JIMMA UNIVERSITY

COLLEGE OF SOCIAL SCIENCIES AND HUMANITIES

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Livelihood Vulnerability and Adaptation Strategies of Pastoralists in Eastern Oromiya: The Case of Ituu Oromoo pastoralists in Fantaallee District

By: Boruu Muussaa Burqaa Gumbii

Advisors:

Principal Advisor: - Ameyu Godesso Roro (PhD, Assistant Professor)

Co-advisor: - Dereje Tesema Regasa (MA, Assistant Professor)

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Department of Sociology

Declaration

I, undersigned, developed my original research entitled „the Livelihood Vulnerability and Adaptation Strategies among Pastoralists in Oromiya, the Case of Ituu Pastoral Communities.

I duly acknowledged the resources I took from various scholars. I ascertain that the work is my original research.

_____	_____	_____
Name of student	***Signature***	***Date***

The research has been submitted for examination with my approval as a university advisor.

_____	_____	_____
Name of Advisor (Principal)	***Signature***	***Date***
_____	_____	_____
Name of Advisor (Co-advisor)	***Signature***	***Date***

Special Thank (Galata)!

First of all, I would like to thank my almighty Allah, without whom all my dreams would not have been realized.

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I would like to express my deepest and heartfelt gratitude to my parents who supported and guided me throughout my life. I sincerely acknowledge that I wouldn't be here today without the help of my Mother, **Faaxee Waaree Raaree**, my father **Muussaa Burqaa Gumbii** and my uncle **Bulaa Waaree Raaree**. It is my pleasure to express my deepest gratitude to my closest friend **Engineer Mohaammad Sa'id Bultum (MSc)** for his moral and economic support throughout my MA education. My special thank also goes to my friend Teacher Mohammed Dega(BA) for his invaluable support throughout my journey of master study. More, I am grateful to Dr. Gemechis T. Chali (Assistant Professor) for his longtime brotherhood advice and motivation during my study. I acknowledge Dr. Ameyu Godesso, my principal advisor, his much devotion in reading, commenting my thesis proposal and report. It is my pleasure to acknowledge my Co-advisor Mr. Dereje Tesema (Assistant Professor) for his guidance throughout my educational endeavor. The supports and guidance of Mr. Dereje starts from courses he thought me, which motivated me to this particular research topic to the designing of research title and his constructive comments throughout my research time. My special gratitude also goes to my teachers Mr. Habtamu Fikadu and Amanti Baru Olani (Assistant Professor) for their moral encouragement amidst the worst time of COVID-19 pandemic, the moment I was at loss of hope to continue writing my thesis. At the last, but not the least, I would like to acknowledge the support of my research participants, and the Ituu Oromoo women and elder who taught me many things throughout the course of my study.

Glossary of Local Terms

Aannoo Mammilaa:-Milking camel split/separated from other camels to sell their milks

Bulchaa:-passing (spending) overnight/week at particular herding site/residence

Cuuphaa: - taking livestock to water sources or pasture either in the morning or in the afternoon

Dikee: - Animal dung

Gunna: - herding livestock in the night

Haro:-lake

Hiika Dheedaa:-Opening time of communal land enclosure

KoreeAdabbii:-communal land enclosure penalty committee

KoreeGodaansiftuu: - Committee for advertising the startup and end period of land enclosure

KoreeLafaa: - Communal land management committee

Nadha:-Livestock's special interest of salty taste

Nogoba:-dirty water

Ona Gunna/Ona Teessoo: - Permanent residence

Kora Biyyaa:-local public meeting

Summaa:-the Original and appropriate name of Awash National Park

Qubsuma:-Residence

Shoolaa:-local name of Juliflora Prosopis

Iftooya:-Name of mountain-chain in the northeastern of Fantaallee District near Bantii Ganda

Calalaqaa: - The name of the fertile buffer zone on the north-eastern border of the Affar and Fantaalle District

Ganda (Gandoota plural): - The lowest administrative unit in Oromiya National Regional State

Abbreviations and Acronyms

CLE- Communal Land Enclosure

FDPDO-Fantaallee District Pastoral Development Office

FGD-Focus Group Discussion

KII-Key Informant Interview

NGO-Non-governmental Organization

GTF-GudinaTumsa Foundation

RIRA-Rift Valley Initiative for Rural Advancement

COWC -Charitable Organization for Women and Child

SNNP- Southern Nations, Nationalities and Peoples

WEMO- Water, Energy and Mineral Office

FNRMO-Forest and Natural Resource Management Office

Ha-Hector

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Dedication

I dedicate this thesis to myself and my Parents who supported me in all aspects throughout my and all the participants of the study.

Abstract

This study explores the livelihood vulnerability and adaptation strategies among Ituu pastoral community in Fantaallee District. The study relies on qualitative methodology employing a descriptive research design to shed light on the livelihood strategies of Ituu pastoralists, describe factors affecting the livelihood, discerning pastoralists" perspective pertaining to the viability of pastoralism as a way of life and explaining livelihood adaptations strategies. The data collection methods in the study are focus group discussion, in-depth interview, key informant interview and field observation. Two different Gandoota were purposively selected. Participants for the study were purposively selected and believed to provide detail information. The findings of the study show that livestock rearing is the main livelihood strategies of Ituu pastoralists. However, a gradual shift to rain fed farming was observed due to increasing challenge with maintaining pastoralism. Pastoralists are also pursuing alternative livelihood activities, like charcoal production and milk selling out of necessity. The study reveals different factors affecting the livelihood of Ituu pastoralists. Climate variability and drought, land territorial conflicts were reported to make the livelihood of Ituu vulnerable. Recurrent drought and irregular rain fall affected fodder and led to death of hundreds of livestock every drought year. Drought induced scarcity of resource also led to competition over resources and dispute over land between Ituu, and Afar and Argobba which in turn resulted in death of human lives and raiding of livestock. The newly emerging land related and ecological factors (the expansion of Shoolaa tree and Haro Nogobaa) are exacerbating pastoralists" vulnerability as they changed the land use pattern. Areas invaded by Juliflora trees were of less use for pastoralists. The alien tree species, Shoolaa, invaded grassland and pushed out other tree species whereas the expanding Haro Nogoba compromised plain areas where pastoralists used to herd their livestock in the time of the mountainous part enclosure. This study also found that irrigation schemes, the expanding state farms and park are challenging the Ituu. In response to vulnerability Ituu pastoralists pursue different adaptation strategies. The typical adaptation strategies are mobility and herd splitting, and communal land enclosure. Therefore, significant attention is needed from the researchers and policymakers to revitalize and develop the context specific adaptation strategies.

Key words: ***Ituu, Pastoralism, Livelihood, Vulnerability, Adaptation***

Chapter One

1. Introduction

1.1. Background of the Study

Pastoralism is a production systems those in which 50% of gross household revenue (i.e. the total value of marketed production plus the estimated value of subsistence production consumed within the household) comes from livestock or livestock-related activities(Dyson-Hudson & Dyson-Hudson, 1980; Swift, 1988). It is a complex livelihood system or way of life seeking to maintain an optimal balance between people, pastures and livestock(Okoti, Kung'u, & Obando, 2014).Pastoralism as livestock production system is based on extensive land use and herd mobility and has been practiced in many regions of the world for centuries (Barrow et al., 2007; Tsegaye, Vedeld, & Moe, 2013). It is practiced by between 200 and 500 million people worldwide, encompassing nomadic communities and transhumant herders (Davies & Hagelberg, 2014; Hatfield & Davies, 2006). Globally, pastoralists inhabit zones where the potential for crop cultivation is limited due to low and highly variable rainfall conditions (Rota & Sperandini, 2009; Wellard-Dyer, 2012). Today, extensive pastoralism occurs on about 25% of the earth‟s land area, mostly in the developing world, from the dry lands of Africa and the Arabian Peninsula, to the highlands of Asia and Latin America where intensive crop cultivation is physically not possible (Nori, Taylor, & Sensi, 2008).

In Sub-Saharan Africa, arid and semi-arid areas account for more than 60 percent of the total surface area with a pastoral population estimated between 20 million and 22 million people (Anand, 2014; Wellard-Dyer, 2012). In this region, pastoralism as a way of life is practiced mainly in countries like southern Burkina Faso, northern Cameroon, Ethiopia, Gambia, Guinea, northern Kenya, southern 2 Mali, central Nigeria, Senegal, central Somalia, South Sudan and etc.(Bradley, 2012)). The sector contributes to 10 to 44 percent of the Gross Domestic Product (GDP) of the region‟s countries (Avis, 2018; Blench, 2001). Pastoralism is the most vulnerable way of life (Mekonnen, Kidane, & Teketay, 2017; Suheri, Kholil, & Lubis, 2019; Wang & Zhang, 2012).

Due to their dependence on subsistent and climate sensitive way of life, pastoralists are in a vulnerable condition. Lack of access to infrastructure and limited capacity of pastoralism also made them vulnerable (Acheampong, Ozor, & Owusu, 2014; Furberg, Hondula, Saha, & Nilsson, 2018; Morton, 2007) In many pastoral areas in Ethiopia, pastoralists have less access to

social infrastructures and social services like health care services, electric service, and pure drinking water. Again, their mobile living condition constrained them from using even services in near towns of the areas. Among others, climate variability is the most common factors for the vulnerability of pastoralists (Bewket, Radeny, & Mungai, 2015; S. Mengistu; 2017; Muricho, et al, 2019; Wako, Tadesse, & Angassa, 2017). Shortage of rainfall, drought and rainfall variability affected the quality and quantity of pasture and water which are the feed for livestock. Depletion of pasture and water weakens livestock, which gradually causes diseases and death of herds. This would directly deteriorate the livelihood of pastoralists (Herrero et al., 2016; Maguza-Tembo, et al, 2017; Opiyo, et al, 2014; Woldetsadik & Hailu, 2010). The declining of grazing land leads to competition of pastoralists over pasture which in turn change to conflict, raiding of livestock, border claims, among pastoralists (Benjaminsen, et al, 2012; Okoti et al., 2014). The changing land use pattern, caused by changes in land tenure system, and agricultural expansion are other factors triggering the vulnerability of pastoralists (Aklile and Beyene 2014; Alemu, et al 2015). Pastoralists are increasingly affected in their environment, not because of the pressure, but of land policies. The privatizations of grazing land are one example of alienating pastoralists from pasture (Haller et al., 2016). Though pastoralists share many common environmental and economic challenges; their vulnerability is very different in all the cases across the globe (Adger, et al. 2005). The impact of climate, conflict, drought, land fragmentation etc. is more severe for pastoralists in developing countries than in developed (Thomas & Twyman, 2005). This is due weak adaptation strategies, resources, problems of policy implementation etc. (Christensen, et al. 2019; Little, et al, 2008). Particularly, climate variability exacerbates the susceptibilities of poor resource dependent communities of developing (Fenta, et al 2019; Lioubimtseva, 2015; Zhang et al., 2019). Still, worldwide pastoralists represent one of the poorest population sub-groups and among African pastoralists the incidence of extreme poverty ranges from 25 to 55 percent (Rass, 2006).

In Ethiopia, pastoralists occupy 60% of the total land of the country; representing ten millions of the total population of the country and supporting 20% of total populations (Eneyew, 2012; Muhammad et al., 2019; Union, 2010). The country ranked the fifth of the largest group of pastoralists in the world. Pastoralists inhabit the four lowland regions of Oromiya, Somali, Afar and Southern Nations Nationalities and Peoples Regional states (Barrow et al., 2007; RH Behnke & Metaferia, 2011; Birch, 2018). The sector contributes 15 to17 percent of GDP (RH Behnke &

Metaferia, 2011; Endalew & Ayalew, 2016; Solomon 2003). It also contributes 45% to the agricultural GDP of the country (Asresie, Zemedu, & Adigrat, 2015; R Behnke & Metaferia, 2013). Superseding domestic demand, livestock sector exports constitute 20% of the national exports (generating 50 million USA Dollars per year), 90% of the live animal exports is derived by pastoralists, (Africa & Sahel, 2008; Aklilu & Catley, 2010).

Pastoralism system in Ethiopia is the most vulnerable even in reference to Sub-Saharan countries (Pantuliano& Wekesa, 2008; Tsegaye et al., 2013).Pastoralist communities are highly affected by violent conflict, politically and economically marginalized (Riché, Hachileka, Awuor, & Hammill, 2009), have decreased access to the natural resources on which their livelihoods depend, and very limited access to basic socio-economic services and infrastructure (Mohamed, 2019). According to Jones et al (2020) Ethiopia pastoralists remains prone to drought and drought continued to weaken livestock and changing to diseases gradually. In Ethiopia, pastoralists remain underdeveloped because of inappropriate policies. The nature of pastoralists land use pattern is increasingly changing over time (Lind et al., 2016; Rettberg, 2017; Yekkala et al., 2008).

For many decades there has been a policy in neglect of pastoralists, aiming at a gradual eradication of pastoralism, this due to the interest of government policy which has an interest in shifting pastoralism to crop production system(Mohamed, 2019). Government policies are influenced by the previous unfavorable views about pastoralism, viewing pastoralism as a threat to the natural environment (Davies & Hagelberg, 2014; Farvar, 2003; Getachew, 2004; M. Mohammed, 2014). Government is employing Sedenterization and large-scale scheme projects to ensure rural and agricultural development. Restructuring of rural land posed difficulties on pastoral and made their livelihood easily vulnerable (Helland, 2006), because Sedenterization restricts mobility which pastoralists use as adaptive strategies. Sedenterization has also affected grazing land as it concentrates livestock populations. Pastoralists are now facing the problem of displacement, change in land use, and fragmentation of grazing land, ethnic conflict, and completion of over resources, to mention a few. Therefore, policy made pastoralists not only poor and vulnerable, but also marginalized (Eneyew, 2012). A self-conflicting nature of government policies indicates the inappropriateness of government policies. On one hand it promotes livestock as an important source of income; on the other hand, the policy seems to

work towards gradually shifting the pastoral livelihood towards sedentary agriculture. Development programs like parks, commercialized farm etc. brought negative effects on the pastoral economy and pastoralists by displacing the pastoral way of life, especially of land use, use of water points and mobility which are essential for pastoralist (Pankhurst & Piguet, 2009; Yohannes, 2003). Therefore, beyond natural cause, susceptibility of Ethiopian pastoralists‟ is attributed to policy priorities (Gebeye, 2016). This study therefore conducted on livelihood vulnerability and adaptation strategies of eastern Oromiya Pastoralists, in case of Ituu Oromo pastoral community.

1.2. Statement of the Problem

Pastoralists are the most marginalized social group in Ethiopia socially and politically (Maguza-Tembo et al., 2017; Muhammad et al., 2019). They are facing challenges of climate variability, drought, conflict, and change in land tenure. Today, Pastoralism is becoming unstable and less reliable to sustain pastoral livelihoods. The impact of climate change and drought is very severe in Ethiopia. The 1984 and 2002 drought in Ethiopia devastated the livelihood of pastoralists, which in turn caused famine, threatening the lives of nations (Bekele & Amsalu, 2012; Mera, 2018). Recently, the country has faced a severe delay in rainfall, in the year 2015-2017, affecting nearly 10 million Ethiopians. Apart from the commonly noted shortage in precipitation, timing and the spatial distribution of rainfall had an impact on livelihood activities, agriculture in general and pastoralists in particular (Ethiopia's National Meteorological Agency 2015). As a result of this, many parts of the country were reported in acute crisis in 2016. Over 75% of crop productions were affected and millions of livestock have died (Gutiérrez, Engle, De Nys, Molejón, & Martins, 2014; Mera, 2018).

The recur of drought among Ethiopian pastoralists used to be 4-6 years previously, but recently it reduced to 2-3 years, giving no time to recover(Amsalu & Adem, 2009; Bekele, 2010). Conflict is another factor causing vulnerability of pastoralists. Conflict mainly arises due to paucity of pasture land, climate variability, and contested border (A. Gebre (2012); Menbere (2013); (Mitiku, Ayele, Assefa, & Tariku, 2016). The results of conflict are raiding of livestock, limit to mobility, loss of infrastructure and of human life (Abroulaye, Issa, Abalo, & Nouhoun, 2015)

Various studies have been conducted on the vulnerability of pastoralists. Some studies explained the vulnerability of pastoralists (Fenta et al., 2019; Goddard, Dougill, & Benton, 2010; Tsegaye et al., 2013) disregarding pastoralists‟ adaptation strategies. Other studies merely assessed the conflict over territorial claims that pastoralists have engaged with their neighbors' livelihood (Hagmann & Mulugeta, 2008; Menbere, 2013). Researches also commonly explored the causes of conflict among pastoral as competition on pasture and water (Gebre 2012; Menbere 2013; Mitiku, Ayele, Assefa, & Tariku 2016), but this reality is changing today. This study, therefore, investigates the changing discourse of conflict Those studies also rarely discussed about context specific vulnerability of pastoral livelihood, because in most case it is understood that pastoralists reside in climatically and environmentally identical areas where they experience

similar vulnerability, but, which is actually not. And hence, previous studies disregarded different level of vulnerability due to assets, geography, coping capacity, 8 livelihood strategies across different pastoralists. Other studies also tried to explain adaptation strategies to drought (Tesema & Musa, 2019) disregarding household coping strategies, because pastoralists‟ livelihood is not vulnerable merely due to climate and conflict. Others (Bekele & Amsalu 2012 Hubadillah, Harun, Aminudin, & Rosman, 2014; Regasa & Akirso, 2019) explain pastoral vulnerability only with climate and climate related factors giving less attention to other accompanied factors(land tenure, investment expansion to rural land) Therefore, this study investigated the subjective views on pastoral livelihood and the adaptation strategies pastoralists pursue to reduce the effects of vulnerability contexts.

1.3. Objective of the study

1.3.1. General objective

The general objective of this study was to explore the livelihood vulnerability and adaptation strategies among of Ituu Oromoo pastoralists in Fantaalle District

1.3.2. Specific objectives

To unravel the dynamics of pastoralists livelihood among the Ituu pastoralists;

To explore the socio-ecological factors affecting the livelihood of Ituu pastoralists;

To examine the livelihood adaptation strategies of Ituu pastoralists in the face of livelihood vulnerability

To assess Ituu pastoralists' perception about viability of pastoralism as a way of life

1.4. Scope of the Study

This study was delimited to describing the livelihood vulnerability contexts, like climate variability and drought, conflict, invasive species and land related factors; and adaptive strategies among pastoralists. The study has methodological and geographical scope. Methodologically, the study employed qualitative approach. The study was delimited to Fantaalle District

1.5. Significance of the study

This study described livelihood vulnerability and adaptive strategies among the Ituu pastoralists. The findings of this study will have importance from different aspects. Accordingly, the study will have academic, theoretical and policy implications. Academically, this study will add knowledge on the existing literatures on pastoralist's livelihood. Particularly, the findings of this study discerning the diversity of pastoralism will correct the already existing misunderstanding

that consider pastoralism as only cattle keepers. It will also shed light on the contending views about the viability of pastoralism as a way of life. Since this study has gone beyond exploring the vulnerability contexts and/or contributing factors for the vulnerability of pastoralists, to explain the adaptation strategies pursued by pastoralists in the face of vulnerability, it will be used as policy input. For instance, if the researcher can get an opportunity to present this thesis at certain government administrative levels (Zone, District etc.); it can be used as a directive in intervening pastorals problems. Not only this, the results of 10 this study can help interested NGOs and GOs as base line information to identify areas of intervention. And the results of this study will also attract interested researchers to the area.

1.6. Limitations of the study

Due to different challenges faced the researcher, the study have many limitations. The COVID-19 global pandemic influenced the researcher's data collection modalities. It had been easy and economical for the researcher use methods in parallel, but that didn't work, because of the pandemic disease. Since it was difficult, and even impossible to conduct FGD in the context of COVID-19, the researcher was forced to conduct FGD prior to the government's declaration on COVID-19 preventive mechanisms and protocols.

1.7. Organization of the Thesis

This thesis is organized in to five chapters. The first chapter of the thesis dealt with background, statement of the problem and objective of the study. Part of this chapter is also the significance of the study and scope of the study. The second chapter is about the systematic review of the related literature to substantiate them with the objectives of the study. The third chapter deals with the research method: research approach, study design, methods of data collection and sources of data. Methods of data analysis were also discussed under this particular section. Fourth chapter is data presentations and interpretation. And lastly the fifth chapter draws conclusion and forwards recommendations.

Chapter two
2. Review of Related Literatures
2.1. Pastoralism as a way of life

Pastoralism is not a single way of life as some people used to understand. It is a very complex system which produces different kinds of livestock (camel, cattle, goats, sheep, and donkeys) and pursues other livelihood diversification strategies (Rota & Sperandini, 2009; Teshome & Bayissa, 2014). Pastoralism is a culture, livelihoods system, extensive use of rangelands. It is the key production system practiced in the arid and semi-arid dryland areas. Recent estimates indicate that about 120 million pastoralists and agro-pastoralists life worldwide, of which 41.7% reside only in sub-Saharan Africa (SSA). Pastoralists live in areas often described as marginal, remote, conflict prone, food insecure and associated with high levels of vulnerability (Abduselem, 2019). It also helps them gain abundant milk and meat products. In the pastoral production system, sheep and goat were primarily reared for household milk consumption, followed by live animal savings and income (Hassen & Tesfaye, 2014).

2.2. Pastoralists and Rangeland Ecology

In the study of pastoralist, it is very important to understand the relationship between pastoralists and rangeland the latter being important assets of livestock producers (Balehegn, Balehey, Fu, & Liang, 2019; Ruvuga et al., 2020). In today‟s world, pastoralists are shape and shaped by rangeland in their environment. 12 People‟s understanding of rangeland and people are also dramatically changing overt time (Zerga, 2015). Researchers‟ knowledge (about rangeland and pastoralists) in the past is different from the current knowledge. It has been understood that rangeland was influenced by pastoralists themselves, because of the communal land use tradition, which brought overgrazing. But today, this fact is no more relevant as the impact on rangeland is accompanied with other factors, such as climate, land tenure system, politics, agricultural expansion etc. In the following section, therefore, I am going to discuss this changing understanding. For many centuries, rangeland was defined narrowly, but today scholars are expanding the definitions of Rangeland to new uses. The most known definition of rangeland is the definition developed by a joint committee of the International Grasslands Congress and International Rangelands Congress (Allen et al., 2011). Rangeland is a Land on which the indigenous vegetation (climax or subclimax) is dominantly grasses, grass-like plants, forbs or shrubs that are grazed or have the potential to be grazed, and which is used as a natural

ecosystem for the production of grazing livestock and wildlife. Rangelands may include natural grasslands, savannas, scrublands, many deserts, steppes, tundra, alpine communities and marshes. Rangelands occupy the largest earth surfaces as compared to other types of lands. It occupies 69% world‟s agricultural land and 40% of the earth surface (Du Toit, Kock, & Deutsch, 2012; Getabalew & Alemneh, 2019). Being known by harsh and climate vagaries, this type of land is most sparsely populated and remote. However, rangelands are home for the production of a significant amount of livestock, which is the most important sector on the face of the earth (Galgalo, 2017; Reid, Fernández-Giménez, & Galvin, 2014; Robinson et al., 2011; Sayre, McAllister, Bestelmeyer, Moritz, & Turner, 2013).

Rangelands for pastoralists are the most important asset on which the whole life pastoralists depend, and they have an inexorably linked relationship (Khan, 2003; Robinson et al., 2011; Thornton, 2002). As a result, pastoralists are known for the conserving and maintaining rangelands as it is the only asset they have for the production of their livestock (Ayantunde, Tarawali, & Wright, 2011). However, in today's changing world, the relationships between rangelands and pastoralists are disturbed due to different forces. The main driving forces behind this change are typically climate, environment, social, economic and political (Geist & Lambin, 2004; Gharibvand, Azadi, & Witlox, 2015; Herrick et al., 2012; Reynolds et al., 2011). The other factors, are shortage and seasonality pattern of rainfall and land tenure system, or change in land use (Fenetahun, Xu, & Wang, 2018; Kariuki, Willcock, & Marchant, 2018). In the face of increasing populations, the interests for rangelands and livestock also increased.

However, had it not been for climate variability (or rainfall shortage etc.), an increase in population number would not have affected rangelands as such, but climatic vagaries affected the time of rangelands regenerations for pastoralists use. In Ethiopia, rangeland policy is developed based on a ranch model paying less attention to the effects of the change in land use on the environment (Angassa & Oba, 2008). Change in land use causes change in households and communities land use practices, which in turn would have impacts on dynamics ranges, causing rangeland fragmentation and loss among others (Angassa& Oba, 2008; Behnke Jr, 2008; Zerga, 2015). Pastoralists Development Planners, policymakers and researchers did not recognize the importance of indigenous rangeland management practices, and their appreciation is still at offspring (Feyissa, Assefa, Kebede, Mengistu, & Geleti, 2015). 14 Pastoralists are the victims of

the changing rangelands (Havstad et al., 2007). The shrinking and fragmented rangelands forces pastoralist to compete over land, which may in turn results in conflict (A. Mohammed & Beyene, 2016). In Ethiopia range lands occur of 67% of the total land of the country and are distributed at arid and semi-arid areas at an altitude of 1500m and below(Abebe, 2000).In Ethiopia, rangelands consist of shrubs, grass, plants species(GemedoDalle, Maass, & Isselstein, 2006). These rangelands are known by climatic challenges (shortage of rainfall and variability and high temperature) and low soil fertility (Ayalew2014). Rangelands are used as a livelihood base for pastoralists in Ethiopia. The influence on rangelands affects livestock production and increases households‟ (Ahmad & Ehsan, 2012; Berhanu & Fayissa, 2010; URGA, 2015). In Ethiopia, rangelands are under the threat of land degradation, climate change, agricultural expansion, government policy, invasive species etc. (Abate & Angassa, 2016; Fenetahun et al., 2018; Gina, 2015). According to Mengistu (2006) and Gemedo-Dalle et al. (2006) given that pastoralism is a ways of life for a significant proportion of peoples in Ethiopia, range lands should have been protected and sustained to ensure the viability of pastoralism, but currently rangelands are under threat.

2.3. Vulnerability in Pastoral Livelihood

Livelihood vulnerability means the susceptibility of livelihood system of stressors (Jorgenson et al., 2010; Omotoso, Daud, Adebayo, & Omotayo, 2018). Most of the cases, the socio-ecological vulnerability of the people is the same across the globe. Developing countries are, however, highly vulnerable due to low income and dependency on sensitive livelihoods, pastoralism and agriculture, in most case (McSweeney, New, & Lizcano, 2008). Though vulnerability occurs at different levels and contexts, it has three major elements. These are exposure, sensitivity and adaptive capacity (Cutter, Boruff, & Shirley, 2003; Fatemi, Ardalan, Aguirre, Mansouri, & Mohammadfam, 2017). Exposure addresses the extent of a system facing varying climate conditions. It generally focuses the condition of an individual or community in the face of variable climatic situations (Brogaard & Seaquist, 2005; M. Sarker et al., 2019). Sensitivity is the degree of a system which indicates how sensitive to the variable climatic conditions. Sensitivity emphasizes the reaction of individuals and community to in the face of disaster. And it shows the frequency and sensitiveness in terms of livelihood capitals. Adaptive capacity is the ability of a system to adapt to, withstand and recover from shocks and stresses. It emphasizes the ability of

an individual or a society to tackle or control the situation which occurs during natural hazards (Change, 2001; Sarker, Wu, Alam, & Shouse, 2019).

2.4. Vulnerability of Pastoralists in Ethiopia

2.4.1. Climate Variability and Pastoralists' Livelihood

Climate variability is a global phenomenon driven by the interaction of climate, socio-economic, environment and political forces. Livelihood, particularly of the poor, has been increasingly vulnerable to its impacts (Olsson et al., 2014). Climate change becomes a commonly complained challenge of 21thc. It is continued affecting the life of people, though its impact is more severe in developing countries, like Ethiopia (Arbuckle, Morton, & Hobbs, 2013; Hubadillahet al 2014; Regasa & Akirso, 2019). Ethiopia is one of the most vulnerable countries of the world to the impacts of climate change and variability. The impact is even stronger in pastoral areas of the country, where the dependence on natural resources is high and the adaptive capacity to climatic changes is low (Lemma, Beyene, & Hundie, 2013).Climate change is becoming more variable and less predictable, and trends towards future 16 changes are emerging(Nassef, Anderson, & Hesse, 2009). Wealth and social differentiation also affect the ability of people to adapt to climate and non-climate stress, with the poor at a distinct disadvantage. Evidence suggests that it would be more effective including cost-effective to enable and strengthen the inherent adaptive capacity of pastoralists and find ways to encourage their autonomous adaptation than to provide adaptation strategies for them. According to Watson (2008), for example, shortage and variability of rainfall and drought with its subsequent repercussions have decimated their livestock and consequently livelihood. Survival for them is a continuous struggle especially given generally prevailing insecurity, such as raiding of livestock and proliferation of arms. It is widely recognized that recurrent drought is a key factor affecting the vulnerability of pastoralists in Ethiopia.

2.4.2. Conflict among Pastoralists

In Ethiopia Pastoralism as a way of living is still preferred in Horn Africa, including Ethiopia. Despite this, conflict between and among many pastoral communities remained to be part of their life. Although pastureland had been the cause of the dispute between those pastoralists, some other factors are now emerging as the driving force behind their conflict. These are insecure land tenure, multinational federalism, poor governance, expanding farmland. Study conducted by Beyene (2017) indicates that conflict resulted from interrelated cultural, ecological

and political factors. The systems of governance, including the setting up of regions on an ethnic basis and associated competition for land and control of water-points, have indirectly contributed to violent conflict between pastoralists ethnic groups. Moreover, change in land use, prompted by insecure property rights to communal land, rather than expected increase in 17 economic benefits has caused conflicts among the clans of the Oromo. Applying land use and administration guidelines and empowering customary authorities would reduce the incidence of inter-clan conflict. There had been a historically boundary-based conflict in the Ethiopian Upper and Middle Awash Rift Valley inhabited by Karrayyuu, Ituu, Afar, Argobba, and Isa pastoralists and settler groups from different parts of the country. Two of the Oromo clans, the Karrayyuu and Ituu, in the area have been in dispute with other ethnic pastoralists. Territorial encroachments, cattle raids and associated small scale warfare between these groups have been ongoing since the 1960s since commercial agricultural enterprises started to alienate important tracts of land from local pastoralist(A. Gebre, 2001) Violent conflicts and cattle raids are a regular occurrence and a major characteristic of the contentious relationships between the Karrayyuu and Ituu from one side and the other neighboring groups such as the Afar, the Argobba, the Arsi and occasionally the Isa Somali from the other side (Hagmann & Mulugeta, 2008).

2.4.3. Invasive Plant Species in Ethiopia

Though Ethiopia is home to natural biodiversity and climate, which made it conducive for the ecosystem, there are threats to biodiversity by invasive alien plant species (IAPS). They threaten biodiversity, socio-economic and health aspects in Ethiopia. Recently, there are about 35 IAPS in Ethiopia. Some of these species include Prosopis Juliflora, Parthenium hysterophorus, Lantana camara, and Acacia species, which are the major threats to biodiversity (Shiferaw, Demissew, & Bekele, 2018). Among all, Juliflora is one of the most invading plant species. Prosopis Juliflora, an evergreen shrub, is one of the most invasive species causing economic and environmental problems (Abdulahi, Ute, & Regasa, 2017).The species is spreading 18 over rangelands and cropland endangering pastoral livelihoods. Several factors have contributed for its rapid expansion. Its ability to adapt wide range of climatic condition and effective dispersal mechanisms are among the principal factors. The species has replaced large areas of pasture lands and has grown to be a noxious weed in Ethiopia. It has had serious repercussions on the biodiversity of the area, and livelihood of pastoralists and agro-pastoralists (Tesema& Musa,

2019; Tessema, 2012). In the Ethiopian context Prosopis Juliflora was wrongly introduced, as agro forestry, in the 1970s by Ministry of Agriculture to high quality pasturelands and irrigable areas, including the Awash River basin in the Afar National Regional State (ANRS) of Northeast Ethiopia (Hundessa & Fufa, 2016).Local people were not informed about the invasive nature of the tree at first and were not advised on management practices to minimize its spread. As a result of the plant rapidly invaded vast areas of agro and pastoral lands, affecting both the biodiversity and socio-economic environment (Dubale, 2006) The Environment Policy of Ethiopia, the Forest Resource Strategy and the National Biodiversity Strategy and Action Plan, recognize invasive plant species to be growing threats to the biodiversity of the country and socio-economic welfare of the people. At the national level, however, there is no clear policy or strategy for the control and management of this invasive species and little attempt has been made in terms of their research and management (Anagae, Reda, Tesfaye, Admasu, & Ayalew, 2004).

Chapter Three
3. Research Methods
3.1. A Description of the Study Area
3.1.1. The Ituu Oromoo of Eastern Oromiya

The Ituu is one of the Oromo moieties under Bareentuu confederacy. Genealogically speaking, the Ituu, who gave birth to ten sons, is the son of Murawwaa Barentuu. The ten sons (called Itu-u-kudhan)[1] of the Ituu are further divided under two exogamous confederacies (Afendi, 2020; Boru 2021). These exogamous confederacies are the Kuraa and the Galaan, which are again subdivided into a number of sub-clans and lineages. Geographically, the Ituu reside in larger areas extending from Carcar[2] (currently West Hararghe) to Fantaalle district in East Shewa zone of Oromia National Regional State (Alemayehu, 1998, Gadaa 2018). They also reside in some parts of Walloo (Jaalataa, 2010). Though they live in these extended areas, the Ituu mainly dominate Carcar areas, which is historically known as *Ona Ituu*, the Ituu district (Alemayehu, 1998; Boru, 2021; Abdurrahman, 2016). The Ituu spread westward up the Fantaallee hill (in east Shewa) living mixed with the Karrayyuu Oromoo and to the east they border the Afran Qal'o Oromo. They border the Affar in the north and the Somali in the north-east.[3] In the south and south-west of the Ituu are the Anniyyaa (Humbanna) and Arsii Oromo groups (Boru, 2021). Though these are the traditional demarcations of the Carcar land, it does not mean there are clear cut boundaries between different Oromo groups and other ethnic groups sharing borders with the Ituu.

Coming to the social and political organization the Ituu are structured and organized by the Gadaa and Gosa systems. Despite their inclusion into the Ethiopian nation-state, the Ituu have sustained the Gadaa system[4], and activate it in religious, ritual and also legal contexts. The Ituu used to be followers of *Waaqeffannaa*, the traditional religion of the Oromoo people. However, the Ituu are now predominately followers of Islam, which flourished in their areas centuries ago (Gebre, 2001). With regard to their economic subsistence, the Ituu are pastoral and agro-

[1] These ten sons are the Baabboo, the Gaamo, the Elelle (Afur-galaan), the Beerree-Hidhabuu, the Baaye, the Gaadullaa, the Alga, the Arroojjii, the Addaayyo, and the Waayyee. The first five clans are under the Galaan sub-moiety, while the next five are under the Kuraa sub-moiety(Boru,, 2021)

[2] Carcar is the original name of the current land of west hararge zone of oromia national regional state. Carcar land named after the biggest lake in the area, near Odaa Bultum. It is the lake of irreessaa for the Ituu of eastern Oromia. The name Hararge came during emperior Haile Sillasie in 1940s(Boru 2021)

[3] Before the expansion of the Affar ethnic group to the Carcar, the Ituu land, the Ituu border the Walloo Oromo of the north

[4] The five Gadaa confederations of the Ituu: Sabbaaqa, Daraaraa, Dhiphisa, Fadata, Horata

pastoralists. The Ituu spreading throughout the lowland areas of Carcar to the east Shewa zone are pure pastoralists whereas the others in the Carcar highlands are agro-pastoralists.

However, this study limits itself to the Ituu pastoralists living in Fantaalle district of east Shewa (Fantaallee District Administration Office 2011). The study area is, therefore, located on the Eastern Rift Valley, East Showa Zone of Oromiya Regional state between 8'45'to 90'00' north latitude and 39'45'to 40'00' East longitude, which is tropical climate. The approximate total area of Fantaalle District is 1340 Km2 and Metehara town is capital and administrative center of the District. Its Altitude ranges from 1500m-2000m. The District climate is grouped as Hot-semi Arid, characterized by steep type of vegetation with less fall and more coarse grasses (Etafa, 2016).The mean annual temperature and rainfall of Fantaallee district varies between 180 c and 340 c and 377mm-742mm respectively with mean annual rain fall of 572mm (climate data of NMA, 1989-2011).The major ethnic groups inhabited in Fantaallee district are Karrayyuu and Ituu Oromo.

Fantaallee district is bounded in the north by the afar regional state, in the South by the Arsi zone, in the west by Carcar (Hararge zone), in the west by the Argobba district and the northwest by Amhara regional state. The study was conducted in two selected Gandoota of the district, Qobbo'o and Galcha where a large majority are Ituu pastoralists. Livestock rearing is the main source of living for the Ituu. They rear four major livestock species: camel, cattle, goats, and sheep. Open grazing land and browsing are the main sources of livestock feed. The report compiled by Fantaallee District Pastoralists and Agro-pastoralists Development Office in 2012 shows that pastoralists use their grazing lands on seasonal basis by moving between available pasture lands. Beyond this, the Ituu pastoralists‟ also practice rain fed agriculture and small-scale irrigation to support their livelihood. Due to this, in some parts (Lower Awash) of the area there is a gradual shift to agro-pastoralism, while the 22 other parts (especially Upper Awash) are still pure pastoralist (B. Gebre & Yirga, 2004; Tesema & Musa, 2019). Land use of the area involves open grassland, riverine, mountainous, vegetation, and farm land. According to the Fantaallee District Pastoral office (2012) estimation, dense woodland and shrubs accounted for 25.5% of the district land area, while degraded land and others cover 74.5%. The open grassland covers the areas located west of the District, the gently sloping areas at the foothill of the Fantaallee

Mountain and areas bordering Metehara Sugar Plantation (Ayalew, 2014). The proportion of grass to shrub differs considerably among different places in the locality. Shrubs are predominant on the rock ridge. The major species of shrubs include Acacia mellifera, Acacia Senegal and Acacia tortillas are common in the area. The most dominant riverine vegetation consists of Acacia nilotica;its pods and leaves are palatable to livestock. This land cover is found on alluvial soils mainly along the Awash River. Acacia nilotica, Acacia Senegal and Acacia tortillas are the most common tree species growing along with the buffer of Awash[5] River (Yekkala et al., 2008).

3.3. Research Approach

The study relied on qualitative research approach with the major aim of discerning the subjective understanding of the pastoralists about livelihood strategies, their perception of the viability of pastoralism as a way of life, the vulnerability contexts which influence the livelihood of pastoralists; different degree of impacts of those local challenges affecting pastoralists ways of living; and the adaptation strategies pastoralists pursued in face of livelihood vulnerability. Qualitative research approach is used when the aim of the study is to investigate the subjective understanding people have about the contexts which they are living (Degefa, 2006).

3.4. Study Design

The study design in this study was qualitative (descriptive). It described the experience of livelihood vulnerability and adaptive strategies among Ituu pastoralists.

3.5. Data Sources

The study generated data both from primary and secondary sources. The primary data sources were collected from key informants, in-depth interviewees, discussants whereas secondary data were obtained from various reports, official document (for instance, Fantaallee District Pastoral Development Office records). Beyond this, other published researches and journals on the issues of pastoral livelihood and government policy for pastoralists were also reviewed to get insight on vulnerability of pastorals livelihood.

3.6. Sampling

The selection of participants in the study was based on non-probably sampling method. The selection procedure considered the researcher's prior knowledge of individuals who are believed to provide rich data on the topic. And hence, discussants for FGD, key informants and in-depth interviewees were selected from development agents, women, elders, youths, pastoral

[5] Hawaas is the original and appropriate name of the river

development officers and sat for discussion and interview. Discussants and informants were recruited purposively, based on the assumption of the research that the selected individuals would give adequate data on the issue.

3.7. Methods of Data Collection

3.7.1. Focus Group Discussion

Data on the description of livelihood strategies, the perception of the pastoralists about the viability of pastoralism as a way of life, the vulnerability contexts which influence the livelihood of pastoralists, the most frequently vulnerable livestock, and the adaptation strategies pastoralists pursue in face of livelihood vulnerability and factors constraining the effectiveness of those strategies were generated using focus group discussion. The participants of the focus group discussion were selected purposively based on the assumption of the researcher on who are believed to provide rich data. Six FGDs were conducted at four *gandoota*. One FGD with elders was conducted at *Galchaa Gandaa* whereas two FGDs were conducted at Bantii Ganda with seven elders and eight women. Two FGDs were conducted at Qobbo'oo and *Dhagaa-Idduu Gandootaa*, one FGD at each with eight elders group and six women, respectively. The last FGD was conducted with youths from both *Galchaa Ganda* and *Qobbo'oo Ganda*. In all FGDs each group sat for discussion separately. This was done to keep acquaintance and homogeneity of the member so that members can raise their suggestion without any fear. All FGDs were conducted at a convenient time and place for discussants. The researcher played his researcher role by extrapolating and extracting the data provided by all participants of the study. The researcher also continued keeping consistency of data to the respective research questions.

3.7.2. In-depth Interview

Data on change in livelihood, change in land use pattern, trends (current and previous) of their vulnerability, the activities practiced for livelihood diversification, factors threatening their livestock production, the most susceptible social segments (in terms of age, gender and economy). And data related to livelihood adaptation strategies were also collected using this method. Community leaders were involved in in-depth interview. Women were also considered, because they experience vulnerability in a different way from others, hence can provide adequate data. And hence five women were interviewed.

3.7.3. Key Informant Interview

Key informant interview was conducted with individuals who are perceived to have accumulated knowledge and long-standing experience about the livelihood of the community. Selective persons from local elders and senior women and professionals from the government and non-governmental organization employees were interviewed. Accordingly, five local elders were selected as key informants. Four key informants from Fantaallee District's Pastoral Development Office and five development agents working in the two selected Gandoota were interviewed. Two persons from Natural Resources and Forest Management Office and Women and Child Office (one person from each office) were interviewed. Differently, three workers in NGOs (GudinaTumsa Foundation (GTF), Rift Valley Initiative for Rural Advancement (RIRA), and Charitable Organization for Women and Child (COWC), working of different rural Gandoota were selected to be participants of this particular method. The key informant interview covered issues, such as trends of vulnerability of Ituu pastoralists, the emerging forces of vulnerability, change in livelihood strategies, land use pattern, concern of government about the communities.

3.7.4. Observation

The researcher directly visited the areas under study. The researcher used camera and other videotaping materials to collect data using observation method. The method was used to collect data with regard to land related factors and land use pattern, particularly, irrigation and park that contribute to the vulnerability of pastoral livelihood. The land use pattern of the study area was observed mountainous and plain rangelands. Some observation was also made on charcoal production mechanisms from Shoolaa tree.

3.8. Methods of Data Analysis

FGD, key informant interview and observation checklists were prepared by Afaan Oromoo. The qualitative data obtained through recording and note-taking were categorized and organized into different categories, based on the review of related literature and objectives of the study. Accordingly, the categories of vulnerability contexts (conflict among pastoralists, Invasive ecology, vulnerability to climate variability (conflict, drought, change in regular time of rain) were developed from works of literature), and then data collected were categorized to these themes. Others questions/objectives as communities' perceptions about viability pastoralism as a way of life, adaptive strategies and review of government policy concern of pastoralists was

analyzed using thematic method of data analysis. For the newly emerged things in the course of data collection, still thematic method was used.

3.9. The Fieldwork

As soon as I entered the field, COVID-19 Pandemic became a serious global challenge. Ethiopia was no exception. Ethiopia adopted some measure on March 16, 2020 and further sharpened on March 20 when there were only 5 confirmed. On April 10, 2020, the government declared a five-month State of Emergency. Measures associated with the State of Emergency includes, but not limited to the banning of all public gatherings of more than four people. Whereas the gathering is of a group of four people, individuals will be expected to ensure that they are 2 meters apart at all times. The prohibition of social gatherings would mean that a researcher could not use some key qualitative data collection methods, such as focus group discussion and observation. For instance, though it was the interest of the researcher to conduct FGD in parallel with other two methods, some contexts (related COVID-19) before 28 and during data collection had influenced the researcher to employ methods one after another, not in parallel. Suspecting the increase in the spread of COVID-19, infection in the country, which would come with proclamations on the prevention of the pandemic, the researcher decided to start and complete FGD on time. The Six FGDs at two Gandoota were conducted from February 26-28, 2020 and completed prior to government's declarations on the prevention of COVID-19. However, collecting data through the other two methods continued on even after precautionary measures were proclaimed by the government. The researcher, hence, keeping his distance from informants and using other methods as wearing face masks managed to collect the required data. Perhaps, before entering the field, the researcher contacted the District's Administration to get a letter of permission. Taking the letter, the researcher directly discussed with Ganda leaders to again get another letter of support from Ganda administration to collected data. During the first two days of the fieldwork, the researcher went to the field with community elder and leader of that particular Ganda to facilitate easy entrance to the field. Time was a very challenging factor during data collection. As solution to this, the researcher decided to write down in the night/times after field what he collected during the day. The researcher though not wrote down in detail all the collected data, he prepared some rough categories to filter down data into those main categories, because there are some data which were collected, but not/difficult to record. Such data may be forgotten if not written down with the first impression. Therefore, before starting the

transcription whole data the researcher continued jotting down main issues on daily base every time after field. While collecting data amidst the worst situation of COVID-19 pandemic the researcher faced many different challenges. The researcher had to travel a long distance. The researcher, therefore, had to spend nights there in the field. Moreover, because of the fear of a state of emergency declared countrywide, the researcher faced many challenges while gathering data. For instance, it was really difficult to tap a video or take photos. Individuals were very suspicious about the condition of state of emergency then. But, this has not been the case during data collection through FGD, as Focus Group Discussion was completed prior to this situation.

3.10. Ethical Considerations

The researcher used appropriate ethical consideration throughout data collection time in the field. The research started the works of ethical consideration by receiving official letter from Jimma University sociology department. Arriving the field setting, the researcher took another official letter written in Afaan Oromo, from Fantaalle district administrative office to secure him and study participants. Beside these, local elders and community leaders at Gandoota level were informed prior to enter field work. More, negotiation was made with discussants and informants before undertaking research works. Through such negotiation participants were informed that the study will not have any harm on them, and it will be used only for academic purposes. Further, while undertaking data collection the context of COVID-19 was taken in to consideration. The researcher used COVID-19 preventive instruments and other protocols. And participants were informed to use their facemask. In case participants have no facemask, they were informed to keep their physical distance up to 2m.

Chapter Four

4. Data Presentation and Interpretation

This chapter deals with data presentation and interpretation on livelihood vulnerability and adaptation strategies among Ituu Pastoralists. The chapter has four main sections. In the first section of the chapter the livelihood of Ituu pastoral community are presented. In the second section, vulnerability contexts of Ituu pastoral community are discussed. Third section covers pastoralists‟ perception about viability of pastoralism as a way of life. And the last section discuses livelihood adaptation strategies pursued by this pastoralist in the face of vulnerability.

4.1. The Livelihood Strategies of Ituu Pastoral Community

The Ituu Oromo pastoralists employ both major and minor (alternative) livelihood strategies to survive socially and economically as pastoralists.

4.1.1. Livestock Rearing

Livestock is a backbone of Ituu pastorals livelihood. They keep various species of livestock, like goats, camel, cattle and sheep. Among the Ituu, the production of livestock embodies both economic and social values.

Economic Values

In economic terms, livestock helps the Ituu cover their expenses. Among Ituu pastoralists small and big types of livestock are sold for different reasons. In the FGD conducted in Qobbo'oo Ganda, elders pointed out the reasons why the pastoralists in the area would prefer the selling of a particular species of livestock to another species. Key informants underscored that selling small ruminants is mainly a source of cash income that supports household consumption. In this case, goats and sheep are dominantly for sales thereby generate regular cash to be invested for different household chores. The sale of these livestock species would also arise when, for example, a household member needs urgent medical treatments for diseases/sickness. It is not economically viable to sell big livestock for small house consumptions. Not only this but also, as house consumptions are frequently needed they need considerably immediate response. Small livestock is sold to deal with such needs. Goat and sheep are always near to home or are not detached from families and thus can easily be sold when needed. For another thing, as compared to large livestock, small livestock is sold without waiting for a regular market day. In this regard, one of the key informants argues that:

Selling larger livestock is very costly. We need to travel a long distance of crossing Regional States to sell camel. Due to these long distances, the final animal which would be ready for our local market would lose weight, which would in turn have adverse effects on the price of that camel. Therefore, selling ruminants is feasible in a face of livelihood shocks and smaller house consumption.

Among the Ituu, production of a specific livestock type seems to depend on the productivity of the other. Stated differently, the pastoral community sells small ruminants such as goat and sheep and invest income obtained to support the production of big livestock. Different services are made for all livestock species. For instance, various vaccination and medical treatments are regularly made for livestock. Such small costs are covered by selling small ruminants, goats and sheep. That is why the Ituu commonly say "*horii horiin horsiisu, nama horiin jiraachisu*", literally meaning, livestock are raised by livestock, and people are alive by the produced livestock.

During drought season buying sugarcane and other residues for cattle is covered by selling goats and sheep. People have now started selling camel milk to support these costs. FGD discussants added some households who are unable to migrate to along Awash River in time of water shortage regularly fetch water from main Awash River and take by car bottle to their homestead. This is paid by selling goat and sheep, the he-goat and he-sheep in particular. Therefore, from this finding, we 33 can understand the costly nature of livestock production and interdependence of producing different species of livestock. Big livestock such as camel and cattle are sold to cover bigger expenses and are sold occasionally. Key informant elders reported in order first to sale livestock like camels, they need to wait for both summer and autumn seasons, because, it is only during these two seasons that camel stay near homestead (Fantaallee district). Camels spend year-round in the two (namely Arsi and west Arsi) zones of Oromiya Regional State and adjacent zones of SNNP regional State in search for pasture. Traditionally, the two seasons of summer and autumn during which camels stay near homestead are an appropriate time for camel to be sold. This does not, however, mean camel are not sold in the other seasons. Discussants reported that among the bigger costs to be covered by selling camel is marriage/wedding costs. Commonly, marriage of Ituu Oromo takes place during autumn season (when camels are near home). Again, it is during the end of autumn season that camel leave home to other areas of Arsi zone and west Arsi zone, and zones in SNNP Regional State. Though many households rush to

sell camel to cover their big cost of wedding, the price of camel remain high. Key informants articulated that this is for two reasons. Needless to repeat, marriage, for which selling camel is a must, traditionally takes place during autumn season. Therefore, though many camels come to market doesn't affect its price that much and this is normal trend in their area. Moreover, camel merchants from Somale, Afar and Wallo come to buy camels in this season, because camels would leave the district until the next summer season. As a matter of fact, in this season of autumn two things happen simultaneously: the price of camel remains good (high) and fetches more money and therefore helps to cover higher costs of marriage, which commonly performed during the same season. Therefore, connecting camel market to seasons is for reasons, which are „the purposes of selling camel and accessibility of camel near homestead". Informants stressed camels are also sold in during first time (start of summer season) back to their area, because past drought, usually causes death of many goat and sheep. Therefore, households who lost many of their livestock, sell camel to replace what they have lost by previous drought. Here, the price of livestock and time matter most. Elder key informants emphasized that during this time the price of small livestock (goat and sheep) falls, because they are physically weak because of the impacts of previous drought. However, the price of camel rises, because only some households who perceive themselves to have lost their goats and cattle by drought prefer to sell their camel. Households selling one or two camel can buy many more goats and sheep. Cattle are also sold to cover big expenses as camel does. However, cattle have other values beyond this.

Livestock beyond Economy: the Socio-cultural Values of Livestock

Elders reported that in the study area though livestock rearing is becoming less viable economically, the social values of livestock are yet undeniable. Women FGD participants suggested that among Ituu pastoralists the social and cultural value of their livestock is vital. Among Ituu pastoral community cattle has highest cultural/social value as compared to other livestock. FGD discussants stressed that in the community cattle is considered as a symbol of wealth. Though have no other livestock, having cattle gives prestige in the community. Cattle also have special role in marriage ceremony. Elder key informants reported, traditionally, marriage is performed in exchange of cattle, not other livestock. Participants alluded that even in case they have more camels than cattle, they would sell the camel in order to buy cattle and give as a bride price or wealth. Expressing cattle's significant value in marriage Ituu Oromo say: *"loon funyoo fuudhaa-heerumaati."* This means, roughly, "Cattle is a rope to connect the parents

of the bride and the groom. Since cattle are the only livestock given as a kind bride price, it helps as rope to tie the couple's parents.

Besides, cattle are reported to play a key role during funeral ceremony among the Ituu. FGD Participants underscored that from livestock, cattle are the only animal slaughtered during a funeral ceremony. During this ceremony, elder brother and father of the deceased men/women have to slaughter cattle. As in the case of marriage ceremony, cattle are bought by selling camel during funeral ceremony. Expressing the value of cattle during a funeral ceremony Ituu Community commonly says "Cattle die with and for us". Not only this, but also, among Ituu Oromo, cattle is the only livestock paid for blood compensation which largely paid in kind among this community. As many as hundred cattle are paid by family and kin group of the offender to the family and Gosaa Set of the deceased men/women. Therefore, households, who have no cattle, have to buy cattle by selling camel. A very common saying among Ituu pastoralists, on motivating to have cattle is "*tokkicha deegaa hin dhabinaa, okholees if hin gogsinaa*", This literally meaning "Let you not ever fail to keep at least a head of cattle, which would be used for funeral slaughtering, and let you do not keep milk containing material drier, because of losing cattle'.

The above saying depicts the social values of cattle among the Ituu besides its economic significances. Ituu pastoralist, therefore, encourage each other on having cattle at any cost. In the saying, the two statements transfer two different social values of cattle. The first statement tells the value of cattle in funeral ceremony. The second statement describes the value of cattle's butter and milk. Women participants reported that during ceremonies like wedding, funeral and when the respected man comes to the home of someone, butter and milk are the major food items to be present. Households who better serve the guests are respected and given high rank in the community. The accommodations particular household or families have for their guests during by providing butter and milk, gives them high prestige. Elders and women key informants emphasized that during wedding ceremonies, different peoples coming to the home of the bride and groom family eat foods prepared with butter and milk. Guests are also smeared/anointed cattle butter on their legs, hands, body and hair. Elders added that there are some practices performed during wedding which would not be done in the absence of butter and milk.

Key informants underscored that not only cattle, camel also has social and cultural value. Among the social value of camel, discussants reported, is the role of camel in orphan development. In most case when mother of children died, her boy children are sent to camel. Perhaps, the live of camel is always away from home and mobile. It is keepers only who follow camels spending every night at different places, and this is year-round. If orphan children are above age of five they are send to camel. It is commonly said "*Gaalli haadha hiyyeessati*", defined literally, camel is the mother of orphan or an appropriate home for orphan is camel. Elder suggested, orphan could not ever get equal treatment and care of their mother from anybody, but from camel. Because, according to women participant, at home orphans suffer unequal treatment (by family and neighbors) with other, but being in camel they at least not face such life. They can also access enough milk being in camel.

The other value of livestock comes in migrating with livestock to the far boundaries. Ituu communities" elders and youths reiterated that trekking with livestock to the border areas they claim, define and defend their territory. The destination of the movement is intended to demonstrate visually where actually the boundary limit of their territory is. The youth key informants emphasized if Ituu are not keeping their livestock on the mountainous land (border lands), they would left it and move to the plain areas where they can produce rain-fed crop. Leaving the mountainous area, stretching from *Iftooya-Gaara-diimaa-Habalee*[6] terrains and north-ward to *Qile-obo* Mountain[7], to the opponent ethnic group, Afar in particular, means nothing, but giving the whole Fantaallee district to their enemies. This is because Ituu pastoralists rely on mountainous land than plain, as the plain land constitutes a small portion of the district, youth reported. This is a good means of identity claiming.

There is no state-based demarcation of boundaries between different pastoral ethnic groups in the study area. For instance, the three ethnic groups in a constant territorial conflict, Afar, Ituu Oromo and Argobba have no clear cut boundaries. Elders alluded that they claim certain land as their own boundary if they actually settled on it, unless there is no legally recognized boundary between us. The end of every of this ethnic pastorals' land (boundary) is where they actually reside with their livestock. Informants further suggested that they do not trek long distance only

[6] Mountain terrains on the north-eastern part of the district and bordering the Affar
[7] The mountain on its top is coldest than other areas of the district

for the sake of securing fodder for their livestock; rather residing there by itself is mechanism of claiming our boundary, which is not legally demarcated. Ituu pastoralists reside on the border at least for two weeks, even during summer season when pasture is enough therein their land. FGD participants disclosed that if they pass two summers without residing (at least for two weeks) on that border land, their opponents would follow enough pasture on the buffer zone which would gradually lead them to claim the land. So, they would not have settled on the border during summer season if they had migrated to the border only for the sake of pasture as pasture is enough in their boundary during this season. Elders also narrated that they experienced problem of crossing (by opponents, Argobba) to their boundaries for they left their residence on the border. Suggesting about this, key informant reported:

> *We return to our permanent residence (Ona Gannaa), because during summer season we can access enough at our permanent residence, and hence we do not have to migrate to border. Argobba agro-pastoralists also go back to their residence in their boundary. We come forward to the border when pasture will be scarce. But, in 2009 E.C as we left our border residence, Argobba pastoralists two weeks after then came to reside entering many Km in to our boundary. Hence, there is no clear-cut boundary, land used to be under our boundary from immemorial time become boundary of Argobba now.*

Ituu Oromo used different mechanisms for claiming their entitlement to particular border lands. The other key mechanism used so far, besides actually residing on the order lands, is "*Dikee*", meaning Animal's Dung. The Ituu Oromo use *Dikee* as a means to claim a particular land area as their own exclusive resource and hence as a boundary making mechanism. When pastoralists settle in an area, so do their livestock stay with them. After they had settled in the area they abandoned it leaving large quantities of animal dung behind. . The *Dikee* entitled the Ituu to the abandoned land. The existence of dung in the area, where they had already lived, is designed to represent symbolically that no one (new comers) has the right to have control and access to such areas even after leaving. Large quantities of dung left on the border where they previously settled exclude other opponents from those particular areas.

Elder key informants reported that they confidently claim that land is their own land, because the dung of their animal is evidence for that matter. Discussants reported when dispute over land become very severe with other ethnic groups, local government bodies sometimes intervene into resolve the dispute. Since demarcation is not available, mediators ask for the original residences of both ethnic groups, which are decided by *Dikee* of either the group on the border land. Still *Dikee* of either group is identified by the direction of the settlement; because both groups may claim the dung (*Dikee*) is of their livestock's. Elder key informants suggested if one pastoral groups settlement face is directed to the boundary of their opponents, that residence is their own, if not is not their own, because border residents always flip the face of their residence towards their enemies, not to their residence.

Interdependence among Ituu is common during mobility from Ona Gannaa to other residences of winter season. There is a situation where mobility with herd has to be only with male. Males take livestock to the border of other ethnic pastoralists only to settle for some weeks. Males take their provision and weapon guns for some weeks to stay at this settlement for some weeks. Elders argued during such mobility main families, children and women in particular, do not trek with livestock, because such mobility from very time is purposefully oriented to defend from border, therefore, conflict inevitably breaks out between Ituu Pastoralists and other ethnic groups. And hence whole families are not taken. During such situation every household are obliged to migrate with their livestock to settle on the border, but households who have no male herders are dependent on the others, so not must on them to trek with livestock. However, such families giving their livestock to other provide food and other logistic provisions, including weapon. Women informant reported in such settlement every things including, provisions are shared 40 among and between male herders. Providing food and other necessary equipment during such settlement is only by the households who have economic capacity to cover the cost of living their families at different residence. As the main concern in such settlement is to claim boundary, life is not private. This social interdependence is emanated from a common saying *"ilmaafii qawween ta biyyaati*", meaning, son and weapon are of the society". In the culture of Ituu Pastoralists, therefore, males are not a resources/capital of a given (to whom they belong) households, a resources of the society at large rather.

4.1.2. Alternative Livelihood Strategies

Besides livestock rearing Ituu pastoralists pursue other alternative strategies of living. The alternative strategies are used in the time of crisis, such as when livestock could not support their families. In what follows, we are going to discuss the three major alternative livelihood strategies: charcoal production, milk selling and rain fed farming.

Crop farming

In the pastoral area of Ituu Oromo there is a gradual shift from pure livestock production to crop cultivation. Different reasons were reported to underlie this shift. According to the study participants land related factors are the reason behind this shift to crop cultivation and rain fall irregularity also. FGD participants stated that vast grass land on which they depend is shrinking due to state farm, Metehara Sugarcane Industry and Summaa National park. They also reported attributed to rain fall the fertility of land to grow browsers, grass and other fodder is decreasing from time to time. Youth participants stressed it is distrust on pastoralism which forced them to sedentary farming. Land related problems were attributed to private investment and irrigation schemes in the study area. Diversifying livelihood through crop cultivation is therefore not voluntary; it is due to those external factors rather.

In the study area some are known to engage in rain fed farming. Informant mentioned maize to be the most widely grown crop. Discussants suggested the residue of maize is also used as feed for their livestock during dry seasons. In some other areas crop cultivation was carried out through small scale irrigation. This was mainly the case for pastoralists who reside in south of Awash River areas. Community leaders' in-depth interviewee and women FGD participants emphasized the existing interdependence between pastoralists of south of Awash and Agro-pastoralists of north of Awash.[8] In the areas of south-Awash agro pastorals there is at least no problem of water shortage, even during dry season. Due to this fact, they to some produce crops even during winter season. In case drought become very serious, pastoral households (in the north of Awash) who have relatives among south of Awash agro-pastoralists, give their drought-weakened livestock and calves to their relatives in the south of Awash to access residue of crop for their livestock. So, at least, these livestock would be saved from drought. In turn, during a

[8] Hawaas(Awash) river crosses Fantaallee district. It cuts the eighteen (18) rural gandoota into south and north. Those rsidents in the south of Hawaas River are agro-pastoralists whereas those at the north of Hawaas River are pure pastoralists.

period of Hiika Dheedaa (parts of land in north of Awash), when land enclosure is opened, agro-pastoralists give their livestock to their relatives (pure pastoralists) in the north of Awash. This is to help fatten their livestock in summer season, which would in turn help livestock tolerate the upcoming drought season. Moreover, in a period of severe drought those pure pastoralists are dependent on agro-pastoralist in accessing food crop. Therefore, during dry season the two groups (pastoralists and agro-pastoralists) experience the effects of drought differently. However, scarcity of pastures for their livestock is common.

Charcoal Production

Under normal circumstance, charcoal production, among the Ituu, was reported to be the least favored livelihood activity. Burning charcoal for earning income seemed to symbolize poverty and lower layer of standard of living. Nonetheless, Ituu pastoralists have gradually adopted charcoal production as an alternative livelihood activity. In the area, charcoal production is operated in two forms. The first is the production of charcoal by women, which is very historical. There is a general perception in the community, however, that if women participate in the sale of charcoal it is believed to be the failure of husbands to govern their families properly. Women produce a small quantity of charcoal around their homesteads. This form of production is a market-oriented one. Women use donkeys to transport the charcoal to the nearby market in Metehara town. Women in FGD stated that they rush commonly to produce charcoal for small house consumption for which selling livestock is not feasible. The common small house consumptions which they fulfill by selling charcoal are coffee, salt and sugar. It is not normal to frequently ask husbands for money, because they are not responsible to govern resource or family. But, there is a situation when they (women) need money, but feel difficult to ask their husbands. This time charcoal production is very important.

In the FGD conducted in Galchaa Ganda women reported the obvious reasons why women need and continue to produce charcoal. Unlike in the past, some materials required for personal hygiene has now become a necessity for women. Modes and diaper are some of the materials that women have now included among the items to be purchased. These materials and alike had not been commonly used and were not parts of regular house consumptions. Currently, however the demand of these materials by the women has increased eventually. In order to buy these materials women, need to get money from their husbands. Especially in such cases, when the money is required for buying materials such as modes, which is related to their private spheres

women would afraid to ask their husbands. When more money is required for such expenses women would have to make up by the sale of charcoal, for which there is a market in Metehara. On the other hand, charcoal production is started by youth male. FGD participant community leaders stressed this form of charcoal production takes place at a largescale level. It is only men youth who participate in such charcoal production. Women do not participate in it. As we will see later, the current large-scale production could be taken as an adaptive strategy against the arrival of a new plant species in the area. This plant is Juliflora, locally named Shoolaa. Shoolaa has invaded the land that the Ituu had used it for grazing.

Different from the charcoal once produced by women near home, this charcoal production is commonly produced in a forest area and from is Shoolaa plant only. Other trees are not used for such large-scale charcoal production. Since it is for commercial purpose, it covers large land. Youth stressed that Shoolaa has no multi purposes related to house consumption as compared to other local tree species, therefore, than simply receiving its negative impacts they use it for charcoal purpose. And other trees which would have been used for charcoal could be saved from charcoal. Elders narrated if properly managed, producing Shoolaa charcoal would even help to control Shoolaa expansion, in turn save their environment. Market for this large scale charcoal production is also different from the first form. Youth alluded that Shoolaa charcoal is rarely sold in near town, Metehara. Charcoal produced, at large scale, from Shoolaa plant is transported to big cities. Adaamaa and Finfinnee are the main destinations of this commercial charcoal production.

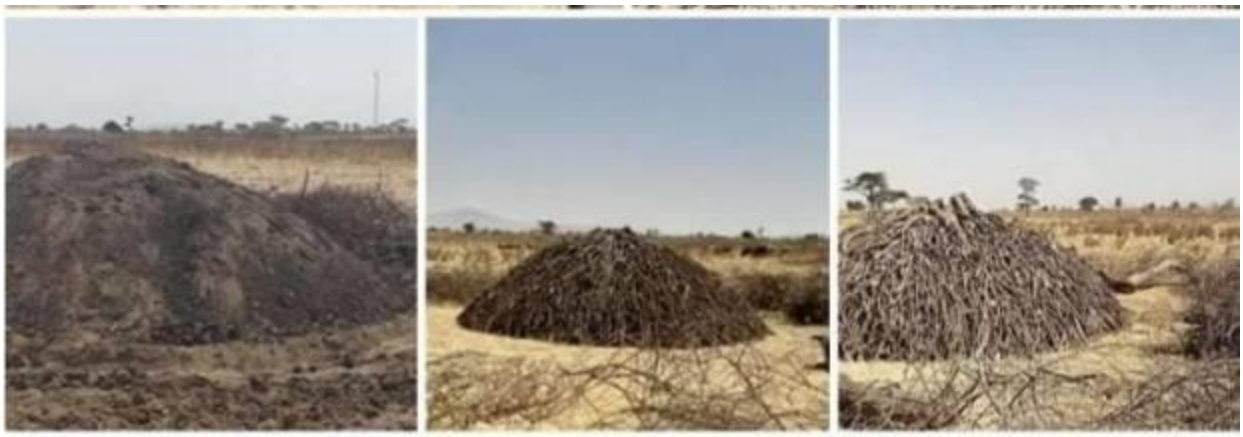

Figure 4.1:- Hay of Shoolaa tree. Source: Field Observation 2020: Photo by author

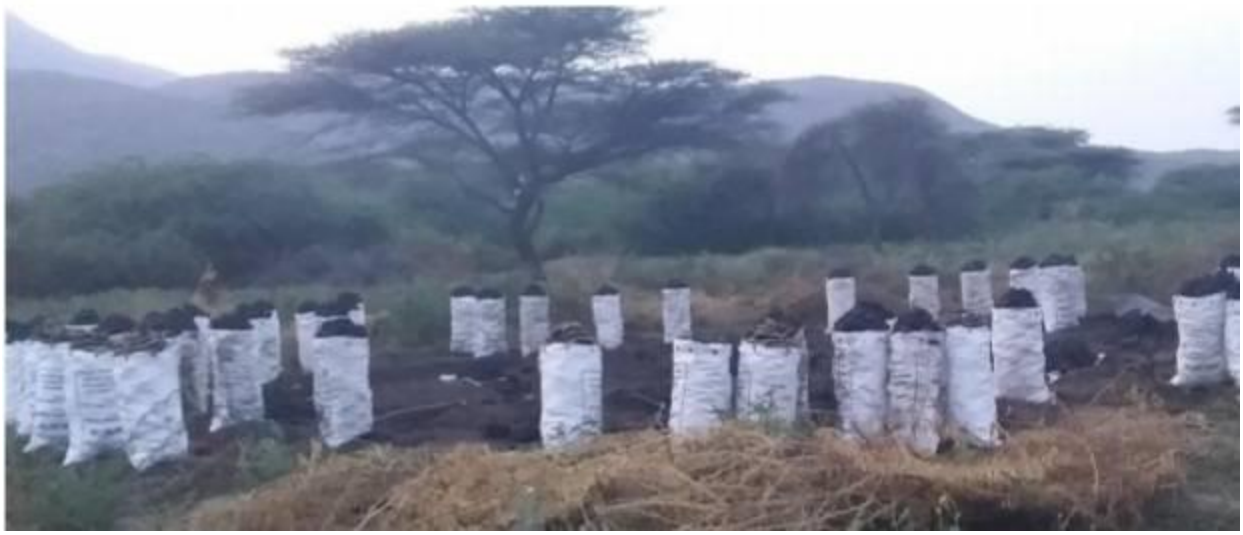

Figure 4.2.: Charcoal Ready for Market. Source: Field Observation: Photo by author

One Young in Qobbo'o Ganda stated the purpose of Shoolaa Charcoal production as follow: *selling charcoal is culturally banned, especially for men. But currently the tree species which is dominating our area is not used for any purposes, but charcoal. It is neither eaten by livestock nor used for another purposes. It simply dominates pasture and farm lands. However, Shoolaa is very productive and feasible for charcoal. I have been producing Shoolaa Charcoal for more than seven years, when Shoolaa dominated our two Hectors farms land near our home. It invaded our farm land which we used to plough during the rainy seasons. As this plant can easily regenerate itself, I continued to produce charcoal. The other good news in the business of Shoolaa charcoal is that, I cost nothing, rather wait for its regeneration after cleared for sell. At one time production I*

could produce 150 to200 kuntals. One kuntals is sold to 230 ETH birrs. I cost to pay for broker and car transport. The traders come in person to my home to buy Charcoal or myself I take it to Finfinnee. I produce charcoal to by goats and camel.

Milk Selling

Milk selling is another house consumption supporting strategies. The milk which is commonly used for sale is camel milk. Traditionally, selling milk, especially camel milk is not allowed, because it is considered as taboo. Nowadays, the sale of camel milk has been considered as a viable strategy in supporting house consumption. Camel, unlike other livestock, does not stay around home throughout a year. In most time the keepers take camel to areas where pasture is available. Splitting the group of milking camels and other camels is started to sell camel milk. Selling camel milk is only the task of men. Women do not participate in this task, because women are culturally prohibited from milking camel.

Needless to say, camels stay at home only during three months of summer season. They leave home during autumn (October). During the remaining seasons, the camels need to move to west Arsi zone and Arsi zone, as well as other zones of SNNP Regional States. During this time every household splits their milking camel from other camels, where the former one needs to stay in different districts of east Shewa zone. Each Households (interested to milk selling) coming with 3 to 5 milking camels form Cooperative. A group of milking camels to form cooperation is called Aannoo Mammilaa. FGD participants also stated that there are three well known stations or settings where those milking camels stay. These are Caancoo, Gaara Solloqqee (near Adaamaa) and Charchar. Milk is sold to customers from the surrounding towns and cities, as Finfinnee, Adaamaa, and Dheeraa town etc. The role of camels' owners is only to prepare milk at their station, and it is the customers who come to take milk on regular base (regularly). A young participant of FGD suggested:

I commonly use our milking camels for milk selling. I have been running this business for the last four years. The business of selling camel milk is really good. I sell 5L of milk to fifty (50) ETB. Camel is milked to three or more times per day. One camel is milked up to 20L per day. Now, I have five (5) milking camels. Therefore, milking the five camels two times per day, each camel milked up to twenty liters (20Lr) I get better income. Money generated from milk selling is used to cover house consumption throughout the year.

During dry season life is very difficult. The prices of livestock, on which we depend, fails, on the contrary, the price of house consumption, particularly grain rises up during the season. Therefore, I send back the money from milk to support my family. Again, during dry season, as there is scarcity of feed for livestock, money from camel milk is also used to buy feed for livestock.

From this suggestion it can be understood that selling camel milk which is considered as taboo, culturally, is today being used to support the communities' livelihood. The milk besides directly covering house consumption is supporting other livestock.

4.2. Livelihood Vulnerability of the Ituu Pastoral Community

There are different factors affecting the livelihood of the Ituu pastoralists. Climate related factors (drought and variability of rain fall) and conflicts are the common. However, there are varieties of emerging factors which would explain the 47 vulnerability of the Ituu pastoralist much more than climate and conflict do. These emerging factors include, but not limited to, the Juliflora tree invasion, Lake Nogoba expansion. And land related factors. These factors are entwined and are having a cumulative impact on the pastoralists' livelihoods. In the following section the impacts these factors are presented.

4.2.1. Climate Variability and Drought

Climate variability, together with drought has undermined the livelihood of Ituu pastoral communities. Climate variability is affecting pastoralists in different ways. Climate variability and changing weather condition have caused the deterioration of the pasture on which livestock rely. When pastureland cannot grow abundantly, it holds the Ituu back from continuing their tradition of herding livestock.

Shortage of rain fall is prevalent in the area. The area used to receive rain fall starting from the end of spring season to the end of summer season, however, this trend changed now, elders reported. Data extracted from FGD revealed that in the past five years, the period of rain fall is reduced only to the months of July and August.

As a result of shortage of rain fall drought has dramatically increased from time to time. According to elders drought has become a common feature of Fantaallee district. In recent decades, it is very recurring than ever. Drought manifests in many ways. Shortage of water and drying up of pastureland are the first and foremost. Rain fall was important as a source of

drinking water for the livestock. Pastoralists used to harvest rain fall water in to artificial ponds to use during dry season. Community leaders reported some of these ponds are constructed by community themselves whereas others are constructed by local NGOs working in 48 rural areas of the district. They stressed they get rainfalls in the area only during two months of the summer season. During the other three seasons the area does not get rain and would experiences shortage of water. Many sources of water as big rivers, lakes and other water points are dries, because of rain fall shortage in the area. Those water points built both by government and local people could store water to be used during dry seasons.

However, the data obtained from discussants show as the man-made water points could not have the potential to store water throughout the dry seasons, because of scarce rain fall, shortage of water in the area becomes a reality. The irregular in rain fall period is another climate related factor affecting the livelihood of Ituu pastoralists. In the past, reliable weather condition used to help the communities develop appropriate adjustment/adaptations and coping strategies. According to elders, some people in the community were able to predict (they were not always accurate though) the time of rain and dry season. But there is no reliable rain fall period as it used to be. Community leaders suggested irregular rain fall period affects pastoral livelihood than decrease in actual rain fall. Therefore, it is not only absence of rain fall in the month, June which challenged Ituu pastoralists, the unpredictable rain fall period also. Some years it rains from June-August, other time it starts raining from July to January.

Verifying this argument, Agro-pastoralists stressed the time during which they used plough their rain fed farming is becoming uncertain. When a well-known agro pastoralist in Qobbo'oo Ganda was asked about unpredictable rain fall period, he stated:

> *Previously, we used to predict when the rain period comes and ends. When we predict rain, though not actually rained, in the upcoming weeks or months, we do different things. We immediately change our residence from 49 temporary (Ona Bona) to our permanent residence (Ona Gannaa) of farm land. We buy farming materials, as plough, sickle, and axes. We also prepare seeds and adjust our farm land for plough. Though not rained actually, we sow seeds to dry soil, because we trust the upcoming rain fall period. But, currently, we are not doing these, because of unpredictable rain period. Rain fall*

does not follow its regular course/ pattern. It may begin to rain earlier or later than its normal time. For instance, I have now accomplished all other pre-conditions of seed sowing, but I am not going to sow it as I used to do. Because, I experienced 1/3 rounds (farm period) seed expire, because of rain absence. I used to sow to dry soil. If I sow it now, I suspect rain to be after two months (after seed is expired in dry soil). We are uncertain about our future.

Rain fall irregularity not only has impacts on readiness of pastoralist, but also on adaptations strategies, mobility and land enclosure in particular. Rainfall irregularity and the delayed onset of the rainy season is leading to decrease of pasture and water near home area. Scarcity of water and pasture results in long distance travel in search of enough pasture and water points, which makes livestock weak physically and less tolerance to drought. Weaken livestock are easily susceptible to diseases.

As a result, the community employed coping mechanisms and adjust themselves to a stressful weather. As we will discuss in the next section, community leaders emphasized had not they have such experience; we would have faced more climate related crisis. Among others, mobility pattern, which is the most important adaptation strategy, is highly dependent on such experience of predicting weather condition. Using particular adaptation/coping strategy (say mobility) is influenced by the climatic condition of that particular time. Therefore, for Pastoralists, predicting the upcoming climate condition by itself is considered as adaptive strategy.

Though climate affects the whole communities, the degree of vulnerability to the effects of climate variability and change differs. FGD results indicated that pure pastoralists are more vulnerable than those who practice farming beside livestock raring. And still the degree of vulnerability depends on coping capacity of pastoralists. The households, who have large labor, keepers, are less likely vulnerable than the others, because while splitting herds (milking, calves, and non-milking) to save from drought, having keepers for each categories of livestock is necessary. In the study area women are the most vulnerable group to the effects of drought. Women FGD participants reported the dry up of water sources near our home expose them to long distance travel to fetch water. Travelling distances to fetch water worsen their double burden at home.

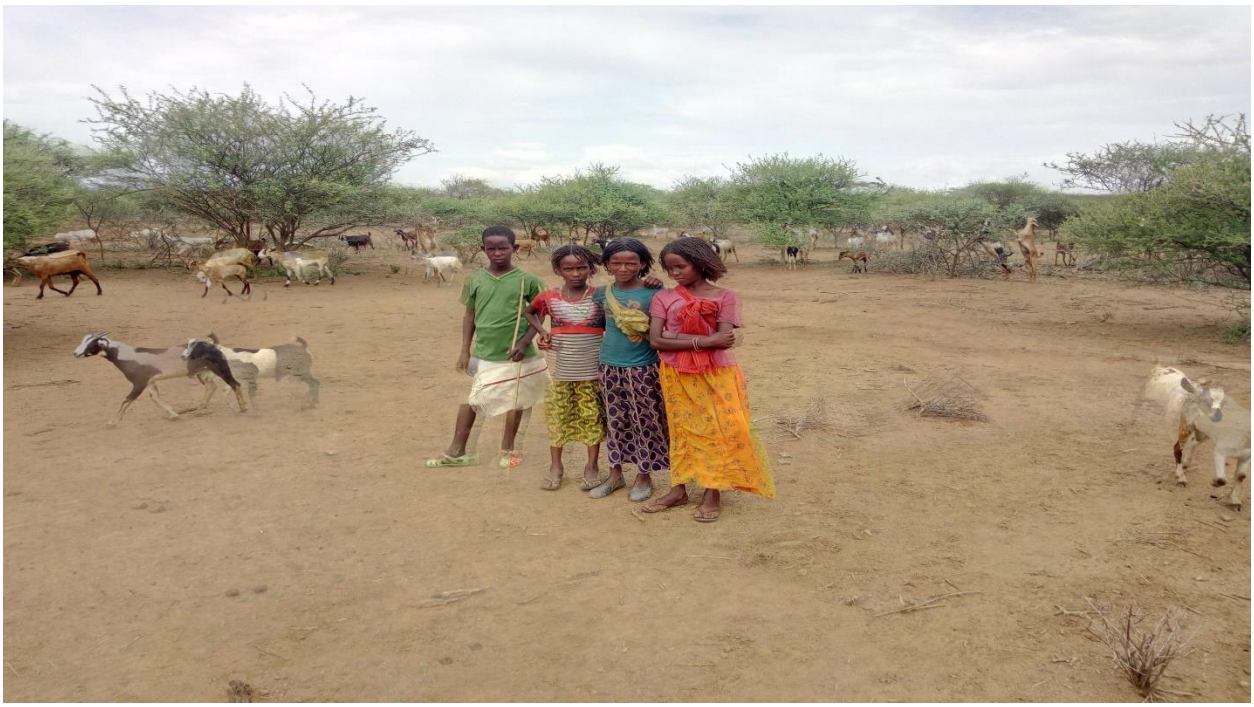

Figure: - 4.3. Children keeping goats in the dry land of Calalaqa site: Source: Field Observation: photo by Author

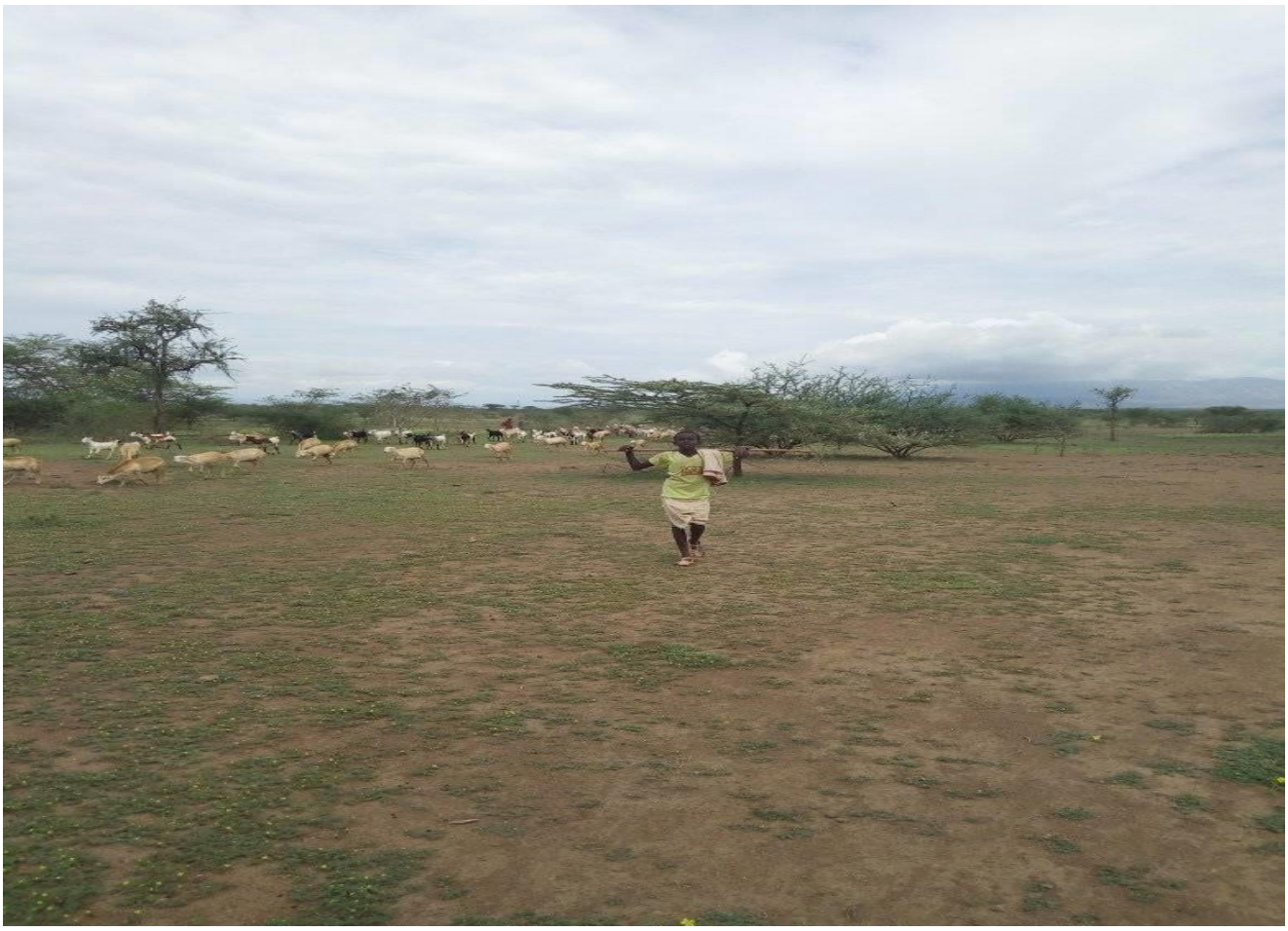

Figure 4.4:- Digaluu site on north of Summaa park. Source: Field observation: Photo by Author

4.2.2. Ecological Factors: The Expansion of Juliflora Tree and Haroo Nogobaa

The Expansion of Juliflora Tree

P. Juliflora inflorescence is a small, green-yellowish spike. P. Juliflora is xerophytic and is adapted to many soil types under a wide range of moisture conditions. The value of the tree lies in its exceptional tolerance of drought and marginal soils. Various literatures (see chapter two) show that Juliflora is a foreign plant species wrongly, but not accidentally, introduced to Ethiopia. It was planted by Ministry of Agriculture in 1970‟s to high quality pasture and irrigable lands including rift 52 valley, along Awash River basin and North-eastern desert lands. Studies conducted in East Shewa and Arsi zone (Hundessa & Fufa, 2016) indicated that Juliflora is invading lands from Adaamaa, Boset and Fantaallee districts. Particularly, in Fantaallee district, this Juliflora plant is spreading at high infestation level.

Local elders narrated that the first introduction of Juliflora to Fantaallee district dated back to summer of 1990s E.C., the year of very severe drought. Elders reported they call the year as "*Bara Bona Hama*" meaning, the year of severe winter or dry. During that year forests of native plants were cleared from the district. According to discussants, wind blow, due to the loss forest, caused the ease death of mass livestock. Elders reported it was during summer of that year that Shoolaa (Juliflora) was introduced to Fantaallee district. Shoolaa was first distributed to elementary schools in rural Gandoota. For some years, it was not planted in rural areas, until the tree was distributed to doors of rural schools. Informant underscored between the years 1995-1996 E.C. it was only some households who have students in school that have Shoolaa tree near their homestead, because the new tree was given to some families on behalf of their students. Households who plant Shoolaa then, used to be considered as role model.

Elder discussants in Qobbo'oo Ganda reported they used to see one or two Shoolaa across their Ganda. They mentioned the first households which used to plant Shoolaa. Until then, the tree was not officially distributed to rural households. According to elder FGD participants in Galchaa Ganda, Shoolaa is first planted in their Ganda and Dheebiti Ganda in the left of Mountain Fantaallee, and then gradually to other eight (8) south-Awash Gandoota. Interviewees reported it was not its pods which were given to people; rather the grownup Shoolaa plant. Discussants stressed that the NGO, Gudina Tumsa Foundation has played a greater role inviting rural people plant Shoolaa.

Key informants from FDPDO reported few Shoolaa plants were planted in each upper awash rural Gandoota of the district. Those first species were planted for trial. It was to check whether Shoolaa species would match to soil of the area. Informants alluded, within a year those first Shoolaa surpassed other plant species with which Shoolaa planted; and it became a big shadow. It was recognized then that Shoolaa is the only plant species to match to the soil and weather of the district. Informants from FNRMO emphasized many different plant species tried to the area, but none could match easily as Shoolaa does. This is attributed not only to the nature of the land (weather and soil), they suggested, but also to the pastoral live of the community. For one thing, due to threat (eat plant), of livestock, it is less feasible to plant trees, except in some protective areas like schools and near homestead. On the other way, the mobile live of the community would prevent plant to get sustainable protection. But, Shoolaa is free from all aforementioned constraints.

Key informants from Administrative office reported Shoolaa tree was appreciated by rural peoples due to different reasons. First, though planting it is tiresome as other plant species, it easily grows and needs little care and protection after planted. Naturally Shoolaa grows very fast. FGD participants added, Shoolaa is not feed on by any livestock species, so once planted it easily blossoms. Community leaders and elders reported that Shoolaa is of two kinds during its introduction. One has no thorn while the second is thorny. They added that, the former (without thorn) Shoolaa does not grow as fast as thorny Shoolaa does. But, gradually the thorn less Shoolaa was extinct and thorny continued invading their area. According to elders, though they didn’t know the purpose of its introduction, they appreciated it during its introduction to the area. Elders expressed that they were happy about all tree introduced to their area, because they thought it would be fodder for their livestock. The greenness of the new tree, according to elder key informants, attracted them.

Women discussants also added since Shoolaa tree require small effort they prefer to plant its seedling to other plants. Expressing his opinion about Shoolaa, elder key informant reported:

> *…but, Shoolaa doesn't dry even during dry season. It even grows in dry season as compared to summer. This makes it special from other plant species native to our area, like Dhaddacha. It has good shadow. Its green leave made our environment attractive. We used to see its goodness than badness, then.*

According to elder informants and discussants Shoolaa started to invade/spread to/ vast area of the district in the years 2007/2008 E.C. The year marked the period of historical reconciliation between Ituu and Afar pastoralist. The reconciliation of Ituu and Affar perpetuated the spread of Shoolaa tree from Affar region to Fantaallee district. The reconciliation allowed both ethnic pastoralists to settle crossing in each other's boundaries. Shoolaa commonly spreads through animal's dung. Shoolaa had already invaded Affar region, on the border of Fantaallee district, prior to 2005. But since they did not cross boundary of one another, livestock of the Afar pastoralists did not come to their land. It is after reconciliation in 2006 that Ituu and Afar started to cross boundaries of each other. Elders reported after the reconciliation some Ituu pastoralists migrated to Affar region and so did Affar pastoralist to Oromiya region, Fantaallee district. Both pastoral groups migrate forth and back between their residences in Afar region and Fantaallee district. Elder FGD participant reported livestock feeding on pods of Shoolaa in Afar region manure in Fantaallee district, then Shoolaa plant grow and spread to vast plain of the district.

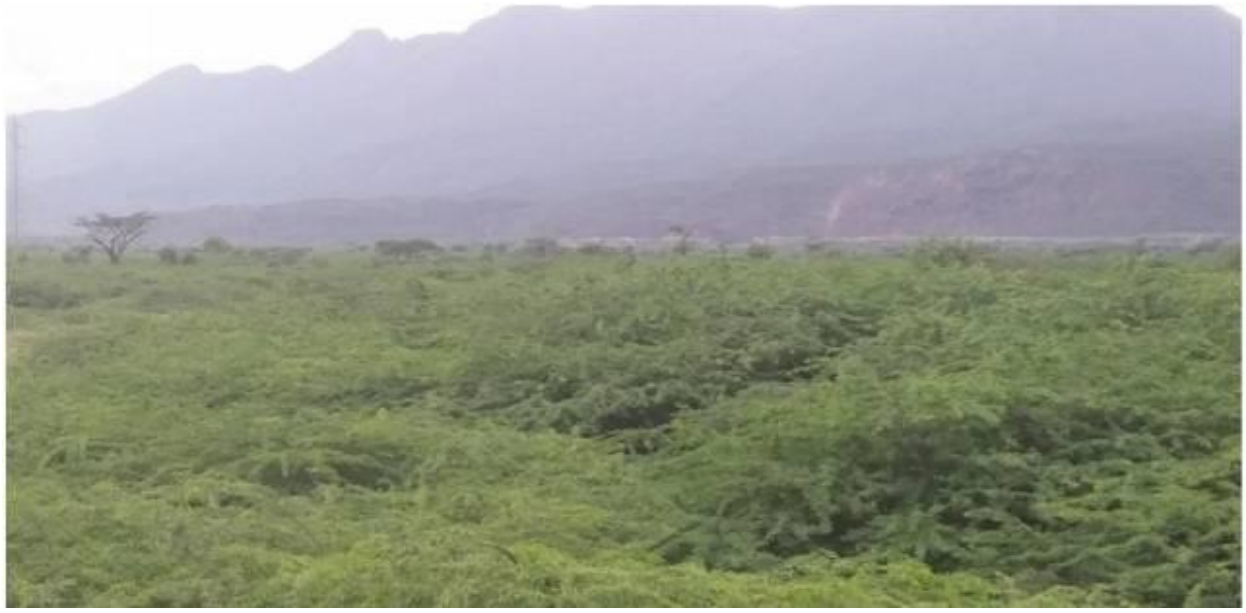

Figure: -4.5. Shoolaa Forest in Qobbo'oo Ganda, Source: Field observation: Photo by author.

According to key informants FDPDO and elder discussants, however today the expansion of Juliflora tree is becoming another emerging factor affecting the livelihood of Ituu pastoralists. Juliflora is invading different parts of the district, particularly plain areas, key informants reported. Elder suggested though Shoolaa tree was introduced to the area two decades back, it did not spread over many areas as it is invading now. Juliflora is dominating huge parts of the district. The plain areas from the edge of Mountain Fantaallee to the right side of Metehara town (town of the District) are currently dominated by the Juliflora tree. The tree is having significant social and economic impacts on the life of Ituu pastoralists. A women participant suggested that this tree species is very devil to the lives of livestock. Pasturelands on which their livestock depend are currently covered by this tree. Discussants alluded that the area covered by this tree species were used to be very fertile areas, on which Ituu pastoralists depend when the mountainous parts 56 of the district is enclosure for later use. During a summer season, elders suggested, mountainous part of the district is enclosure for consecutive two months. During this time, the other plain parts were used to be feed on by livestock and used for rain fed farming, but today, this is becoming impossible as Juliflora is dominating the areas.

Discussants reported that beyond covering the pasture areas, this tree species are very harmful to livestock. Its poisonous thorn causes inflammation to livestock legs. It is not feed on by any

livestock species, except that its pod is feed on during dry season; this even has another impact on livestock. The tree is rapidly invading the areas causing the blocks of roads to water sources and to town. The communities travel long distance to reach to local town, Metehara. They even travel during night crossing many long distances. Development Agents reported, Juliflora is blocking many roads to the town. Three main roads from the edge of Mountain Fantaallee to the town are already closed; and other roads are being made or constructed. They added, for instance, they (DA) travel through other Gandoota to reach Qobbo'oo Ganda where Juliflora highly invaded.

The other significant social and economic repercussions effect of this Juliflora tree is that it is replacing grasses and browsers of the area, on which livestock depend for fodder. Thought it is not scientific verified, this tree causes the extinction of other species of tree and browsers. The areas once touched by this tree would rarely grow other tree or grasses and rarely regenerate itself, even during rainy season. According to youth participants the newly emerging other effects of Juliflora tree is that the tree is becoming dense forest in the area. The dense forest of Juliflora is a home for various species of wild animals which are threat to their livestock. In-depth interview participants stressed, previously except smaller wildlife, livestock hunting animals rarely lived in the plain areas of the district, because the areas are plain and grass covered. They herd their livestock without any fear of hunting animals. This helped livestock keepers to do their other businesses simply sending their livestock to the plain areas of pasture. But today, according to youth participants, this is completely impossible. A dangerous and livestock hunting animals which used to live in the mountain are coming down to this Juliflora forest. There are also various smaller wild lives which are threat to crops of the pastoralists.

In the study area Shoolaa tree spread over land through different ways. Expert from FNRMO[9] reported the main means through which Shoolaa tree spread are through animal's dung and water channels of the irrigation scheme. Livestock feeding on pods of Shoolaa, then manure it somewhere, and then Shoolaa grows there. Key informant underscored that Shoolaa does not in most case grow on mountainous land, but livestock takes it to mountain. And today, it is even started to grow in mountainous land of the District. According to FGD participants from Pastoral Development Office, different channels dug out for irrigation project is contributing, next to

[9] Forest and Natural Resources Management Office

livestock, to the spread of Juliflora tree in the areas. This channel specially contributed for the spread of the tree from one Ganda of the District to the other Gandoota. During rain, the scheme‟s channels take pods of the tree to the other areas where the channel ends. Gradually, Juliflora densely grows at every destination of the water channels.

The other browser species is Ali Wario. According to local elders narrated Ali Wario first came to invade their area in the end of Dergue regime, in 1980 E.C. This species is not externally introduced, it is native. But, elder narrated, it has a time to grow. It used to come and extinct within a limited period. It regularly grows in summer season, and then gets dry when dry season comes. Spreading to the plain areas of the district, Ali Wario invades other grasses or browsers. 58 Discussants reported though affect other species of grasses; Ali Wario is feed on by goat and cattle during dry season. The browser's dry leafs is feed on by cattle and goats when other grasses and browsers are either not available or scarce. Informants emphasized though it is feed on by these two livestock species, since its taste is very bitter/ sour; it has effect on the milk of livestock. Once livestock feed it milk taste becomes very bitter and difficult to use. Ituu women use milk us food for our babies, but this impossible in case livestock feed Ali Wario. Women reported therefore, Ali Wario is better feed on by non-milked livestock lone. Except that it rapidly spread overland to cover grass areas, Ali Wario is not as dangerous as Shoolaa. This browser is currently on extinction.

The Expanding Haroo Nogobaa

The other environment induced) factor in the study area is the expanding lake Nogobaa. Lake Nogoba is the natural volcanic lake found in Fantaallee District. The lake is located to the West of Metehara, town of the District. It is along south side of Ethio-Djibuti High Way. Elders narrated that this lake used to stream from small source which is far from Metehara town. Its water was very clean and salty during that time. Then, it used to have different advantages. Its clean water is used for washing purpose. It cleans clothes than other water does. Elders reported while washing clothe with Haro Nogoba, they do not need to use soap or any other things to clean clothes. Local elders reported livestock drinks water of Haro Nogoba to satisfy livestock's natural interest for salty taste, called Nadha. Elders suggested they take their cattle and goats many times to drink Haro Nogoba water whereas camels are taken to this lake during summer. Other times livestock used to drink water from any sources. So, livestock drinks this Haro Nogoba water to satisfy their special interest of salty taste, not for thirsty to water. Therefore,

camel staying year-round in other areas comes in a summer season to drink this salty water. It is normal to take camel to Haro Nogoba in a summer season. Elder discussants underscored that for camels while drinking Haro Nogoba does not need more food. This salty water helps both as food and water also. Camels spend drinking it for a period of week. Throughout three months of summer season camels go to Haro Nogoba once per month. Elder emphasized they take their livestock to Haro Nogoba water, because the lake‟s water cures different internal disease and parasites on livestock. Drinking Haro Nogoba water helps livestock remove its hair, which is very helpful. However, the salty water of the lake is not used either for drinking or for farming purpose.

However, today the coverage and volume of Haro Nogoba is increasing from time to time. This increment, according to discussants, is attributed to both natural rain fall and waters from irrigation schemes within the district and the surrounding districts. The volume of the lake increases during summer season when different river tributaries flowing from Mountains Fantaallee joins it. Elders emphasized this lake used to increase, in summer season, more than is today, because previously the area used receives much rain. But, today the increment in the summer season continued even during dry season, because of water from irrigation in the west ends to this lake. Water from Oromiya irrigation project which used to serve some western parts of the district ends to this lake.

Participants state that this lake is affecting the livelihood of pastoralists by covering larger plain areas of pasture. Worrying, discussant underlined, is that though it decreases (during dry season) by its coverage, the area once contaminated by this salt water never regenerates to grow browsers, grasses or other tree species. It remains bare forever. Key informant from FDAO reported another emerging problem induced by this expanding lake is that the lake is destroying a single road connecting the two Gandoota of the town, Metehara (01) and Haro Adi (02). Data from FGD reveals Haro Adi sub Ganda of Metehara, is the center of weekly market day. It has been used as a center of market for centuries. Ituu pastoralists sell their livestock there; and other traders from whole district and other surrounding districts also sell their product/materials at Haro Adi. However, today to use this center is becoming impossible due to the expanding lake. Haro Nogoba expands and cuts road taking to there, Haro Adi. Water crosses or turnover the roads and challenges travel of residents in these two sub-towns and peoples coming from rural

areas. Key informants reported since they take their livestock on foot to the market land, this lake not only threatens them, but also livestock.

Youth discussants emphasized this center of weekly market, particularly during summer season, is under constant change being pulled back and forth between Metehara and Haro Adi, former center. It is still problem for pastoralists if it is at both sites. The lake is expanding east ward from west cutting off the road connecting two centers. Some pastoralists (south awash residents) are to the side of former center whereas some are to the side of new center. It is problem for pastoralists in the lower (south of river) awash if market center changed to Metehara. And is challenge for those in the upper (north of river) awash if it is at the former place, Haro Adi. According to key informants and discussants from WEMO[10] the lake is flowing down to the right side of their own displacing one sub-zone of the Galchaa Ganda, estimated to 150 households (500 populations). Residents relocated from this Zone are settled in another Ganda, Qobbo'oo Ganda. The two Gandoota (Qobbo'oo and Galchaa) are divided by Ethio-Djibuti High Way. Galchaa Ganda is to the south of main road whereas Qobbo'oo is to the north of the road. Pastoralists displaced, from Galchaa Ganda, by the expansion of the lake were resettled in Qobbo'oo Ganda. At a new settlement the displaced households have no farming land (which they used to plough during summer) and pastureland for their livestock. Their land is already taken by the water of Lake Nogoba and Shoolaa also. This displacement and resettlement is in turn having other repercussions effects. These pastoralists were settled legally by government; however, land dispute between the hosts and the displaced persons became pervasive. Though pasture land are shared communally, and not private, problem rises for the new displaces were settled on plains where pastoralists of Qobbo'oo and Bantii Ganda used to herd their livestock in the time of land enclosure. Therefore, the problems (displacement and resettlement) resulted of Lake Nogoba are also challenging the operation of communal land enclosure.

4.2.3. Territorial Conflict

In Ethiopia conflict is common among pastoralists. These conflicts can be attributed to various factors. Boundary claim is among these factors. Of course, boundary defines who should be included and excluded from ownership of land and land related resources. The increase in claims over boundary and the resources it circumscribes, such as pasture and water, has exacerbated the

[10] Water, Energy and Mineral Office

conflict between Ituu Oromo pastoralists and other ethnic groups. Though pasture and water are the leading factors, the root cause of conflict is climate condition (drought) of the 62 areas, because availability of pasture and water depends on climate of the area. As FGD result shows conflict arises when pasture is scarce or unavailable from one or both sides. During a dry season Ituu pastoralists‟ livestock finish grazing grassland of their side and the same is true for other opposite groups, the Argobba and Affar. Conflict among those pastoralists arises on the border where land remains buffer because of fear from both sides.

Key informants stressed the situation of this historical conflict has now changed. The cause of conflict has changed from mere pasture and water to land ownership claim. So, conflict is not only drought induced as previous. Ethnic groups face each other on border not merely in search of pasture for their livestock, to claim the land rather. Ituu pastoralists migrate to settle on the border where they claim is their land. FGD participants underscored that these different pastoral ethnic groups could have used this buffer zone residing in their border, but since they thought simply herding from long distance would not make this buffer land their own land, they prefer residing on it. In-depth interview participants suggested that there are different indicators for the changing conflict in their area. Previous conflict, according to participants, is oriented towards defense and threatening their opposite groups through cattle raiding, but now conflict is very deliberate. More, battles of conflict are becoming fixed and pastoralists are making land marks to indicate the end of their boundary. This shows conflict now is beyond pasture land. Previously, they used to meet each other unfortunately when one group enters in to the buffer zone between the two groups. Key informant reported that but, in the current territorial conflict the day conflict occurs is known, not sudden as it used to be. Both opposite groups are well informed about the conflict near their future. Discussant added, historically, it was untrained cattle keepers who fought each other. But today, Argobba ethnic groups are trained. Youth participants stressed that they are recently seeing Argobba pastoralist military training field on the border land. What is new more about the politicized conflict, according to the result of the FGD, is that the Argobba ethnic groups come with their regional flag during the time of conflict. The armed men came in their regional flag warped about their head or their weapon. Even after conflict ends Argobba plants their national flag on the battle field and pass night there. These had not been the issue previously. Elders surprisingly reported that they find materials similar to official military force of the government when killing men from Argobba group. Big and very expensive guns are

witnessed during conflict. Traditionally, when conflict broke out keeper shoot on each other for a while and each side leave battle then. Today, however, Argobba pastoralists have logistic assistance from their home and soon after the broke out of conflict they would have necessary provision. The Ituu pastoralists also started doing the same thing from their side. Understanding the trends conflict, government though not giving long lasting solutions intervening conflict between those pastoralists, this was not previously.

4.2.4. Land Related Factors

Development Agents participants of FGD complained that the interlocked land related factors are deteriorating the livelihood of Ituu pastoralist. Those factors are changing land use pattern of the Ituu. The most important factor that the study participants commonly complained were the expansion of state development projects and land tenure problems. One of the projects is Awash National Park (Locally Summaa Park). This park covered vast plain areas of grass land estimated to 500Sq/Km. However, another 200 Sq/km land areas are being claimed by the park. As the FGD participant reported the park has been undergoing expansion and its effect is believed to become very serious than before. This National Park will expand its current boundary by incorporating two Gandoota in Fantaallee district, and bringing vast land in the district under Awash National Park. It is expected to cover land extending from Ajo Tarre (subzone of Galcha Ganda) to Banti Ganda of the district. There is a frequent dispute over land between the park and the Ituu pastoralists. Elders emphasized land under Summaa National Park is the most fertile and flat land as compared to other part of the district.

The other project is Boset-Fantaallee irrigation scheme. Boset-Fantaallee irrigation project is a large-scale gravity-based irrigation scheme. Key informant from FDWEO reported the project was designed and implemented by Oromiya National Regional Government: inaugurated in 2009 G.C. The project is diverted from Awash River and covers approximately a total land area of more than 3700 ha in six agro- pastoral Gandoota of the district. This irrigation project was established with the aim of saving the lives of Fantaallee pastoralists. The study participants in Qobbo'oo Ganda complained that though the project was designed to save pastoral life from climate-induced problems, it could not achieve its goals. This is attributed; according to key informants from Agricultural Development Office, to water scarcity and problems related to

drainage system. Informants from DA[11] of Qobbo'oo Ganda suggested failing, the project comes with various repercussions effects on Ituu pastoralists of Fantaallee District. Women participants of the FGD conducted at Qobbo'oo Ganda reported, water concentrated in water channels with densely growing Juliflora and other browsers is again coming with other repercussions effects. Juliflora and grows on channels filled with water; this becomes the home for Mosquitoes. Since this happen at every section of the same Ganda, Malaria, particularly during summer season is a very common disease in the areas.

Figure:-4.7. The Channel of the Boset-Fantaallee Irrigation Project: Source: Photo by Author

[11] DA: Development Agent

4.3. Pastoralists' Views about Viability of Pastoralism as A Way of Life

Views held regarding the viability of pastoralism vary across different sections of the communities such as, youth, elders and women. The youth, believe that pastoralism will not continue anymore because of land related problems. Pastoralism, as compared to other way of life, needs larger, open and communally owned land. But, except mountainous and some other lands, open lands are shrinking due to the land related problems. Youth key informants reported they suspect that the mountainous land by itself will be put for parking and tourism services. The open land will be changed to farm and will be privatized after few years. The privatization of land will negatively affect pastoralism as households cannot herd their huge livestock on the privatized land.

Youth reported reluctance of government to solve a longstanding (territorial) conflict among pastoralists‟ is another factor which is threatening the sustainability of pastoralism as a way of life. Territorial conflict is having a serious repercussions effect on the life of Ituu pastoralists. Huge resources (livestock) are being raided and lands are confiscated. The lives of various youths were passed away by this everlasting territorial conflict. This has had not only economic and social impacts, but also psychological impacts on pastoralists. Data extracted from FGD participants showed that in such circumstances Ituu are losing hope of continuing livestock rearing anymore. Youth also reported that except that pastoralists stop trekking to the borders of each other, conflict is inevitable. But there are still other factors pushing those pastoralists to the border. The increasing human population and shortage of land from their border are the main factors. And hence, due to these factors‟ pastoralists are weakening/ less confident to rely on livestock raring.

Youth reiterated livestock rearing despite being main livelihood strategy for their ancestors will not economically be viable. Government is paying more attention to farming as compared to pastoralism. Youth FGD participants suggested government is gathering pastoralists to use vast land of pastoralists‟ for state and private investors farming. The shift in livelihood strategies to farming is inevitable if the current situation is to continue. There are various repercussions effects following. Elders FGD participants suggested pastoralism will not continue anymore, because of climate and environment induced problems, to mention a few. Climatic condition matters most for pastoral livelihood. Though very short the area used to receive enough rain fall

during two months of summer season, this however is changed now. Qobbo'oo Ganda community leaders participated on FGD emphasized that the shrinking of open land, due to expanding farm land (state farm in particular), the invading Juliflora plants and the expanding Haroo Nogobaa would not be challenging as such given enough rain fall to the area. Though it is undeniable that pastoralists need larger open land, they can help themselves living on small land area, provided that they can access water. It is the shortage of rain fall during summer season that exacerbated the land related problems. Discussants of FGD reported if pastoralism is to be their way of life, pastoralists have to reproduce as many as livestock, but this is not possible anymore in their area.

A time period for a livestock to replace/ reproduce itself is crucial in the livelihood of pastoralists. Key informant elders reported livestock under a normal condition have relatively fixed period to reproduce themselves. For instance, goat and sheep, and cattle reproduce twice and once (1) respectively, within a year. This however, depends on conducive of environment/time that livestock would get. Key informant reiterated Bull (he-cow) and lamb (he-goat) mount/serve (for reproduction) she-cattle/goat when livestock access enough water and pasture. Elders suggested, in their area livestock reproduce (mount/serve) each other commonly during summer and autumn seasons, a period of relatively enough water and pasture. Data extracted from FGD, however, shows the longer drought in area continuing in to autumn season (one of the convenient times for livestock reproduction) affects livestock reproduction period, because livestock would not reproduce in dry season. Therefore, longer drought period results in shorter conducive time for livestock to reproduce. And the shorter reproduction period for livestock, the less livestock they would have. In depth interview result indicates, therefore, in the presence of longer drought pastoralists are having less and less livestock populations. This would have an implication on pastoralists‟ trust on livestock rearing as their main livelihood. Expressing his opinion of the impacts of drought on the reproduction of livestock an elderly man suggested:

> *Our livestock take break and recover from drought in a time of summer season. This summer season is not only a period for livestock to physically regenerate; it is time to continue the quitted, because of drought, reproduction also, and hence replace livestock lost by previous drought. But, if the recurrent drought is to continue at this rate, livestock*

will not fail to regenerate alone, but also will stop reproductions. This would constrain livestock population of our area. We believe to the number of our livestock, which is being constrained by climatic condition. So, we are losing trust on livestock rearing.

Elder participants of FGD conducted in Qobbo'oo Ganda stressed that Ituu pastoralists are not interested in farming than livestock rearing. It is for they are not confident on livestock that they prefer pursuing other means of living. Provided that they are not facing challenges, climate related in particular, in livestock rearing they would not be interested to practice other alternative means. They are pushed to diversify their livelihood out of necessity. Comparing the viability of livestock rearing in the past and present the 85 years old elder suggested.

During our time (previous) pastoralism was really viable. Things, pasture and water, which are actually important for livestock rearing are available in abundant. There was enough land for pasture. Climate related problems, drought, rainfall, and temperature are not as such severe; as a result of these, territorial conflict, which is making pastoralists hopeless, was not frequent 69 as now. It is not for we prefer farming to livestock rearing, time (existing condition) rather that pushed us…. And livestock rearing will not be good for our children. Our children have to practice farming through irrigation. Still, they (children) don't have to leave the tail of livestock. Drought really made livestock rearing less viable

4.4. Adaptations Strategies among Ituu Pastoralists in the Face of Vulnerability

To reduce the vulnerability of their livelihood Ituu pastoralists must pursue different adaptation and mitigation strategies. Pastoralists commonly employ those adaptations strategies to save their livelihood from vulnerability to climate induced problems. Though some of these strategies are similar among pastoralists in different sections of the country, there are some which are very specific to certain contexts. More, study result shows the susceptibility of Ituu pastoralists is caused by the synergic effects of drought, conflict, Juliflora expansion and Lake Nogobaa, land related problems. And hence, the pursued coping and adaptive strategies are also not only for one or two specific factors, rather to whole livelihood. In the section follow we are going to discuss the livelihood adaptation strategies pursued by Ituu pastoralists in the face of livelihood affecting factors.

4.4.1. Pastoral Mobility: Livestock and Families Splitting

Mobility in search of enough pasture and water is common among pastoralists. It is the most important livelihood adaptive strategy for Ituu pastoral community. Key informants stressed that mobility is the means of getting in to enough pasture and water during dry season. Mobility (in search of pasture and water) of Ituu pastoralists of upper awash is commonly taking place in two main directions. During this mobility families (youths, and women and elders) are split following two separate livestock groups: non-milking and weak livestock (lactating, calves), respectively. Elders reported they divide their families and livestock, because they cannot access water and pasture at the same site. This labor division among and between the same families‟ is sex and age based. The first movement by the Ituu takes place northward to the mountainous part of the district mainly in search for grazing areas. This mobility to mountain is for non-milking livestock.

Discussant and key informants suggested in the period of drought non-milking livestock are taken by youth male and female to the tip of mountain Fantaallee (border) where they can get dry grass. Land at the border are not grazed because of fear from both sides, it remains buffer. Therefore, though dry grasses, there is most of the time enough pasture for livestock, but what a worse is unavailability of water. Discussants noted that residing thereon at the border of Afar Regional State they take their livestock back and forth to water source of Awash River in the District. Elder reported this livestock group (non-milking) drink water on regular time gap of five-ten and two-three days for goat and sheep, and cattle, respectively. Informant emphasized non-milking livestock are thirst tolerant as compared to milking livestock. This is because; non-milking livestock absorb what they feed to their bodies while milking livestock share parts of what they feed with their breast-feeding calves. They emphasized this travel of long distance from and to water source gradually weakens livestock physically. This would have impact on the reproduction of livestock and make livestock less tolerant to disease, in most case. The second movement takes place southward (center of the District) to Awash River mainly in search of water. This mobility, FGD and in-depth interview participants reported, to along Awash River is for weak livestock. And weak livestock are herd by women and elders, in most case. Though they access water, livestock would not access enough fodder at this site. Key informants suggested, weak, calves and lactating livestock depend for fodder on residue of sugarcane. They reported they access residue of sugarcane for free throughout the dry season. But it becomes

scarce in the middle time; because when drought becomes more severe the non-milking livestock split/remained on mountain Fantaallee are mixed to this weak group. And hence, all households compete on residue of sugarcane to feed their livestock. In such context they start to buy residue to abundantly feed their livestock. Competition on residue occurs among pastoralist, and between residents in many camps of sugarcane factory. Discussants suggested residents in many camps of the factory rear cattle as they do. And therefore, their (camp resident's) livestock are dependent on the residue on which they compete throughout the year. Some households even fail to afford the residue. Participants suggested mobility direction and time goes in parallel. This means mobility direction is determined by the availability of pasture and water, which is in turn determined by seasons. Key informant emphasized, their living, therefore, remain mobile from the end of autumn season to spring season. This kind of mobile settlement where livestock and family members are divided to different separate group is locally called *Bulchaa Settlement*".

The concept "*Bulchaa*" refers to passing (spending) overnight/week at particular herding site. *Bulchaa* Settlement is, therefore, temporal mobility where youths and women and elders take their respective roles of herding two groups (non-milking and weak livestock) of livestock at different sites. Such mobility, In-depth interviewee stressed during these two different contexts either group accesses either water or pasture near their home. Therefore, non-milking livestock, being on mountainous, would accesses enough (dry grass) pasture while the weak livestock would accesses water easily. Informant complained, they would, at any cost, not access 72 water and pasture at same site. Elder narrated youths, during *Bulchaa*, would construct temporary house made of grass and tree or not even construct house, because their live during this time is mobile.

4.4.2. Indigenous Self-help Mechanisms in Herd Split: Cuuphaa and Gunna

Cuuphaa and *Gunna* are indigenous self-help mechanisms used by Ituu pastoralist. These two different herding mechanisms/styles are pursued in two different contexts or seasons. The two systems are an in-built mechanism in herding livestock prior and during dry season. In the section follow we will discuss the two mechanisms.

Cuuphaa Herding Style

Cuuphaa is Afaan Oromo concept denoting 'immersing whole parts of something in a liquid matter.' It is to put dry matter in a liquid matter to help it absorb liquid to itself or get wet. Cuuphaa is a herding style of taking livestock (both milking and non-milking) either early in the

morning to water points and take to pasture in the afternoon or to take livestock in morning time to pasture (mountainous part) and take back to water points in the afternoon. Participants of in-depth interview suggested that *Cuuphaa* is employed during spring (*Birraa*) season when pastoralists are at their permanent residence. *Cuuphaa* is practiced when pastoralists predict severe drought in the season to follow, winter. In this situation they use Cuuphaa to fatten their livestock to help their livestock tolerate the upcoming drought. *Cuuphaa*, hence, is not employed because of absence of water and pasture. It is prior preparation and self-adjustment to the coming drought, rather. Informant stressed livestock would not weaken in dry season if they are well served and nurtured during summer season. They can wait for the rain of autumn season (*arfaasaa*) not weakened or die. Livestock, cattle in particular, are better nurtured prior than in the face of drought. Elder narrated goat and cattle in most of the time give birth during dry season. Therefore, nurturing pregnant cattle and goat during spring season, by the system of Cuuphaa, would help the calves to be born. They stressed, to save livestock from drought is very tiresome and expensive, because of scarce or absence of fodder and therefore prior protection is vital.

Gunna Herding Style

Gunna is herding mechanism by which male youth herd livestock in the evening (imaginary up to 10 pm) after coming back from water sources. This herding style used during dry season. *Gunna*, a system of herding in the evening, is used only for cattle and camel, not for sheep and goat, because small livestock can easily be hunted by other smaller animals, which are invisible to herders in the evening. *Gunna* is used when there is scarce pasture. It is employed, therefore, to cope with and withstand drought. Elder participants reiterated even though livestock feed on grasses in the next morning, to stay overnight drinking water in the afternoon, would have impacts on the physical of livestock. Therefore, livestock has to be taken *Gunna* (herding in the evening) to just feed for 1 or 2hours.It is when livestock become physically weaken and unable to loss water that this herding style is used.

Gunna System is intended have an intention that during a very severe drought livestock has to more or less access water and feed in a balanced manner. It would be physically destructive for livestock unless. Pastoralists suggested livestock taken to water point in the afternoon come back to home travelling long distances, therefore would not get time to feed on grass. Discussants suggested this system is used because in winter season pastoralists cannot ever access water

points and pasture at the same place/time. As discussants stated this system is employed for a short period of two months. But this period is very crucial and would have a significant impact on livestock life, and pastoral live in general. Key informants and discussants suggested these two strategies used for livestock are also very helpful even for herders/livestock keepers. In the system of *Cuuphaa* and *Gunna* herders have to travel double distance in the same to access water and grass for livestock. Participants reported herders take livestock either in the morning time to water point and to pasture in the afternoon or take in the morning to pasture in the morning to pasture and to water in the afternoon time. So, it is tiresome for herders to look after livestock. But, the good thing in the *Cuuphaa* and *Gunna* systems is that traditionally, herders take livestock either to pasture or water on regular base of take turn among and between each herder within the same families. Elders added herders who take livestock to water point would not continue taking livestock to pasture in the evening, *Gunna* and the reverse is true.

According to discussants, in most case, herding on the base of turn during such time is a divided among sex. This is based on the effort that taking livestock to pasture and water point asks. Taking to water sources is the role female youth whereas taking to pasture is the role of male youths. In either time, taking livestock to pasture area is tiresome as compared to taking to taking to water point. Women key informant reported they prefer taking livestock to water point in either time, because they discharge their double roles of fetching water for home consumptions and looking after livestock at the same time. Unless, women narrated, they are burdened to fetch water in the morning and take livestock back to the same distance in the afternoon, which is exhaustive, because they fetch water from the same sources where livestock drinks water. For one another, water points are therein plain areas, since not difficult to female. Again, herding in the evening and herding in the morning time in a mountainous land is difficult to female. But also, in *Gunna* time male has to look after livestock for herding cattle is watching a hunting animals and raiders from opponent ethnic groups.

New Discourses in Pastorals Mobility

To put in different, there is new discourse in the use of mobility as adaptive strategy. Community leaders presented, before five years they migrate from place to place only in search of enough pasture and water points. But currently though it is still in part used for the same purpose, the situation changed. It is for instance, drought alone which used to force them to trek distance to the border of Afar and Argobba pastoralists; however, now accompanied with other factors the

purposes, distance /scale and direction of mobility is changed. Those other factors perpetuating mobility besides the search of pasture are the expanding Juliflora trees, lake Nogobaa and dispute on boundary. Juliflora trees invading the plain part of the district which extend from the edge of Mountain Fantaalle southward to Metehara town and from Metehara eastward to *Summaa* National Park, is forcing Ituu pastoralists to migrate long distance. Juliflora tree beyond invading grass and browser land is dangerous, particularly its thorn, for livestock. Therefore, Ituu pastorals mobility sometimes is in the escape of this tree species. Study participants reported, although they are tolerating, *Ona Gannaa* (plain part) residence by its self is becoming difficult as result of this plant species. And hence though not actually occurring now, in near future we predict that we remain residing there on mountainous part even during summer season. In turn, this would have impact on the practice of other adaptations strategies, like land enclosure. Furthermore, Lake Nogobaa taking larger area is pushing some pastoralists from their permanent residence. For example, Lake Nogobaa displaced one full sub-zone, accounting 125 households, of Galchaa Ganda from their residence of summer season. This displaced peoples where re-settled in another Ganda adjacent to their former residence. They neither able to come to their own residence nor reside continuously in another Ganda, in which they are resettled 76 temporarily. Participants of Focus Group Discussion conducted in Galchaa Ganda reported in their new settlement their agro-pastoralists have no farm. Though there are enough lands they have no legally given land to plough. Participants added, every summer, rain fed farming time, they are in constant dispute over land with formal residents of Ganda Qobbo'oo, particularly Muka-Baddanaa Sub-zone. The other new thing in mobility is migrating to the end of their border to claim land. Key informant stressed Argobba from west and Afar from east and north east are pushing and entering to the boundary of Fantaallee District. Therefore, Ituu with Karrayyuu community are also mobile to the border, especially Argobba, to defend their territories. Mobility of this kind is different from mobility in search pasture and water. For one thing its time is during summer season. Ituu pastoralists putting mountainous part under protection move to the west direction to claim land on the border.

4.4.4. Communal Land Enclosure

Communal Land Enclosure (CLE) is another livelihood adaptation strategy pursued by the Ituu pastoralists. CLE is a tradition of forage reserving and fodder bank creation system practiced by the Ituu Oromo pastoralists. It is mechanism of grazing the mountainous and plain lands of the

district in shift. CLE is endogenous for the fact that its wisdom is emerged from within Ituu Oromo since the immemorial time, and its law enforcement procedures is rooted in the knowledge, local context, experiences and practices of this particular Oromo clan. Though other pastoral community use land protection this enclosure completely differs from land protection employed by other pastoralists. The communal land enclosure, as elders suggested, has played a crucial role in reducing the effects of drought. To adapt to recurrent drought in the area the CLE strategy is pursued to save pasture for livestock. Elder key informant reported in the practice of CLE the issue of resettlements (*qubsuma*) is very crucial, because CLE has a very significant role in determining when to settle where in the district. During summer season land is protected to save grasses for dry season when pasture would be scarce. According to the elder discussants if they had not used this strategy, they would not have saved their livestock from such a historical drought. The practice (apply) of Communal land Enclosure is not an easy task. CLE in most case is applied to Mount Fantaallee, not to other mountainous part of the district. This mountain is protected for two respective months so that pasture would regenerate after dry season. During the first month of summer season, June, Land enclosure would not be employed, because it is time for livestock relief from drought and regeneration of grazing land. This time, therefore, livestock reliefs because they access water (rained) and grasses (though dry) in this month.

The regular system of land protection, Indigenous Land Enclosure is first launched in the month of July through local meeting called, *kora-biyyaa.* Participants suggested the time of opening the protected land depends on the rain fall status. If rain is good and continuing, enclosure continues, because livestock can access grass and pasture therein the plain areas. Elders also reported land Enclosure is very important for environmental relief; plant for construction grows and regenerates itself. This local meeting would proclaim many different things, including deciding when to reside where. Though this local meeting is attended by whole community, there are selective community leaders who develop different structure of this land protection strategy. Protecting land through Communal Land Enclosure needs team working with various shared responsibilities among and between committees.

Different team workers like *Koree Godaansiftuu, Koree Lafaa and Koree Adabbii* are established to employ this strategy. As the name indicates these committees have their own responsibilities throughout two months of summer season. How is communal land enclosure

managed? Among the Ituu the management of communal land enclosure is entrusted to specific individuals in the community. These individuals are assigned to three separate groups or special committees: *Koree Lafaa, Koree Godaansiftuu, and Koree Adabbii*. These committees have different roles to play and responsibilities in the system of communal land enclosure. In what follows, we look at how these committees play their role in communal land enclosure.

Koree Lafaa (Enclosure Committee)

The main task of *Koree Lafaa* (land committee) is making rules and regulations of communal land enclosure. Study participants reported since the tasks of this group are most difficult as compared to the other two teams it is elderly men who has to be a member of this committee. Members of this team in most case are also the experienced elders on this communal land enclosure. Discussants also described that *Koree Lafaa* plays the role of managing the protected lands. They control the protected land whether some households herd their livestock violating the rules and regulations of the system. Some households may send their livestock thinking that their livestock are not getting enough pasture from the plain (out of enclosure) areas. The other role of Koree *Lafaa* is also to control whether other neighboring ethnic pastoralist, Afar and Argobba, are entering in to Ituu's boundary, because when Ituu Pastoralists left mountainous part for land protection Afar come to Ituu‟s boundary to herd their livestock on buffer so as to save their land in the center of their home land. Key Informants emphasized Afar pastoralists may cross to Ituu‟s border not only to herd their livestock on the protected land, but also settle on it to gradually claim the area. Moreover, the member of enclosure committee regularly controls over the whole protected lands to see whether lands are regenerated enough. Status of range land, grasses, and water points would be controlled by this group. This would help them decide the time of allowing the protected land, which is locally called Hiika Dheedaa.

Koree Godaansiftuu

Koree Godaansiftuu is a committee, primarily responsible for executing the decisions of the Koree Lafaa. In other words, this committee directly implements the decision of Koree Lafaa about the duration of land enclosure, where to reside and not, distance from home where livestock can feed on, and time to leave(migrate from) mountainous part(to be enclosure) of the district to plain. During spring season Ituu community coming back from the winter residence along Awash River directly resides on mountainous part of the district where livestock can access dry grasses and water at one place. However, they again leave this mountainous part after

a while to enclosure it. Key informants suggested that another role of Koree Godaansiftuu is to round throughout the whole district to declare/ inform the community that the time for Communal Land Enclosure is up. Migration Committee are divided and sent to different directions of the mountainous part of the district to inform community leave Mountain for land protection. Every household is informed to come down to the plain land of edge of Mount Fantaallee, Ona Gannaa, which is considered as permanent residence, called Ona Teessoo. From then on, after every household left mountainous part to plain areas, land would be under protection. For two consecutive months of summer season livestock, except camel, are herd only on plain areas stretching southward from the edge of mountain Fantaallee to Metehara town to Awash River. Elder key informants reported exceptional to other livestock; Camel is allowed to feed on in the protected lands. This is for two different reasons. First, camel feed on leaf, (Soorattoo Baalaa), not grasses, therefore, camel could not access leaf and browsers in the plain areas where livestock should and expected to feed on during land protection period. Elders also emphasized the impacts of camel on land is lesser as compared to other livestock. As camel would not feed grasses and other browsers it would not have as such impacts on grasses, for which land protection is mainly necessitated. Therefore, though mountainous land is not naturally conducive for camel, camels have to spend summer season thereon mountain, unless camel would face hunger even during rainy season, because leafs and browsers are naturally available only on mountainous, not in plain areas.

Koree Adabbii (Penalty Committee)

The third working team in the system of Communal Land Enclosure is penalty committee. In the system of CLE experienced elders propose different kinds of penalty for those who are violating the rules and regulations of the system. The level or types penalty also depends on the nature of crimes committed. The proposed penalties associated to different kinds of crimes can change from time to time. It is subject to modification within four to five years interval. It is proclaimed to the wider public on the date of local conference, called Kora Biyyaa where discussion to launch the CLE held. The role of this team is to force tasks of penalty, not to set kinds of penalty. They are actors. Participants suggested though Penalty Committees have no power of setting kinds of penalty for crimes, they can change penalty depending on the contexts. Discussant stressed penalty for person violated rules differ across cases. Study participants reported that the commonly committed crime for which penalty committee is established are the crime of herding

livestock on the protected land and residing in the protected lands. In the case of herding livestock on protected lands penalty differ for different livestock species. Discussants described that, for instance, in the past five-year penalty for herding goat and cattle on protected land is twenty-five (25) and fifty (50) ETB, respectively. However, participants reported penalty may change depending on intention of the criminal and frequency of committing similar and different kind crimes. Traditionally, for a person herding and residing in the protected land there was no constant financial penalty. There is neither financial penalty set depending on the time that household spend residing in the protected land nor other kinds of punishment. Though very rare to occur, elders suggested, households/person who oppose/against the CLE land protection strategy receives another punishment, which is even harsher than any of the aforementioned penalties. Persons accused of committing such crime are either directly reported to their respective Gosaa leaders, called Jiraa.[12] The criminal committed such crime is accused as deviating from the norms and values of the communities. The criminal then receives balanced punishment based on Gosaa systems. Local elders stressed his/her case is not dealt with by the rules and regulations of the CLE mechanism, because the man is considered as threat to the whole livelihood of the wider community. In some cases, such criminals are reported on local public meeting, called Kora Biyyaa, to be known to public. Key informants reported, but currently government is taking part in the practice of this enclosure system, especially in punishing households deviating from the wider public memorandum of understanding with regard to CLE. Therefore, punishment Committee reports the extremist criminal of residing in the protected land and opposing the practice of the system in general. Elders suggested government started to intervene in the system's work, which was started in the last three years.

[12] Jiraa is head of particular gosa/clan in the gosa system of the Ituu Oromoo

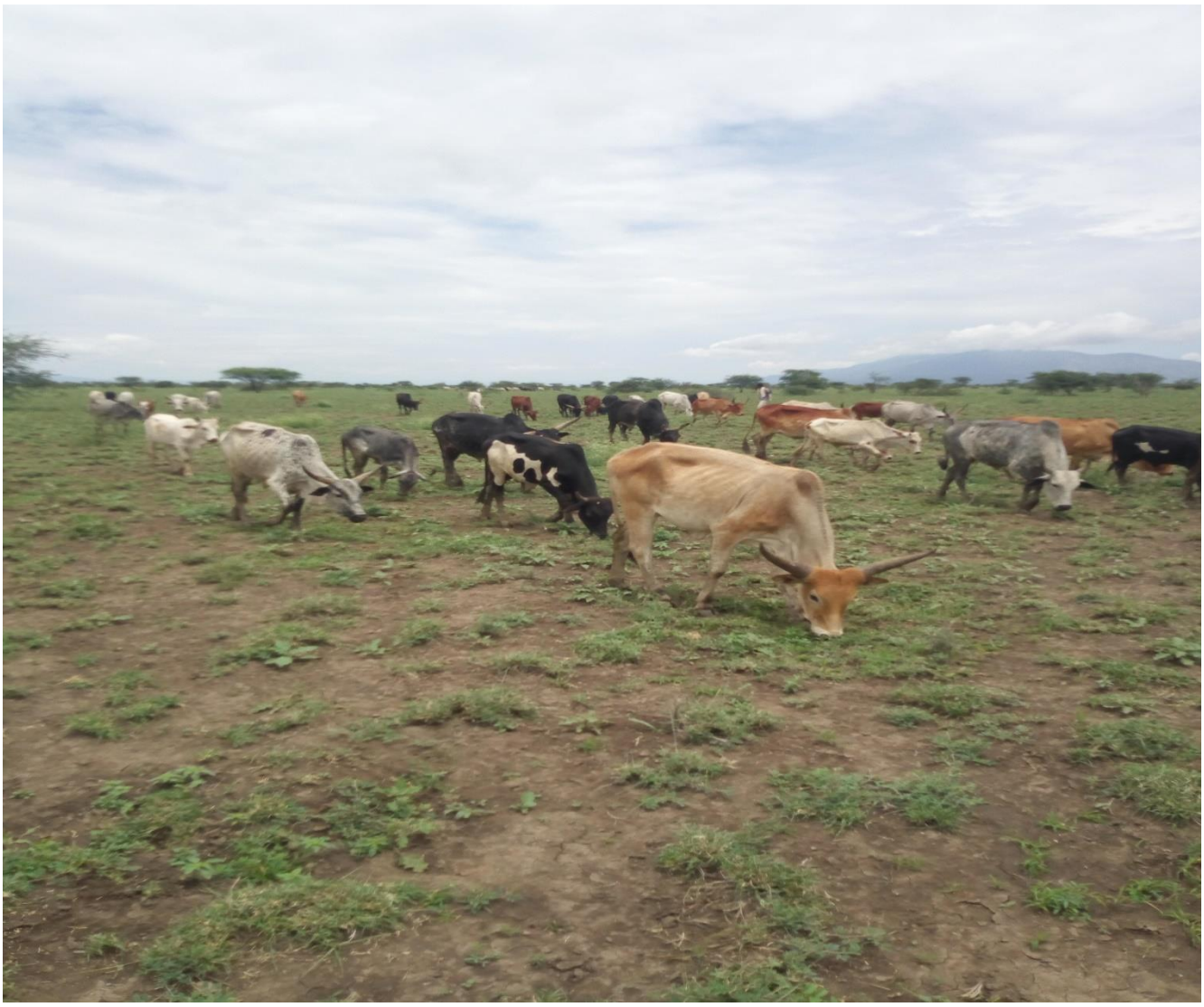

Figure: -4.8. The Ituu cattle grazing on Bantii Ganda pasture site, Source: Field. Photo by author

Chapter Five
Conclusion and Recommendations

This chapter concludes the major findings of the study. The chapter based on the findings of the study, also gives recommendations for further researches.

5.1. Conclusion

This study explored the livelihood, vulnerability, and adaptation strategies among Ituu pastoralists in Fantaallee district. The study relied on a qualitative research approach. The study was qualitative in design. It used focus group discussion, key informant interview and in-depth interview to gather data from purposively selected discussants and informants. The main livelihood of Ituu community is livestock rearing. The Ituu produces mixed livestock species: camels, cattle, goats and sheep. They produce diverse livestock species for different purposes ranging from house consumptions and other expenses. Ituu pastoralists beyond their economic significances, produce livestock for they value them socially and culturally. Different livestock species they produce have different social and economic significances. Further, Ituu pastoralists pursue other alternative livelihood strategies beside livestock rearing. The Ituu started using charcoal production, selling milk and rain fed crop cultivation as a supportive livelihood strategies. Traditionally, producing charcoal and selling milk is considered as a sign of poorness. Though producing charcoal and selling camel milk is used to be banned traditionally, the Ituu started using these two strategies to support their main livelihood strategy, livestock rearing. These two mechanisms are becoming sources of income. Charcoal, among Ituu pastoralists, is produced in two forms: charcoal production near homestead by women and commercialized large scale charcoal production from Shoolaa trees. The Ituu also started rain-fed crop cultivation. The major crop cultivated in the area is maize. Therefore, unlike misconceptions by some people as pastoralists are cattle only keepers, pastoral livelihood is very diverse. Different factors are affecting the livelihood of Ituu pastoralists. Climate variability and drought, territorial conflict, ecological factors (Lake Nogoba and Juliflora trees expansion) and some other land related factors among the main factors and concern of this particular study. Delay rain fall period, intermittent rain fall and recurrent and longer drought in the area are among the climate induced factors. Territorial conflict with neighboring ethnic pastoralists also caused the civilians causalities and deaths, livestock raids and shrink of pasture land. There is a change in the historical conflict between and among those pastoralists. Though the conflict was used to break out due to scarce pasture, the present conflict between the Ituu pastoralists on one side and Affair

and Argobba in another side is shifting to claims of land ownership. Therefore, the conflict between those pastoral communities is going beyond scarce pasture land. And there are many things indicating this shift. Moreover, Juliflora and Lake Nogoba expansions are also compromising the pasture land of Ituu pastoralists. Development projects like failed Boset-Fantaallee irrigation project, sugarcane state farm and Summaa national park are also deteriorating the lives of Ituu pastoralists. Hence the vulnerability of pastoralists is beyond drought and shortage of pasture and water. In the face of livelihood vulnerability Ituu pursue various adaptation strategies. The main adaptation strategies are pastoral mobility, communal land enclosure and families and herd families splitting. In mobility, the Ituu move following a regular migratory pattern between dry and wet season grazing areas, with permanent settlements in each area. The communal land enclosure is practiced by the Ituu pastoralists to use mountainous and plain pasture to in shift. By this indigenous mechanism, Ituu protect pasture land in the summer season to use it during dry season when pasture is scarce. Therefore, mountainous part of the district is protected during summer while they use the plain land at the edge of mountain Fantaallee herd their livestock. The Ituu also split their livestock in to the lactating and calves, and non-lactating to adapt to the dry season. Family members also split following these split livestock group, because these livestock categories reside (herded) on different sites or residencies. Though every pastoral community pursues adaptation strategies to their livelihood vulnerability, the functioning of strategies varies across contexts and depends on indigenous knowledge of particular community. Though pastoralists are losing trust on the viability of livestock rearing as their main livelihood strategy, different social segments (youth, women, elders) complain different reasons. Still elders ad senior women insist on having livestock at every house. This is because of the other value of livestock and lack of confidence on crop cultivation as their livelihood.

5.2. Recommendations

Climate vagaries, drought, territorial conflict, environmental factors with other manmade factors put the livelihood of Ituu pastoralists at risk. To improve this, different opportunities which could be environmentally sound and applicable to practice need to be assessed and recommend for future actions. Contingent on the findings of the study, the following recommendations were made for further research and policy interventions. While developing policy for rural pastoralists policy makers should consider diversity among pastoralists'. Pastoralists are very diverse. Pastoralists are diverse in their ecological zone, culture, available resources and livestock production system. Since pastoralists have long time experiences of their problems, every intervention made should use the existing local resources or local knowledge of the community. Since some of the invasive ecological problems are beyond the control of the community and local government, it needs the intervention of regional and federal governments. The expansion of Juliflora tree needs scientific study as this tree species would inevitably lead to the extinction of other bush, trees and browser species. Government should control perpetrator investors who take the lands of pastoralists for their private investment. Government should intervene and resolve the problem of territorial conflicts between and among ethnic pastoralists in the study area.

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Appendices

Jimma University

College of Social Sciences and Humanities

Department of Sociology

Name of student (Researcher): Boruu Muussaa Burqaa Gumbii

Appendix 1

Dear participants, the purpose of this questionnaire is to collect data on the topic "***Livelihood Vulnerability and Adaptation Strategies among Pastoralists in Oromiya, the case of Ituu Pastoralists***" for the partial fulfillment the requirements for Master Thesis. So, I would kindly request you to provide me reliable information so that the findings of this study will meet the intended outcome. I strongly assure you for the confidential treatment of your answers. I would like to thank your voluntary participation for the success of my study.

Appendix 2

In-depth interview Guidelines for community leaders and local elders

1. What are you means of living?
2. What kinds of livestock species do you rear?
3. Why you rear different species of livestock?
4. What number of livestock do you have?
5. Which livestock species is mostly vulnerable?
6. Why?
7. What livelihood strategies do make your major income?
8. Do you have farmland?
9. Do you have grazing land for your livestock?
10. Explain factors affecting grazing lands in your areas?
11. Does grazing land privately owned?
12. Is there change in land use pattern?
13. What factors are contributing for change in land use?
14. What factors affect your livestock production?

15. Who are your closest pastoral neighborhoods?

16. How climate does affect pastures?

17. How does conflict affects pasture land use?

18. What strategies do you use to cope with those factors affecting pasturelands?

19. How conflict with adjacent pastoralists is going?

20. Is there difference between current conflict and previous conflicts with other pastoralist?

21. Would you explain factors for the conflict with other pastoralists?

22. What do you think are the immediate causes of conflict?

23. What do you think are root causes of the conflict?

24. During which season does conflict intensify?

Focus group discussion Guidelines for women

1. Describe your roles as house wife

2. From where do you fetch water?

3. Explain other responsibilities do you have out of home?

4. Do you look after livestock?

5. How you manage other home activities while keeping livestock?

6. Explain other sources of income

7. Why do you produce charcoal?

Key informant interview guideline for local elders

1. Describe your livelihood strategies

2. Why do you rear mixed livestock

3. Would you describe the other values of livestock (camels cattle, goat and sheep), beside it economic values?

4. Describe livestock rearing as your main livelihood strategy in previous and present time(goodness or badness of livestock rearing in previous and present, why?,

5. Explain other livelihood strategies you prefer to livestock rearing (farming, charcoal, milk selling, trade etc)

6. Explain factors affect your livelihood (drought, ecological factors, land related factors, conflict)

7. Would you describe about Shoolaa tree your area (when it comes emerge, who brought, why it was, it characteristics)

8. Would describe the advantages and disadvantages of Shoolaa tree?

9. How do you see Shoolaa tree in your area

10. Would tell us about the status of fodder in previous and present time (availability of browsers, grasses, browsers)

11. How do you see the previous and present conflicts with Afar and Argobba (causes, courses, consequences and trends?)

Focus Group Discussion Guidelines for Youth

1. Describe your main roles as male in your family

2. Which livestock do you mostly look after?

3. Would you describe your roles to help your families during dry season?

4. How do you see livestock rising as a livelihood strategy?

5. Do you have other sources of income? Explain

6. Why do you sell camel milk?

7. Why do you start producing charcoal?

8. Describe challenges in livestock rearing in your area?

9. Do you prefer livestock rearing to crop cultivation (compare and contrast?)

10. Why?

Key Informant Interview Guide for District's pastoral development officers

1. Role of the interviewee_____

2. Would you explain status of natural resources in the area

3. How do you see the current rangelands productivity in the area?

4. Would you explain challenges facing pastoralists?

5. What has been done to reduce those challenges?

6. Do you think pastoral communities are benefited from the services you are providing?

7. What do you help them in the face of drought?

8. Does government intervene during conflict between pastoralists?

9. What kind of measure does government takes?

10. What measure has been taken to protect natural resources of the areas?

11. Do you discuss with the communities while taking measures?

12. Which social class is mostly affected by the impacts of drought?

13. Which social class is mostly affected by conflict?

Observation guides

1. Ecological factors (the expansion of Juliflora, Irrigation scheme, the expansion of HaroNogoba)
2. Alternative livelihood strategies (charcoal production,
3. Tributaries of Haroo Nogobaa (rivers from mountain Fantaallee)
4. Land use pattern (pasture land,
5. Development projects (expansion of park, sugarcane state farm and private investment)
6. Water sources (natural and manmade ponds and their potential)