FACTORS CONTRIBUTING TO FOOD AND NUTRITIONAL SECURITY OF PASTORALISTS AND AGRO-PASTORALISTS IN AWASH, AFAR ZONE 3, ETHIOPIA

Final Project Report

Submitted by:

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In partial fulfilment of the requirement for the

Degree of Masters of Arts in

SUSTAINABLE DEVELOPMENT PRACTICE

Submitted to

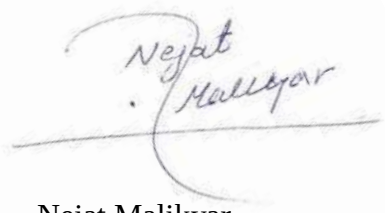
Department of Policy Studies

TERI School of Advanced Studies

June 2018

DECLARATION

This is to certify that the work that forms the basis of this project "**Factors Contributing to Food and Nutritional Security of Pastoralists and Agro-pastoralists in Awash, Afar Zone 3, Ethiopia"** is an original work carried out by me and has not been submitted anywhere else for the award of any degree. I certify that all sources of information and date are fully acknowledge in the project report.



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Certificate

This is to certify that **Nejat Malikyar** has carried out his major project in partial fulfillment of the requirement for the degree of Master of Arts in Sustainable Development Practice on the topic "**Factors Contributing to Food and Nutritional Security of Pastoralist and Agro-pastoralist communities in Awash, Afar zone 3**" during January 2018 to May 2018. The project was carried out at the **Pastoral Community Development Project III, Afar region, Ethiopia.**

The report embodies the original work of the candidate to the best of our knowledge.

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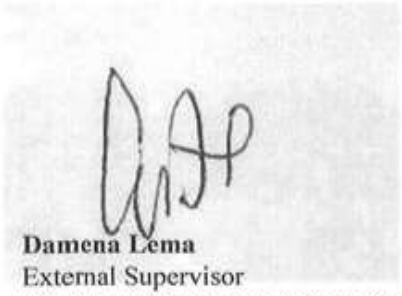

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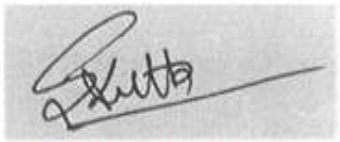

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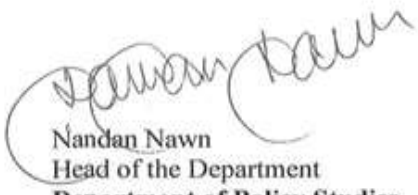

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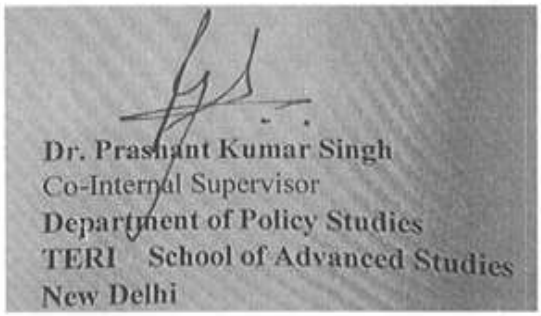

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Foremost. I want to offer this endeavor to our GOD Almighty for the wisdom bestowed upon me, to strength peace of my mind and good health in order to finish this research in one of the remote areas of Ethiopia.

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Nejat Malikyar

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List of Abbreviations

CADDP	Comprehensive Africa Agriculture Program
EIU GFSI	Economist Intelligence Unit – Global Food Security Index
FAO	United Nations Food and Agriculture Organization
FGD	Focus Group Discussion
FMOH	Federal Ministry of Health
GNI	Global Nutrition Index
GNI	Gross National Income
GoE	Government of Ethiopia
GTP	Growth and Transformation Plan
HDI	Human Development Index
HEP	Health Extension Program
HHI	Human Hunger Index
HHs	Households
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IPCC	International-Governmental Panel on Climate
PCDP	Pastoral Community Development Project
P&AP	Pastoralist and agro-pastoralist
PSNP	Productive Safety Net Program
SACCO	Saving and Credit Cooperatives
TERSAS	The Energy and Resource Institute – School of Advanced Studies
UNDP	United Nations Development Program
USAID	United Stated Agency for International Development
WFP	United Nations World Food Program
WB	World Bank

Abstract

"**Factors Contributing to Food and Nutritional Security of Pastoralists and Agro-pastoralists in Awash, Afar Zone 3, Ethiopia"** study was conducted through various approaches to underline the problems of Food and Nutrition Security by identifying livelihood factors associated with the food production system in pastoral communities. Several analytical frameworks has been applied to understand the livelihood associated factors of food insecurity. Such analyzes are considerable findings of the research. Indeed this paper significantly discuss over issues on context of specific setting where most of the output are achievable if used. Findings from this paper is considerably significant for local and regional organizations, planning to design and conduct policies and intervention in pastoral Awash area in regards to food security, hunger, poverty reduction for pastoral communities. Recommendations given in this paper is based on ground realities which sensed with the heart of this research. This report does not support any false statement and biases both qualitative and quantities data parts. No biases and false statement the real scenarios which can directly contribute to local level program implementations. Through three main objective this study is designed in six chapters where each chapter contains significant findings along with specific discussions.

Keywords: Livelihood, Food System, Nutrition, Dietary Pattern, Pastoral, climate change,

Chapter 1

1.1 Introduction

In recent years a huge amount of money has been invested by western countries, donors and international aid agencies in Africa to address the problem of food insecurity. Despite spending millions of dollars and many efforts on food security, there are still hundreds and millions of people in Africa who are dying out of severe hunger. As per Food and Agriculture Organization (FAO 2016) in 14 developing countries of the world, 35 per cent or more of the population are chronically undernourished in the years of 2006 up to 2010. The countries in Africa shares the highest proportion (one-third) of people suffering from chronic hunger and moreover sub-Saharan Africa accounts for 13 per cent of the population and 25 per cent of the undernourished people in the developing world (United Nations Food and Agriculture Organization FAO 2016).

According to Inter-governmental Panel on Climate Change (IPCC) 2007, the current food production system to feed the growing global human population have to occur in conjunction with climate change. The projected decline in agricultural production due to large negative effect of climate change has affected the livelihood of hungry people in Africa (International-governmental Panel on Climate Change IPCC) 2007). The effects of climate change on agriculture system in developing countries depends on location and people`s adaptive capacity. In such places, livelihood option may have to change. In the mixed crop – livestock rain fed arid and semi-arid systems of Africa, cropping become increasingly risky, and this could increase their dependence on livestock keeping or their transition to non – agriculture activities or migration (Jones and Thornton, 2009). In Sub Saharan Africa 153 million individual about 26 per cent of population above 15 years of age suffered from severe food insecurity in 2014/15. (World Food Program WFP 2016). It means on an average one out of four individuals above 15 years age did not take meal or escaped the meal for a whole day because there was not enough money or other resources for food. The average per capita income was three times lower in sub-Saharan Africa than it was in other regions of the world in 2016, although it witnessed a 30 percent increase between 1990 and 2016 (United Nations Development Program, UNDP - Human Development Index 2017). Poverty level declined in African region but remained the highest in the world. As a result major causes of food insecurity and malnutrition in Africa are associated with unstable food markets and commodity prices and natural disasters, including severe droughts and floods, leading to failed crops,

insufficient pasture feed and water for livestock, and persistent political instability (Comprehensive Africa Agriculture Development Program – CAADP, 2016).

Ethiopia is the second most populous country in sub-Saharan Africa and also in horn of Africa, with projected population of estimated 105 million people from 83 ethnic groups and languages (Ethiopia Census 2017). Ethiopia has a federal system of governance and never colonialized by any mean. The country is divided into nine administrative regions: Afar, Amhara, Benishangu Gumuz, Gambela, Harari, Oromiya, Somali, Tigray and Southern nations and Nationalities and Peoples Region (SNNRP). Public health system in Ethiopia is based on three health care delivery, where level one is woreda[1] primary hospital, health centers and health posts considered as the primary health care unit. Level two is a general hospital and level three is a specialized hospital. In addition, Ethiopia`s flagship Health Extension Program (HEP) is the platform for the delivery of maternal, newborn, and Child health focused health education and promotion services at the community and household level. (Federal Ministry of Health – FMOH 2016). Despites increasing rapid urbanization in the country, 85 per cent population still lives in rural areas and 5th hungriest place on earth, even worse than Sierra Leone, Haiti and other countries in sub-Saharan Africa. While Zimbabwe and Sudan are at 58th, fared much better than Ethiopia (United Nations Development Program, UNDP - Human Hunger Index 2016).

In terms of the (UN Human Development Index – HD, 2016) Ethiopia is ranked 174 of 188 countries which put the country in the low human development category. Between 1990 and 2014 Ethiopia`s life expectancy at birth increased by 20.4 years, mean years of schooling increased by 0.9 years and expected years of schooling increased by 5.4 years. Ethiopia`s (Gross National Income – GNI, 2016) per capita also increased by about 120.7 percent. Ethiopia is ranked 16th of 119 countries in Global Hunger Index that is considered to be among nine countries with extreme alarming hunger levels.

According to (UN Global Hunger Index 2016), 51 per cent children in Ethiopia are stunted (a measure of child undernourishment that is characterized by low height for one`s age); Due to high

[1] Woreda: Is a rural third level district administration in Ethiopia. It is a designated district unit under a certain Zonal division.

political disability risk Ethiopia scored 34.7/100 out of 113 countries in (Economist Intelligence Unit- EIU Global Food security index, 2016) which is considered to have the weakest food security score compared with the rest of the set of middle and low income countries in the larger group. It is identified in Global Nutrition Index 2016 that Ethiopia is vulnerable to all six underlying drivers of child stunting; total per capita food supply, calories from non-staples, access to improved water and improved sanitation, female secondary school enrollment rate, and ration of female to male life expectancy. Therefore, Ethiopia scored 1.71 in deficiency, 0.00 in obesity, 46 in security and 0.620 in Global Nutrition Index GNI (UN Global Nutrition Index 2016).

While taking the above issues into consideration the continuous drought in arid and semi-arid areas of Ethiopia devastated the livelihoods of smallholder farmers and pastoralist, with the crop failure between 50 and 90 percent, hundreds of thousands of livestock dead owing to pasture and water shortages and very limited alternatives for income generation (Ministry of Federal and Pastoral Development Affairs, Government of Ethiopia). At the start of 2016, more than 10.2 million people in Ethiopia were need of emergency food aid, 1.7 million household's seed insecure and 2.4 million households on need of livestock support (United Sates Agency for International Development USIAD, 2014). By August 2016, food insecurity decreased only slightly to 9.7 million people (Global Nutrition report 2016). Despite humanitarian needs having nearly halved since last year, food insecurity – especially in areas worst-affected by the drought remain high with 5.6 million Ethiopians requiring food aid in 2017 (Food security and Nutrition overview FAO, 2016).

Ethiopia is a recipient of USAID`s Feed the Future, a U.S. government`s global hunger and food security initiative that aims to spend $3.5 billion on developing country`s investment plans to reduce poverty, improve nutrition and agriculture. In 2016, the total number of food insecure woredas increased by 15 percent, 217 woredas remained the same despite increasing national food availability and the status of 120 woredas has worsened mainly in areas where drought is emerging. In Afar where crop production was poor and newly affected by drought are likely to continue facing high levels of food insecurity well in to 2019.

The present research has been conducted in Ethiopia under the Ministry of Federal and Pastoralist Development Affairs, Pastoral Community Development Project III. The PCDP III aims to identify the community Food and Nutrition needs and challenges, to construct upcoming components to accelerate the reduction of hunger and under nutrition and make the pastoral and agro-pastoral communities more food secure and self-sufficient. Pastoral Community Development Project (PCDP) is a project initiated by Government of Ethiopia, funded by, World Bank (WB), International Fund for Agriculture Development (IFAD), and International Development Association (IDA) to implement a long-term program to empower communities, woreda and regional (sub-national) government to better manage local development in pastoral and agro-pastoral areas. The Pastoral Community Development Project (PCDP) aims at establishing effective models of public service delivery, investment and disaster management in the pastoral and agro pastoral areas of Ethiopia that address pastoral communities' priority needs, improve their livelihoods and reduce their vulnerability to manmade and natural disasters. The project interventions are designed to empower communities and local administrations at woreda and kebele[2] levels as well as regional governments to better manage local development in their respective pastoral areas, with the objective of increasing, stabilizing and diversifying incomes, improving basic infrastructure facilities, increasing access of pastoral and agro-pastoral communities to public services and increase their resilience to external shocks. The outcomes of this study will help (PCPD) to understand more about factors challenging the food and nutrition security of the respective of the communities and form upcoming strategies accordingly.

The study area is located in northeast lowlands of Ethiopia. The Afar regional state has a population of 1.812,002 consisting 9, 91,000 men and 821,002 women. (Ethiopia Central Statistics Agency, 2016). In Afar 800 thousand people depend on government and non – governmental support every year. Climate change become a threat and declined pastoralist income, which even the current aid is not making them enable to adapt to long-term changes and uncertainties. In Afar region, a majority of the population is dependent on food aid (mainly the food grain). According to Demographic and Health Survey, Government of Ethiopia (GoE, 2016, around 41 per cent children are stunted, and mothers are commonly malnourished.

[2] Kebele is a rural district village, which consisted sub villages under this unit

Afar region is one of the poorest and least developed regions of Ethiopia. For Afar livestock is the major source of food (milk and meat), income and employment for the pastoralists. However, the pastoral production system and in particular the food security and livelihood situation has been largely threatened because of different man-made and natural catastrophes (Beruk, Food Security Situation in Pastoral areas of Ethiopia, 2003). Recently efforts have been undertaken to provide pastoralists with basic infrastructure such us road accessibility, education, health in forms of health posts and health centers, and other supportive food and nutrition programs. Food security becoming even more of a challenge in the recent food crises. In afar region food insecurity arise from harvest failure and cattle lose due to climate conditions. Poorly integrated markets are one of the primary causes of food supply shortage and price volatility in Afar.

As far as food insecurity is concerned, Awash is one of the major food-insecure woredas in the Afar zone 3. The basic livelihood of the communities residing in the region is Pastoralism. The death rate of livestock is exorbitantly high due to severe shortages of food in the region. Thus the situation is very dire. Cow and milk have been essential dietary supplements for pastoralists while agro-pastoralists newly started consuming subsistence grown by themselves. The shortage of grazing land for livestock is also forcing an increasing number of Awash pastoralists to move to nearby villages in search of viable fields.

In Awash the Pastoral Production system in particular the food security and livelihood situation has been largely threatened because of different man-made and natural catastrophes. Unsustainable exploitation of natural resources specially grazing lands, the decrease in carrying capacity of these resources have brought about new climatic challenge. Afar pastoralists depend primarily on grazing, herds of cattle, camels, and goats, and are concentrated mostly in the dry lowland areas. Larger number of pastoralist and agro-pastoralists (mainly women, children and the elderly) suffer from malnutrition. Hunger and malnutrition are on the increase, in Afar zone 3.

In a crucial time where the health and well-being of affected communities were totally neglected and where no earlier study has been conducted to reveal the grim situation of the communities, the aim of the present study is to assess the current socio-economic status, livelihood pattern, food consumption and nutritional status among the Pastoral and Agro-pastoral communities in the Afar

Zone 3 of Ethiopia. It is of utmost importance to highlight the baseline information like income and expenditure pattern of the households, employment status, coping strategies of the communities to mitigate the current food need, constraints in the dietary pattern and also the gaps and challenges of the implementation of various government policies and programs related to food and nutrition security in the region etc.

1.2 Research Objective

Based on the broader objective, the study intends to highlight the following sub-objectives

1- To understand current livelihood pattern of pastoralists and agro-pastoralist and related challenges which contribute to food and nutrition insecurity.
2- To understand socio-economic status of pastoralists and agro-pastoralists and its impacts on food and nutrition security
3- To identify and analyze the gaps and challenges in the current policies related to food and nutrition security

1.3 Significance of the Study

This study is an important contribution to Ethiopia`s mission on ending hunger and food insecurity in pastoral vulnerable areas. Since the ultimate goal of Ethiopia`s government national policies on Food and Nutrition security focuses on combating poverty, ending hunger and food insecurity, this report will significantly contribute to local level decision making to achieve the country`s target on food and nutrition security since the issue food and nutrition security of pastoralist both in federal and regional level are significantly important. Most of the development programs in Afar are not aware of ground level realities which led to poor implementation of the programs. Therefore a clear picture of the area through a substantive baseline assessment no related issues will lead to effective implementation of the projects and programs in respective woredas. Indeed, this report will represent an effective guideline for implementation of any food and nutrition intervention in research area.

Chapter II

2.1 Methodology

2.1.1 Research Journey (Lessons and Practices): Coming from Afghanistan and joining one of the renowned universities in South Asia, The Energy and Resource Institute – School of Advanced Studies (TERI), in New Delhi India, was a great platform full of fascinating practical experiences. On my initial days to Teri I faced lots of difficulties and tough times due to the complexity and technicality of my subjects. With the grace of God and support of my professors and own dedication towards education I made my way more effectively to TERI. During my three semesters with Teri, this university equipped me with true knowledge and aspiration where I got a great opportunity to conduct my major project internship in Ethiopia through IFAD – MDP win-win partnership. I would like to mention that traveling and conducting this research in remote areas of Afar with the most marginalized communities was a great achievement following with an amazing lifetime experience.

My journey to Ethiopia followed two principles; one, to learn from the challenges and opportunities communities are facing and second, to transfer these learnings along with practical solutions back to the community. Beside this journey teaching me lots of struggling life lessons, I learnt a lot from the communities; about self-esteem, patience and endeavor which I believe is difficult to expect in towns and cities. The achievement of going to Ethiopia and working for the food and nutrition security of communities is a major contribution to my academic and career goals. In spite of the great threats (drought) affecting them badly, the cleanliness of their thoughts, their ignorance of hypocrisy, lie and thousand other corruption of outside world made me more enthusiastic to stay longer and closer to them.

When I was googling about my study area, about their culture and mainly security I came across very sad and shocking pictures which was showing the horror faces, poor infrastructure and hundreds of other unreal problems. I made my mind to move forward and get ready for this mission. With a very limited online data available on Afar I started making myself ready for this life changing journey. Throughout night and days I was brainstorming on how to design my study

in a way to contribute to the vulnerability of these people. Finally, in 22nd January 2018 I landed in Addis Ababa, where I saw a beautiful view in front of my eyes and the development of this city fascinated me a lot. After a week of exploring the city we started interacting with IFAD, Ethiopia office which we were warmly welcomed by them. The continues interaction and discussions over our topics went through a very positive flow. Next day we started visiting Pastoral Community Development Project, our host organization, where we met Mr. Sayed (PCDP project Coordinator at Federal Level), Mr. Damena Lema (Communication, Development Learning and Knowledge Management/Intern Supervisor), and Mr. Hailu Kassaye (M&E officer) who facilitated us with our research plans.

On 25th of January a meeting was carried out by PCDP to meet their regional teams where they will guide and facilitate us with our research areas. After a productive interaction with them through a convenient and random sampling method our study sites were selected. We agreed on two villages of Awash district of Afar Zone 3, where accessibility and security issues were comparatively better than any other parts of Afar. The intention was to select one pastoralist and one agro-pastoralist village to conduct a comparative study. Therefore, we finalized the discussion by selecting Aurebeto (Pastoralists), and Aaeva (Agro-pastoralist) as our research areas. After a week we started our journey from Addis Ababa to Afar, where by traveling 80 km from Addis Ababa to Afar, the developed face of Ethiopia got invisible instead the drylands and people rearing cattle started appearing. Our PCDP supervisor Mr. Damena Lema remained with us for four days in the field to give us a brief understanding of communities' cultural context, their sensitivities and most importantly the adoptive way of living in that area.

We visited the Amibera village following an introductory session with a group of small scale farmers where they shared their success stories of how small-scale irrigation project has brought big changes in their farming and livelihoods. Our next stop was at a health post in Guromoli village which was built by PCDP, provided the marginalized pastoralists with basics health and nutrition services. As the initial days of this study it was very delightful to us to closely observe the lives of the pastoralists. This opportunity of transferring knowledge into practices brings in a lot of excitement which has further pushed us closer towards our research goals. Next day we visited some mobile tribal households around Awash which was full of excitement while for the first time

we were seeing the pure pastoralist with amazing hair and different signs in their faces, wearing white long dresses, holding a long knife in hand and around their backs. This informal interaction with households helped us draw a baseline picture of how to move forward. As our PCDP supervisor left we started structuring our research in Aurebeto and Aaeba villages. Since there was a language barrier we hired a translator who facilitated us with our research activities in respective villages. Our first week in these two villages started with a baseline study of the subject along with a rapport building where we interacted with communities, listened to their stories, challenges and problems to have a clearer picture of their needs and vulnerabilities. After a week of baseline study, a comprehensive food and nutrition security questionnaire was structured to conduct household interviews. Following to this a number of focus group discussions and key informant interviews was conducted to collect the most accurate primary data from different groups among the communities. Beside this a number of other approaches were designed to promote and practice agriculture, nutrition and WASH practices where they were exposed to new experiences. After almost 55 days of working closely with the communities I can conclude that we, living in luxurious cities never struggled for food and other life requirements. Everything was available at all time to us. In my entire life I have never noticed what food I have been eating, it never crossed my mind that who prepared the food, how much money was spent on food. But I learned lots of life saving lessons from these communities. Importantly the “saving today is saving tomorrow”. In these communities, the families consult with each other hundred times before taking any meal to either eat for the day or escape tomorrow`s meal. Seeing the hunger and food insecurity of these people I came back surrounded with lots of sad and happy experiences and lessons which will be never forgotten.

2.2 Research Design

Research Framework: In this study three comprehensive food and nutrition analysis framework has been used. FAO Nutritional and Food Security Baseline Study Framework (NFBS) was used to examine the role of policies, implementing institutions, and potential resources on the food and nutrition security of communities. With the help of this framework a baseline study was designed to identify and analyze the poor access to nutrition services, barriers in feeding programs, challenges of health systems and mainly gaps in dietary pattern. Eisner`s Connoisseurship Model of Inquiry was applied to evaluate the role of current programs improving or impacting food

security and nutrition in pastoral areas. This framework is mainly used to evaluate the food and nutrition security of populations at risk of food crises. FAO Baseline Nutrition and Food Security Framework was applied in this study to gather primary and secondary data on the Food System which consisted Food Access, Food distribution and food procurement and dietary pattern indication. Various Participatory Rural Appraisal Tools; Resource mapping, seasonal calendar, Key Informant Interviews, Focus Group Discussion, wealth ranking, observation and participatory observations, stakeholder meeting and various activities to promote best food and nutrition practices were used to generate effective data.

2.3 Research Sampling

This research was conducted through a descriptive mix method of qualitative and quantitative. The quantitative data from participants is analyzed and presented in tables and figures in an unbiased and objective manner. The qualitative data are gathered by asking broad and general questions are presented in subjective manner in this report. A 55-day field work was conducted on a sample of 45 households in two villages of Awash (Aaeva and Aurebeto).

This research adopted a convenient and random sampling methods where 45 HH from two villages were randomly selected (17 male and 18 female) aged of 20-55. The total population of the interviewed HH including respondents was 261 (120 female and 141 male). A total 4 Focus Group Discussions (two FGDs in each village) were conducted to ascertain community views and practices. Each focus group was composed of eight to ten participants representing different sections of the community in terms of age, gender and socio-economic status. A total of 16 key informant interviews conducted with village elders and influential faces, and zonal administrative in order to understand their perspectives on Food and Nutrition security in depth.

2.4 Research Methodology

Household Interviews: The HH interviews were structured followed by some semi structured question where households were asked for more qualitative data. The problem with questionnaire was the language barrier, translating it from English to Afaric which needed time and patience. Household Interviews contributed a lot to the qualitative and quantitative parts of this report (Annexure 1).

Resource Mapping: This tool was used to map the community resources in both the villages. Through this method I drawn and explored the community resources and identified the barriers, gaps and limitations in access to community resources. Though the resource mapping group was unable to identify the community resources a transect walk was conducted to properly identify their resources. (Annexure 2).

Seasonal Calendar: By conducting seasonal calendar the time related cyclical changes in the area identified to analyze migration, drought and cropping seasons.

Focus Group discussions (FGD): A total of 4 Focus Group Discussions were conducted (2 with male group and 2 with female group) due to some cultural restrictions.

Key Informant Interviews (KII): A total of 16 KII were conducted with people who had better knowledge about the food and nutrition problems of the village. The purpose of this tool was to collect information from wide range of people- including clan leaders, religious leaders, zonal official and people with better knowledge to understand the problem and give recommendations for solutions.

Stakeholder meetings: Semi- Structured Interviews were used to collect data from the various stakeholders at the woreda (district) level. In the Awash woreda district administration representative from Education office, Health Office, Water Office, Agriculture Office, SACCO office and Women`s office were interviewed to understand the ongoing programs for the pastoralist and agro pastoralist development.

1

Observations: Observation was a key tool to understand the problem of Food and Nutrition among the both villages. Initially the other tools didn't get effective due to language barrier and by this tool I was able to identify initial gap in my study and structure other tools accordingly.

Activities to Promote good health and nutrition

Activity one- "Hygiene for Personal Health and Well-being". The first activity conducted with children`s parents to promote the importance of cleaning and sanitizing for a healthy life. Through this activity I aimed to aware parents while practically teaching them the basic steps of cleaning and sanitation. I washed and cleaned their babies aged 1 -5 to show them baby`s current hygiene and to recommend them frequent cleaning. Distribution of soap was also a part of my activity for sanitation awareness.

Activity two-"Building Awareness of Sustainable Development Goals in School". This activity was conducted with student aged 10 – 15 in Aaeva primary school. The teachers received an hour training on the role of SDGs in current world to better perform this group activity with students and to spread this knowledge among them before the group work. Students received an hour class on SDGs role in their life. One teacher led the group of girl students and another boy students. They were asked to conduct a group work on the role of each SDGs in their life. At the end of session I received their answers in flipcharts which was FASCINATING, where there passion to change their life was beyond my expectation. They really dreamt big and we need to help them to fulfill it.

Activity three- Aurebeto being pastoralist are seeking for alternative income opportunities where through this study it was found that there are available resources like fertilizer land to start agriculture but required water supports. Therefore crop cultivating and soil practicing activity was conducted through making small artificial agriculture as demonstration from the several plastic bottles which I had used during my research

2.5 Description of The Study Area

This research paper employed a qualitative and quantitative approaches to asses and generate food and nutrition security and vulnerability information of pastoralist and agro-pastoralists to help policies and decision makers design and implement programs that contributes to the reduction of pastoralists' food insecurity and livelihood vulnerability. This study was conducted in two villages of Awash under Afar Zone 3 namely Aurebeto (pastoralist) and Aaeva (agro-pastoralist).

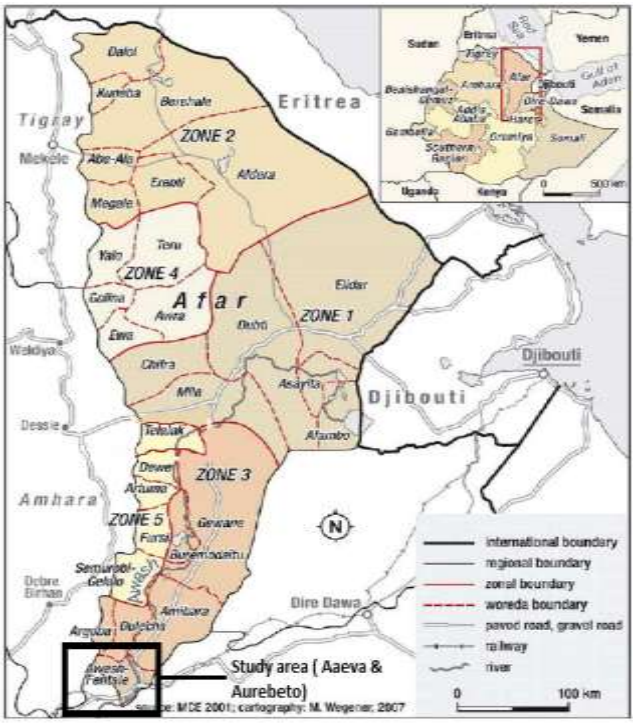
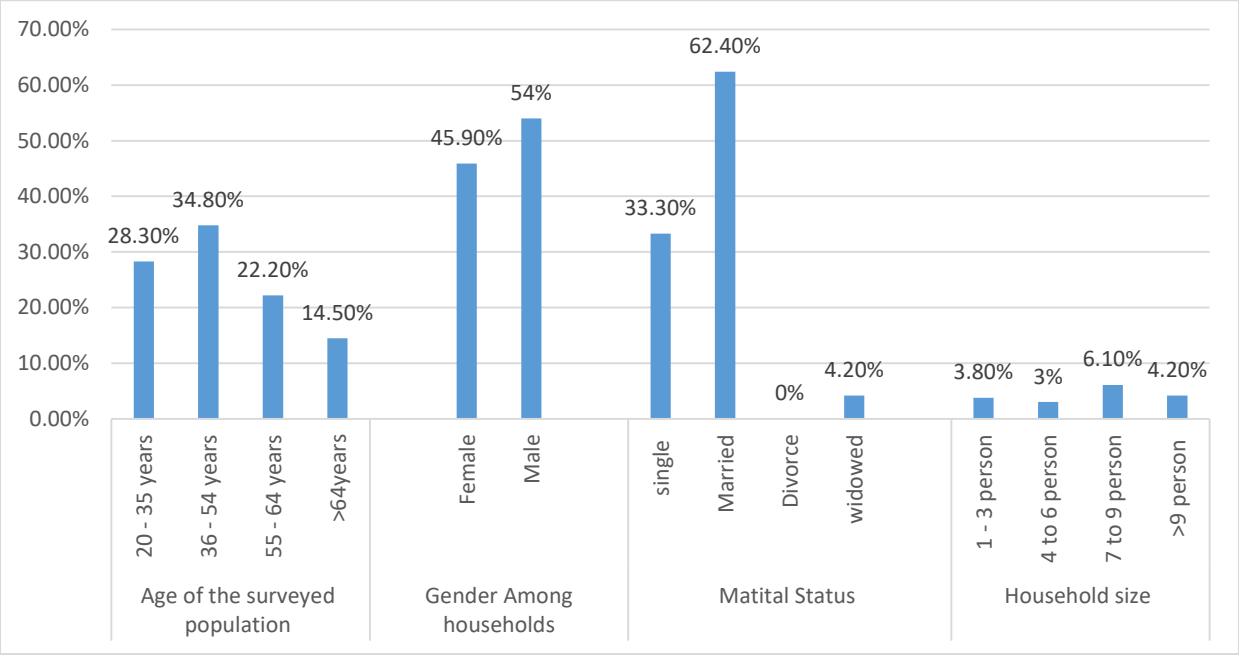


Figure 1 Map of the study area

Awash woreda locates in north western part of Afar with 5 Kebeles and 1 city administration. The distance of Awash district (230 km from Addis Ababa and 370 km to Semera the capital of Afar). The total population of Awash is 198.751 (108.995 male and 89.756 female) with 85 per cent pastoralist and 25 per cent agro-pastoralist. The population of studied villages (Aaeva - 52 HH, 31 MHH and 14 FHH) with the total population of 325 (155 male and 170 female). Aurebeto (42 HH, 38 MHH, 14 FHH) with total population of 275 (152 Male, 123 female) Figure 2. Among 45 households (42 per cent) were occupied in livestock farming, (12 per cent) only agriculture farming, (32 per cent) mixed farming and (14 per cent) in irregular labor work.

Figure 2: Demographic Characteristics of the studied population



The qualitative and quantitative data in this paper represents a total population 261 (120 female, 141 male). Among the total population covered in this study (37.5 per cent male and 42.1 per cent female) were illiterate. Only (6.8 per cent male and 2.6 per cent female) were enrolled/attending school). See table 5for details on educational characteristics of the studied population.

Chapter III

Livelihood Pattern of Awash Pastoralists and Agro-Pastoralists

3.1 Introduction

Pastoralists in Aaeva and Aurebeto in Awash are living in one of the driest parts of Afar State. The traditional Awash pastoralist system involves transhumant migration during dry and wet season pastures within a radius of approximately 50 Kilometers to around Fentale Mount. During drought the perennial Awash River and its fertile riverbanks and some small rivers like Logia, Bolga and Kebena offers an alternate source of water and grazing for pastoralists of Awash Fentale. Awash communities living in arid desert – like environments are relatively more mobile than any other zone and depends more upon water drawn from shallow hand dug, hand pumps and wells along rivers which usually run dry after a certain period of time. Pastoralists in Awash raise mixed species of primary livestock, usually camels and cattle and keep supplementary herds of goats and sheep. Camels are best suited to the arid desert since they can endure without water for more than two weeks (Agriculture Bureau).

Agro-pastoralists particularly in Aaeva are based on the growing crops (maize and onion) and raising their livestock as the primary means of economic activity. These agro-pastoralists are doing both rain-fed and irrigating farming. The major crops grown are maize, sorghum and onion. In Aaeva, the agro-pastoralists are good in raising cattle and sheep as compared to the pure pastoralists. As per the data, Aaeva agro-pastoralists have less livestock compared to pastoralists in Aurebeto since they generally do not consider meat as important as cereals and milk is drunk only by children and women and the herd boys therefore they are able to utilize the minimal available water for growing maize and onion also to feed their cattle with grass which is grown around their lands (Table 1).

Table 1: Herd size composition among P&APs

Aurebeto		**Aaeva**
Goat and Sheep	780	600
Cow	540	446
Camel	255	215
Total	**1575**	**1261**

Source: Fieldwork by Author

There are mainly two types of pastoralists in Awash, those who are gradually abandoning pastoral livelihoods and those comparatively wealthy who hold substantial livestock assets. Livestock ownership in Awash does not make them food secure or resilient to shocks. In this study households reported that increasing number of livestock is a major challenge due to pasture and water scarcity. The government of Ethiopia, Ministry of Agriculture through Growth and Transformation Plan (GTP), focusing on rural pastoral areas with a provision of land entitlement where drought affected pastoralists will receive land and agriculture inputs to grow different crops. According to Awash agriculture office, pastoralism is deeply rooted to their culture that despites of being vulnerable to climate shocks they are not willing to shift to alternative production systems. Where in Aaeva a number of successful agriculture adopted pastoralist are generating sufficient income to escape food shortage (Figure 5). Although majority of them reported insufficient agriculture inputs. The process of food production and consumption among pure pastoralists begins with the regular monthly cattle selling and receiving 50 kg wheat from Safety Net Program where due to not functional flour machine in the village provided by Agriculture office they spent 10 birr/kg to convert wheat into flour in Awash Arba market. Pastoralists made Kandi Kita (Afar bread) for 3 meals a day with other subsistence consumed by the households. While Aaeva agro-pastoralists produced their own crop, sell them in the market, feed their cattle with the grass grown around their farmlands and purchase food and other commodities from the money coming from their crops. In (Figure 3 and 4) the livelihood process among pastoralist and agro-pastoralist are briefly indicated.

In Awash both villages shortage of water and relative scant pastoral resources are serious constraints to cattle production. Aurebeto pastoralists in Awash have to cover long distance, especially during the dry season and even more in periods of drought while agro-pastoralist feed their cattle from the same grass grown around their farmlands.

Conflict over natural resource is very common among pastoralists in Aurebeto. Many times, since 2002 these villages have engaged in armed clashes over grazing resources diminished due to drought. As a result, the traditional division of work was ignored; women were no longer tending livestock and men guarded their herds with weapons. Beside this cyclical drought has shocked has threaten the livestock-based livelihoods of Awash communities and caused massive death of

livestock. After tremendous recent drought, pastoralists in Awash are in high needs of food relief support.

Figure 3: Household`s Access to Food by Safety Net Program (Pastoralists)

Figure 4: Household`s Access to Food by Safety Net Program (Agro-Pastoralists)

Figure 5: Focused Group Discussion (FGDs) with Agro-pastoralist Clan Members

Source: Fieldwork by Author

3.2 Dynamics of Livelihood Pattern and its Impact on Food and Nutrition Security

The success and failure of livelihood among P&AP is dependent on socioeconomic and institutional context that play dominant role in Awash. Challenges in Awash is found be mainly driven by push factors. Drought was found to be the major factor that forced communities to engage in non-pastoral activities. Though Awash has naturally been exposed to erratic and uncertain rain fall pattern, the information gathered from FGDs and Key informant interviews shows that starting from 10 years the occurrence of drought has become more frequent. It has become the major challenge that risked pastoral livelihood system in both villages. Furthermore, weak livestock market linkage exacerbated the food security situation. These cumulative impacts had made communities dependent of food aid only provided through Safety Net Program where pastoralists and agro-pastoralists receive 50 kg maize in 6 month interval. From personal observation and discussion with informants and household interviews it is identified that crop cultivation among agro-pastoralists is the dominant type of income undertaken by the people. In Aaeva agro – pastoralist's agricultural practices have been suffering from lack of enough rain galls, lack of modern technologies and supply of agriculture inputs. The disruption of seasonal rain reduced the size of grazing lands and agriculture lands which has been reinforcing food security in Awash.

3.2.1 Pastoral Traditional Institutions and Livelihood Pattern

The clan is the lowest and *de facto* unit of traditional administration in both villages of Awash, although there are also smaller social units, such as the sub–clan. Each clan comprises "a group of people related to each other by decent, living within shared territory and sharing common rituals and political leadership (African Center for Food Security, 2010). Each clan has a well–established gerontocracy, whereby decision–making power regarding land and other natural resources resides within the clan council, consisting of the clan leader, elders, the and local wise men. Each clan manages its resources collectively, based on customary principles. Accordingly, herd management follows rotational grazing patterns. When rainfall is normal for successive seasons, clan members are instructed not to use reserved pasture areas. These areas are made accessible to the members only after other areas have been exhaustively used. Although each clan member has an inalienable use right over the resources, intra–clan customary laws (or operational rules) regulate these use

rights. The traditional institutions of the Afar allow two types of resource users. The first category includes clan members who use the rangeland permanently. They are primary right–holders (*waamo*)[3] who not only have the right to use the resources on the rangeland but also to exclude others and to transfer to their heirs. The second type of resource users comprises groups of neighboring pastoralists whose demands for pastoral resources go beyond their own endowments, particularly during drought years. These groups are secondary right–holders. They can be termed "right–holders" because they have frequent access to clan resources that is generally recognized and accepted by clan members and traditional leaders. However, certain obligations are operational on secondary right–holders in order to obtain access to the resources. *Ex ante* negotiation is required with *waamo* right– holders, the success of which depends upon the relationship between the two groups and resource conditions. If they are allowed access, secondary right–holders are required to honor the customary rules of the host group. For instance, they should refrain from actions such as cutting trees, allowing other herders to use the resources, and rushing their livestock into reserved areas.

[3] Waamo is the primary right holders to use the resources

3.3 Pastoral Livestock Production Challenges and Livelihood Related Impacts

For pastoralist communities in the studied areas, livestock is the main financial asset. Livestock holding represent wealth, asset and contributes to their food security. In studied areas animals are used both as a form of savings and as assets to be exchanged for cash or grain as needed. Livestock play integral role in the livelihoods of Awash population, it acts as the main source of food and survival, it is considered as store of wealth (CAST, 2001); and coping mechanism in response to drought and climatic shocks. Other important roles of livestock for pastoralists is employment. In Aaeva and Aurebeto (56.29 per cent) of total population were employed in livestock farming and more than 65 per cent of respondent reported owning >10 cattle with the high density of camels and goats. The most reliant population of livestock in studied areas were difficult to accurately measure due to their pastoralist / semi-pastoralist lifestyle. It is hard to talk about livestock production in Awash since the livestock production and cattle health is endangered specially cow and goat due to *Dargy Hara* (*Prosopis Juliflora)* invasion which chased away all valuable vegetation. Productive Safety Net Program initiated landscape restoration where communities receive wheat and cash transfer to cut back *Dargy Hara* to make animal health better and make lands available for grazing and farming.

Figure6: Dargy Hara (Prosopis Juliflora) – An Invesive Species

Cattle production and agriculture farming depends on amount of water and grass. (Figure 6). Karma (March, June and July) are considered to be the peak earning months for pastoralist where 80 per cent of them generate sufficient income from cattle selling where 62 per cent household respondent that they sell 1 or maximum 2 goat monthly in 800- 1000 price while 18 per cent responded that in dry season they sell >2 goat in 400 – 600 birr and even they have to sell 1 cow sometime. Through a linear mixed model, the effects of household characteristics on food security resulted that cattle ownership and breed group were important determinants of all household food security indicator. Average herd size of two villages shows that goat and sheep density is higher

than cow and camel while Aaeva pastoralists holding less camel and cow comparing Aurebeteo. Larger the herd, larger the asset. Value of cattle depends on dry and rainy seasons. The price of cattle is very low during dry season where for camel and cow there is less disparity (Table 2).

Table 2: Herd size and herd value of livestock

Animal Types	**Villages**		**Market Value of the animal livestock (in Birr)**		
	Aurebeto	**Aaeva**	**Type**	**Dry Season**	**Rainy Season**
Goat and Sheep	780	600	Goat	1000- 1500	>1500
Cow	540	446	Sheep	1000-1500	>1800
Camel	255	215	Cow	2000 -2500	>4000
Total	**1575**	**1261**	Camel	10000-15000	> 15000

Source: Fieldwork by Author

Due to limited rangelands resources around cattle feeding has become insufficient and challenging. Insufficient natural rangelands and water resources in Awash Fentale affected the pastoral production, affected the food availability and decreased the micro – nutrients. Agriculture office of Awash increased the area and condition of rangelands adjacent to sugar cane farming which favored the sustainability and productivity of cattle through increasing availability of animal manure. Movement of livestock vary by season. Aaeba pastoralists unlike pastoralists of other zones rear their cattle at the distance of 15 to 25 km around Awash rangelands where they get enough water and grass to feed their cattle but pastoralists of Aurebeto move from one area to another for the search of seasonal water and grazing land. Sometimes ethnic conflicts forces them to change their usual migration pattern and most importantly were denied access to either traditional water points and wells or grazing areas or both together. On the top of this rather complex and confuse conflict situation, drought due to lack of rain in the region forces the pastoralists to migrate in neighboring regions. As indicated in the Resource Map general pattern

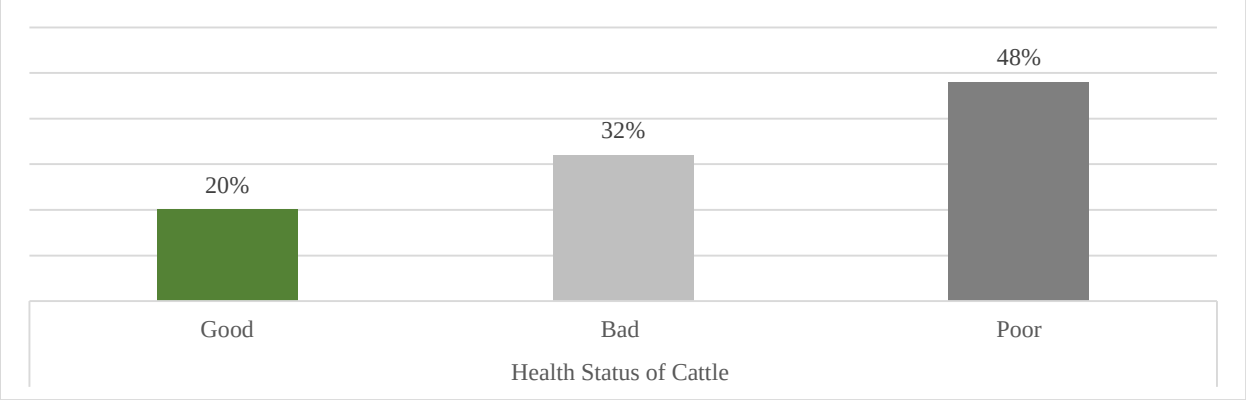
of movement is towards water sources (or Fentale mount and Amhara border) during the dry season, out to pasture after rains start.

3.3.1 Health Related Challenges of Livestock

Pastoralist vulnerability to drought is eroding food security. In Awash grass species are gradually disappearing, instead bushes are growing there. Camel seems to be survived on bushes and shrubs, but goat and cow are endangered. Awash pastoralist`s cattle are slow growing. When they want to sell it is difficult for them to find buyer, most of their cattle are refused by traders. The buyers want below 1 year and 28 – 30 kg live weight and they believe that they need breeding help to make it`s meat better. Unorganized livestock market channels, low skills and capacity, poor linkages between pastoralists and local Woreda markets are the constraints toward pastoralist livestock marketing.

Low rainfall and climate problem led water and pasture shortage for Awash pastoralists that deteriorated the condition of their livestock. The current natural pasture around Awash rangelands are poor quality and are not nutritious. While the current shocks made the livestock very vulnerable, interviewed pastoralists are in high need of veterinary services which is lacking in these two villages. Considering their concerns (48 per cent) of the respondent reported that their cattle health condition is poor following 32 per cent bad and 20 per cent good. (Figure 7).

Figure 7: Health status of Livestock

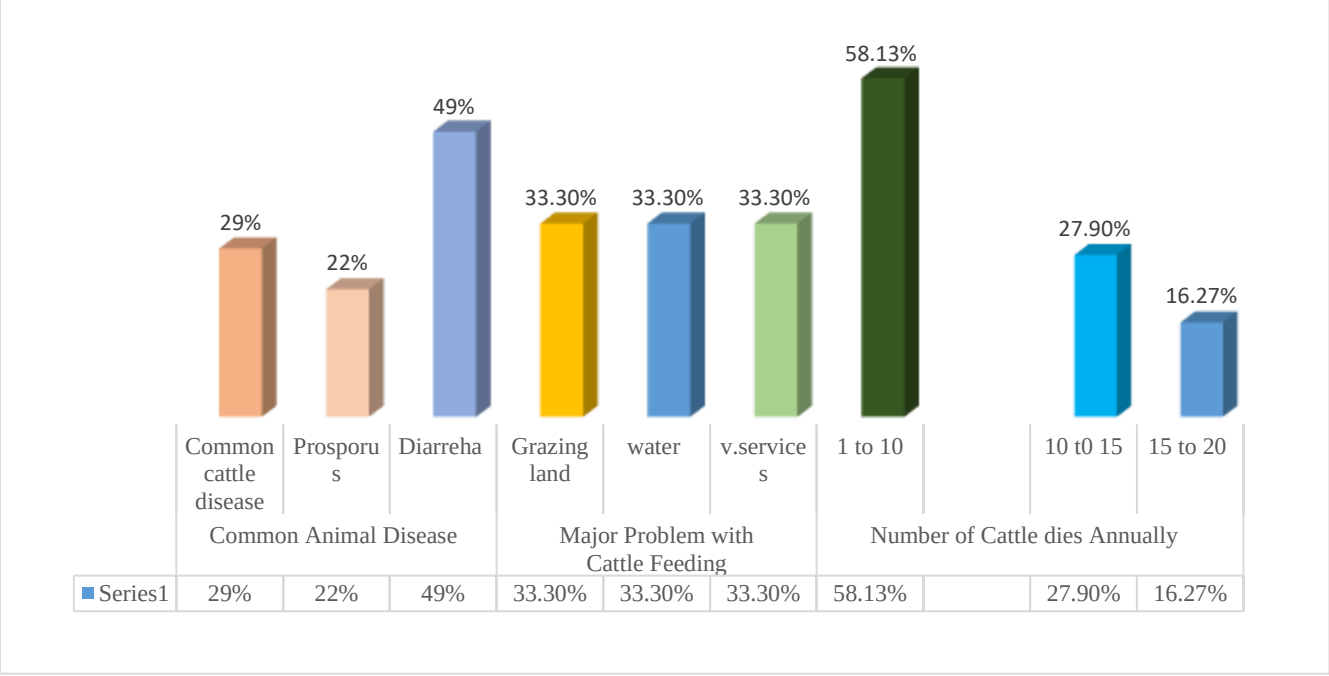


Source: Fieldwork by Author

Communities are concerned with the diseases and insect pest leading to heavy losses of livestock. 76 per cent of the pastoralists and agro – pastoralists responded that the native breed of their livestock are generally of poor quality. In Aurebeto the annual cattle loss was estimated ≥ 150 sheep and goat while in Aaeva ≥ 10 cow annually.

Other challenges of livestock was also noted which indicates, (33.3 per cent) graze land, (33.3 per cent) water, (33 per cent) veterinary services and into some percentage frequent attack of wild animal were identified as top 4 risks for cattle lose in Awash . Table 3, shows (49 per cent) of pastoralists claimed that diarrhea, *Bovine Viral Diarrhea* (Bovine viral diarrhea is a viral disease of cattle and other ruminants that is caused by the bovine viral diarrhea virus) , *(Haemophilus somnus)* is a common disease-causing bacterium of cattle, with a large proportion of cattle carrying antibodies to the organism, (22 per cent), Prosporus Julifierm and (29 per cent) common animal disease is affected the health of cattle which on average bases 88 per cent of the households spend ≥ 150 birr monthly on cattle health (Figure 8).

Figure 8: Livestock Morbidity and Mortality Pattern and Other Challenges



Source: Fieldwork by Author

Almost all the interviewed pastoralists reported that there is a need for a community-based animal health service in the village since the current veteran groups and animal health staff have no means of mobility and are not able to provide services in the community. There is no stationed veterinary clinics where we can refer to. The average expenditure on cattle health in the both villages livestock farmers estimate >150 birr monthly to purchase Ivermectin injection, Doxanish sheep (spectrum anthelmintic), OXYVIC injection and applied by themselves without any veteran consult. Expenditure on animal health was considered as a negative factor to the food security of communities where almost 25 -30 per cent of their income were used for veterinary costs.

Before drought milk was a great source of income and food for the communities. After tremendous drought milk production pattern of these villages affected badly where currently (66.6 per cent) of pastoralists produce 2 to 3 liter/day, and (33.3 per cent) of them producing >5 liter/day which is even not sufficient to be consumed for than two members of the family on daily basis. During rainy season milk production increase to 15 to 20 per cent since cattle get to eat green fodder and drink sufficient water (**Table 3).** Currently there is hardly any green fodder and pastoralists are fully dependent on dry feed and this has affected the milk production.

Table 3: Estimation of Milk Production

	Rainy Season	**Dry season**
Produced	5 – 8 liter/day	2 – 3 liter/day
Sold	4 liter	NOT SELLING
Consumed	1-4 liter/day	2-3 liter/day

Source: Fieldwork by Author

3.4 Agro-pastoralist Livelihood, Food and Nutrition Security Challenges

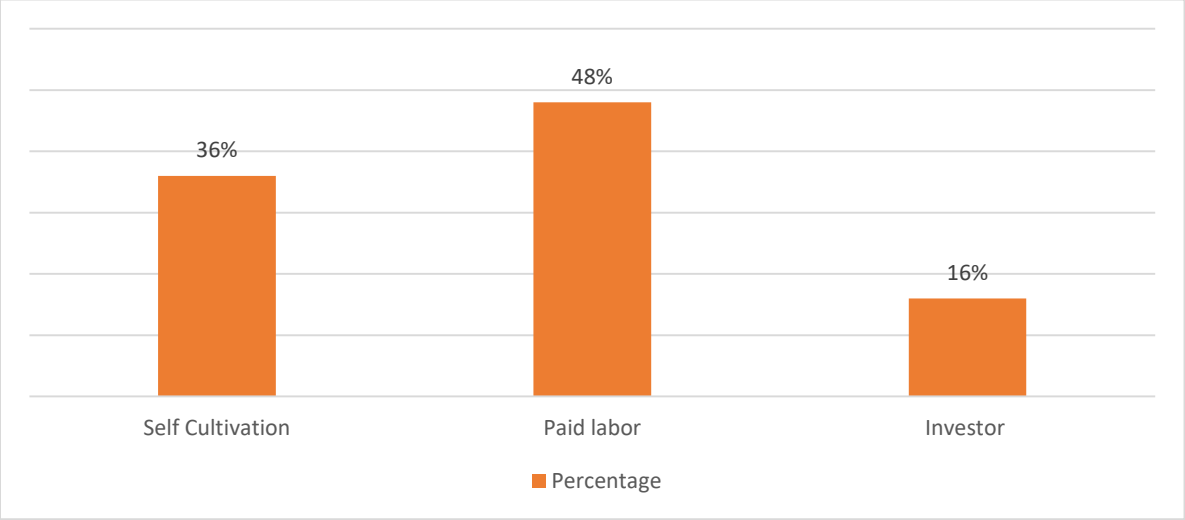
Agro-pastoralists in Aaeva are dependent on a mix of agriculture and pastoralism. They are typically settled with some short time migration to Guromoli due to flood and Kebena River overflow. Agro-pastoralists in Aaeva live in small groups with little occupational specialization, minimal social hierarchy (no one has much power over anyone else), during the farming peak

earning months they send their animals with relative group for grazing remain around their farming lands.

Preparation of the land in order to fertilize the soil is commonly cut and leveled by ox. Seed are either given by agriculture bureau or commonly purchased but a proper seed selection remains a challenge. Ploughing done either by mechanization (oxen), they request to rent ox (1 ha =30 birr per day), while they cannot afford to rent tractor (1ha =200 birr per hour), but still additional production costs related to the recent market depression have contributed to the agriculture activities decrease.

Interviewed agro-pastoralists reported that there is wage labor system, where (48 per cent) pay to labor rather than cultivating their own subsistence good with 12000 – 15000-birr income in 6 month, while (36 per cent), grow their own crops with the income of 8000 – 10000, and (16 per cent) gives their land to investor to generate only 5000 – 8000 birr. A minority of interviewed agro-pastoralists also gives their land to farmers to cultivate it for them due to lack of farming knowledge which they shares the harvest (mainly maize) 50 per cent to landlord and 50 per cent for the farmer (Figure 89).

Figure 9: Involvement in Agriculture

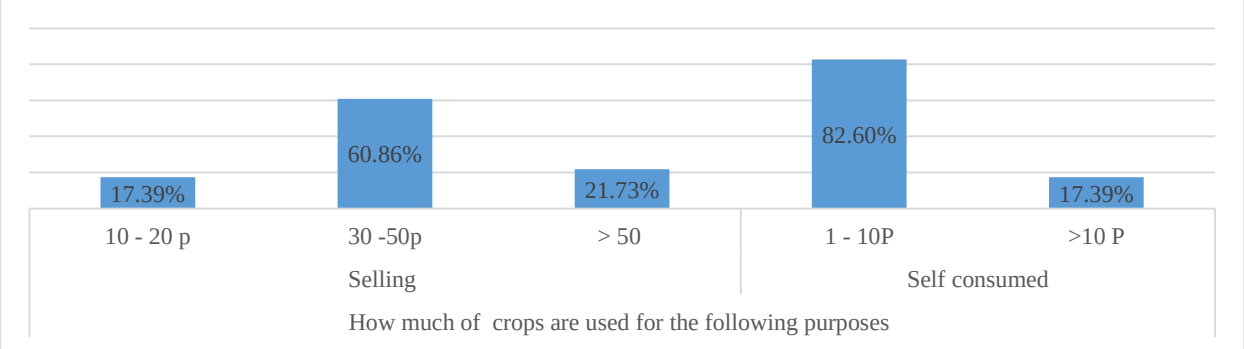


Source: Fieldwork by Author

In Aaeva, selling crops to purchase different food and commodities is very common. Farmers tends to sell their crops rather than consuming it at household level. The culture of helping poor

neighbors and relatives were also a significant impact on the food security of households. Through household questionnaire it was asked from farmers to what extend they sell and consume their crops, where (60.8 per cent) of the respondents reported that they sell 20 – 50 packages of maize and onion once a year, while (82 per cent) of them consume only 1 -10 packets of maize and onion. Keeping this note in mind it can be analyzed that supporting pastoralists with farming activities contribute very less to the household food security where maximum amount of cultivated crop is sold and due to chewing khat [4] culture 65 per cent of this money goes to buying chew chat on daily basis and very limited money will be kept to be spent on household food and other requirements (Figure 10).

Figure 10: Crop Production and Consumption pattern of APs



Source: Fieldwork by Author

It is also common that the household and investor are sharing the cultivation as a part of the contract. Once the household receive the income they exchange it to purchase household necessities. If we compare pastoralists in Aurebeto with land holding pastoralist in Aaeva, (57 per cent) of the sold crops among agro-pastoralists contributes to their income pattern with few possessions shows only minor differences in wealth with pastoralists of Aurebeto where only (43 per cent) of crop (maize and onion) consumed by the agro-pastoralists households contributed to their food security which differentiate these two villages from each other. Contribution of crop cultivation and livestock production to food security of households on the bases of their income generating activities are explained in detail in next chapter.

[4] Khat; is a plant contains alkaloid cathinone which makes physiological dependency on human and causes excitement and loss of appetite.

For making these communities more food secure and more resilient, the government of Ethiopia through agriculture bureau targeted communities in Awash with the aim of transitioning them from the traditional pastoralists to agro-pastoralist by introducing them to farming practices and provided them land and agriculture supports as an intervention to help them escape food shortage. With the support from Agriculture Bureau, farming activities among agro-pastoralists started newly**.** The majority of respondents (60 per cent) reported that they started practicing agriculture 2 years ago which was considered a non-specialized livelihood activity to them Table 4). While understanding their poor farming practices and poor agriculture inputs from respective offices the current situation of farmers seems disappointing. From the stakeholder meetings with agriculture bureau it was reported that they are planning to implement various broad awareness programs through Agriculture Extension Worker to build the capacity of farming among agro-pastoralists since majority of them are not interested to take direct part in agro-farming.

Table 4: ***Percentage of respondent which voluntarily shifted from pastoralism to agro-pastoralism***

Newly started	1 year ago	2 year ago
23 per cent	60 per cent	17 per cent

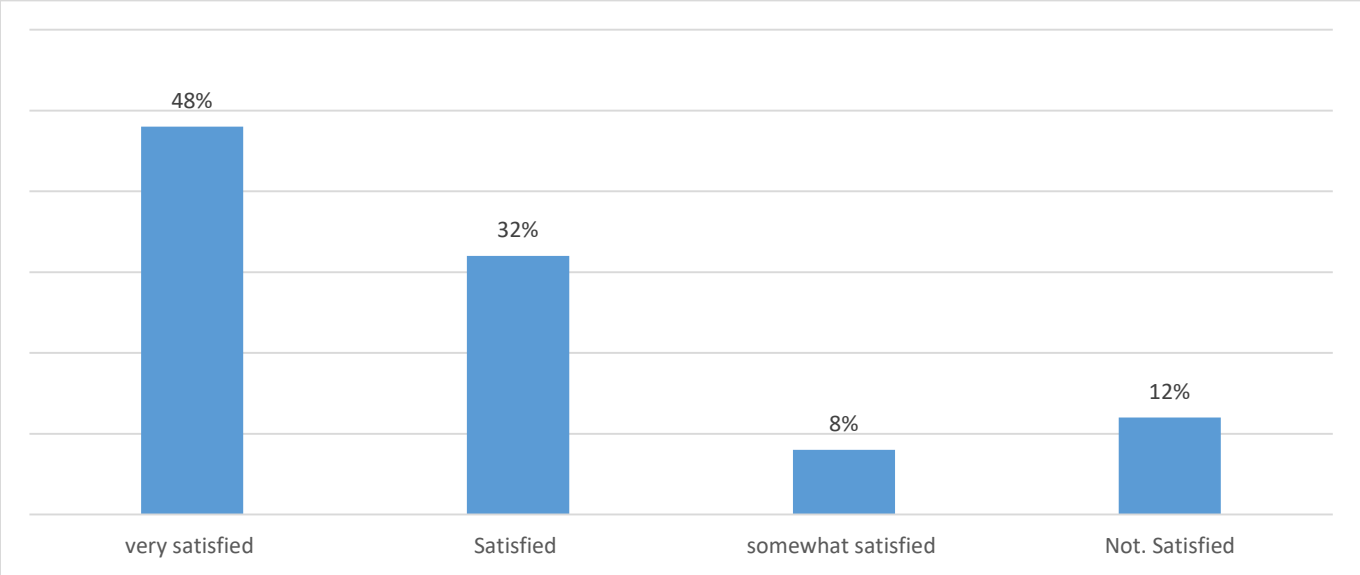
Source: Fieldwork by Author

While talking about low participation of pastoralist in agriculture farming, majority of the respondents reported that agriculture can never apply to their current livelihood setting and has never contributed to their food security since majority of them experienced failure in their agriculture activities earlier. Also, agriculture inputs which were promised earlier by the government mistrusted them to be involved in this process. While the other group of agro-pastoralists remained, farmers waiting to receive seed of maize and onion in 6 months interval to grow their crops as having no other alternative livelihood options.

The only agriculture input the agro-pastoralists received from agriculture support program of Awash was seed and onion once in 6 months. Among all the farmers only (48 per cent) of mix farmers were satisfied with the current agriculture inputs receiving from Agriculture Office while majority agro-pastoralists responded that irregular and improper distribution mechanism of these

inputs are challenging our farming activities. They also required government supports to make their farming practices more extensive with providing them agricultural tools and trainings on their capacity building (Figure 11).

Figure 11: Farmers Satisfaction level with current Agriculture inputs



3.4.1 Land Type and its Impacts on Agricultural Productivity

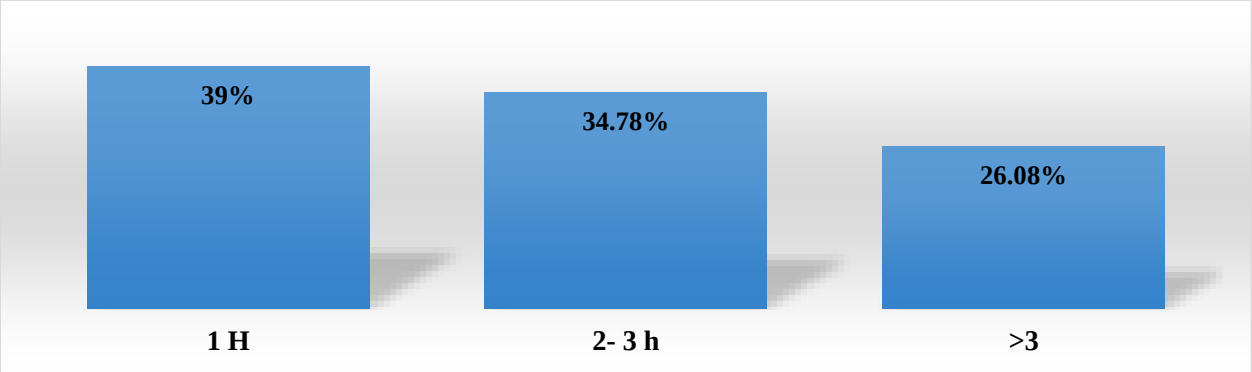
Awash rangelands are covered with natural vegetation due to some ecological reason are unsuited to stable, rain fed cultivated agriculture. The agriculture area for Aaeva is around Guromoli sugar cane farming with a canal irrigation scheme provided to them by Kesem Sugar Cane Factory. A more gradual but serious encroachment on Afar land is the spread of *Prosopis Juliflora* (locally referred as Woyane or Dargehira) in grazing zones, which also has a deterious effect on pastoralist livelihoods. *Prosopis Juliflora* was introduced by the Ethiopian government in the 1980s as a vegetation cover to halt the land and soil erosion in these areas. Since that time the plant has rapidly proliferated and expanded into prime grazing areas and now is estimated to cover 3600 square kilometers of Afar. It has severely invaded Aaeva and the proliferation of this invasive species limits available land, and it has had multiple additional negative effects associated with it. The

fruits of the plant are edible and even nutritious. The seeds have been reported to cause nerve sickness in animals.

3.4.2 Pastoral Land Ownership and Crop Pattern

There are more than 100 clan families in the Afar region where clans (Kahaithy and Yalo) are among one them, shares equally land divided among them. Pastoralists in Awash suffer from insecure land tenure because they lack formalized property rights, even though the informal recognition that they occupy land is collectively owned by the community. On an average 25 agro-pastoralist households hold 2.1 ha land which (30.4 per cent) of farm holding pastoralists performed illegal irrigation, (65 per cent) irrigated through Kebena River and (34.7 per cent) irrigated by Bolga River (Figure 12). The irrigation scheme provided by Kesem Sugar Factory was not available every time to farmers. Majority of land holding farmers reported that this scheme is not sufficient and does not work for the current irrigation needs.

Figure 12: Land Ownership among agro-pastoralist HHs

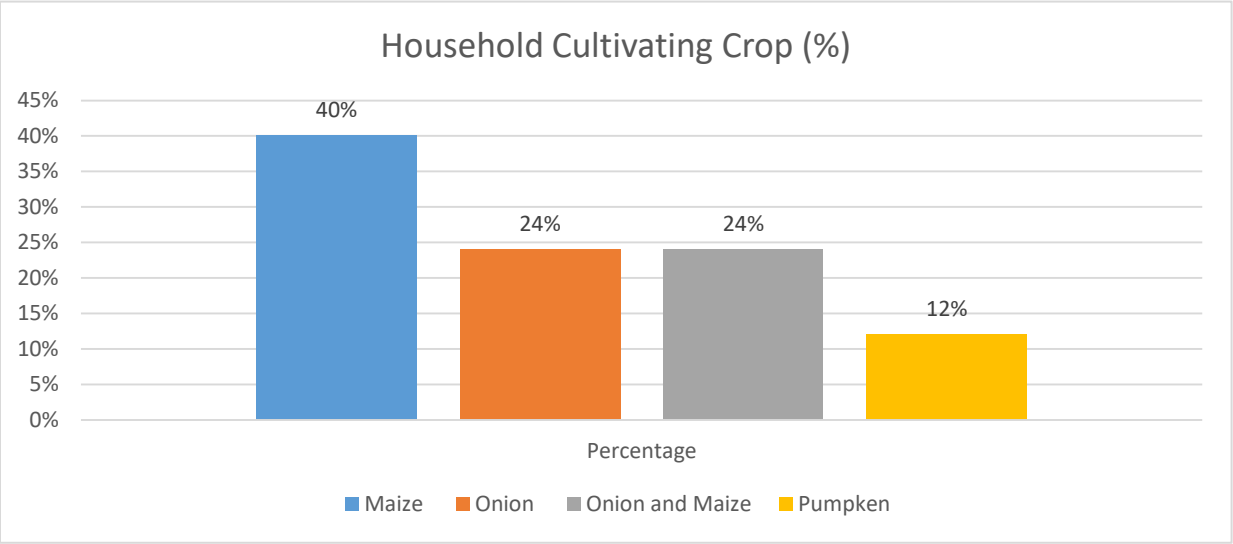


Source: Fieldwork by Author

The major crops cultivated by majority of pastoralist farmer consist (maize, onion and to some extent pumpkin). Due to lack of agriculture farming knowledge majority of them were not familiar to grow any different crops even no one of then received any training from Agriculture office or any other development program. . Only maize and onion cultivation was common among farmers where (40 per cent) of them cultivated maize as the single cropping activity. The crop pricing for onion and maize remained very low where most of the agro-pastoralists sold their products in a very low price in local markets. In 3 farming season they produced 50 kg onion and 55 kg maize

varied from one farmer to another where 1 kg onion was sold by 20 per and 1 kg maize by 25 birr (Figure 13).

Figure 13: Crop pattern among Agro-pastoralists



Source: Fieldwork by Author

According to the district stakeholders the Ethiopian government recognized that there is no alternative option other than recommending sedentary agriculture therefore since last 2 – 3 years voluntary settlements of pastoral communities are being initiated in order to support people with basic infrastructure such as water, school, health services and agriculture inputs. The aim is to reduce their vulnerability to climate change impacts and they are advised to cultivate crop to ensure household food security. While government is taking steps to achieve zero hunger through combatting food security, the majority of the farmers in Awash deal their farming lands with investors on the basis of contractual agreement. As part of this agreement, investor's shares about 20 – 30 per cent of their produce with the households from 1 to 3 ha land. It can be considered a concern since 20 – 30 per cent of the produced crop cannot meet the economical necessities of these households and agriculture being a single source of income get challenging. But, there is good works on its way from Awash Administrative, on land use pattern policy. Where a number of agriculture interventions will be implemented which will help farmers generate more income in a transparent and easy way. In Figure 15**,** an agro-pastoralist woman sharing his success story on how she begun to achieve her livelihood goal by producing different crops. These women is considered to be one in hundred in Awash where his agriculture activities are getting effective.

She get irrigation scheme from Turkish Company which is working on railway project connecting Djibouti to Addis Ababa as one of her main customers.

Figure 15: A small scale farming by an agro-pastoralist women farmer

3.5 Impacts of Pastoral Education on Food and Nutrition

Basic education contributes a lot to pastoral development; the quality and relevance of schooling can positively impact the food and nutrition pattern and health condition of communities. Indeed, good quality education can help imparting life skills which are useful in alleviating poverty in pastoral areas. Through this study it is indicated that the majority of children in Aurebeto and Aaeba are dropping out or not enrolled at school due to livestock rearing or searching pastureland with their elders. It is sad to know that most of the students leave their schooling behind when their livestock and food is in stage of danger. Despites of works done by the government and donor

agencies to bring school closer to the community still the dropout rate is high is caused by the current natural disaster and inter-ethnic clashes in pastoral areas.

The interviews and focus group discussions resulted that effect of unstable condition of the lives of the pastoralists is also one among the many risk factors mentioned more frequently. The majority of the responses from the interviews and the focus group discussions with different influential faces of the Kebele indicated that the absenteeism and school dropouts are highly increasing as students could not go to school in a situation where there is no available food at home. Also, parents `` lack of education and awareness about the values of education, poorly equipped teachers are the major obstacle for the children enrollment status in the current school. The school feeding program which was provided by USADI - Safety Net Program, implemented by Awash Education office didn't reached regularly to these schools. It is identified that the initial implementation phase of SNP significantly contributed to the enrollment rate of students, especially girls, receiving oil and corn from this program.

Educational attainment among pastoralist in Awash remained low. Interviewees were asked different questions on values of education in for a healthy life, but no answer was given correctly. Either I don't know, we don't need education, no one told us and many more. Involvement of Aurebeto pastoralist in Education was lower than Aaeva. (45 per cent) of the population in Aurebto was illiterate comparing to (45 per cent) in Aaeva. Among them Aurebeto had highest female with no education (42.1 per cent), where it was (18.3 per cent) in Aaeva. Aaeva is relatively in better condition than Aurebeto village in terms of female education. The grade level category reveals that some primary school levels constitute 10.3 per cent, secondary school completed 0.0 per cent, tertiary or higher 0.3 per cent and still (enrolled) attending 13 per cent (table 5).

Table 5: Level of Education

Village	**Sex**	**No. Education**	**Still (enrolled) attending school**	**Primary**	**Tertiary or higher**
Aurebeto	Male	18%	3.8%	3.4%	0.3%
	Female	23.7%	1.5%	1.1%	0
Aaeva	Male	21.4%	2.2%	2.6%	0
	Female	18%	1.1%	2.2%	0

Source: Fieldwork by Author

The interviewees clearly put that the Woreda and zonal officials do not go down to schools to visit, supervise or discuss problems with the students, teachers or community elders to find solution. When this concern was raised with Woreda Education Officers they responded that of lack of transportation means and hence supervision, counselling and guidance and support from the government officers are not able to supervise these remote schools as planned. But it can`t be a rational reason where hundreds of cars are just roaming around in Awash with no certain mission. I can confidentially say that education especially in Aurebeto is totally forgotten and neglected by the district authorities. As table 6 was discussed above the enrollment rate among male and female is very low in these two villages comparatively to other woredas of Afar Zone 3. There are many reasons behind the low INR of children at age seven.

While current feeding treatment provision provided by productive safety net was not consistent or systematically distributed to schools (Figure 16). Children in both villages cannot enthusiastically learn with what they have eaten at home. Some even come to school without having breakfast at home. Because of this, what is common among children in these two villages is to stay with domestic animals in the field and drink their milk as breakfast and lunch. The current school feeding program should include provision of consistent and systematic supplement. On the contrary, older children can resist these challenges and get education. That is why we have more AIR than NIR only in Aaeva. From key informant interviews with teacher it has been identified that there were students who quitted schools due to not receiving proper feeding as an incentive to increase NIR, and the drop out due to drought when they travel with their parents in search of green land and water for their camel and cattle. This occurs in the months of December, January and February. *However, the problem is latent in that the reports that are regularly given on the number of these dropouts to the higher educational officials at different levels and to the NGOs are not genuine and the right image of the students on the regular attendance toll is hidden and this is also a challenge to take corrective measure*.

The key informant interviews indicated that teachers are not comfortable because of lack of facilities (for instance, accommodations near to school, some have to travel 15 – 20 km to collect

their salaries, not receiving educational facilities from education office) in both the villages. This often caused to quit their job and go for more accessible places.

Figure 15: Status of School Feeding Program

3.6 Impact of Health and Nutrition on Livelihood

WASH were one of the major challenges people specially mothers were facing in Awash. Most of the time people were directly or indirectly affected by the factors of unhygienic environment. Although, many support programs brought the households together to learn about WASH practices provided by Health Extension Workers under 14 package program but due to remoteness of the area this program is not running successfully.

Type of diseases has been varied among villages. In Aurebeto most common diseases were (25 per cent), chronic fever, (14 per cent) malaria, diarrhea, hypertension, and TB. Simultaneously, in Aaeva the most common diseases were (23 per cent), chronic fever (11 per cent) TB, malaria and diarrhea, (66 per cent) common illness.

Household's access to health services varied among two villages; In Aurebeto (52 per cent) of households were seeking treatment at Awash health center (15kmtr away from village, (16 per cent) poor households waited for health post service inside the village. In Aaeva 54 per cent) were seeking treatment in private clinic (15 km around factory) and (28 per cent) visited Guromoly health post. Only 5.3 per cent of the population did not seek health care in both study areas. Only (45 per cent) households sought treatment from traditional/spiritual healers (Afar Daila and Ina Daila), The main reason for those not seeking medical attention was lack of money.

Malaria is among top disease in Awash despites of Safety Net Program providing Mosquitoes Net. Malaria is the main cause of death when rains start and mosquitoes begin to breed. People`s physical condition is generally weak and therefore susceptible to any disease. Tuberculosis is still one of the biggest causes of death in Awash. But at time of research both health post and private clinic workers did not report any deaths related to this disease.

3.6.1Water and its Implications on Pastoral Food and Nutrition Security

For Awash pastoralist food and water issues are inextricably linked. For pastoralist in Awash water have been their major problem in the past, but now the motorized pump in Aurebeto and hand pump in Aaeva, has solved the problem to some extent. In Awash women and girls frequently spend several hours a day collecting water where majority of them compromised over their children themselves daily meal.

Households in Aaeva (99.9 per cent) used hand pump water as a single source for drinking and sanitation and in Aurebeto (99.9 per cent) used communal tap (Bono) as the major source of water. Other than these, those who reported using hand pump reported about water being dirty during heavy rainfalls. Both villages reported that the maximum water was consumed (42 per cent) for drinking (with small portion to small cattle), following (31 per cent) for dishwashing, (25 per cent) for toilet and sanitation and (9 per cent) for bathing, See table 6 and figure 10.

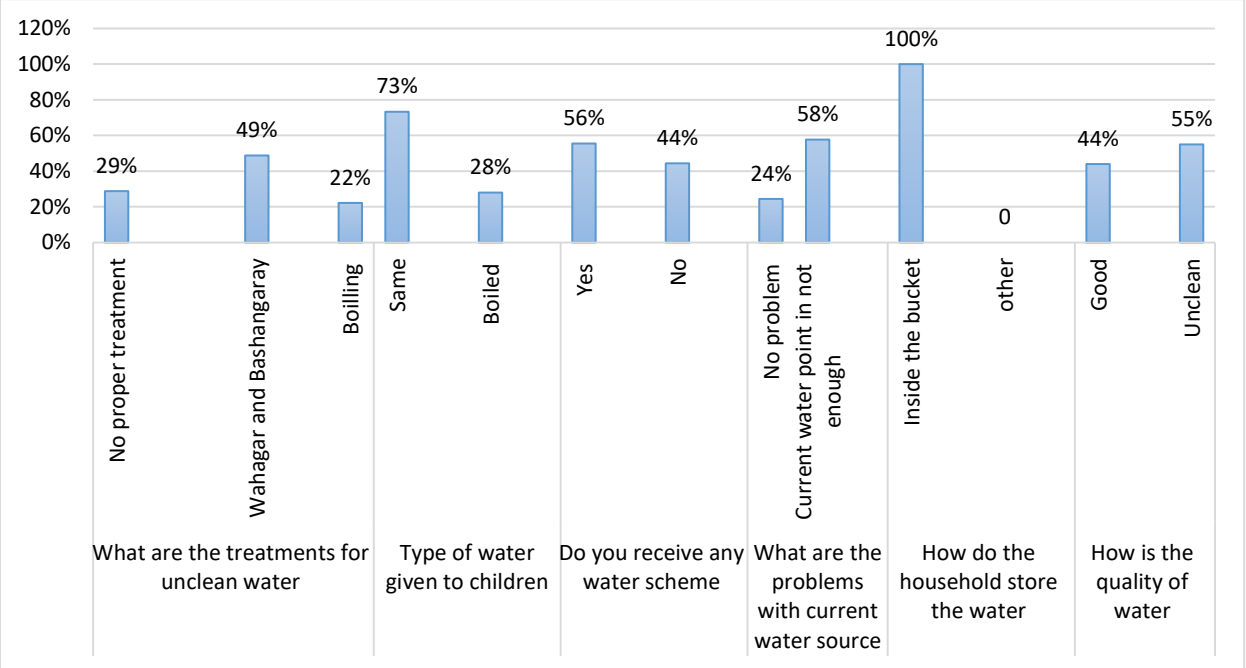
Table 6: Water Consumption Pattern of HHs

Toilet	Drinking	Bathing	Dishwashing
25 per cent	36 per cent	9 per cent	31 per cent

As indicated in table 6 each household consumed 19liter water per day where only 36 per cent of water is used for drinking without any proper purifying treatment which caused severe disease which is explained in details in next chapter. Sanitation and hygiene was another barrier to healthy eating in both the villages. Where only 9 percent of the water is consumed for bathing.

Though, the current water source was only available for drinking, cooking and cleaning purposes. For the animals they still needed to travel long distance with their cattle in search of water. The current water schemes didn't fulfilled the current water needs of the communities. Safe drinking water was another concern among both the villages. 55 per cent percent of interviewees reported of water being unclean, (49 per cent) people used Wahagar[5] while (44 per cent) reported of not receiving any water scheme, (Figure 16). Inadequate access to clean water undermined both community's nutrition and health through water – borne disease and chronic intestinal infections. Adding to this water sanitation was a serious problem among both village since almost majority of the household stored water inside the same bucket they fetched water with.

Figure 16: Issues and problems around water



Source: Fieldwork by Author

Taking these complexities into account, the findings indicates that to enhance the capacity of pastoralists and agro-pastoralists to manage and increase water and livestock productivity in a range of food production systems, interventions in the area of knowledge, capacity building and community-based services delivery are required. Not only food but water is a key contributor to

[5] Wahagar; is Water purifier given by health bureau.

wellbeing. According to Awash Water Bureau, areas around Kebena has high potential of under-ground water which needs to be extracted, but with the current capacity neither water office nor any other sectoral office can afford to implement under-ground water treatment programs.

3.7 Livelihood Impacts of Market and Food Accessibility

Accessibility to market was a major problem in studied areas. Majority of the respondents reported that two factors kept us distanced from the current markets; one weak economic affordability and second; lack of proper transportation. Although, the current structure of the markets were also another concern towards their Ext- erogenous activities. They believed that current food and livestock markets never helped us to remain food secure, despites of creating challenges towards of life.

Major market for Awash to trade their livestock, purchase grain and other commodities of primary necessity are situated in Awash Sabat Kilo (15 km), Awash Arba (10 Km) and Sabure (8km).
There is zero market access for Aurebeto during heavy rainfall due to Awash River overflow. Due to recent drought the price of grains increased rapidly, key informant interviews said. While from interviews with traders it was identified that the major reason for the increase in price during drought was the increase in prices from sources of commodities; and transport cost. While a price assessment of grains was conducted in two markets (Awash Arba and Awash Sabat kilo) it was noted that the price of Injera (Ethiopian flat bread – important food in Afar diets) increased on average of 10 – 15 per cent; meat by 15 -20 per cent and oil/sugar by 8 -10 per cent in last 2 years. Traders also reported that compared to previous years, sales are declined to 35 per cent for grains, 25 per cent for pulses, 30 per cent for meat and 20 per cent for vegetables. Majority of the interviewed traders indicated that there was a change in pastoralist's behavior while buying food commodities. In this regard, there was a shift from expensive to cheaper goods as well as decrease amount purchases at a time. During observations it was noticed that sales declined for all commodities compared to last 2 years. Also supply of cereals to the market declined since traders were misinformed of pastoralists receiving food aid. The major problem with market in both villages was distance, 15 km from Aaeva to Awash Arba, 10 km walking distance due to lack of

transportation to around factory small market, 15 km from Aurebeto to Awash Arba and during Awash river overflow no accessibility to market.

3.7.1 Local Food Market Impacts on Pastoral Food Security System

As mentioned in above text food prices increased higher while drought affected the livelihood of pastoralist, communities' nutrition was considered to be in high risk. Number of meal intake in pastoralist families was significantly reduced. In both the villages households shifted to less preferred and cheap foods, to less nutritious foods, it means that the quality of food was highly declined. Based on the observations children were given priority for food, but neither parents nor children had benefited much. While questions were asked on the satisfaction of current diets, majority of the households responded that they were dissatisfied of their food. It had caused hunger and malnutrition. Households took different measures to overcome food prices. In Aaeva agro-pastoralists decreased the amount of crop for sell to increase subsistence consumption for the household where unwilling to work and physical weakness were common. In Aurebeto families member aged above 16 looked for any casual work and earn some income for each day where they believed labor work required lots of energy. In Aurebeto people were thin and no vitality in their faces comparing to Aaeva agro-pastoralists. Due to market inaccessibility and food unaffordability, households started selling asset and excess livestock, borrowed food, sending children to eat elsewhere and many more. Selling asset and livestock, borrowing food and money from neighbors and relatives was widespread and simultaneously saving culture was unknown among them (Table 7).

Table 7: Different coping mechanisms among pastoralist HHs (%)

HH borrowing food from neighbor	22 per cent
HH slaughter livestock to preserve meat	21 per cent
HH send children elsewhere to eat	9 per cent
HH looking for labor work to purchase food	14 per cent
HH selling livestock to purchase food	34 per cent

Source: Fieldwork by Author

As indicated in Table 7**,** families send their children to different relatives until the food insecurity issues of the HH gets improved. However, in many instances, the long – lived tradition of helping each other had faded away since everybody was feeling poor and vulnerable in terms of food. The good relations between relatives, family members and neighbors had weakened drastically.

3.8 Pastoral and Agro-Pastoral Food Vulnerable Groups – Factor analysis

Because the accessibility and increased food price, the poor households were highly affected. People especially eldered, mother and child were supposed to get extra treatment nutritionally, were victims of the situation. Unemployment among people who had no means of income made people clearly helpless, vulnerable and food insecure. Poor households in Aurebeto were comparatively more affected as they had nobody to support them in a situation where everyone was challenged by the food insecurity. In Aaeva agro-pastoralists with big family size with low income from crop cultivation were also very much challenged with their dietary patterns. As a result the low income families, daily laborers, small scale farmers, female (widowed) headed household, poor pregnant and poor lactating mothers were the other vulnerable groups where there food security was affected the most among both villages.

Unbalanced diet was very common in both two villages. Chronic malnutrition is caused by unbalanced diet rather than acute food shortage. Health posts and private clinics visited in this research had not come across malnourished children and people recently. First hand observation among Awash communities did not reveal widespread malnutrition. In fact this research did not come across any cases of malnutrition. Therefore the research is unable to draw a clear picture on the nutritional situation of Pastoralists and agro-pastoralists in Awash. But health office and administrative office reported that a joint study will be launched to conduct a nutritional baseline survey in near future where this survey will provide data on over-all nutritional status as well as on micro – nutrient deficits.

It was difficult for this research to draw a broad and coherent picture on the health situation in Awash. In both villages we could not came across very serious health problem. During key informant interview with health workers of Aurebeto and Aaeva. He reported that there is and has

never been an outbreak of any unusual disease nor has there been any malnutrition among children. It was observed that the health workers relying on information gathered during food aid distribution (Safety Net Program) in the village, when the health personnel screened all the people receiving food relief. They believed there is no serious health problem in the both villages.

3.9 Impact of Drought on Livelihood and Pastoral

For Households living in Aurebeto and Aaeva drought means dealing with major shocks regularly, disaster which make it difficult to every family to escape poverty and hunger. Many households in Awash living as farmers and pastoralists relying on crops and livestock to sustain are no stronger to deal with current natural disasters. As the families face these severe challenges year and year out, they lose their ability to bounce back and have to turn to outside assistance to resist.

Water shortage was reported in both villages. Despites of Aurebeto and Aaeva being water intervention area the people are fetching and consuming water every second day. For cattle, pastoralists in Awash mostly migrate and set up their temporary (Ari) settlements near grazing areas. As water and grazing gets scarce, they have to walk ever – longer distances. It is recognized that majority of the households in both the villages are in need of relief assistance due to drought. Relief food distribution delay was reported in the both villages.

3.9.1 Barriers to Food Production System

Challenges with agriculture will start with a question: whether integrating crops into pastoralist system will be a positive experience? Understanding the complexity and sensitivity of pastoralists, will these steps of changing their livelihoods will work effectively? These are the questions and issues which this study aims to understand and solve. Through the household questionnaire it was asked from agro-pastoralist whether they agree on agriculture contributing to their food security. Will agriculture support their livelihoods to adapt climate change? Where (12 per cent) of interviewed ago-pastoralist reported of not being satisfied with current farming practices, following to this (48 per cent) of mix famers which had secondary income source reported that during rainy seasons they are satisfied since there lands are closer to the river and they get enough irrigation. Other agro-pastoralist group reported that four factors affect the sustainability of their agriculture system, uncertain climatic condition, and reduced access to grazing land, water and mobility. Aaeva pastoralists are moderately involved in crop cultivation as on promising alternative means of livelihood. Majority of agro-pastoralists reported that only during rainy seasons crop cultivation increases availability of feed and grain sources and also it improves their food security and minimizing their animal's morbidity and mortality. Beside the moderate positive impacts of agriculture to livelihood of pastoralists, a number of internal and external factors

influence their livelihood activities, like low rainfall, pests and the lack of inputs and market for their crops. It is to be concluded that that there is a greater need training and capacity building, climate resilient agriculture practices to increase effectiveness agriculture among agro-pastoralist.

3.9.2 Pastoral Food Insecurity Copping Mechanisms

The main coping mechanism during drought among these households were to rely on less expensive food. Vulnerable households were asked about how they manage their food during shocks. The most common respond was relying on less expensive food items, reducing size and number of meals per day, borrowing money from neighbors and relatives to purchase food, decreasing their expenditure on other non-food items, reducing adult meal so that the child can eat and selling more cattle. While (86 per cent) of the households reported that the current measures taken by the government by supplying subsidized food like wheat is not adequate and not distributed regularly which itself is making us more vulnerable to shocks. Other than to this, credit facility provided by PaSACCO to households to run income generating activity somehow contributed well to the livelihood of member to SACCO. Households reported that during drought there is no specific coping mechanism at community and household level, nor any specific emergency relief program like adequate food aid, credit access or any food relief programs. It was outlines that the adjacent villages were receiving more attention of food program rather than the studied areas. This respond was given, most probably, from those who had neither the asset nor money to buy subsidized food.

Chapter IV

4.1 Impact of Socioeconomic factors on Food and Nutrition Security of P&AP

The basic objective of the chapter is to understand the impact socioeconomic factors on food and nutrition security among the pastoralists and agro-pastoralists. For this, food consumption and income expenditure pattern will be elaborated. It has been mentioned that majority of the households are stated to be in low income generating base where on average, oil/fats was consumed three days a week, sugar three days a week, pulses and vegetables once per week. Households classified in borderline consumption were eating *Teff* and oil on a daily basis, sugar five days a week, and other cereal four days a week, pulses three days a week as well as potatoes (2 days), pasta or macaroni vegetable and meat (1 day).

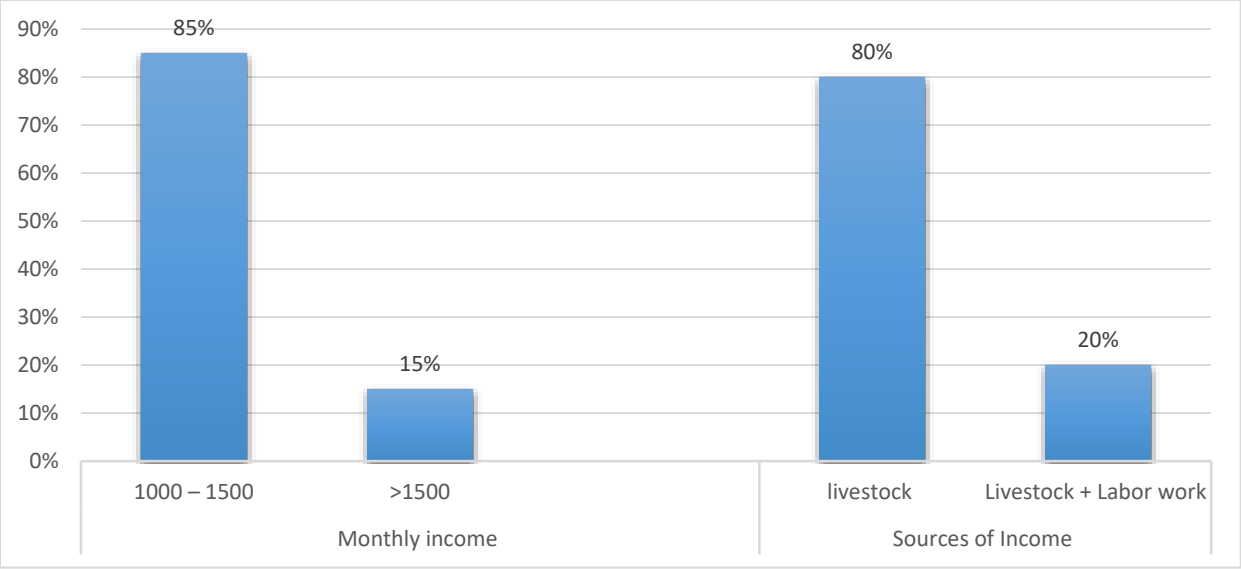
4.2 Income Pattern of P&AP

Based on this analysis, 29.5 per cent of households were classified as having poor food consumption; 41 per cent having borderline consumption; and 30.5 per cent being characterized by acceptable consumption. While considering variations by villages, households classified as having poor consumption is highest in Aurebeto (57 per cent), following Aaeba (43 per cent).

Among pastoralists in Awash Fentale Woreda keeping livestock is still their main source of livelihood, although there is no notable trend of increasing livelihood diversification, especially among livestock-poor households. Pastoralists in Aurebeto are still less likely to diversify their livelihoods, while most of semi – pastoralists and agro – pastoralists in Aaeva keep livestock more as an additional insurance against failure on the other livelihood activities such as agriculture farming and labor work. The mean monthly income was Birr 600 per person among the Aaeva agro-pastoralists (median 1800Birr /month/person); while in Aurebeto the mean monthly income was 200 Birr /month/person and (median 1300 Birr /month/person). Comparing these two villages mean income per capita per month varied 400 and median income 500 birr. On an average basis 48 per cent of the households reported that they experience decrease in their income during dry due to cattle market, 22 per cent reported no change in their income level and about 30 per cent in

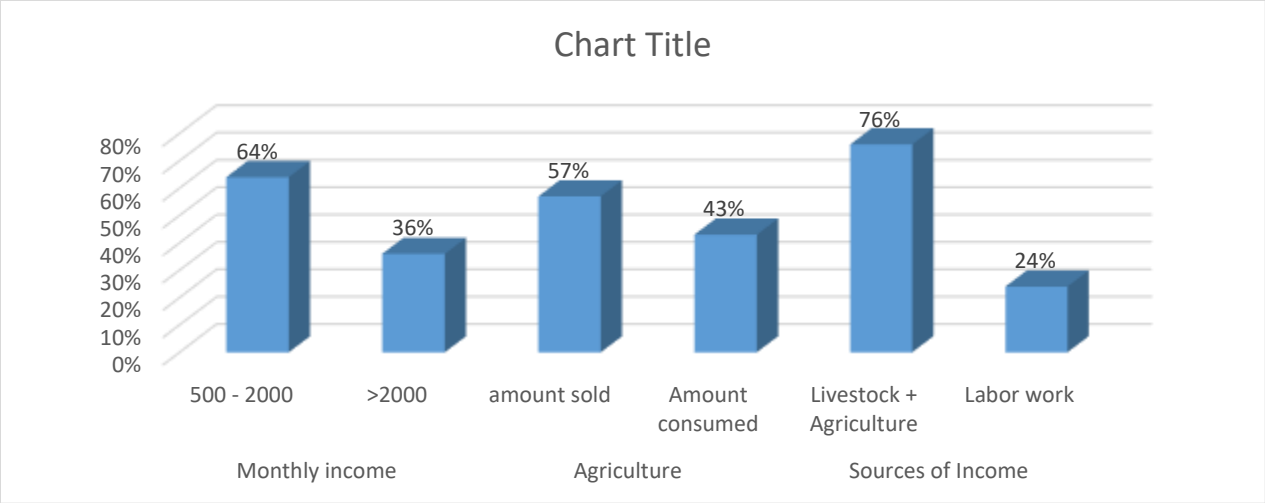
mostly in Aaeva reported an increase of income during dry season due to high crop markets. The livelihood groups that reported more significant decrease of their income were; pure pastoralists where only monthly livestock selling and some irregular labor work contributed to their income. Also Table 8 indicates that the monthly average income of households in Aurebeto is $47.6 while 80 per cent of this money comes from livestock selling and 20 per cent is coming from irregular income sources like labor work while Table 9 shows that $86.14 is the monthly average income of Aeva agro-pastoralist households where cropping contributes 76 per cent to their income which helps them meet their dietary needs as per the requirement. In Aaeva almost 65 per cent of the agro-pastoralist consume 43 per cent of their crops (maize and onion) and sell 57 per cent of their crops in local markets (Table 9). During rainy season pastoralist households in Aurebeto sell 1 or maximum 2 goat monthly to purchase food. In dry season they sell more than 2 – 4 goat and in emergency (severe food shortage and severe sicknesses) they sell 1 cow to fulfill their requirements. Labor work among both villages produces irregular income where it is provided in forms of short term small scale laboring. During Afar Karma (March, June and July) the peak earning months for pastoralist excess grass and water will be available where they can easily feed their cattle and they sufficiently irrigate their farming lands which makes these communities more food secure. Table 1 and 2 presents the income pattern of pastoralist and agro-pastoralist where it is shown how much of crop cultivation contributes to the livelihood of agro-pastoralist where itself a decline towards their food vulnerability is.

Table 8: Monthly Income pattern of Pastoralist Households



The Monthly Average Income of interviewed pastoralists are: $47.6 while has been generated from the total income 20 interviewed households. Table 1 shows that 85 per cent of pastoralists gaining 1000 to 1500 and 15 per cent more than 1500 from livestock selling monthly. The source of income among pastoralist are only livestock while 20 per cent of the household generated irregular income from labor. During rainy season HHs sell 1 or maximum 2 goat monthly to purchase food but during dry season they sell more than 2 – 4 goat. (Emergency- 1 cow). Labor work is irregular income source where the community will only generate income in rainy season as the peak earning month which this its increases the affordability of food.

Table 9: Income pattern of Agro-pastoralist Households



The monthly income of agro-pastoralists are estimated $86.14 monthly. Agriculture contributes 76 per cent to the income of Agro-Pastoralist which helped them to meet their dietary needs. Beside agriculture being an income generating activity it also contribute to HH Food Security by consuming crops (maize and onion).

During dry seasons in both villages agriculture and livestock productivity decreases rapidly therefore the government of Ethiopia through an emergency food aid operation implements productive safety net program which provides regular food transfers to food insecure households. This program also supported public work programs regarding landscape restoration cutting off Prosopis Juliflora it is considered to be a barrier towards cattle health.

4.3 Expenditure Pattern of P&AP

Through this productive safety net program every household receives 50 kg of wheat for short term hunger relief meanwhile community perception was gathered and 86 per cent of the household in both villages claimed that the current food distribution mechanism is not systematic since 50kg wheat is given to them in 6 month interval which they meet their dietary needs. While Table 10 indicates that the average expenditure on food in Aurebeto is $29.2 and it decreases to 10 to 15 per cent during heavy rainfalls due to overflow in Awash River which challenges the food accessibility of the community while Table 11 shows that the average monthly expenditure on food in agro-pastoralist households is 26$. The difference among pastoralist and agro-pastoralist monthly expenditure on food can be clarified in a way that 65 per cent of interviewed agro-pastoralists consume subsistence grown from their own fields.

The average monthly household expenditure was Birr 775 for the both surveyed villages. The average monthly expenditure on health care among pastoralist Aurebeto is reported $18 with a 20 per cent increase during dry season (table 3), while the monthly average expenditure on health in Aaeba is $22 since 52 per cent of the respondent visited only private clinic because they claimed that the government health post is far from the village and poor medical service. The enrollment rate in pastoralist community in Aurebeto is very low, there monthly average expenditure on food is $0.5 where only 9 household send their children to school while the enrollment of girls and boys are double in Aurbeto with a monthly average expenditure of $9.2.

Table 10: Monthly Expenditure Pattern of Pastoralists

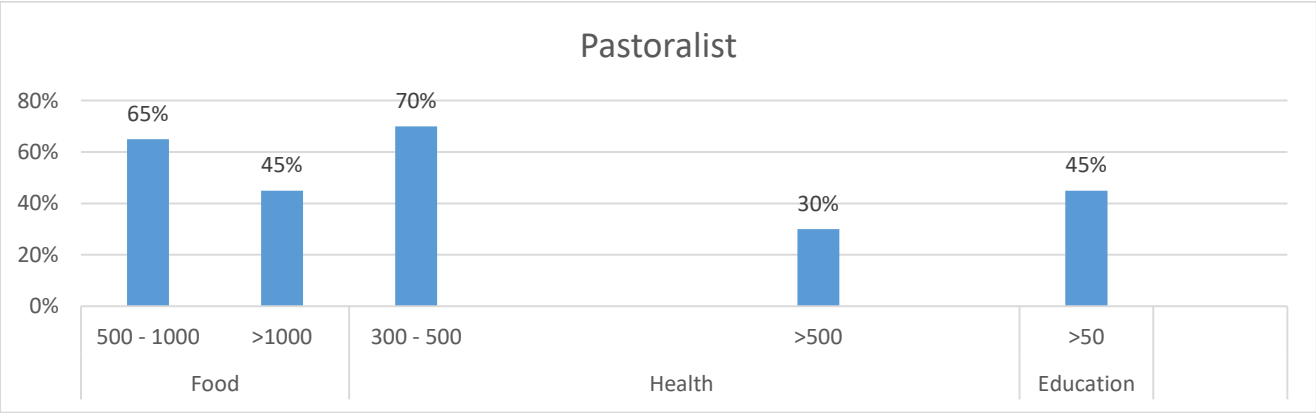
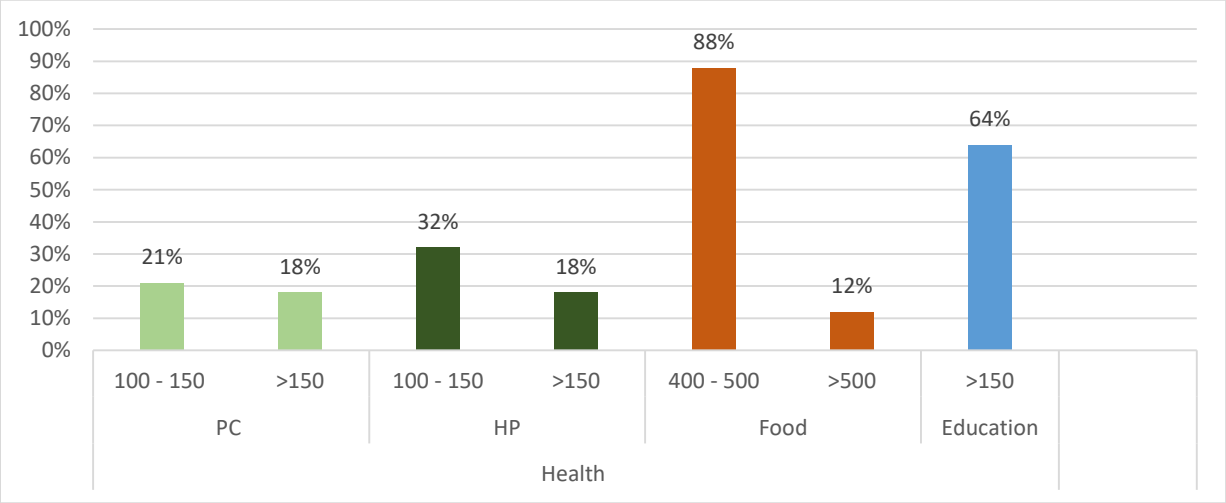


Table 11: Expenditure pattern of Agro-pastoralist



4.4 Major Needs of HH Pastoralists and Agro-pastoralists

Aurebeto comparatively vulnerable village people were seeking help to build a bridge on Awash River for safe crossing since Awash River overflow made their accessibility limited to the market. Employment opportunities were asked almost by all interviewed households, where elderly headed household reported that if the government don't provide certain employments to us, theft, robbery and violence are expected to occur in the village. The food price in the current market are continuously getting higher the chances hunger getting spread is higher in these two villages, therefore the majority of the households claimed that the instability of price and infrastructure of the markets frustrate them due to weak purchasing power.

Chapter V

5.1 Policies related to Food and Nutrition Security – Gap and Challenges

Pastoralists in Awash are experiencing an intense change in their livelihoods. It is still not solved whether these changes are driven by climatic shocks or inappropriate policies which contributes directly or indirectly to their vulnerability. Policies play critical role in life of pastoralists since there is lack of choice making guidance and their problems are not addressed significantly. Therefore, policies are required to establish parameters and putting in place structure and institutions to make their livelihoods safer.

This study understands that there are huge numbers of policies which are designed to fasten services to pastoral areas, but the current policies should be implemented in close consultation of all stakeholders. When policies are designed and implemented without the consultation of the target groups, and not taking their uniqueness into account, the policy impact will be negative, and it cannot make the pastoralist life better.

When it comes to food Security in pastoralist areas of Afar, it be of chronic food insecurity, and transitory or acute food insecurity. Through this study it was identified that vulnerable households to chronic hunger are those that are either subjected to frequent or severe food insecurity, or those households that have low resilience, or both. In Awash, households that suffer from acute or transitory food insecurity or hunger do so over a shorter but intense period, especially in life threatening periods of drought. In Awash even in normal months where there is no drought, almost majority of the households rely on relief aid to meet their food needs. These pastoralist and agro-pastoralist households are chronically food insecure and unable to produce or access enough food to meet their dietary needs. The causes of short and long-term hunger can be lack of proper policies, weak implementation of current policies, insufficient financial asset (majority of them are holding small size herd comparing to previous time) land and income generating opportunities. Due to research limitations we have exact statistics are lacking behind, but it is recognized that over the last decade, the number of people facing chronic hunger in Awash has increased. During drought where pasture and water gets scarce and animal feeding gets challenging the transitory food insecurity join the chronically food insecurity which will bring life threatening matter to

pastoralists and ago-pastoralists. Talking about the food and nutrition concerns of vulnerable pastoralist the question of whether current policies and frameworks can support and improve the current food and nutrition vulnerability of these marginalized communities? Will these policies reach to unreachable? Will the regional and district level government feel accountable to learn and implement these policies as it is designed? And who will question and inquire about the quality and status of policy implementation in ground level? These are all the questions and concerns remained unsolved while the study was conducted.

Policies papers are written, designed and well - rounded in a very comprehensive manner. When you read these policies, it makes you optimistic on how it works and how it will contribute to the vulnerability of targeted communities and mainly it makes you curious to know the policy applications on certain places. But despite of spending millions of dollars, purchasing expensive cars, high salaries and luxurious offices, even 10 per cent efforts to combat food insecurity have not taken place in Afar and no significant changes in distant areas are visible. When I conducted my research in Afar I observed that more than 100 development projects are there to target the vulnerable communities and implement their policies and report back their results to central offices. But it turns out to a sad scenario in Afar, it looks that the current vulnerabilities are sufficiently not considered. This study came across interventions which was not successfully implemented or set to address the food and nutrition problems of communities' despites of receiving proper fund and the corruption part was that the local programs presented non-realistic figures and reports to central governments which were not practically true and cannot represent the real progress done in the field. With this sad scenario I would like to start with the discussing on the current Ethiopia governments policies and other implementing bodies which are dedicated to improve the current food and nutrition status of people living in remote areas of Ethiopia with a special focus on Afar.

5.2 Ethiopia National Policies and Programs on Food and Nutrition Security

The food policy impacts on how food is produced (and what is produced), processed, distributed, purchased, consumed, protected and disposed (Committee on World Food Security).

Without segregating urban and rural people, everyone equally holding right to food. Policies should endure that everyone has adequate food. If the food policies are not implemented well it will lead to massive and ongoing human rights violation. No one can take rights of life, rights to food from people. There are certain places in Afar where food and nutrition programs and policies did not match the needs of communities. Where policies and programs were designed to influence the operation of the food distribution system. Food policies in Afar is focusing on four major areas consist in:

- Agriculture and livestock extension
- Food assistance
- Food safety
- Development assistance/food aid

These actions on food security and nutrition played a key role in Afar but the policy itself deserves more recognition while Afar Zone 3 was ignored to be focused by these policy implementation due to uncertain reasons the impacts of NNP was only visible. Below part is discussing on types of policies and programs intended to be implemented in Ethiopia to help communities escape hunger and food insecurity.

5.2.1 National Nutrition Strategy of Ethiopia (2016)

The National Nutritional Program (NNP) translates the strategies of the National Nutrition Strategy into programs and actions which is approved and launched by the government of Ethiopia. Through this program the Iodization of salt was launched to achieve universal salt Iodization. As an interim intervention, Iodine oil capsules were distributed to 1.2 million under five-year-old children and 300,000 pregnant and lactating mothers with support from UNICEF, USAID, the Japanese government, and the Micronutrient Initiative. Another objective of this program is to scale up the supplementation for pregnant women, through the Community Based Nutrition Program with the objective of increasing the proportion of pregnant women receiving iron/folate supplementation from 10 per cent to 50 per cent in 2013.

NNS and NNP of Ethiopia is achieved with the following objectives:

1. To improve the nutritional status of women (15 – 49 years) and adolescents (10-19 years).

2. Improve the nutritional status of infants (0-6 months), young children (6-24months) and children under 5 years.
3. Improve the nutrition service delivery for communicable and non-communicable/lifestyle related disease (all age groups).
4. Strengthen implementation of nutrition sensitive across sector

Taking these objectives into consideration the current NNP framework Productive Safety Net Program is implemented in Awash with the below details:

5.2.2 Productive Safety Net Program

The productive safety net program (PSNP), was introduced in 2005 as an alternative to emergency food aid distribution, has targeted poor households with food and cash transfers, as well as building local infrastructure through a work requirement for those recipients who are able to work. PSNP offers credit, skills training, and other services to build participants household`s asset and livelihoods. While it may be not the dominant policy instrument to address major production shortfalls, emergency food aid likely will still be required some years. A decentralized public response system is necessary to ensure timely responses to serious hunger threat before dire famine conditions emerge.

This program supported by USAD from the pooling resources from 11 donors and development partners along with increasing amount of resources from GoE was designed to protect communities from the negative impacts of shock only supported Awash communities with wheat distribution at household level, school feeding program in forms of corn (25 kg/6 months/2 student), Mosqutioes net to every household on the basis of household size and cash and wheat for cutting down prosporis (Dargy Hara) as an landscape restoration program. The impacts of this program on the livelihood and food security status of pastoralist and agro-pastoralist is discussed in detail in chapter 3.

5.2.3 Productive Health Extension Program

Health Extension Program has shown significant results in Ethiopia and it is considered to be the main vehicle for community action including community-based nutrition programs for the coming years. Through this program the government of Ethiopia has put Health Extension Workers to

reach every family in every villages for various preventive and health promotion services, including nutrition. The health extension worker is recruited and working to access urban and pastoral areas. There are more than 30,000 HEWs which two HEWs for each village. However, the quality and effectiveness of the training and service delivery has always been a concern for the communities which requires a serious review and it requires to be kept as one of the core activities in NNP for upcoming years. The HEWs and Voluntary Community Health Workers receive trainings on Community Based Nutrition before the initiation of the Community Based Nutrition Program. In Awash pastoralists and agro-pastoralist communities received Health Post infrastructure with the support from Pastoral Community Development Project where Health Extension workers start reaching the communities to provide 14 packages of basic health and nutrition.

Considering the importance of this program in Awash health sector, the communities in studied area still are facing problems with health service delivery. The unavailability of Health post in Aaeva and absence of health workers in Aurebeto made the health condition of the households more poor and vulnerable. In both community awareness and information on health was very poor where people. At district level action plans for HEP no health related data was reported for further implementation of HEP. The health extension workers were poorly skilled where gap was visible in their interpersonal communication with the villages to solve their problems. HEWs can be considered as a health data source at community level but in both the villages' health extension workers were lacking data for consistent reporting due to weak analytical skills. For a productive HEP in Awash it is important to ensure adequate institutionalization to strengthen community health system to be more inclusive, resilient and well organize.

5.2.4 Enhances Outreach Strategy (EOS)/Targeted Supplementary Food

EOS is an interim strategy on NNP to addresses the acute nutritional needs of children and pregnant and lactating women in chronically food-insecure areas. This program aimed to screen pregnant and lactating women for malnutrition every six months. It is indicated that 1200 Therapeutic Feeding Units and Outpatient Treatment Program sites are providing service in 315 districts. The major achievement of this sector under the Health Sector Development Program III was over 90 per cent coverage of Vitamin A supplementation and de-worming coverage, compared to less than

60 per cent in 1998. Through this program around five hundred and sixty Woredas have either started or will soon start, implementing preventive community-based nutrition activities.

5.2.5 Community Based Nutrition: Community Based Nutrition interventions is in top priority in the Nutrition Strategy and Program which addresses the high level of chronic malnutrition. The aim of this intervention is to cover 560 rural Woredas with the community-based nutrition project. Still gaps remain in rolling out this strategy to remote villages.

5.2.6 Coordination Structure of NNP: The National Nutrition Coordination Body (NNC), is the highest policy making organ, established and is functional while the coordination structures at the regional and Woreda levels are yet to be established but the establishment of these coordination structures at lower levels need to be fast-tracked to strengthen the nutrition interventions. The financing landscape of NNP is improved well for nutrition in Ethiopia. Excluding government contribution, the total financing requirement for NNP for next 5 years is estimated USD 253 million, with USD 365 Million for Targeted Supplementary Feeding. There is huge financing gap in NNC which requires to be fulfilled. The government contribution is estimated to be USD 96 Million and this cost is mainly related to salary, operational cost and pre-service training of health workers involved in NNP implementation.

The National Nutrition Strategy and National Nutrition Program have not been well disseminated to government implementing organs below the regional levels. The Health Extension workers are not well trained to manage and spread nutrition education and service delivery. The health centers and health posts are yet to strengthen and it is reported by the communities that there is significant delay in obtaining the services at the health center and health post levels. There is an investment requirement for the NNS and NNP implementation and ensuring adequate funding will remain one of the critical challenges of all stakeholders in the sector. While the role of NGOs implementing the NNP is well recognized, the effort to bring them on board through information dissemination and ensuring their alignment to the program seems inadequate. The coordination mechanisms in low levels to implement in manage NNP is weak. And the capacity of sectors needs to be strengthened.

5.3 National School Health and Nutrition Strategy (2012)

The national School Health and Nutrition Strategy and Action Plan of Ethiopia was to improve access and educational achievement of school age-children through health and nutrition interventions in educational establishments in Ethiopia. The goal of this strategy is to improve access and educational achievement of schoolchildren through health and nutrition interventions. In Awash for except School Feeding program which was in a very poor condition the importance of School Health and Nutrition was not initiated to boost the school attendance and improve educational performance. By designing interventions to improve Awash educational performances NSHNS can improve the quality of education and make the school environment friendlier for the students. This strategy can also help government and development partners to achieve their educational goals easily in these communities

5.4 Forthcoming Policies to be Adopted:

NNS and NNP needs to recognize various food and nutrition concerns where currently it is not addressed. Weak implementation of National Nutritional Strategy, Afar is still deprived and challenged with malnutrition and the gap in nutrition has always remained to be shortfall in the pastoralist areas. On the basis of the NNP and for a broader policy National Food and Nutrition Policy is getting prepared to achieve ending malnutrition and stunting by 2030 (Ministry of Health – Ethiopia). This will focus on reducing malnutrition, stunting and other nutrition related problems among children and mothers. It will also focus on feeding for children under five. This policy will bring about a legal framework in which the rights of children will be fully respected with a provision of adequate nutritional nourishment which will help them to attain normal growth.

Chapter VI

6.1 Conclusion

Using a combination of approaches this study was conducted in northern part of Awash to understand the food and nutrition vulnerability of communities through identifying the major risk factors around food and nutrition security. To better understand the scenario, three comprehensive food and nutrition analysis framework has been used in this study. Firstly, Food and Agriculture FAO Nutritional and Food Security Baseline Study Framework (NFBS) was used to examine the role of policies, implementing institutions, and potential resources on the food and nutrition security of communities, where a baseline study was designed to identify and analyze the poor access to nutrition services, barriers in feeding programs, challenges of health systems and mainly gaps in implementation of social service deliver. Eisner`s Connoisseurship Model of Inquiry was applied to evaluate the role of current programs improving or impacting food security and nutrition of pastoral communities like Safety Net and Emergency Food Relief Programs. This framework is mainly used to evaluate the food and nutrition security of populations at risk of food crises. These frameworks helped to systematically understand and gather primary and secondary data on food and nutrition security of communities which was consisted food accessibility, food distribution, and procurement patterns and factory affecting these systems.

This study identified that three hierarchical food needs are required to be assured in achieving food security in pastoral areas: nutritious and culturally appropriate food must be accessible, available and affordable. This study found out that pastoralism was a historically resilient livelihood strategy for Awash that was often practiced in an ecological poor system to support crop and cattle production. Drought and flooding associated with changes in rainfall pattern reduced the agriculture productivity of agro-pastoralist which caused severe food shortage and spread infectious diseases. The livestock system in study areas were rapidly changing from Lalabe[6] period where almost all the pastoralists lost majority of their livestock which was the main source of income, food, fuel and fertilizer for them.

It was found that livestock systems are subject to risk from instability in weather (heat stress, drought and flooding), though primary literature shows that there is limited research in effects of climate change across diverse livestock production system in Awash to support climate change related vulnerability of pastoralists in detail.

[6] Lalabe: A period (started 15 years ago), known as Afar disaster where majority of pastoralist lost their animals.

Poverty was among the top factors contributing to household food insecurity, which was driven from unemployment, lack of sanitation, increase in prices due to the general inflation, cattle lose and drought which ranked them low asset owners caused, lack of education, high dependency on food aid and relying on livestock as a single source of livelihood.

During rainy seasons pastoralists in Aurebeto obtained their food by selling livestock products (milk and meat), while during dry season they exchanged cattle for food, relying on food aid, bartering (exchanging asset to food), relying on food aid, getting loan from neighbors or relatives, sending their children to eat elsewhere.

Aurebeto was more vulnerable to food security than agro-pastoralists in Aaeva because of limited economic access to food and unfavorable market exchanges. Livestock exchanged in a very low price in Awash while pastoralist in Aurebeto exchanged their livestock very quickly to avoid animal losses due to starvation and disease.

Agro-pastoralists in Aaeba newly started cultivating crops and have not relied heavily upon livestock production. One major finding from this report is the importance of crop production as a livelihood strategy to escape hunger. But for enhancing food security in broader level advancing community capacity was highly required. Agro-pastoralists in Aaeva has small landholdings where many of them are not familiar with specialized and moderately specialized farming. They often lack additional resources while growing their crops, including labor and inputs. Livestock rearing also contributed directly to food access and availability for farmers. While they consumed some of the food products made available by their own farming lands, and livestock. Despites of Ethiopian government supporting pastoralists with land and agriculture inputs still they chose to sell cattle in very low price that means less agriculture and more livestock plays a direct role in their food security.

6.2 Recommendations

Based on the study findings a number of achievable innovative strategies can be recommended as a mechanism to make pastoralist and agro-pastoralist households more food secure. In this part a number of unique programs and its implementation strategies are introduced to diversify the current livelihood set ups of pastoralist communities.

Recommendation for upcoming studies:

1. To overcome the data gap a macro level study on Demography and Health is required to facilitate future studies in Afar Zone 3.
2. A functionalize multi – sectoral coordination board is required to facilitate research related studies in Awash.

Specific Recommendations:

1. Agencies should promote the use of media, particularly radio broadcasting in Awash, with a specific provision of early warning information related to human and animal health, weather situation as well as marketing information.
2. Productive Safety Net and food aids promoted by NGO should adopt a broader approach based on the Kenyan model of Pastoral NGOs taking into account water and food schemes for resource scarce communities.
3. Training and capacity building in term of agriculture through pastoral associations should contribute to strength Awash marketing capacities with rather good chance to influence positively pastoralists' income.
4. A comprehensive structure is required to make PASACCO more easy and accessible to communities. Current beneficiaries of PASACCO are unaware of the concept and uses of this scheme, therefore comprehensive awareness and capacity building programs needs to be established along PASACCO implementation.
5. Improving the current Food Aid Program through a comprehensive distribution mechanism. The current food aid program provided by safety Net Program is quite complex and unsystematic in nature. The distribution mechanism of safety net program in Awash does not fit into the geographical and cultural context of the community.

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6.4 Annexure

Household Questionnair

Date: ____/____/____ Respondent Name: _____ Sex: _____ Age: _____

Clan name: _____ Livelihood System: **Pastoralist ( )** **Agro Pastoralist ( )**

Mobile Tribal ( ) Settled Household ( )

Start time: Finishing time:

HH PROFILE CHART

Name	**Sex**	**Age**	**Height in (cm)**	**Weight in (cm)**	**Relationship**	**Employment**	**Educational Qualification**

In which age your father/mother/others they passed away?	
Natural or due to sickness?	
What institutions are available in the village?	
Is there any case of conflict in this village or surrounding areas?	
Do political instability harm the livelihood of the HH?	

INCOME AND EXPENDITURE

1.	What is the monthly income of the HH?				
2.	What are the sources of income?				
3.	What are the monthly income from the following sources?	**Livestock**			
		Labor			
		Agriculture			
		Others			
4.	How much milk do the household produce in daily basis?	**Amount**	**Self-consumed**	**Sold out**	**Price/liter**
5.	What are the peak earning months?				

6.	Do you get any kind of scheme concerning health and nutrition?					
7.	What are the HH expenditure on the following items?	**Food**	**Health**	**Education**	**Marriage**	**Clothing**
8.	Where do you (does your household) Mainly buy fresh fruit and vegetables from?	Local shops	Market (including stalls or farmers markets)			Farm

9.	How often do you visit market?	**Once a week ( )**	**Twice a week ( )**	**More than twice ( )**	**Others**

10.	What items from fruits, vegetables and other commodities do you buy?	Fruits	Vegetables	Others
		1.	1.	1.
		2.	2.	2.
		3.	3.	3.
		4.	4.	4.
		5.	5.	5.
		6.	6.	6.

11.	What do you think which of the mentioned food items are good for health and nutrition? Why	
12.	Which food items are expensive for the HH to purchase?	

WATER

1.	What are the available sources of water for the HH?	**Community tank/well**	**Hand pump**	**Private sink**	**River**	**Others**
2.	What is the limit for water consumption per day?					

3.	What amount of water do you consume for the following purposes?	**Drinking**	**Bathing**	**Cooking**	**Cleaning**	**Others**

4.	In case of unclean water, do you have any means to make the water safe to drink?	1. Boil 2. Add chlorine 3. Strain with cloth 4. Sand clean **5.** Other if any	**No**
5. **6.**	What type of water do you give to your children? Do you receive any scheme for water?		
7.	What is the problem with water availability?		
8.	How is the HH water storage hygiene?		
9.	How is the quality of water?		

HEALTH

1.	How is the health condition of the HH members?					
2.	Is there any acute/chronic disease within the HH?					
3.	Is the HH following the vaccination campaigns?					
4.	Is there any cases of acute malnutrition within the household?					
5.	How is the Nutrition and health education of the HH?	**Very bad**	**Bad**	**Medium**	**Good**	**Very good**
6.	What health services do you receive?					
7.	Is the health service available and affordable for the HH?					
8.	What traditional health services exist in the kebele?					
9.	The number of days child was ill in the past month					
	What was the category of disease					

10.	Are you aware of Health Extension Workers? If yes which type of service you receive	
11.	Is there any Health Post available in the village? If yes, how satisfied are you with the HP?	

Agriculture

1.	Who all are involved in Agro-farming?		
2.	When the HH did start growing crop?		
3.	How much land do the HH hold for agriculture?		
4.	What are the cropping season?		
5.	Which crops do the HH grow?		
6.	How much of the grown crops is for the following purposes?	**Selling**	**Consuming by HH**
7.	What are the peak months for agriculture?		
8.	Where do you sell the agricultural products?		
9.	What are the prices of the following crops?		
10.	What are the current water source for farming lands?		
11.	What is the water limit for agriculture?		
12.	Is there any disease/climatic disaster affecting your products?		
13.	Do you receive any scheme?		

Livestock

1.	Herd Size	Number of cattle owned by women		No. of cattle owned by men		Meat produced from cattle		Milk produced from cattle
2.	Price	Camel	Goat	Cow	Sheep	Donkey	Others (if any)	
3.	How is the health status of the HH cattle?	**Very Good**		**Good**		**Bad**	**Very bad**	
4.	What are the common animal disease?	**1.**						
		2.						
		3.						
5.	If an animal gets sick what treatments do you follow?	**4.**						
6.	What are the veterinary services you receive?	**Service**					**Cost**	
7.	What are the major problems with animal feeding?	**Grazing land**		**Water**		**Veterinary services**		
		Others (please specify)						
8.	Please rate 1 – 6 to your cattle based on the following:	Productivity				Breeding		
9.	How many of your cattle dies annually?	5 -10		10 – 15		15 – 20	More than 20	
10.	What are the main reasons of cattle lost	Drought		Water		Food	Others (please specify)	

Hygiene and Sanitation

1.	Do you have a sanitation facility in your house?	P. Toilet	Public. T	O.fields	Other
2.	What kind of Health Care/hygiene Practices do you Follow? Hand wash, brush, etc.				
3.	What is the HH doing for keeping the food healthy?				
4.	During hot seasons how do you keep the food fresh and healthy?				
5.	Do your kids learn about hygiene and sanitation in school?				
6.	How much hygiene and sanitation plays role in better health and nutrition?				

Food and Nutrition

Who prepares meal in HH?	
Is there any cultural attitude toward making food on daily basis?	
What common foods are consumed by the HH?	
Do HH borrow food? If yes, from who/how.	
Do HH sell livestock to buy food?	
Do HH sell asset to buy food?	
Do HH slaughter livestock and preserve meat?	
Do HH send child members to eat elsewhere?	
Do HH send children out to labor and earn to buy food?	
How much health and nutrition education is important for a healthy life?	

Breastfeeding

1.	Is there any pregnant women within this HH?	
2.	During pregnancy, what all food products are consumed by the female members of the family?	
3.	Does the children have health/vaccination card?	
4.	Which foods do you give to your children?	
5.	Amount of milk consumed by the children on daily basis?	
6.	What is the first food a newborn baby should receive	Sometimes babies are fed breastmilk in different ways, for example by spoon, cup or bottle, or are breastfed by another woman.
7.	How often should a baby younger than six months be breastfed or fed with breastmilk?	
8.	Many mothers need to work and are separated from their baby. In this situation, how Could a mother continue feeding her baby exclusively with breastmilk?	
9.	How difficult is it for you to breastfeed your baby exclusively for six months?	1. Not difficult 2. So-so 3. Difficult

10.	Do any member of HH received education/awareness/training on health and nutrition?	
11.	Do the school attending kids learn about health and nutrtion?	
12.	Is the current school providing students with health and nutrition knowledge? If yes, how is their participation in HH?	
13.	What do you think how Health and nutritional knowledge important for a healthy life?	
14.	What do you think can be done in order to improve the educational facilities in the village?	

Migration Pattern

1. How long have you been here in this village?
2. Have you been in any other city/town before? If yes, where to

What is the migration status?

Where are people migrating to	The reason	Nature of migration (long-term, short-term, permanent)	Number of members

Market

1. How far is the market from Kebele?
2. How do you access to this market?
3. What all do you buy from market?
4. What do you think needs to be done to improve the market?
5. How many livestock markets are there in the kebele? How often are these markets Held?
6. Are all the food items required for the HH available in the market?
7. Is the market closed sometimes due to political/road blocked issues?

Drought

8. Have you ever faced food shortage? If yes when
9. When was the most recent drought that the community in the kebele faced?
10. In case of drought what all livelihood factors are affected?
11. Approximately how many livestock in the kebele died due to this drought?
12. Did any member of the HH die as a result of the drought? If yes, how many?
13. What was the main coping strategy that the community used to limit the impacts of The drought?

Major Needs

What do you think is the major need for a healthy life?