the researcher and research assistant hired a chauffeur and approached as many farmers as possible considering the distance and time limitations. Recently, the government has decided that the city is extended at the expense of arable farm land around the city. Farmers were therefore extremely suspicious against outsiders, as many of them lost large parts of land. After convincing that the researcher was not aligned with the government, farmers were willing to answer a few questions. However, most farmers were busy harvesting and processing the teff. The researcher was allowed to witness and sometimes was able to drop a few questions. Results from these actors are therefore limited.

Structured interviewing of officials and desk research

Multiple officials were interviewed at the Ministry of agriculture in Addis Ababa and the EIAR and Debre Zeit. These interviews were more structured of nature: in a quiet office and therefore more

private. In addition, the officials spoke English and therefore a research assistant was not necessary. The researcher was equipped with a recorder, which was used after asking for approval. However, in some cases this recorder was making the official uncomfortable. In this case, the recorder was put away. Questions were informed by former research findings and prepared on forehand by thorough desk research to former policy on teff.

Empirical chapter II

Open and unstructured interviewing

To be able to design the survey, in a neighbourhood near the final neighbourhood where the survey was implemented, lower and higher income households were interviewed. Method to obtain participants was, again, convenience sampling. Though originally the acquired data was meant to fuel the construction of the survey, it occurred that it was also useful to connect directly to the quantitative data of the survey results. Both survey results as well as the data from these interviews show similarity, suggesting that the outcome can eventually be generalized to a wider population. However, due to the sampling method of this research, convenience and snowball sampling, one should be careful with such assumptions.

Survey

Respondents were sampled from the three grain mills in the designated neighbourhood: the only condition to participate was the act of purchasing teff. In total a number of hundred surveys were conducted in one week, from Monday till Saturday (most shops are closed on Sundays) during different time frames (morning, noon and afternoon), to increase reliability of the results. This resulted in the inclusion of participants of all income groups and delivered comparative data.

The research assistants translated the survey from English to Amharic for the respondents. The choice to not translate the survey to Amharic in the first place is justified by the fact that a large part of the population is not able to read. This would exclude certain respondents and result in a distortion in the data. After finishing the survey, respondents were offered a 10 Birr (40 eurocent) pre-paid phonecard to thank them for their cooperation. The research assistants were trained, instructed and guided by the researcher prior to and during that week. As the presence of the researcher was disturbing to some respondents, the last two days the research assistants finalized the task by themselves. During those two last days, in the evening surveys and results were checked to prevent miscommunications or inaccuracies.

Respondents were asked to participate in a consumer survey and had to answer the questions on behalf of the household they are part of. The first part of the survey includes general questions about the household, such as type of occupation of head of the household and the number of members in the household. The second and third part of the survey elaborate on the aspects of food security, according to the framework the FAO Food Security Programme (2008) proposes: accessibility, utilization and stability over time. The full survey is included in appendix (number).

4.3 Limitations and restrictions

The research was not abundantly equipped with time and financial means. First, to finally arrive at a

representative sample by narrowing down retailers in the food chain would be a too time consuming and financially costly task in the context of a large city as Addis Ababa. Other scholars completed such a task for teff retailers in this city and finally interviewed 282 teff outlets (Minten et al.,2013).

This has implications for the final results. The method of convenience- and snowball sampling for the actors of the food chain results in the fact that the outcomes of these interviews can only be interpreted as case-specific and detailed in-sight information. Consequently, results cannot be generalized to a wider population. However, this part of the research is qualitative of nature and delivered some perceptions to the topic of teff that are often ignored in quantitative research. Detailed views of retailers, famers and policy makers were included. Also, the acquired knowledge informed the following sections of the research.

Also, the results of the survey cannot be generalized to a wider population due to the nature of sampling. However, the comparison between the different income-groups deliver insights in how teff prices are moulding food choices and finally food security.

In addition, the questions about the stability aspect of food security were not clearly stated or participant were not able to grasp the nature of these questions. The answers to these questions therefore provided not the useful information the researcher was hoping for. Therefore, it was chosen to leave this aspect out of the final analysis.

In sum, this research is explorative of nature. Food security research is not new, but this research connected the changes in the policy environment of teff to food security on the ground. No other research has yet completed such specific task. Hence, this research includes in a qualitative manner the perspective of teff food chain actors, which also unique. As such this research can inform future research about food security in Ethiopia.

5 Empirical chapter I: changes in the food chain of teff

5.1 A new policy on the teff food chain

Teff: from traditional food chain to modern value chain

The government of Ethiopia is currently aiming at impressive economic growth: final objective is to become a middle-income, carbon neutral country by the year 2025 (Ayalew, n.d.). How to achieve this growth is explained in the ADLI. The agricultural sector is endorsed in this vision: to increase production and better the quality of that production. The profits deriving from this agricultural policy are expected to fuel the overall growth of the economy (Growth and Transformation Plan II (GTP II) 2015-2016/2019-2020, 2016). This economic vision is not new for the country, as the ADLI is executed since the nineties.

A new element in this policy is the food chain of teff enabling this ambitious economic growth by becoming central to the ADLI. This new policy is justified by several reasons. First, teff is a gluten-free grain and in the western world there is occurring a large demand for gluten-free products. Hence, teff is considered a potential superfood, not only for being gluten-free: the crop is supposedly highly nutritional. If the Ethiopian government is able to upgrade the teff production in such a manner that its quality and quantity can live up to international standards, the grain can become highly profitable (interview EIAR, Addis Ababa, May 2016). Second, the teff food chain already comprises a large part of the agricultural sector: 6.3 million small holder farmers account for 3.5 million tons of production in 2011, covering 20% of all cultivated land in Ethiopia (Minten et al., 2013). It is therefore by the government considered only natural to start upgrading the production of such a wide-spread cultivated crop (Anonymous government official I, personal communication, 30 april 2016, EIAR Addis Ababa). Third, these large numbers of production directly derive from the fact that teff is the most frequent consumed grain in Ethiopia. It is the main ingredient in the spongy flat-bread injera and consumed by many multiple times a day. Therefore, bettering the production of teff will almost automatically result in increased local food security (Anonymous government official II, personal communication, 4 May 2016, EIAR Debre Zeit).

To organize such bettering of the teff production, in 2013 this government bundled forces with a variety of stakeholders: the private sector, multiple Ethiopian universities and a variety of International Non-Governmental Organizations (INGO) and National Non-Governmental Organizations (NGO), to create an export-led teff sector (WSSETVC, 2013). A well-elaborated strategy on teff was created: The Working Strategy on Strengthening Ethiopia's Teff Value Chain (WSSETVC). The central idea of this strategy includes a VCA and is organized around three phases.

The first phase is directed towards an immediate increase of yields and a decline in post-harvest losses, by both mechanization and thorough research on the crop. These efforts will result in the overall bettering of agronomic practices, increased production and better quality of the harvest. Better yields, both quality and quantity, throughput several planting circles a year is the final objective of this phase. The second phase includes the expansion of market opportunities. Since 2006 teff is forbidden to export due to severe local price increases. This ban of export was limited to teff as a primary product, as the grain is mostly sold as such in Ethiopia. During this ban on export, companies as Mama Fresh Injera were allowed to export teff as a processed product: injera

(Anonymous government official I, personal communication, 30 April 2016, EIAR Addis Ababa). (Anonymous manager, personal communication, 15 March 2016, Mama Fresh Injera Addis Ababa). The ban on the export of teff as a primary product remains in place during this new policy, to prevent the country to rely on agricultural primary export products (Anonymous government official I, personal communication, 30 April 2016, EIAR Addis Ababa). Consequently, the expanding of market opportunities includes the extension of value-adding activities. This can be either packaging and branding the teff with an Ethiopian qualified brand, or processing the teff into products such as injera, biscuits, breads, cakes, pizza and pancakes (Anonymous government official III, personal communication, 4 May 2016, EIAR Debre Zeit). Finally, when finishing phase two, the better yields, both quality and quantity throughout several planting circles a year are delivering teff to a profitable, modern, organized and value-adding sector, delivering highly-quality processed teff-products (WSSETV, 2013). These processed teff products are the key-element to the final stage of the strategy. In the third phase, the government aims at exporting these teff products on a large scale to satisfy the global demand for gluten-free and nutritious products.

This overall new vision for the Ethiopian teff value chain reads as: “an efficient and well-functioning teff value chain that enables a sustainable increase in smallholder teff farmer productivity and profitability while providing high quality output at an affordable price to teff consumers” (WSSETVC, 2013).

When examining this vision more closely two objectives occur. First, the presence of an efficient teff value chain enables an increase in small-holder farmer productivity, consequently resulting in a higher profitability for those same small-holder farmers. Second, a better-quality output of teff becomes available for local consumers at an affordable price.

The twofold objective: enhanced productivity and an affordable price

First objective reads as a sustainable increase in smallholder teff farmer productivity and profitability. The production of teff is at a low level compared to other crops, which is the outcome of several causes. First, the prior communist government discouraged the production of teff by its natural low yields. This resulted in a significant delay in research on the crop and knowledge about agronomic practices by the farmers (WSSETVC, 2013). This lack of overall knowledge was (and still is) reinforced by the fact that this grain is endemic to Ethiopia and Eritrea (once part of Ethiopia) and cannot profit from widespread international research and knowledge on agronomic practices, as is the case with crops maize and wheat. Teff needs to catch up with modern agricultural methods, being far behind other crops in terms of knowledge: production, agronomic practices and processing (Anonymous government official II, personal communication, 4 May 2016, EIAR Debre Zeit).

Second, not only the lack of knowledge is a problem; farmers are also lacking a steady and affordable distribution of the right quality seeds, fertilizer and other inputs needed to grow teff. Fertilizer and pesticides prices are high, seeds distribution is stocking, tools such as row-planters and ploughs are not present or accessible for the small-holder farmers.

This combination of a lack of research, knowledge and access to necessary inputs by farmers, is translating in underdeveloped and unsophisticated farming practices. This becomes apparent from, for instance, post-harvest methods. Teff is dried for several days in the sun and piled up multiple times before it arrives at site of processing (Anonymous farmer I, personal communication, 15 April farmland around Addis Ababa) (WSSETVC, 2013). Following this, the straw is separated from the

grain by spreading it out on the ground, subsequently being trampled by cattle, dividing the chaff from grain (Anonymous farmer I, personal communication, 15 April farmland around Addis Ababa) The drying and piling shatters the crop and it is mingled with feces and soil during the last phase (Minten et al, 2013). This procedure is depicted in picture 5.1 below. It is estimated that 30% of the harvest is shattered by means of these practices (Minten et al., 2013).

Picture 5.1 teff processing: separating the chaff from the grain (source: author)



To fulfil the goal of an increase in small-holder farmers' productivity, the government has started the first necessary, time-consuming and costly research on the crop. In research centres throughout the country, research is done on improved varieties of teff and plans are made how to better those agronomic practices. Farmers are introduced to new varieties of enhanced seeds and are trained in farming techniques such as row planting and the use of fertilizer and pesticides (Minten et al., 2013) (Anonymous farmer III, personal communication, 15 April farmland around Addis Ababa) (WSSETVC, 2013). The access to farming inputs is bettered by, for example, the introduction of tools for the tilling of teff or the providing of the necessary means to obtain fertilizer and pesticides (Anonymous government official I, personal communication, 30 April 2016, EIAR Addis Ababa).

These activities raise the expectation that small-holder farmers are a central feature to this policy and thoroughly included in the upgrading of the teff value chain. This is a well-known objective of such value chain strategies: including smallholder farmers ensures the inclusion of the local population, rather than transplanting ready-made farm-plant models to the country. In this latter case, farmers are often deprived from farmland and frequently a small portion of the population is finally benefitting from such mechanized and high-technological production. Ostensibly, the government of Ethiopia is aiming at avoiding such down-sides.

However, when examining more closely the objectives in the third and second phases, it occurs that the final export-led teff sector is not underpinned by those same small-holder farmers. After the completion of the first phase, the private sector is encouraged to engage, as the production of teff is

now more attractable, the first bottlenecks in the production of teff being resolved. The export-led sector that is created by this strategy is finally supposed to be underpinned by the private sector and the newly export-licensed farmers are rather investors than Ethiopian smallholder farmers (Anonymous government official I, personal communication, 30 April 2016, EIAR Addis Ababa).

This has serious implications for the small-holder farmers, as they are excluded from the new export-led teff sector and the promise of future profits. The government recognizes this, but explains that the objective of upgrading the teff value chain is twofold. First, the farmers benefit freely from extensive research and bettered access to inputs needed. This will increase local production, both quality and quantity, and thereby the teff trade becomes more profitable for those small-holder farmers (Anonymous government official I, personal communication, 30 April 2016, EIAR Addis Ababa). Second, the teff value chain becomes attractable to private investors by all intensive research set in motion by the government. This new profitable export-led sector creates synergy and finally economic development is created within the country, which is beneficial to all Ethiopians. An additional fruit of this policy is that the creation of an export-led teff sector will not damage local food security by withdrawing local teff production from the market. On the contrary even: local teff prices will decline as production is bettered (Anonymous government official I, personal communication, 30 April 2016, EIAR Addis Ababa). These ideas accumulate into the second objective of the strategy: providing high quality output at an affordable price to teff consumers.

5.2 Teff policy context and outcome

The unstructured and fragmented teff food chain in Ethiopia

Another justification for the excluding of small-holder famers from the export-led teff sector is that the overall production is simply too severely fragmented at the start of the implementation of the strategy in 2013 (Anonymous government official I, personal communication, 30 April 2016, EIAR Addis Ababa). The production of teff is profoundly fragmented among many small-holder famers that mostly are without the necessary resources to kick-start genuine development of the sector. For instance, one of the most important measures of the strategy is to start mechanization of the food chain. The baling of teff after harvest by the introduction of mechanical threshers was mentioned as the most important intervention to better production (WSSETVC, 2013). It is almost unthinkable that these farmers can aggregate the capital to buy such machines: mechanization is simply a bridge too far for smallholder farmers in Ethiopia (Anonymous government official III, personal communication, 4 May 2016, Debre Zeit). Consequently, to include all smallholder farmers would be a too costly and time-consuming task (Anonymous government official II, personal communication, 4 May 2016, Debre Zeit).

This unorganized structure is rather witnessed throughout the whole food chain: production, distribution and exchange (Ericksen, 2008) (Ingram, 2011). The country is large and traditionally the transport of teff, or rather distribution, is done over short distances by horse and carriage or on the back of the farmers or workers (Anonymous farmer II, personal communication, 15 April 2016 farmland around Addis Ababa) The last decades, infrastructure has largely remained the same in most parts of the country and only some actors have aggregated enough capital to buy small trucks. Transporting teff is, and has been, problematic and is mainly done over small distances, as has been done for centuries. In addition, teff transport does not have to be done in a hasty manner. Due to the

nature of the crop, teff is easily stored for months (Anonymous farmer II, personal communication, 15 April 2016 farmland around Addis Ababa).

In all regions in Ethiopia, local assemblers travel around the country-side to collect small amounts of teff from the many small-holder farmers that lack the time or resources to transport their harvested teff (Demeke and Di Marcantoni, 2013). At the local markets these assemblers trade with brokers and whole sellers, whom bulk up and negotiate the prices. Subsequently, the teff is distributed over local outlets in that area or transferred to other regions, mainly in the direction of the nearest market towards Addis Ababa. 70% of the surplus produced teff in Ethiopia is finally moved to the capital (Woldu et al., 2013).

When arriving in Addis Ababa, the produced teff has been subject to multiple transaction and storage points, all involving some actors that each add small fee to the final price. It is therefore not surprising that teff is an expensive good in Ethiopia. In addition, many other reasons are coined for this high price by respondents throughout the research, such as low productivity, droughts, high prices of fertilizers and pesticides, general inflation, urbanization and loss of land. However, the unorganized structure of the food chain is by most respondent of this research, including the government, recognized as the main bottleneck besides the low productivity of the crop. The many, not necessarily efficient, transport movements, storage points and the involvement of many actors at and between each market: assemblers, brokers and whole sellers, are considered as one of the major contributors to the local price of teff.

Solving the high price of teff

Considering the unorganized food chain, it is questionable whether an enhanced production is able to deliver a good quality of teff at an affordable price to local consumers, as is the second objective of the new strategy on teff. It can be quite correct to claim here that that an increased teff production leads to an increase in involved actors, rather than a lower teff price. Nevertheless, according to some officials this second goal is, however delayed, on his way to be full-filled by increased yields, which are deriving from the activities carried out by the new policy (Anonymous government official II, personal communication, 4 May 2016, Debre Zeit). Others are more critical and note here that government efforts are not enough: "these activities have been successful, but not much new (activities) are planned in future, it is just simply not enough to transform the production in such a large country: more money, time and effort are needed", hence yields already occurred before the implementation of the strategy. (Anonymous government official III, personal communication, 4 May 2016, Debre Zeit).

We can conclude here that all efforts of the government are turned to the aspect of food security as availability. In terms of food security this is problematic, as is deriving from the persistent high price of teff, despite the claimed yield increases. This high price is even more remarkable when considering that teff is widely available throughout the urban area. Again, 70% of the surplus produced teff is moved to Addis Ababa (Woldu et al., 2013).

At the site of research, the central market Ehil Beranda in Addis Ababa, this latter point is further clarified by the overall role of food chain actors. At this market urban brokers and whole sellers play an important role in linking all parties to buyers (Demeke and Di Marcantoni, 2013). These brokers and whole sellers often are powerful and wealthy policy makers, having years of experience in the trading of teff (Anonymous government official I1, personal communication, 30 April 2016, Addis

Ababa). Ethiopia is lacking a standardized and quality-grading system for teff and production differs throughout the year and between regions because of unstandardized farming techniques and seasonality (WSSETVC, 2013). Prices are therefore strongly fluctuating and brokers and whole sellers are putting this to use. First, by determining prices and quality through their own informal grading systems (WSSETVC, 2013). Second, by stocking when prices are low and subsequently reselling when the prices are on the rise during the lean season. Third, by the use of unfair weighting methods (Anonymous Retailer I, personal communication, 14 February 2016, Mercato Ehil Beranda). (WSSETVC, 2013).

Urban brokers and whole sellers are thus fortifying a strong bargain position vis a vis local farmers and assemblers (Anonymous government official I, personal communication, 30 April 2016, EIAR Addis Ababa). This appears for instance from the small local teff market in the city centre. Some of the local farmers directly sell their teff supply on this market (interviews farmers, Addis Ababa April 2016). This direct-end selling is beneficial for both farmers and consumer, as many actors are cut-out of the food chain, rendering the product more profitable and cheaper to the consumer at the same time (Anonymous farmer I, personal communication, 15 April 2016 farmland around Addis Ababa) (Anonymous Retailer II, personal communication, 16 February 2016, Mercato Ehil Beranda). However, this is a time-consuming task to complete for the whole harvest and avoided when possible (Anonymous farmer I, personal communication, 15 April 2016 farmland around Addis Ababa).

This problem assessed from a more country-wide perspective leads to the realization that the teff food chain has evolved over multiple centuries until it received at its contemporary form. Many actors throughout the country involved in the teff trade, rely on this food chain for a source of income. The teff food chain at its contemporary form is in place for a reason and is anchored firmly in Ethiopia's agricultural sector and societal organization (Anonymous government official III, personal communication, 4 May 2016, Debre Zeit). In the case of Addis Ababa, this has resulted in the clear disadvantage of interference of powerful actors that are downplaying their powerful position, resulting in high teff prices (Anonymous government official I, personal communication, 30 April 2016, EIAR Addis Ababa).

Policy outcome

The government recognizes these problems in the teff food chain and another important objective, besides increasing yields, of the new strategy is therefore to cut out the unnecessary actors and shorten the overall food chain (Anonymous government official III, personal communication, 4 May 2016, Debre Zeit). However, at the site of research this objective is not easily full-filled, as the powerful actors in this part teff food chain are often policy makers that make good profits of the trade (Anonymous government official III, personal communication, 4 May 2016, Debre Zeit). Simply cutting out the 'unnecessary' actors is problematic as the urban brokers and whole sellers often determine the policy on teff. At the time of research, despite claimed yield increases, the price of teff has not declined. Consequently, the second objective of a better-quality output of teff available for local consumers at an affordable price largely has been un-fulfilled.

Whether the first objective has been fulfilled is subject to discussion. Some yield increases have occurred, research has happened and farmers has been trained. Nevertheless, after these initial doubtful successes, the overall strategy has stagnated. Phase two, or rather the development of a value-adding sector and the involvement of the private sector has not been realized at the time of

research and government officials consider the strategy as failed or severely delayed (Anonymous government official II, personal communication, 4 May 2016, Debre Zeit). Let alone phase three; the overall idea was that country started exporting processed teff products, such as breads and biscuits, by the year 2016 (WSSETVC, 2013). However, no large export-led sector was present realized during the time of research (Anonymous government official II, personal communication, 4 May 2016, Debre Zeit).

5.3 Conclusion

Teff is the designated crop, according to the government, to both kick-start economic development and solve food security. First, the crop is potential highly profitable, once launched into the Western market. Second, the grain is being consumed on a regular basis, to increase production is to increase food security. Therefore, the government has aimed add an increased teff production by extensive research on the crop and other activities that are expected to increase yields and finally attract private investors to further develop the food chain into a modern value chain.

Whether the realized increased yields are the results of this policy is subject to discussion. However, more important is that all efforts undertaken in the strategy are dwarfed by the consequences of the fragmented production and complex and long food chain. First, the fragmented production results in the fact that government is not aiming at a broad-based and country-wide transformation of the teff food chain. Rather private investors are attracted to start investing and create a second isolated food chain of teff that is supposed to deliver the harvest for export. This prevents small-holder farmers from a genuine opportunity to connect to more profitable sectors, such as an export-led teff sector, even though the government has put some effort in knowledge-transfers and the bettering of access to farming inputs for small-holder farmers.

Second, the multiple inefficient transport movements of the production of teff through transaction points that are subject to multiple actor activities, are an important determiner of the persuasive high price of teff. In terms of food security this is problematic as teff is consumed by many daily. However, the trade of teff is anchored in the societal organization of the country. For many actors in the food chain teff is an important source of income. To tackle this problem and to cut out these actors, as is an objective in the strategy, is to cut off many Ethiopians from an important source of income. Hence, at the site of research many of the important teff traders in Addis Ababa are also powerful politicians and they will not easily cut themselves off from a source of income.

Finally, this leads to the conclusion that in general, the government is simply too optimistic about the complicated and convoluted teff food chain. To expect such a food chain to kick-start the entire economy and simultaneously solve food security might be a bridge too far, as is shown from the current results of the strategy on teff. It is not a realistic goal to expect such a food chain to catch up with modern methods and production and start exporting in less than three years.

6 Empirical chapter two

6.1 General introduction to the context of the survey and the respondents

The neighbourhood and sites of research

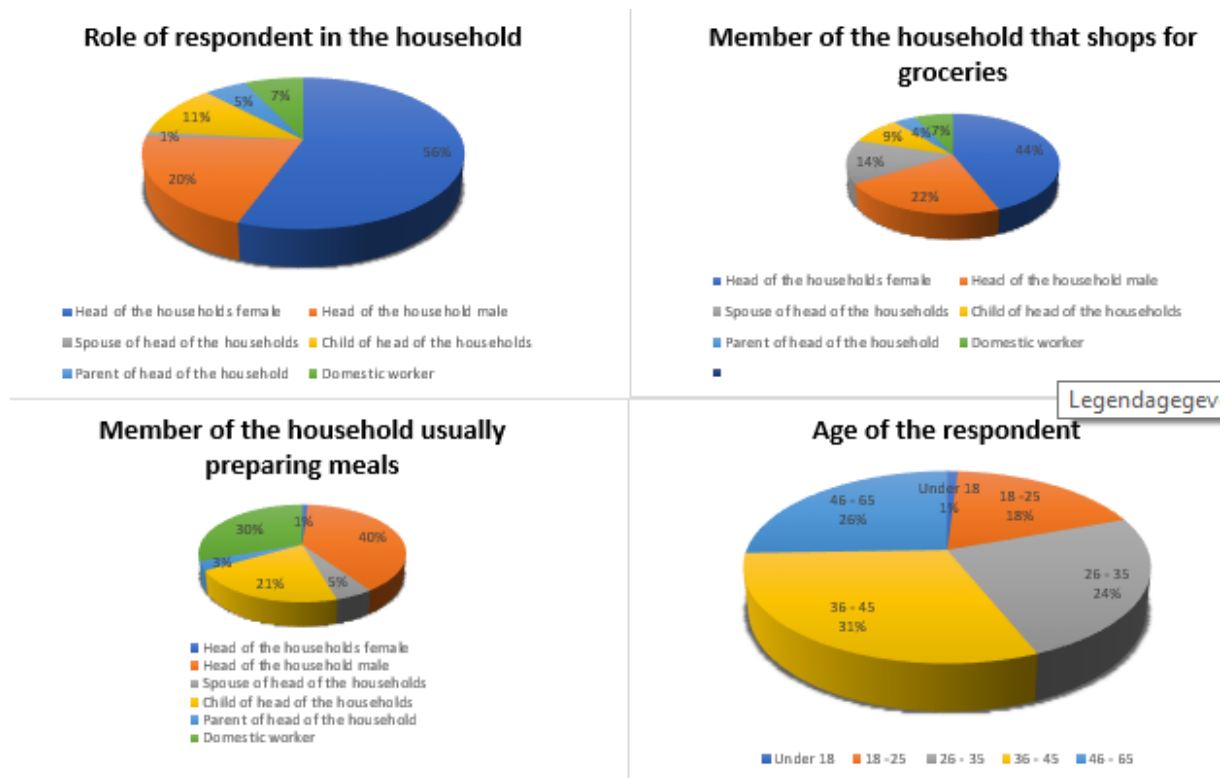
The survey was implemented in the same sub-city as in which the food chain actors were approached. In the designated neighbourhood, all levels of household income are present. When the neighbourhood is examined more closely, this becomes clear from the types of housing: three types can be distinguished. First, walled compounds offer place to large houses as well to smaller rooms build near the outer wall. In these small rooms, personnel, frequently security guards and maids, or other tenants are housed. Second housing types are courtyard-slums: small alleys lead to inner courtyards where small slums are located. These courtyard-slums vary widely in quality of housing and how cramped the shared outdoor area is. Third type are the individual houses scattered around the neighbourhood. These also vary widely in quality and size. It is important to note here, again, that the city of Addis Ababa is undergoing profound urban renewal. Land prices are skyrocketing and much of the slums are demolished to make room for new lucrative buildings, such as malls and hotels. The map of Addis Ababa is therefore subject to constant revising, as is the site of the research.

Within the researched neighbourhood three different cereal shops deliver the local demand of grains. These cereal shops are large one-room buildings in which sacks, filled with cereals, are piled along the side-walls. Large grinders are positioned next to each other. Most of the cereal shop supplies are purchased at whole sale markets, of which the biggest is Ehil Beranda at Mercato (interview retailers, Addis Ababa February and March 2016). The cereals are mainly delivered uncleaned. Sand, stones and other impurities are mingled with the grains. This needs to be cleaned first before the cereals are ready to be grinded. Consumers can buy teff either uncleaned, cleaned but ungrinded or ready to consume: both cleaned and grinded. The mills employ staff to clean and grind the cereals. Multiple types of teff can be purchased at these cereal shops, in order of price ranging from low to high: red, mixed, white and super white teff. The average price is 1900 birr per 100 kilos, but the price ranges from 1500 to 2500, depending on the type of teff and whether it is dirty, cleaned or cleaned and grinded (Anonymous retailer III, personal communication, 27 February 2016, cereal shop).

Households and respondent characteristics

The survey was conducted on the household level. Consumers purchasing teff were asked to participate in the survey and answer the questions on behalf of the household they are part of. A total of hundred surveys were conducted. 72% of the respondents is female and 23% male. In most households, the head of the household female is in charge over the purchase of groceries: 44%. A minority of the households employ domestic servants that participate in household's chores such as shopping for groceries or the preparation of meals. Other households assign children, the spouse (when not considered as head of the household female) or parents to these tasks. These general household and respondent characteristics are depicted in more detail in Figure 6.1 below.

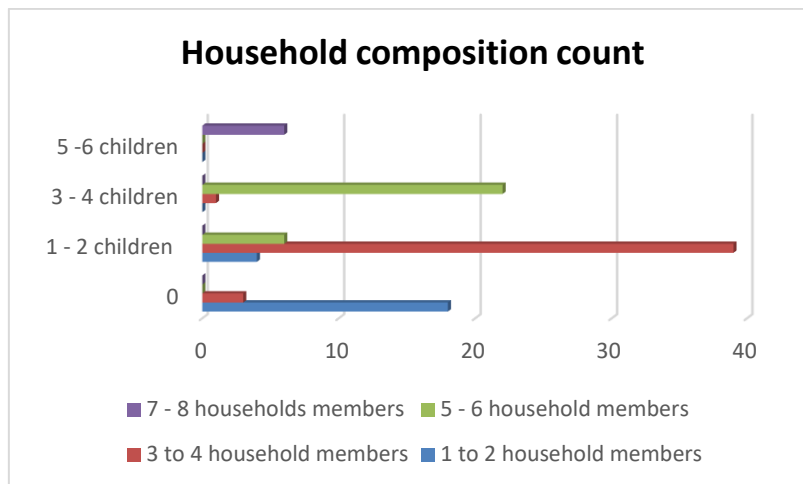
Figure 6.1 Household and respondent characteristics



Household composition and source of income

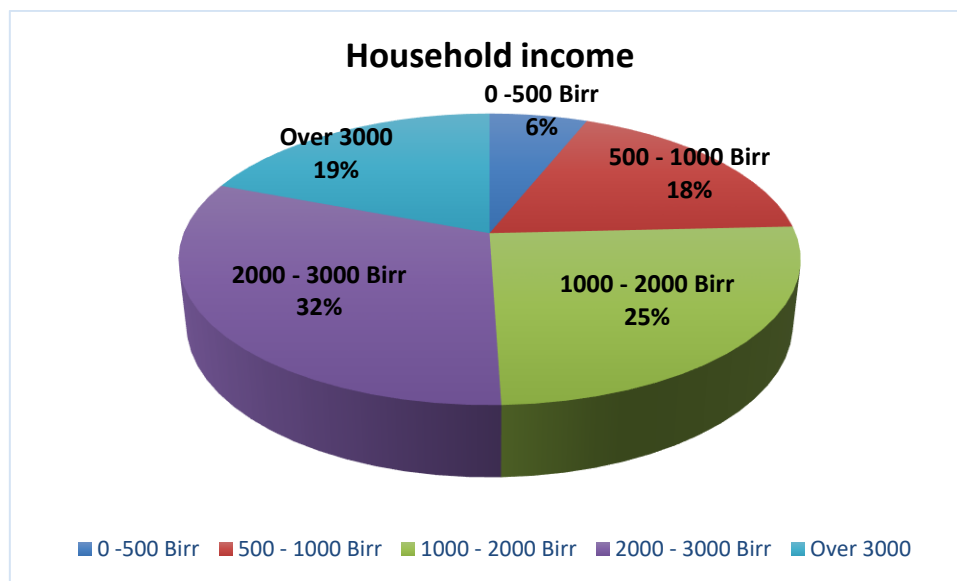
Households in Addis Ababa vary in composition: traditional families (husband wife and children) live alongside other types of households, such extended families, brother and sisters and single men This makes sense as the capital is also the economic and, currently, thriving centre attractive to fortune-seekers and internal displaced from throughout the country (Anonymous household members, personal communication, 1 – 31 March 2016, Addis Ababa). Nevertheless, traditional households are still dominant in, at least, this part of the city. Respondents were asked for the composition of households: number of members and number of children. Below in figure 6.2 these numbers are displayed in count of total households that conducted the survey.

Figure 6.2 Household composition count



Households were asked for their income per month grouped in 5 categories. Distribution of household income is displayed in figure 6.3 below.

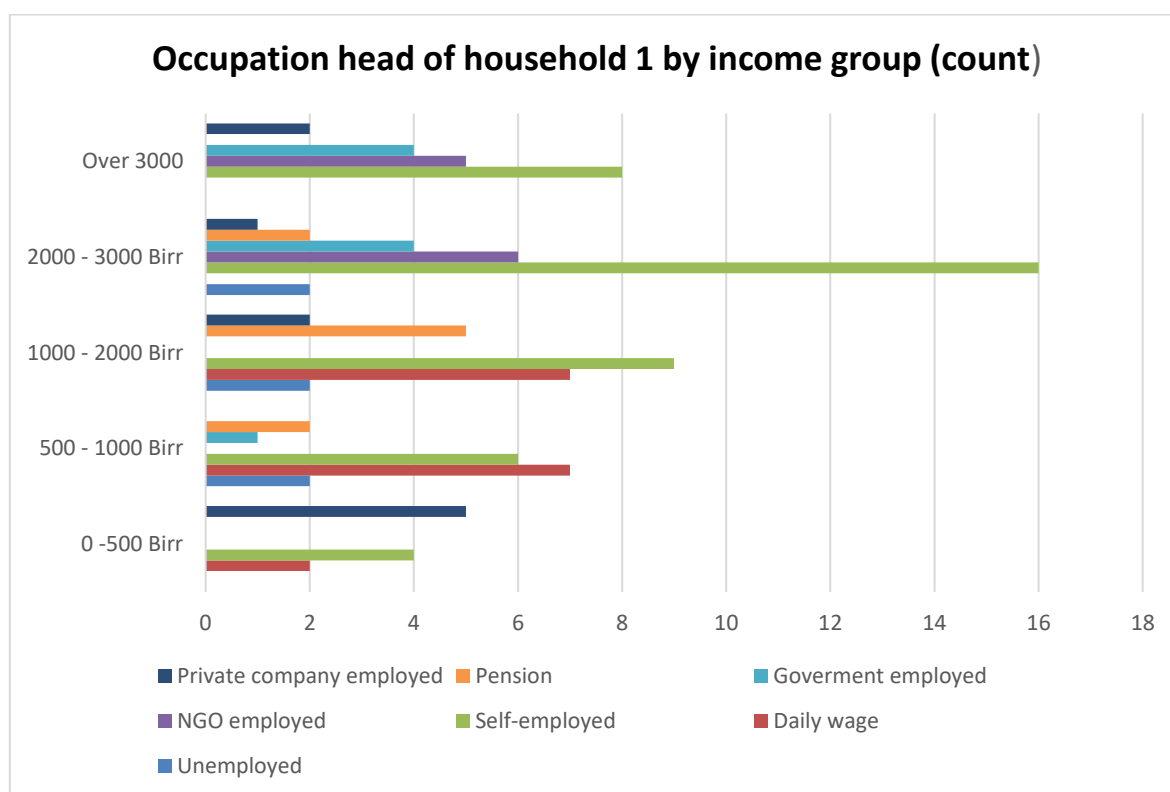
Figure 6.3 Household income in five income groups



Many citizens of Addis are engaged in business that is ranging from informal, such as street vending, to more formal types of business, such as established (smaller or bigger) shops. This type of income is, in this research, going under the bricks of self-employment. Another type of income is daily wage, or rather when the head of the household on a daily basis applies for a job. Other sources of income are, private company-, government and NGO wages and pensions. The final category in this research is un-employment. In this case, other family members might be the source of income or the head is usually begging (Anonymous household members, personal communication, 1 – 31 March 2016, Addis Ababa),

In figure 6.4 the five income groups and occupation of head of the household one are depicted in count of total number of surveys. In all income-groups a large share of the head of the households is self-employed, telling us that being self-employed is not necessarily informing us about the amount of income, but is rather a widely-spread means of self-subsistence. Furthermore, the head of the households of the two lowest income groups are mostly engaged in daily wage jobs or are either self- or private company employed. Hence, the head of the households of the two highest income groups are frequently, besides being self-employed, NGO-employed. The high number of higher income households of which the head is un-employed informs us that the income of other members in the household often is an important source of income (Anonymous household members, personal communication, 1 – 31 March 2016, Addis Ababa)

Figure 6.4 Occupation of head of household by income groups



Households divided into two income groups

Considering the topic of this research, food security, it is generally expected that lower income households are less food secure, this assumption being confirmed in this research (Anonymous household members, personal communication, 1 – 31 March 2016, Addis Ababa). During research, it also occurred that little differences in food security concerns between middle and high-incomes exists. Therefore, it was decided that a comparison between lower and higher income groups is useful for this research, lumping the higher income groups, including the middle class, together.

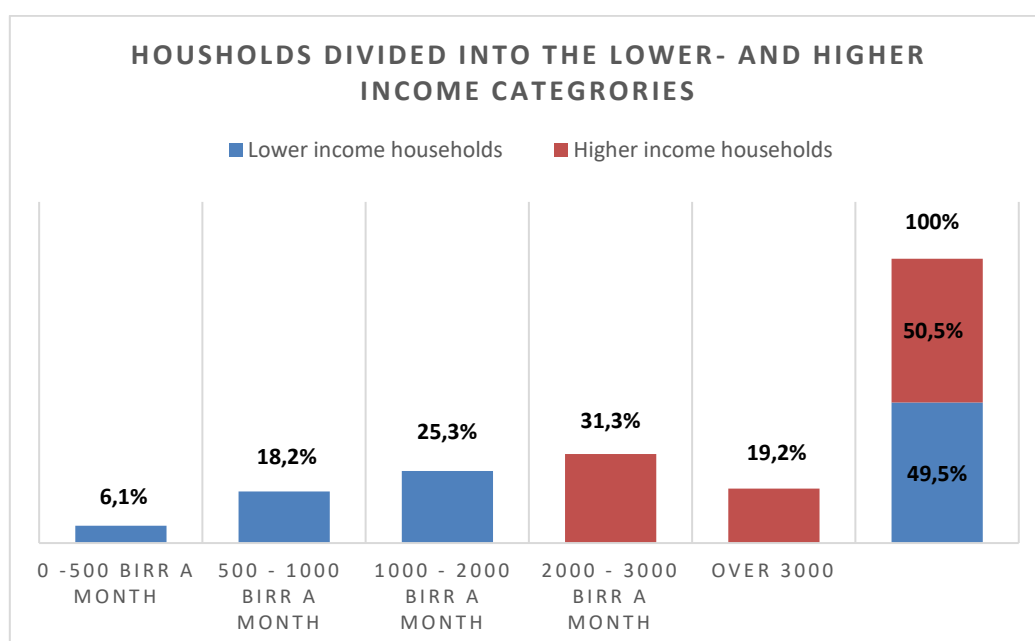
Consequently, it became necessary to draw a line between lower and higher income households. Data about the micro level, such as neighbourhoods, is not available in Ethiopia. This is partly due to the profound urban renewal, but also partly due to the absence of well-organized agencies that keep

track of such numbers. Even when this data would have been available, the city of Addis Ababa is growing both informally and formal at a quick pace and the local currency is not stable: data about incomes would become obsolete quickly.

The researcher solved this problem by asking both informants and research assistants about what is considered as a lower, middle and higher income. 2000 birr per month as average income of the household is considered by most as a good middle-class income at the time of research (February – May 2016) in the city of Addis Ababa.

Therefore, the income groups of 0 – 500 birr, 500 – 1000 birr and 1000 – 2000 birr were merged into the category of lower income households. The income groups of 2000 – 3000 birr and over 3000 birr were merged to the category of higher income households. This deviation is depicted in figure 6.5.

Figure 6.5 Households divided in the lower and higher income groups



This categorization is used throughout large parts of the following analysis, but it is by no means a rigid line. For instance, households that have an income of 1900 Birr are not expected to be significant less food secure than households with an income of 2100 Birr. Rents and composition of household also play an important role in the outcome of food security, as one can imagine. However, keeping in mind this questionable aspect, categorizing the data in two income groups renders the analysis clearer and more practical. At the moment of research in that area it occurred to the researcher as the right deviation to compare income groups.

6.2 The general daily food basket

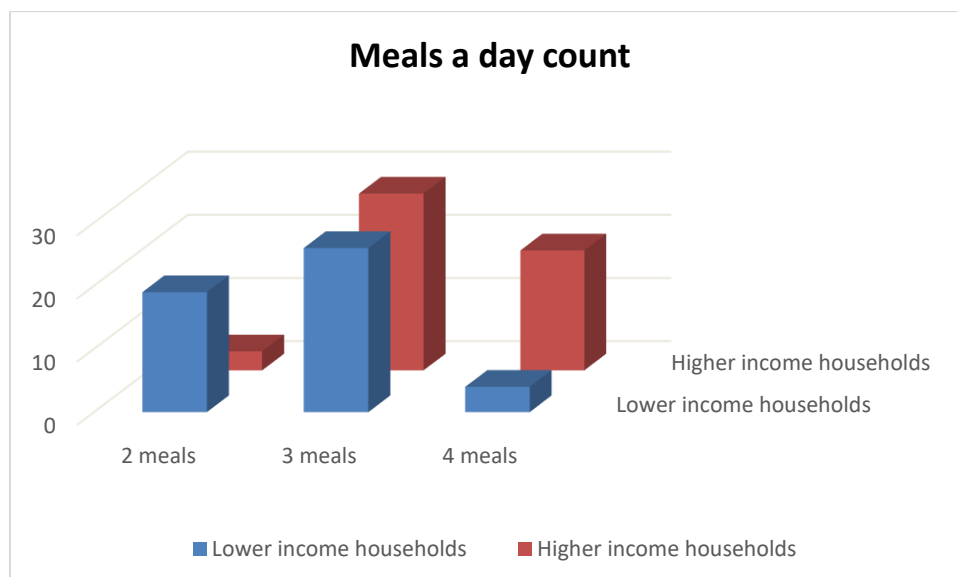
Frequency of meals

To be able to draw conclusions about food security it is first necessary to outline the daily food basket of the income groups. First respondents were asked how many times a day the household consumes a meal or something in-between those meals. Of all households, 54,5% consumes a meal

or an in-between three times a day, 23.2% four times a day and 22,2 % of all households two times a day.

As is depicted in figure 6.6 below, in percentage of all hundred households that conducted the survey, lower income households more often eat two times a day and higher income households more often eat four times a day.

Figure 6.6 Frequency of meals a day for lower and higher income households



Composition of breakfast, lunch and dinner

Alike people in the Western world, Ethiopians consider breakfast, lunch and dinner as the right interval to consume meals (Anonymous household members, personal communication, 1 – 31 March 2016, Addis Ababa). Respondents were asked to specify which food categories they consume for these three main meals. The following categories were included in the survey:

- 1) Fruit and vegetables
- 2) Meat and fish
- 3) Dairy products
- 4) Beans, legumes and pulses
- 5) Injera
- 6) Wheat, barley, maize or sorghum
- 7) Other ready-made cereal products (such as bread and macaroni)
- 8) No meal

Respondents were allowed to assign multiple food categories to each meal. For instance, respondents were able to assign the categories of 5) injera and 1) fruit and vegetables to the meal

breakfast. When not consuming that meal at all, respondents were assigned solely to the category of no meal.

These differences in food consumption between lower and higher income groups are displayed in figure 6.7.1 and 6.7.2. As it was possible for the respondents to apply more than one food category to each meal, the percentage of each food category in each meal is displayed as proportion to the total number of assigned categories to each meal.

Twelve of the lower income households (total of 49) reported to skip breakfast on a daily basis, compared to 2 of the higher income households. Other ready-made cereal products (such as bread and macaroni) are what is consumed most frequently for both income groups during breakfast. Furthermore, difference in breakfast between the two groups are small. Higher income households tend to consume slightly more meat and fish.

Overall, breakfast is a sober meal for households in this area. Inhabitants of Addis Ababa tend to get up early to start working long hours. Breakfast is considered as something to quickly fill the stomach and deliver the energy that is necessary to start the day, if the household can afford such luxury (interviews household, Addis Ababa, February, March and April 2016). Usually inhabitants of Addis Ababa eat some bread or macaroni or cooked left-overs from earlier meals. This latter is often the dish called *firfir*¹.

Lunch and dinner, on the other hand, are meals that should be consumed with preferably the family, but otherwise with good friends or colleagues, and are prepared and consumed with the greatest attention and devotion. These meals are highly valued as both moments of rest and connection (Anonymous household members, personal communication, 1 – 31 March 2016, Addis Ababa).

Therefore, lunch tend to be consumed more often for both lower and higher income households: all households, only one lower income households excluded, tend to eat lunch on a daily basis. Higher income households are usually consuming a more varied lunch compared to lower income households. As lower income households mainly consume injera and beans legumes and pulse, higher income households eat more frequently meat and fish and fruits and vegetables.

The same pattern is occurring for dinner habits. Of the lower income households, three reported to skip dinner on a daily basis. All higher income households reported to consume dinner daily. Injera and beans, legumes and pulses being the largest category for lower income households and meat and fish and fruits and vegetables more often consumed by higher income households.

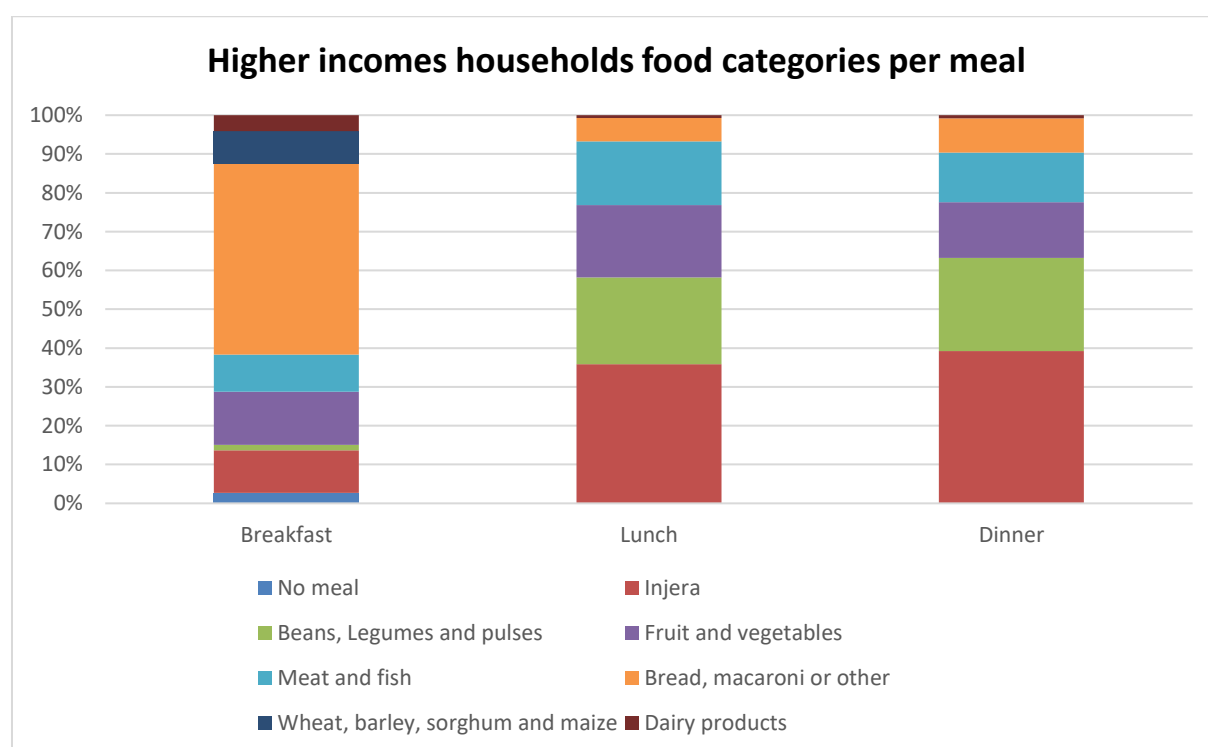
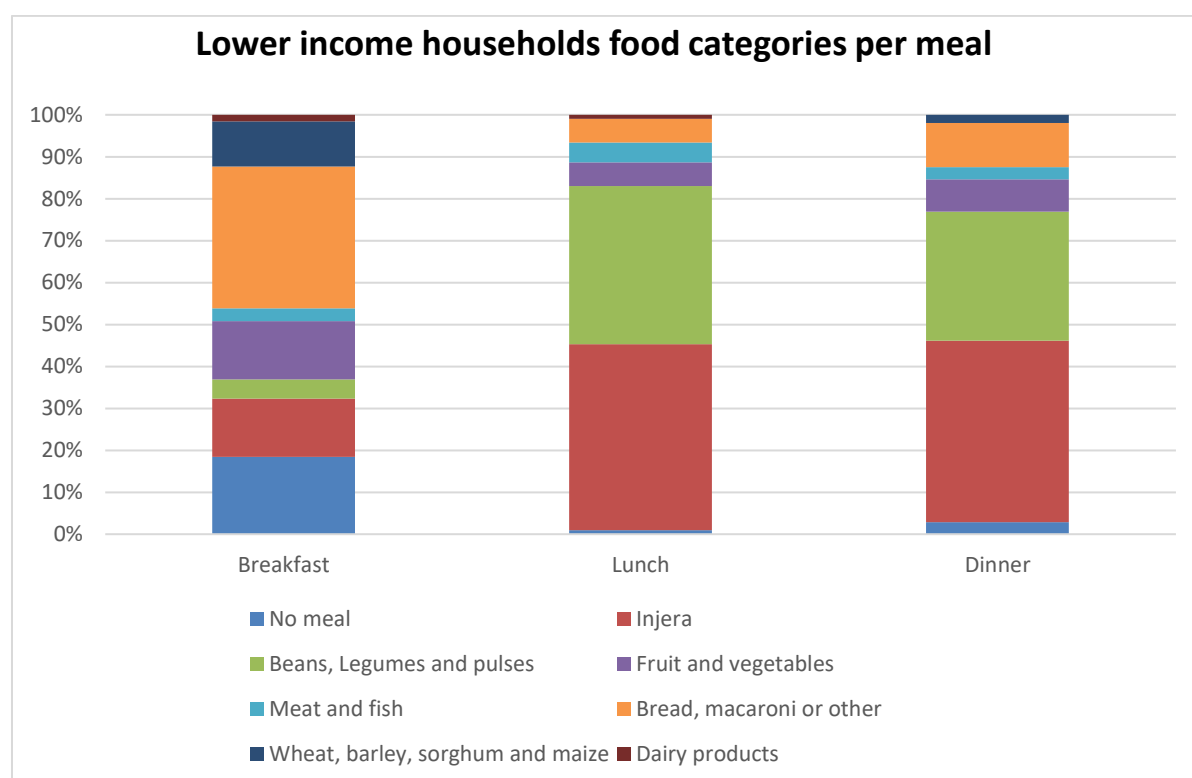
In sum, lower income households more often eat for lunch and dinner both injera and beans, legumes and pulses, or rather shiro². This common dish is by many Ethiopians perceived as the daily food for the poor. Nevertheless, higher income households do eat this dish as well but as an addition to other food categories. It is common in Ethiopia that in the wealthier households injera is served with small portions of a variety of dishes: for instance, shiro, tibs³ and beyenyatu⁴.

¹ Leftover parts of the injera that are usually cooked with water, onions, garlic, tomatoes, ginger or anything else that is present in the kitchen and finally thoroughly spiced with peppers.

² common dish in Ethiopia: dried and powdery chickpeas or broad beans mixed with spices, mingled with water into a creamy paste

³ Pieces of spiced lamb or chicken

Figures 6.7.1 and 6.7.2 Lower and higher income households food categories per meal



⁴ A range of cooked vegetables

6.3 Case studies

It makes sense that lower income households in any developing country eat less diverse than higher income households. This finding is by no means striking. However, in this research an additional mechanism occurred.

First, it is important to note here that the nature of this research is explorative. The survey, as explicated above, is by no means a representative sample from the inhabitants of Addis Ababa. Therefore, the findings below were witnessed throughout the whole period of this research and confirmed in the final survey, but are by no means evidence based truth or bare facts. Rather the results should be perceived as a micro-local case study which, at best, can indicate shifts at the macro level, either city or country wide.

Lower income households explained throughout the research that injera is of great importance for all Ethiopians, hereafter often becoming severely agitated that it is so hard to keep consuming this grain because of the high price. When mentioning the plans of export one elderly lady yelled: **let them (foreigners) eat macaroni, teff is ours!** (Anonymous household members, personal communication, 1 – 31 March 2016, Addis Ababa).

Hence, even despite the plans of the government to start exporting this grain, prices of injera have been severely on the rise the last couple of decades. However, due to the importance of expensive injera lower income households ostensibly impoverish the remaining diet to be able to afford teff for meals. This change of diets according to the relative high price of teff is explicated below by means of case studies of different income groups. Three case studies of three of the five income groups are submitted: 1) 0 -500 birr, 2) 1000 – 2000 birr and 3) over 3000 birr. Each of the households chosen for this comparison matched the most frequent characteristic for all the questions about general household features. These households are therefore considered as exemplary for the other households in the corresponding income group.

Case study 1: household income group 0 – 500 birr (N=6)

This household is composed of five to six members and includes three to four children. Both heads of the households are self-employed and the household all together earns a monthly income of 0 – 500 birr a month.

The households usually eat three times a day. For breakfast, generally other ready-made cereal products (such as bread and macaroni) are on the table. For lunch, usually injera, beans, legumes and pulses are on the menu (shiro). For dinner, the same ingredients as for lunch are on the table, as well as other ready-made cereal products (such as bread and macaroni).

The consumption of other cereals products in the morning and for dinner is contradictory to the preferences for food types of the household. When asking for actual preferences other ready-made cereal products (such as bread and macaroni) are the least preferred. Furthermore, the household indicates that when the price of teff is low, more fish and meat would be consumed.

In addition, the household reports to purchase solely the white type of teff and is usually not mixing it with other cereals or rice. This is a costly habit, as white teff is usually around 19 Birr a kilo.

In sum, food choices of this household deliver an impoverished diet. The costly habit of the daily consumption of a good quality injera results ostensibly in the cut back on expenditures on other foods. This assumption is supported by the fact that though the household do not report to skip meals, it is stated that when the price of teff is high the household is more often hungry.

Case study 2: 38 Household income 1000 – 2000 birr a month (N = 25)

This household is ostensibly what is classified as a traditional family: three to four members, including one to two children. The head of the household one is self-employed and the second head of the household is government employed. Overall, the household earns an income of 1000 - 2000 birr a month.

The household consumes a meal usually three times a day. In the morning breakfast is mostly composed of dairy products and other ready-made cereal products. On the menu for lunch is injera with meat and or fish. During dinner fruits and vegetables, injera and other ready-made cereal products (such as bread and macaroni) are on the table.

When asking for actual preferences, it comes to the table that dairy products, wheat barley, maize and sorghum and beans legumes and pulses are the least preferred types of food for this household. This is in line with the food choices after a decrease in the teff price, as more would be spent on fruits and vegetables and meats and fish, types of food the household is already consuming on a regular basis.

Ostensibly, this household appears to be more or less food secure. The diet is more or less balanced, as it includes dairy products, cereal products, meat and fish and fruits and vegetables. Moreover, dietary habits are in line with most of the actual preferences of the household.

Case study 3: 60 over 3000 birr (N=19)

The household questioned is composed of three to four members, including one to two children. The respondent filling in the survey is the domestic servant, purchasing teff for the household of her employer. The first head of the household is NGO-employed and the second head of the household is un-employed. Overall the household earns an income over 3000 Birr.

The household usually consumes a meal four times a day. For breakfast the household usually eats injera, meat and fish and other ready-made cereal products (such as bread and macaroni). In between breakfast and lunch fruits and vegetables, beans legumes and pulses, injera and bread, macaroni and other ready-made cereal products are on the table. For lunch fruit and vegetables and injera are on the menu. During dinner meat and fish and injera are consumed.

The household prefers all types of food, except for wheat, barley, sorghum and maize which are also the least consumed products.

This household is food secure as, members are following a dietary pattern that matches actual food preferences. Least preferred foods are not substituted for other cheaper foods from that same category. All food categories are consumed on regular basis, delivering all necessary nutrients to the household members. In addition, the household able to put a domestic servant in charge over food concerns and is eating as one of the few households in-between the three main meals something extra.

6.4 The social and cultural value of teff

Why do Ethiopian households prefer injera?

As becomes clear from the case studies, despite decreasing affordability of teff, mainly for the lower income households, teff remains consumed multiple times a day. Injera is on the menu for most of the households at least two times a day, either being in the lower income group or the higher income group. This is also confirmed by the questions that asks for the preference of injera over other cereal products, 87% of all households prefers this type of food. Hence, 98,9% consumes more often injera than any other product group.

But what is the exact reason to prefer such an expensive grain over other foods. As a minister at the EIAR stated: “in the whole of Africa cheap porridge is consumed, made of maize or any other grain of cereal that is not so expensive” (Anonymous government official II, personal communication, 4 May 2016, Debre Zeit).

Respondents of the households that preferred injera over other cereal products (N=87) were subsequently asked to specify why, allowing multiple answers to the given options.

- 1) Nutritional value
- 2) Cultural value (tradition)
- 3) Social value (eating together)
- 4) Good taste

75,9% of these households value injera over other cereal products because of the cultural value (tradition). Eating injera is perceived as a tradition within Ethiopian society. A large round injera is served on a big plate and topped with all kinds of ingredients. A group of kin, friends, neighbours, colleagues, or any combination of these types of acquaintances circle around this plate and share the meal together. It is even a habit to invite strangers to the meal when consuming in public. When running short of injera or dishes atop, more is added. Throughout the research all respondents confirmed that this food ritual is a deeply anchored tradition. Important in a country in which over eighties ethnicities are living together. Some respondents even claimed that teff is what glues the nation (Anonymous household members, personal communication, 1 – 31 March 2016, Addis Ababa). Also, the production of injera is depicted as a tradition. Ideally, the mother or grandmother of the household bakes large amount of fresh injera, multiple times a month.

62,1% of the households that value injera over other cereal products, claim that good taste is (one of) reasons(s). Proper injera cannot be made of other grains of cereals, as this severely decreases the quality of the final product. Nevertheless, to reduce the final price of injera, teff is mixed with rice or other cereals. All households state this decreases final quality and taste of injera, but is often necessary to be able to consume injera at all.

47,1% of the households that value injera over other cereal product, claim that nutritional value is (one of) reasons(s). The teff grain is small of nature and processed. Consequently, the grain is classified as a whole wheat, being high in nutritional value. Moreover, Ethiopians in general believe that injera is of superior quality compared to other grains.

23% of the households that value injera over other cereal product, claim that social value (eating together) is (one of) reasons(s). Many respondents throughout the research explained that consuming meals without injera often means to eat alone, this being repulsed generally. These respondents sometimes even continued that eating alone, for instance macaroni, is less satisfying and fulfilling, resulting in hunger afterwards the meal and during the day (Anonymous household members, personal communication, 1 – 31 March 2016, Addis Ababa). This latter seems a little far-fetched, but endorses the importance of the social and cultural aspect of food security.

6.5 Teff preference and food security

Injera being both preferred and consumed twice a day is conversely from what is stated by other research. It is often mentioned by research that lower income households in Ethiopia are decreasingly consuming teff because of its high price. Some are more nuanced, stating that teff is economically superior and therefore consumed relatively more by the rich than by the poor (Minten et al., 2013). However, others downright claim that teff is not consumed by the poor anymore: “most like to consume teff but only middle and high income people in urban areas have access to the grain” (Demeke and Di Marcantoni, 2013).

This latter view upon teff price and relating consumption is rejected by the results of this research. Rather, teff being the culturally preferred food, but not easily affordable, renders the income of a household of crucial importance to the food security status of a household in this research. In general, when a certain food becomes too expensive, the rational decision would be to exclude this to exclude it from the diet and substitute it for another product from the same food group. However, though lower income households indeed eat less in general and less often injera, they also report to continue to consume injera twice a day despite its high price.

To be able to continue to consume injera, these lower income households need to spend less on other foods. Diets of lower income households tend to be less varied and impoverished, compared to diets from higher income households, as was explicated in detail above. Lower income households mainly receive calories from grain and cereal food categories: either from injera, other ready-made cereal products and other ready-made cereal products (such as bread and macaroni). Hence for lower income households generally, little nutrition is added by the consumption of shiro, or rather beans legumes and pulses. Valuable other types of foods such as fruits and vegetables, dairy products or meat and fish are largely off the table.

Finally, also the overall the calorie intake is at dispute for these lower income households. Respondents were asked if the household sometimes skips a meal to be able to afford teff for the next meal. 44,9% of the forty-nine lower income households reported to sometimes skip a meal to be able to afford teff for a next meal. Most of these households, reported to skip meals weekly.

6.6. Conclusion

In sum, teff, or rather injera, is the preferred food for all households in this survey. Most households eat injera at least two times a day. This preference for injera is strongly influenced by the cultural value of teff. Consuming teff is what is being considered a crucial part of being Ethiopian. Moreover, as teff is consumed on a daily basis by many Ethiopian, teff is what glues the nation together, as claimed by respondents.

Injera is only perceived as such when it is made of mainly teff and this renders the purchase of this grain inevitable. However, prices are high and many urban citizens struggle to actually purchase this grain for the daily household diet. Consequently, and resulting from this survey, lower income households must make decisions regarding the remaining diet.

Lower income households in this survey therefore show the tendency to eat less diverse than higher income households. It appears that they cut back on other foods to the expense of injera. Higher income households more frequently consume foods such as fruits and vegetables and meat and fish than lower income households.

In addition, lower income households eat more of other types of grains and cereals, such as bread and macaroni to substitute injera for some meals. This is impoverishing the overall diet as this is not a valuable nutritional addition to the frequent consumed injera, being of the same nutritional category.

Finally, some lower income households report to skip meals, mainly weekly. This is striking, as the expensive teff in the diet can easily be replaced by cheaper options, such as wheat, barley, sorghum and maize.

7 Analysis and conclusion: the importance of teff and food security in Addis Ababa

7.1 Structure of the teff food chain: actors and bottlenecks

Contrary to the claim that local food chains are often depicted as short and local, the teff food chain is rather long, fragmented and complex (Ericksen, 2008). Fragmentation starts at the production of the crop: many small-holder farmers produce each a small amount: in 2011 and 2012 it was estimated that the teff production claimed 20 per cent of all the cultivated area in the country and grown by a total of 6.3 million farmers (Minten et al., 2013). The fragmentation of the food chain is not limited to the production, also distribution and exchange of the crop are severely fragmented (Ericksen, 2008). After production, teff it is transferred to local markets throughout the country by either small-holder farmer or local assemblers. At the local markets, small-holder farmers, assemblers, brokers and wholesalers determine the price and distribute the teff over the local outlets or transfer it to the next local market. When it is transferred, this is mainly in direction of Addis Ababa: 70% of all teff production in the country ends up in the capital (Waldo et al., 2013). Usually before the teff arrives in Addis Ababa, it has travelled a long way across several transaction points at local markets, being subject to several price increases by each actor involved. At the site of research, the urban area of Addis Ababa, the main bulk of produced teff ends at Ehil Beranda, the cereal and grains section of the largest market in Africa: Mercato. Here prices are negotiated. Subsequently, the teff is bought by urban retailers that finally distribute the teff over local outlets in the urban area of Addis Ababa.

Urban brokers and whole sellers play a dominant role in the teff food chain at the site of research. They are often powerful and experienced teff traders that are also policymakers. These powerful actors use their powerful position to their advantage by applying self-advantaging grading systems, stocking techniques and the use of unfair weighting methods (Demeke and Di Marcantoni, 2013) (WSETVC, 2013). Bid and offer prices are largely determined by these powerful actors and they make good profits compared to the assemblers, retailers and Addis-based small-holder farmers. However, as this is acknowledged as a problem by the government, it also clarifies the role the teff food chain plays in Ethiopian society. Fragmented production, the absence of sufficient roads throughout large parts of the country and the absence of trucks renders transporting teff problematic. Teff is mainly traveling over small distances throughout many local markets, each involving actors. Consequently, the teff trade is a source of income for many small-holder farmers, assemblers, brokers and whole sellers in all regions in the country.

7.2 Changes in the teff food chain: government policy

The government is aiming at the creation of an export-led sector of teff in order to gain serious profits, the grain being on the list to become a superfood. This creation of an export-led sector is supposed to be fuelled by a VCA. The approach of the Ethiopian government to teff as a value chain is in line with the definition as coined by Kaplinsky and Morris (2001): 'the full range of activities which are required to bring a product or service from conception, through the different phases of

production (involving a combination of physical transformation and the input of various producer services), to the deliverance to final consumers, and final disposal after use". The government is clearly depicting the teff food chain as such, by incorporating all stages of teff production, distribution, exchange and consumption, simultaneously addressing the importance of value-adding to the product (Ericksen, 2008) (Ingram, 2011) (WSSETVC, 2013). In addition, the competitive aspect of value-adding activities between single firms as coined for the initial concept of value chains is largely absent, as the teff food chain has not reached this stage (Porter, 1985). The Ethiopian government is in its initial stage to attract such firms.

In the jargon the Ethiopian government in the VCA, the usual language is used to describe the teff food chain: rather the counterpart of the modernized and globalized, farmers lacking access to necessary means and knowledge to acquire enhanced and valuable production (Maxwell and Slater, 2003). The government is planning to better this food chain in the crop by extended research on, among other subjects, improved varieties of seeds and agronomic practises. The new knowledge is subsequently shared with the small-holder farmers and the access to important inputs such as fertilizers is bettered.

By this objective, at first sight the government is aiming at including those many small-holder farmers in the VCA, as activities are targeted at the upgrading of small-holder farmer productivity. However, this is a false assumption. The severe fragmentation of the teff food chain is not without consequences with regards to this government policy on teff. According to the government the food chain is too large, unorganized and wide-spread to be transformed in a modern value chain. By this the government is affirming the general perception that a traditional food chain such as teff is lacking the technical knowledge and finances that are needed to finally arrive at an enhanced production (Ericksen, 2008). Small-holder farmers are expected to remain producing for local markets, cut-off from the export-led sector and good profits. However, in this manner, also local production and therefore food security is ensured, as the Ethiopian government does recognize the importance of the continuation of traditional food chains (Neven et al., 2006).

After the extensive research funded by the government, the teff the teff food chain becomes attractive to private investors. These private investors are included in a newly created teff value chain. In this manner, the overall chaotic structure of the local teff food chain is avoided. As it remains forbidden to export teff as raw material, the crop needs to be either processed or branded before it leaves the country. Therefore, a more modern and value adding sector is needed in the country, for instances factories in which teff is branded and packaged or that produce teff into biscuits or pizzas.

This latter aspect is of crucial importance to the Ethiopian government. To avoid Ethiopia to continue to produce primary products, and as such continue the exploiting relationship between the country and industrialized partners, the government insists that value is added before the teff harvest leaves the country (Cyper and Dietz, 2009). The fact that teff is endemic to Ethiopia gives this case a rather strange twist. As no other countries is currently producing teff, the Ethiopian government can maintain a monopoly position and easily overcome such neo-colonial structures.

Finally, by that same choice to not include those same small-holder farmers in the value adding export-chain social inequality is possibly re-affirmed (Baumgartner et al., 2015). It is not unthinkable that the government will finally appoint already wealthy and financial able actors to make such

investments and already present power structure will re-affirmed Hence, to produce the necessary large output that is needed for the value-adding activities, large pieces of land are needed, which will most likely lead to increased competition on natural resources (Weissleider, 2009). This is serious for many small-holder farmers as teff is grown by 6.3 million (Minten et al., 2013). These are disadvantages that, despite the promise of economic growth and synergy and job-opportunities, possibly can be disruptive for Ethiopian society.

However, at the time of research February - May 2016, the latter objective of the creation of a second export-led and value adding teff sector has failed. The government has started with the overall research, bettering of agronomic practises and improving access to farming inputs. This has resulted in some yield increases for small-holder farmers. However, these yield increases were not broad-based and it is even doubted by some if these are rooted in the government efforts. Private investors have not been attracted and the overall VCA has stranded in its initial start-up. Consequently, the following phases that included the creation of value adding activities and finally an export-led sector have not been realized.

7.3 Food security of urban consumers

Accessibility to and utilization of teff

The changes in the teff food chain are therefore not directly affecting urban teff consumers in Addis Ababa. However, by the claim of the Ethiopian government that increasing small-holder farmer productivity automatically results in increased food security, the debate about food security the last decades is largely ignored. After the second world-war food security research has traditionally focused on rural areas, almost automatically giving the impression that that an increase in small-holder farmer productivity will result in stable food security (Crush and Frayne, 2011). Contemporary it is agreed upon that food security is much more complex and includes multiple dimensions. One of them being the accessibility to food, or rather physical and economic access (FAO Food Security Programme, 2008). As physical access is not at stake in the case of teff, the crop being abundantly available over the urban area, economic access, or rather affordability or purchasing power of households relative to food prices is what is the bottleneck here (FAO Food Security Programme, 2008) (Eriksen, 2008). The persistent high price of teff is deriving from many factors, but the unorganized food chain seems to be the main malefactor. This results in the case of teff that urban teff outlets are well-equipped, but urban consumers are struggling to afford teff for daily consumption (Crush and Frayne, 2011). Urban lower income households, in this research, report to skip meals, mostly weekly, to be able to afford teff for a next meal.

In the case of teff, the high price derives mainly from the complex, fragmented and unorganized food chain of teff, which is clearly anchored in societal organization (Pinstrup-Anderson, 2009). Throughout the country many actors are involved in the teff food chain and therefore the teff trade is an important source of income for many. This is demonstrated by the direct-end selling of small-holder teff farmers to urban consumers on a small local in the city. These farmers sell their teff supply on the local market in the city when in need for direct cash. As is demonstrated here is that problems with accessibility to teff are deriving from the high price, which is anchored social, political and economic characteristics of Ethiopian society (Pinstrup-Andersen 2009).

In addition, focussing on solely availability and accessibility leads to the notion of food security as an objective and quantitative unity: how much food is available and how much is accessible for a household. Subjective perspectives on food are equally important, as individuals are able to maintain a certain calorie intake, but are not automatically healthy and well-fed individuals (Maxwell, 1996). The FAO Food Security Programme (2008) proposes here the utilization aspect: “how the body makes the most of various nutrients in food”. Or rather energy and nutrient intake: defined by good care and feeding practice, food preparation, diversity of diet, intra-household distribution of food and good biological utilization of food (FAO Food Security Programme, 2008). Feeding practises can be further defined as social and cultural aspects to food consumption (Ingram, 2011). The cultural and social preference for teff by the urban population is hard to explain. It is an ordinary grain that is easily substituted by other products such as bread, macaroni, wheat, barley, sorghum and maize. Rabibowska (2010) proposes here preparation and consumption of meals as act, or rather rituals, that support remembrance, feeling of unity and support collective identity. Though this often coined in the context of migrants that regain at a ‘state of normalcy’ in often foreign countries, this was also witnessed in this research (Rabibowska, 2010). Consuming teff was frequently addressed as an act that glues families, groups of acquaintances or even the nation. or Government plans for teff export frequently triggers emotional reactions by the urban population researched, as teff is considered as the possession of all Ethiopians. When discussing the plans for export an elderly lady yelled: **“Let them (foreigners) eat Macaroni!”**

Finally, the cultural preference for teff and the persistent high price is finally influencing the utilization aspect of food security of households in this research. According to FAO Food Security Programme (2008) the outcome of sufficient energy and nutrient intake, is determent, among others by diversity of diet. Lower income households reported in this research to consume less fruits and vegetables and meat and fish compared to higher income households. This combined with the fact that teff is by many lower income households consumed twice a day lead to the conclusion that, for lower income households in this research, the consumption of relative expensive teff results in an impoverishment of diets, as diversity is decreased.

7.4 Conclusion: food security and importance of teff in Addis Ababa

How are the changes in the teff food chain affecting food security of urban households in Addis Ababa?

Answer is that the changes are not affecting the food security status of urban households in Addis Ababa, as the policy of the creation of a teff value chain has largely failed. However, this research has demonstrated that future efforts to continue this policy need to take into account the social and cultural importance of teff in Ethiopia.

Both the Ethiopian government and former research on teff are ignoring several aspects of food security, as can be concluded here. The government is actually reaffirming that the traditional food chain of teff is of crucial importance for local food security (Neven et al., 2006). However, by stating that increased production leads to increased food security, the achievements of food security

research are largely ignored, as for instance accessibility issues deriving from societal organization are of crucial importance here (Pinstrup-Anderson, 2009).

Finally, the more case specific research on teff largely ignore that the urban poor do continue to consume teff on a large scale when prices are high (Demeke and Di Marcantoni, 2013) (Minten et al., 2013). This research has demonstrated that the cultural and social aspect of teff counts so heavily for urban consumer in Addis Ababa, that this relatively expensive and easily substituted grain is not excluded from the diet. Rather other choices are made with regards to dietary habits: the skipping of meals and the impoverishment of the overall diet.

8 Discussion and reflection

As was dwelled upon above, food security is too often concerned with objective and quantitative numerators. In terms of the FAO Food Security Programme (2008) framework, this means that the availability of food is often endorsed, or rather how much is produced and whether this is enough for adequate energy-intake of any given population. In terms of teff, this objective and quantitative approach comes to the foreground when endorsing the levels of teff consumption in Ethiopia (Waldu, 2013) (Minten et al., 2013) (Demeke and Di Marcantoni, 2013). This makes clear how important the grain is, but rather ignores the consequences of increasing unavailability of such product. It is generally assumed that when teff prices become higher, it is increasingly removed from the diet (Demeke and Di Marcantoni, 2013) (Minten et al., 2013). However, as was explicated in detail above, in the case teff this is assumption is rather false. Rather the importance of social and cultural appropriation of teff and relating food security consequences were demonstrated in this research. In general, this social and cultural appropriation of food is largely absent in research about food security.

This absence of social and cultural appropriation is demonstrated by the fact that the FAO Food Security Framework (2008) often is too vague when describing the aspects of food security: 'Other research was needed to supplement the description of each aspect in order to be able to link finding to other literature. Ingram (2011) coined here the cultural and social aspect of food. This research has aimed, finally, at contributing at such hopefully increasingly attention devoted to the cultural and social aspect of food security.

It is important to note here that the background of the researcher has certainly contributed to the final results of this research. As the researcher has finished a bachelor in Cultural Anthropology and Development Sociology, it is not surprising that frequently the cultural and social aspect of teff was encountered. During the bachelor, the researcher was trained to take into account such cultural and social aspects.

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Irene Lize

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Appendix 1 Survey food security urban consumers Addis Ababa

Survey number:

Date:

Part 1: general questions about the household

1. Gender

☐ Male ☐ Female

2. Age

☐ Under 18 ☐ 18 – 25 ☐ 26- 35 ☐ 36- 45 ☐ 46 – 65 ☐
Older than 65

3. For who is the respondent currently shopping

☐ Own household ☐ Household of family ☐ Household of an employer
☐ Other, specify:

4. What is the role in the household of the respondent

☐ Head of the household male ☐ Head of the household female ☐ Spouse of head of the household
☐ Child of head of the household ☐ Parent of head of the household ☐ Friend of the household
☐ Domestic worker ☐ Other, specify:

5. In what Woreda and sub-city the household is located

Subcity: _____

Woreda: _____

6. Occupation of head of the household

Head of household 1:

☐ Unemployed ☐ Daily wage ☐ Self-employed ☐ NGO employed
☐ Pension
☐ Other, specify:

Head of household 2 (when applicable):

☐ Unemployed ☐ Daily wage ☐ Self-employed ☐ NGO employed
☐ Pension
☐ Other, specify:

7. Average monthly income of the household

☐ 0 – 500 birr ☐ 500 – 1000 birr ☐ 1000 – 2000 birr ☐ 2000 - 3000 birr
☐ 4000 - -5000 birr ☐ Over 5000 birr

8. How many members in the household

☐ 1 – 2 ☐ 3 – 4 ☐ 5 – 6 ☐ 7 – 8 ☐ 9 – 10 ☐ 11 – 12
☐ Over 12

9. How many children in the household

☐ 0 ☐ 1 -2 ☐ 3 – 4 ☐ 5 -6 ☐ 7 -8 ☐ 9 – 10 ☐ Over 10

10. Which member of the household is shopping for the ingredients for meals

☐ Head of the household male ☐ Head of the household female ☐ Spouse of head of the household
☐ Child of head of the household ☐ Parent of head of the household ☐ Friend of the household
☐ Domestic worker ☐ Other, specify:

11. Which member of the household is usually preparing meals

☐ Head of the household male ☐ Head of the household female ☐ Spouse of head of the household
☐ Child of head of the household ☐ Parent of head of the household ☐ Friend of the household
☐ Domestic worker ☐ Other, specify:

12. How much of the household's expenditures are spend on food

☐ 0 – 25% ☐ 25 – 50% ☐ 50 – 75% ☐ 75 – 100%

13. How much of these expenditures are spend on teff

☐ 0 – 25% ☐ 25 – 50% ☐ 50 – 75% ☐ 75 – 100%

Part 2: household food consumption (utilization)

14. How many times a day do members of your household usually eat a meal or something in between those meals, when it is not a fasting period

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

15. What types of food are included in those meals or in-between those meals (multiple answers possible)

Breakfast: ☐ Fruits and vegetables ☐ Meat and fish ☐ Dairy products
☐ Beans, legumes and pulses ☐ Injera ☐ Wheat, barley sorghum or maize
☐ Bread and macaroni and other ready-made cereal products

Lunch: ☐ Fruits and vegetables ☐ Meat and fish ☐ Dairy products
☐ Beans, legumes and pulses ☐ Injera ☐ Wheat, barley sorghum or maize
☐ Bread and macaroni and other ready-made cereal products

Dinner: ☐ Fruits and vegetables ☐ Meat and fish ☐ Dairy products
☐ Beans, legumes and pulses ☐ Injera ☐ Wheat, barley sorghum or maize
☐ Bread and macaroni and other ready-made cereal products

In-between breakfast and lunch: ☐ Fruits and vegetables ☐ Meat and fish ☐ Dairy products
☐ Beans, legumes and pulses ☐ Injera ☐ Wheat, barley sorghum or maize
☐ Bread and macaroni

In-between lunch and dinner: ☐ Fruits and vegetables ☐ Meat and fish ☐ Dairy products
☐ Beans, legumes and pulses ☐ Injera ☐ Wheat, barley sorghum or maize
☐ Bread and macaroni and other ready-made cereal products

In-between other: ☐ Fruits and vegetables ☐ Meat and fish ☐ Dairy products
☐ Beans, legumes and pulses ☐ Injera ☐ Wheat, barley sorghum or maize
☐ Bread and macaroni and other ready-made cereal products

16. Assign numbers to the different types of food in order of which is preferred most, 1 for the most preferred food type, 7 for the less preferred

☐ Fruits and vegetables ☐ Meat and fish ☐ Dairy products
☐ Beans legumes and pulses ☐ Injera ☐ Wheat, barley, sorghum and maize
☐ Bread and macaroni and other readymade cereal products

17. Assign numbers to the different types of food in order of which is consumed most, 1 for the most consumed food type, 7 for the less consumed

☐ Fruits and vegetables ☐ Meat and fish ☐ Dairy products
☐ Beans legumes and pulses ☐ Injera ☐ Wheat, barley, sorghum and maize
☐ Bread and macaroni and other ready-made cereal products

18. The household is satisfied with the amount of injera consumed

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

19. When the price of teff is high, the household starts to eat other types of food (when checked disagree proceed to question 22)

☐ Disagree ☐ Agree

20. When checked agree at question 19, specify which categories of foods (multiple answers possible)

☐ Fruits and vegetables ☐ Meat and fish ☐ Dairy products ☐ Beans, legumes and pulses
☐ Wheat, barley sorghum or maize ☐ Bread, macaroni and other ready-made cereal products

21. When checked agree at question 19, eating other types of food than injera allows members of the household to eat bigger portions of those other foods

☐ Disagree ☐ Agree

22. When the household cannot afford to buy teff we eat less often together

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

23. When the household cannot afford to buy teff we eat less often Ethiopian dishes

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

24. When the price of teff is low, the household spends more money on other foods (when checking disagree proceed to question 26)

☐ Disagree ☐ Agree

25. When checked agree at question 24, specify on which food types is spend more money (multiple answers is possible)

☐ Fruits and vegetables ☐ Meat and fish ☐ Dairy products ☐ Beans, legumes and pulses
☐ Wheat, barley sorghum or maize ☐ Bread, macaroni and other ready-made cereal products

26. The whole household sometimes skips a meal to be able to afford teff for another meal (by checking disagree proceed to question 29)

☐ Disagree ☐ Agree

27. When checked agree at question 26, how often is this happening

☐ Daily ☐ Weekly ☐ Monthly

28. When checked agree at question 26, which meal is skipped most of the times

☐ Breakfast ☐ Lunch ☐ Dinner

Part 3 access to teff

29. The household buys teff

☐ Daily ☐ Weekly ☐ Monthly ☐ Every 3 months ☐ Every half year
☐ Every year

30. When buying teff, how much each time on average when going go to a teff shop

☐ Less than a kilo ☐ 1 – 5 kilo ☐ 10 – 25 kilo ☐ 50 – 100 kilo
☐ Over 100 kilo

31. What type of teff is bought most by the household

☐ Super-white ☐ White ☐ Mixed ☐ Red

32. Which of the following aspects is important in the final decision to choose that type of teff (multiple answers possible)

☐ Price ☐ Quality ☐ Nutritional value ☐ Other, specify:

33. The household mixes teff with other products to bake injera (when checked disagree proceed to question 38)

☐ Disagree ☐ Agree

34. When checked agree at question 33 specify what products (multiple answers possible)

☐ Barley ☐ Maize ☐ Sorghum ☐ Wheat ☐ Rice

☐ Other, specify:

35. When checked rice at question 34, what is the reason to mix the teff with rice (multiple answers possible)

☐ To make the injera more white ☐ To make the injera more flexible ☐ To make the injera cheaper (when rice price is low)

☐ Other, specify:

36. When checked one of the cereal types at question 34, the mixing of teff with other cereal types results in a less tasty injera

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

37. When checked one of the cereal types at question 34, the mixing of teff with other cereal types results in a less nutritious injera

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

38. The household would rather eat injera of a poor quality, than not eating injera at all that day

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

39. Check at least 1 box to specify why the household buys teff at this and 3 other teff shops (mills, cereal shops, markets and *kebele* shops)

Shop 1 (type): ☐ Prices of teff ☐ Quality of teff ☐ Availability of variety of types of teff
☐ Stock levels of teff ☐ Familiarity or social ties ☐ The option to buy on credit
☐ Close distance to home

Shop 2 (type): ☐ Prices of teff ☐ Quality of teff ☐ Availability of variety of types of teff
☐ Stock levels of teff ☐ Familiarity or social ties ☐ The option to buy on credit
☐ Close distance to home

Shop 3 (type): ☐ Prices of teff ☐ Quality of teff ☐ Availability of variety of types of teff
☐ Stock levels of teff ☐ Familiarity or social ties ☐ The option to buy on credit
☐ Close distance to home

40. The household sometimes buys teff on credit (when checked disagree proceed to question 42)

☐ Disagree ☐ Agree

41. When checked agree at question 40, specify the reason that the household buys teff on credit (multiple answers possible)

☐ No cash available, household needs food ☐ Cash available, not enough to buy the desired type of teff

☐ Arrangement with teff shop ☐ Other, specify:

42. The household (sometimes) spends money on the transport costs to buy teff (when checked disagree, proceed to question 46)

☐ Disagree ☐ Agree

43. When checked agree at question 42, specify transport costs (multiple answers possible)

☐ Transport costs to shop ☐ Transport costs of teff to home

☐ Other, specify:

44. When checked agree at question 42, transports costs to a teff shop results in eating less preferred types of food for the household some days

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

45. When checked agree at question 42, transports costs to a teff shop results in going hungry for the household some days

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

46. The household (sometimes) does not buy teff because the desired type of teff is not available (quality or quantity) (when checked disagree proceed to question 49)

☐ Disagree ☐ Agree

47. When checked agree at question 46, the absence of the desired type of teff (quality or quantity) results in eating less preferred types of food for the household during some days

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

48. When checked agree at question 46, the absence of the desired type of teff (quality or quantity) results in going hungry for the households during some days

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

49. This household prefers injera over other cereal types or products (when checked disagree proceed to question 51)

☐ Disagree ☐ Agree

50. When checked agree at question 49, what is the reason that this household prefers injera over other cereal types or products (multiple answers possible)

☐ Taste ☐ Nutritional value ☐ Social value (eating together) ☐ Cultural value (tradition)

☐ Other, specify:

51. The household also buys ready-made injera instead of teff (when checked disagree proceed to question 53)

☐ Disagree ☐ Agree

52. When checked agree at question 51, what is the reason to buy injera instead of teff (multiple answers possible)

- ☐ Power shortages ☐ Lack of time ☐ Higher quality of purchased injera
- ☐ Other, specify:

53. When the household's income decrease, we would buy less teff to save costs (ask for perception)

- ☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

54. When the household income would increase, we would buy more teff (ask for perception)

- ☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

55. When the price of teff is high, we are more often hungry than when the prices of teff are low

- ☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

56. Is this household consuming more, less or the same amount of teff than 1 year ago (when checked the same proceed to question 58)

- ☐ Less ☐ The same ☐ More

57. When checked less or more at question 55, specify the reason why less or more teff is consumed by the household

- ☐ Lower or higher price of teff ☐ Household income decreased or decreased
- ☐ Household composition changed ☐ Other, specify:

58. Is this household consuming more, less or the same amount of teff than 3 years ago (when checked the same proceed to question 60)

- ☐ Less ☐ The same ☐ More

59. When checked less or more at question 57, specify the reason why less is consumed by the household

- ☐ Lower or higher price of teff ☐ Household income decreased or decreased
- ☐ Household composition changed ☐ Other, specify:

60. Is this household consuming more, less or the same amount of teff than 5 years ago

- ☐ Less ☐ The same ☐ More

61. When checked less at question 59, specify the reason why less is consumed by the household

- ☐ Lower or higher price of teff ☐ Household income decreased or decreased
- ☐ Household composition changed ☐ Other, specify:

