INDRA GANDHI NATIONAL OPEN UNIVERSITY

SOCIOECONOMIC EFFECT OF TENDAHO SUGAR CANE PLANTATION ON THE PASTORAL LIVELIHOOD OF AFAR NATIONAL REGIONAL STATE

A Thesis Submitted to the School of Continuing Education, Indira Gandhi National Open University in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Rural Development Studies (MARD)

By

Jibril Ibrahim

November, 2016

ADDIS ABABA, ETHIOPIA

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DEDICATION

I fully dedicate this thesis manuscript to the late my mother for her care and sacrifice she paid for the sake of raising her children

ACKNOWLEDGMENT

First, I am highly indebted to Dr. Wondimagegn Chekol for his technical guidance. Without his insight, guidance and professional expertise the completion of this work would not have been possible. My special appreciation also goes to Mr. Hayatudin Jemal who complimented and advised me on matters pertinent to this thesis. I also like to give credit for his contribution while brainstorming to identify the research topic.

At last but not the least, I take this opportunity to thank my wife, Jemila Ahmed for her moral support and encouragement. I also owe her for typing the questionnaire and entering the data into SPSS software.

DECLARATION

I hereby declare that the Dissertation entitled SOCIOECONOMIC EFECT OF TENDAHO SUGAR CANE PLANTATION ON THE PASTORAL LIVELIHOOD OF AFAR REGIONAL STATE submitted by me for the partial fulfillment of the M.A. in Rural Development to Indira Gandhi National Open University (IGNOU) New Delhi is my own original work and has not been submitted earlier either to IGNOU or to any other institution for the fulfillment of the requirement for any course of study. I also declare that no chapter of this manuscript in whole or in part is lifted and incorporated in this report from any earlier work done by me or others.

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CERTIFICATE

This is to certify that Mr. Jibril Ibrahim, student of M.ARD from Indira Gandhi National Open University, New Delhi was working under my supervision and guidance for his/her Project Work for the Course MRDP-001. His Project Work entitled Socioeconomic Impact of Tendaho Sugar Cane Plantation in the Pastoral Livelihood of Afar Regional State, which he is submitting, is his genuine and original work.

Signature:

Date:

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LIST OF ACCRONYMS

APSPRC	Afar Pastoral and Semi Pastoral Research Center
ACZ	Agro Climatic Zones
ARS	Afar Regional State
ADSWE	Amhara Design and Supervision Works Enterprise
BOA	Bureau of Agriculture
CDC	United Sates Government Agency for Center for Diseases Control
CSA	Central Statistics Authority
ETP	Employment-to-population ratio
EPA	Environmental protection authority
FAO	Food and agricultural organization
ELAP	Ethiopia- Strengthening Land Administration Program
FMOH	Federal Ministry of health
FGD	Focus Group Discussions
GDP	Gross Domestic product
GIS	Geographic Information System
GTP	Growth and Transformation Program
MDG	Millennium Development Goals
MEDaC	Ministry of Economic Development and Cooperation
MOWRD	Ministry of Work and Rural Development
MOA	Ministry of Agriculture
SNNPRS	Southern nations and Nationalities Peoples Regional State
TSP	Tendaho Sugar Plantation

TLU	Tropical Livestock Unit
TVET	Technical and Vocational Education and training
UNEP	United nation environmental program

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ABSTRACT

The land use rights for rural dwellers (both pastoralists and farmers) are clearly enshrined in the newly written constitution of the Federal Democratic Republic of Ethiopia. However, because of various factors such as lack of clear guidance or legal protection or enforcement to ensure pastoral land use rights has led to encroachment and alienation of key dry season grazing areas. Most importantly, the expansion of various federal and regional state investments in pastoral regions the likes of Afar for example have become a cause for the shrink of pasture areas and access to water for the pastoralist which thereby led their accustomed livelihood style on the brink of alienation and crisis.

This study therefore, has explored how the increasing expansion of agricultural lands over the rangelands in Zone one Afar National Regional State (Tendho Sugar Plantation) affected the nomadic way of livelihood and the overall lives of the pastorals. In this research work, primary data was collected with the help of open and structured questionnaires, focus group discussion. Data collected were analyzed using descriptive statistics using SPSS.

Results from this study indicated that 71% of the respondents have affirmed that the sugar cane plantation in the study area has affected the total area of the dry season grazing area, access to water for their livestock and household purpose, decrease on their livestock size, created intra and inter conflict between the pastoralist and the Thendaho Sugar Estate.

From this study it was concluded that the expansion of the Sugarcane Plantation up to 60,000 hectares of land in the dry season grazing area of Lower Awash basin without any compensation mechanism to the pastoralist have brought severe effect on the livelihood of the pastoralist.

Keywords: Tendaho Sugarcane plantation, Pastoralist, Socioeconomic effect, Livelihood

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

An estimated 90 percent of the population of ANRS depend on pastoralism, herding cattle, sheep, goats and camels. Areas of good pasture that are able to support cattle are only about 15 per cent of the total land area and are now said to become increasingly fragmented and lost. This is partly due to competition from irrigation agriculture in the Awash Valley (Helland, 2015). There are also a number of factors that over the past few decades have contributed to this rangeland's shrink. Encroachment of Prosopis Julieflora can be one factor to be mentioned. According to Helland, some parts of ANRS are found in the extreme end of the aridity continuum in the arid and semi-arid lands of the Horn of Africa. Occurrence of the unpredictable and severe droughts that have become a characteristic of the region has also contributed to the increasing loss of pasture in the area. Helland also quoted Tesgaye who asserted variation in rainfall is the main driving variable in the pastoral system, other events, like increased sedentarization, increased demand for firewood and charcoal and expansion of agriculture into marginal areas are all linked to observed changes in the vegetative cover and resource depletion (Diress Tsegaye et al, 2010).

The Awash River has been a major resource in the Afar pastoral production system; seasonal access to the river frontage and to the river flood plains during the dry season has allowed the exploitation of the wet-season pastures away from the river. Furthermore, the flood plains, particularly along the lower reaches of the river, have allowed simple agriculture and food production as the floods recede (ANRS, 2015).

Helland sited Ali Said, (1997); Ali Hassen (2008) and Rettberg, 2009, the Awash river regularly floods after the rains start in the highlands and the normal pattern of movement of the pastoral communities is away from the river during the floods, out on to the Alledeghi plains to the east or up to the Rift Valley escarpment to the west.

This pattern of mobility, however; has been disrupted by the large-scale development of irrigation agriculture along the river since the 1960ies (Helland, 2015). The irrigation potential of the rivers in Afar is limited, and with a large proportion taken away by large-scale commercial schemes like the sugar plantations at Tendaho and Kessem, the proportion of Afar pastoralists that can be accommodated is limited.

After the 1975 revolution and land reform, all farms were nationalized and put under state farm management. In addition, there were several new farms developed, particularly in the Middle Valley. In 1992, approximately 45 per cent of the total irrigation potential of the Awash, amounting to some 155,000 hectares had been developed (Ali Said, 1997:124). In general, irrigation farming in the Awash Valley was not very successful and it is reported that the farms under government management consistently ran at a deficit. Furthermore, it is reported, that many of the farms in the Middle Awash were poorly designed, with poor land leveling and drainage leading to salinization problems, loss of land and loss of productivity. In summing up the experiences, Ali Said states that the performance of the irrigation schemes looks even grimmer when compared with the magnitude of initial investment cost in establishing the schemes. It is arguable that if these investment costs had been diverted to the pastoral sector, the benefits that could have been derived would have been far greater than for irrigation (Ali Said, 1997:127)

As stated above expansion of irrigation agriculture is one of the factors that resulted in rangeland shrink in the area. According to Hellnad (2015), irrigation agriculture first started in the 1960s with a large-scale concession for cotton farming in the Lower Awash, followed by a number of farms in the Middle Awash, usually set up as joint ventures between the Awash Valley Authority and foreign companies.

After the change of government in 1991, a number of irrigated farms, particularly in the Middle wash, were returned to Afar clans on the basis of traditional claims. The Afar are organized into a large number of named clans that 'own particular pieces of land, usually defined with a watering point on a river as its center. The seasonal pastoral movements in Afar are usually not very long (50 -100 kilometres), and members of a clan will normally come back to the dry-season water point and grazing reserve that is known as belonging to the clan, because of easy access and to strengthen clan solidarity. Mutual support between clan members in all matters is vitally important. There are no institutions for land management as such and pastoral land 'ownership' is largely about the territorial extent of the authority of clan leaders and their ability to mediate and settle conflicts. Clan members have precedence to water within their own clan territory but other clans are allowed to pass through or share in the available resources on the basis of negotiations with the clan 'owning' the land. However, the change of ownership in the Middle Valley did not lead to positive changes in land use or improved performance of irrigated agriculture. The land taken over by the clans was rarely used by them for food production but was often directly rented out to agricultural entrepreneurs, usually from outside the region, on short-term leases. This has had consequences for the operation and maintenance of irrigation works and resource husbandry practices have suffered. The 'investors' usually have a very short time

horizon in their operations and are more concerned with immediate returns from their investments than long-term management of the land. On top of the problems with poor design noted above, poor land preparation, poor irrigation practices and labour problems, there were conflicts over ownership among the clans. All of this contributed negatively and reduced productivity on the irrigation farms to the extent that many farms were abandoned and left fallow (ELAP, 2012).

The irrigation farms themselves do not take up a lot of the land. The irrigation potential of the Awash River is estimated at between 150,000 to 200,000 hectares which is less than 2 percent of the land surface of ANRS, but the strategic value to the pastoralists of the irrigation sites far exceeds the amount of land they occupy. First, irrigation farms often block access to the river itself, cutting the pastoralists off from water sources for their stock. Second, the irrigable land is located in the former dry-season pasture reserves of Afar pastoralists. Without access to these reserves the yearly herd movement cycle is disturbed and the wet-season grazing, away from the river, becomes useless as well. This means that although the amount of land that is occupied by irrigation actually is quite modest, there are far-reaching effects and repercussions of locating the irrigation projects in direct competition with pastoral grazing needs in the dry season. The cost to pastoral production in the Valley is correspondingly high (Behnke & Kerven, 2013).

1.2. Statement of the Problem

According to Abebe *et.al* (2015) quoting FAO (2001) pastoralism is one of the key production systems in the world and is taking place in about 25% of the globe and 66% of the entire continent of Africa.

The Ethiopian pastoral community i.e. mostly the drier and hotter lowland parts, is estimated to occupy about 61-65% of the total area of the country and are home to 12-13% of the total population with more than 29 nationalities and ethnic groups. In addition, out of the total estimated livestock population of the country, pastoralists have the greatest contribution for the national livestock resource, accounting for more than 28 percent of cattle, 26 percent of sheep, 66 percent of goats and 100 percent of camels (Hayatudin, 2006). However, recent livestock population estimates obtained from the Central Statistics Agency pastoral areas raise these figures to 49% of the cattle, 47.5% of the sheep, 51.5% of the goats, 100% of the camels and 12.9 % of the equines (CSA, 2011).

They inhabit land with natural resources and a wealth of cultural and traditional heritage that remains largely untapped. They are being livestock-centered, seasonally mobile, well adapted to harsh terrain and extreme climates, tolerant of ill health, kinship and social network-oriented. Human survival in these environments would be virtually impossible without livestock that provides for basic needs. The importance of livestock in these areas surpasses the mere fact of meeting basic needs, since they are traditionally seen as the basis of life, wealth and social respect (Thornton PK, et al, 2002). Pastoralists are geographically and socially marginalized groups, inhabiting large regions unsuitable for agriculture and infrastructural development.

In these areas, where pastoral production system is the dominant way of life, livestock is the primary source of existence, providing milk and cash income to cover family expenses for food grains and other essential consumer goods. Furthermore, the lowland pastoral areas have been the traditional source of export animals (Belachew, 2003 and Hayatudin 2006).

Pastoralism in the past was highly successful in supporting people who depend on a fragile natural resource base and marginal lands even under adverse conditions (Ayalew, 2001). However, the situation now is dramatically changing. High population growth coupled with declining productivity is making the crisis vicious. More than 50 percent of the chronic drought-affected population in the country is from pastoral areas (Biruk, 2002). Other research findings also voiced out the misery as asserting that the pastoral system in Ethiopia, like in many other countries is suffering from severe stress caused by a multitude of factors. Frequent drought, population growth, rangeland and natural resources degradation, expropriation of communal grazing lands by government, expansion of private enclosures and turning communal grazing lands into private agriculture and crop cultivation are some of the major stressors on the pastoral system (Abebe "*et al*"., 2015).

The challenges the pastoral production system facing are myriad. Largely due to widespread misconception about the system among national governments and planners, the policies devised for these areas were detrimental for the pastoralists. Such policy measures include allocation of land for non-pastoral use mainly the development of irrigated commercial agriculture, attempts to disrupt herd movement which severely disturb the grazing cycle, moving agriculturalists in the pastoral areas, coercive settlement of pastoralists in

agriculture and related schemes, arbitrary reduction in herd size (Ayalew, 2001). These actions, which resulted from the presumption of pastoralism as irrelevant to development and often damaging to the habitat, had significantly affected the pastoral production system. On top of this, the establishment of wildlife conservation areas in traditional grazing lands of pastoralists had also contributed its share in making the situation worse.

The focus of wildlife conservation in Ethiopia is based on a system of delineating wildlife conservation areas. The reserve areas are widely distributed in the country representing different eco-system including alpine, aquatic and arid areas. There are nine national parks, three sanctuaries, eleven wild life reserves and 18 controlled hunting areas. In total, these areas cover about 194,000 square kilometers or approximately 14 percent of the country's total area (Leykun, 1995).

Various attempts have been made in different countries to minimize the impact of conservation parks on local inhabitants and to make them beneficiary by following "participatory" management approach. This move was triggered by the realization of the importance of incorporating the needs and perspectives of local people for sustainable development. Although the adoption of this approach and the projects it undertakes offer a wide range of benefits to local people, such schemes have rarely been subjected to full cost benefit analysis using social indicators and therefore, their ecological and socio-economic viability cannot be guaranteed (Hayatudin, 2006).

The majority of these schemes aim to compensate local people for the loss of access to natural resources by providing alternative livelihood sources. By doing so, it is assumed that the incentive to encroach into protected areas and /or poach wildlife is removed (Lane,

1995). In practice, these schemes usually are carried out under the auspicious donor funded projects. Which view local people as passive beneficiaries. However, benefits are not always distributed equally. Compensation is rarely proportional to the amount of income forgone, and the services do not address sufficiently the needs of the people (Hayatudin, 2006). Basically this is one area of the problem the pastoral areas are facing; but the result of this research outcome has not attempted to go into details of such scenarios.

Rather in a different scenario, state farm expansion the likes of sugarcane plantation and factory plant is aggressively underway in pastoral areas particularly in Afar by clearing the river flood plain for sugar plantations (Roy Behnke and Carol Kerven, 2013). A comparable analysis has been done by the two researchers pertaining cotton, sugar farms and cattle herding. According to their study, a well-run private cotton farm may achieve rough productive parity with pastoralism. However, state cotton farms lost money for decades. Current development programmes suggest that the Ethiopian government is aware of this situation. For some time it has been either turning the operation of its cotton holdings over to private interests – the Afar clans or investors – or transforming old government cotton farms into sugar plantations. The state's sugar estates are more profitable than its old cotton estates, but whether farming sugar cane is more profitable than livestock production is doubtful. Pastoralists in Afar are nonetheless currently losing additional land to expanding state-owned sugar plantations (Roy Behnke and Carol Kerven, 2013).

Therefore, this study was conducted to make an empirical research to explore the overarching impact of the state sugarcane plantation and its subsequent sugar factory from the environment, social and economic perspectives on pastoral livelihood in Afar Regional

State by taking Tendaho Sugar plantation/factory as point of reference. The research theme particularly focused on how the factory and its related settlement affected the nomadic living patterns of Afars from both positive and negative perspective of the state farm intervention.

The results of this research are to be presented in detail in its respective chapter of the paper. However, the writer of this paper believes that the findings of the research are believed to have much contribution as an input for the policy and planning machineries operating at different level of the political structure at regional and national level. It is also believed to indicate corrective measures where corrections are needed in light of the overall socio economic, political, and cultural settings of the region contrary to what is envisaged from the outset.

1.3. Objectives of the Study

1.3.1. General Objective

This academic research aimed at conducting a study how the increasing expansion of agricultural lands over the rangelands in ARS affected the nomadic way of livelihood and the overall lives of the pastorals in the area.

1.3.2. Specific Objectives

- To investigate the extent of the increasing shrink of grazing land in ARS affects the pastoral lives.
- To explore whether the agricultural investment impacted the physical environment.

- To look into how the settlement effort of the pastorals and migrant workers with regard to the sugar cane plantation in Tendaho affects the socio cultural values of the Afar pastoralists.
- To investigate if such large-scale agricultural investment was carried out on participatory basis at grass root level..
- To indicate corrective measures if such government initiatives did not consider the actual context of the area.

1.4. Scope and Limitation of the Study

The study was conducted in the ARS where the Tendaho Sugar Cane Plantation and factory is located. In the selection of this pastoral region certain important factors were taken into consideration. The first one was that it is a pastoral region, which has been perpetually affected by the increasing expansion of large-scale agricultural lands over the years since previous two regimes of Ethiopia. The expansion is still kept continuing in the present day as well. Therefore, the scope of the study was only just to learn if such expansion and persistent interventions were in favor of the pastoral life style or a gradual devastation to the pastoral livelihood of the area. As stated in the specific objectives, to see the impact on the environment was part of the scope of this study. In addition, the area was selected based its accessibility (*relatively*) for modern transportation facilities for collecting the required data.

Though what is mentioned above was the scope of the study, the study was limitted by two main constraints. The first one was the timeline. A very short timeframe was timelined to carry out the assessment particularly for the data collection and field reconnaissance. Not going so in depth has its own impact in getting adequate information to understand issues in

a more plusible way which is no doubt it compromises the quality of the research work. Perhaps this is because of a self sponsored study which has huge cost implication.

The second constaraint was that geographic factor. The research area is geographically located in the North East part of Ethiopia which is very far (*670kms*) from Addis Ababa (*centearl city*) coupled with its harsh dry climatic weather (*where temprature at times reaches close to 45 degree celsius)* should have also contributed agaisnt getting quality of data as it has been very difficult for data enumerators to walk through several disperse housholds on foot. So such sircumistances would reslt in the assessment and information not to be exhaustive.

Due to time limitations and the harsh nature of the area the research systematically focused only on nearby three woredas where the sugarcane plantation and factory is located. I was not able to further assess the impact of the project intervention on pastoral livelihood found outside of these three woredas. However, as much I can I try to extrapolate the data I have collected from different sources based on the consideration of the homogeneity nature of the Afaris across the board.

1.5. Significance of the Study

The impact of agricultural land expansion on pastoral areas has become to be an issue even on international arena. There is a growing disparity among various proponents of different school of thoughts. With regard to this study, there is of course an effort to enable the pastoralists to take advantage out of the sugar cane plantation as being daily laborers. However, this is quite in opposite with tradition, experience and practice they are accustomed with for centuries. Thus, this study attempted to look into the extent of the

expansion over the rangelands and its existing manifestations on the lives and need of the pastorals in the area. Unless such expansion is carefully studied in comparison with their nomadic way of lives, any development or investment intervention may crumble or not last as envisaged. Therefore, the findings of the study would have a great contribution in understanding the actual need of the inhabitants and be also an input for to correct the policy formulation to be in compliance with the actual context of the pastoral area.

1.6. Organisation of the Study

This research paper encompasses five chapters. The first chapter is an introduction to the subject matter of the study. In this chapter, problem statements, objectives, scope, significance and limitations/constraints of the study are presented. To what extent state farming and its related settlement continuously affect it. Why its way of life is judged in comparison with the sedentary farming and what are the pushing factors driving policy makers to formulate policies in this perspective. Such and related issues are to be elaborated in the introduction part. More or less the issue was further detailed in the subsequent chapter as well. The second chapter, i.e. literature review deals with the conceptual framework and a review of literature. An attempt is made to describe the concept of pastoralism, its distinct characteristics as a way of living and how it differs from the sedentary settlement and other issues are incorporated under it. In the third chapter research methodology of the study and data collection are to be presented. The fourth chapter discusses results and findings of the study. The extent of the state farming and the settlement on the environment, socioeconomic and cultural condition of the pastorals are presented here. In this chapter, the hypothesis stated in this proposal will be put to test and later elaborated. The fifth chapter gives the summary and conclusion of the study

CHAPTER TWO

LITERATURE REVIEW

2.1. Theoretical Framework of Pastoralism as a Means of Livelihood

According to Blench (2001), pastoral strategies can be classified in a number of ways. His classification is done based on species, management system, geography and ecology. Furthermore, there are also a broad distinction between the developed and developing world. Extensive livestock production is practiced in both Australia and North America, under very different conditions from elsewhere in the world, using fenced ranges and unambiguous tenure. This creates a level of investment in land and animals very different from 'traditional' systems (Blench Roger, 2001).

The most common categorization of pastoralism is further classified by the degree of movement, from highly pure pastoralism through transhumant to agro-pastoral. Cultivators also keep livestock for work or marketable products but these are not regarded as pastoralists. Any classification of this type must be treated as a simplification; pastoralists are by their nature flexible and opportunistic and can rapidly switch management systems as well as operating multiple systems in one overall productive enterprise. For example, African cattle-herders can practice a system of regular transhumance for a long period, building up patronage relationships with farmers on their routes. However, in a case of extreme drought or disease stress, they will switch to pure pastoralists patterns, moving to new areas and breaking these relationships. When the crisis has passed, they may revert to their former routes or move into an entirely new management mode.

2.1.1. Nomadism

Exclusive pastoralists are livestock producers who grow no crops and simply depend on the sale or exchange of animals and their products to obtain foodstuffs. Such producers are most likely to be ‘nomads” i.e. their movements are opportunistic and follow pasture resources in a pattern that varies from year to year. This type of nomadism reflects almost directly the availability of forage resources; the patchier these are, the more likely an individual herder is to move in an irregular pattern.

2.1.2. Transhumance

Transhumance is the regular movement of herds between fixed points to exploit seasonal availability of pastures. There is strong association with higher-rainfall zones; if the precipitation is such that the presence of forage is not a problem, then herders can afford to develop permanent relations with particular sites. Transhumant pastoralists often have a permanent homestead and base at which the older members of the community remain throughout the year. Transhumance is often associated with the production of some crops, although primarily for herders’ own use rather than for the market.

In many temperate regions, where snow is likely to block animals’ access to pasture, haymaking is an important component of the system (Blench R., 2001).

A characteristic feature of transhumance is herd splitting; the men take away the majority of the animals in search of grazing, but leave the resident community with a nucleus of lactating females. There are many variations on this procedure and moreover the development of modern transport has meant that in recent times, households are not split up as radically; members can travel easily between the two bases. Whether it is milking females, weak animals or work animals that are left behind differs substantially between one

system and another and may even vary within an individual system on a year-by-year basis. Transhumance has been transformed by the introduction of modern transport in many regions of Eurasia. For example, the transhumance of sheep in Britain between rough grazing on highland areas and lowlands is now conducted entirely by putting the sheep in trucks and carrying them between grazing points. Many pastoralists in North Africa send their animals on transhumance by truck or on trains (Trautmann, 1985). Wealthier countries in the Gulf, such as Oman and Saudi Arabia have made vehicles available at subsidized rates to pastoralists to assist with animal transport and it seems likely this pattern will be more and more frequent; especially as the problem of controlling animals in increasingly densely settled environments can only get worse.

2.1.3. Agro-pastoralism

Agro-pastoralists may be described as settled pastoralists who cultivate sufficient areas to feed their families from their own crop production. Agro-pastoralists hold land rights, use their own or hired labour to cultivate land and grow staples. While livestock are still valued property, their herds are on average smaller than other pastoral systems, possibly because they no longer solely rely on livestock and depend on a finite grazing area around their village which can be reached within a day. Agro-pastoralists make greater investment in housing and other local infrastructure and if their herds become large, they often send them away with more nomadic pastoralists. Agro-pastoralism is often also the key to interaction between the sedentary and mobile communities. Sharing the same ethnolinguistic identity with the pastoralists they often act as brokers in establishing cattle-tracks, negotiating the ‘camping’ of herds on farms, which potentially exchanges crop residues for valuable

manure, and arranging for the rearing of work animals which adds value to overall agricultural production.

2.2. Nomadic Pastoralism vis-à-vis Sedentarization

Pastoralism, the use of extensive grazing in rangelands for livestock production, is one of the key production systems in the world's drylands. Nonetheless, throughout much of its long history its reputation has been unflattering, its practitioners marginalized by sedentary cultivators and urban dwellers. Pastoral societies have risen and fallen, fragmented into isolated families or constructed world-spanning empires and their demise regularly announced, often in the face of entirely contrary evidence of their persistence (Blench, 2001).

The debates on the very existence of pastoralism in general keeps unabated. According to Rice (1981), two schools of thought have emerged from the debate over the future of nomadic pastoralism. The first holds the present tendency toward the sedentarization of nomadic peoples to be simply one phase in the cyclical shifts between nomadic and sedentary life styles, which have dominated the histories of the world's semi-arid regions (Salzman et al., 1980). The other school believes the tendency toward sedentarization to be the result, not of a natural cycle, but rather a massive intervention on the part of central governments in order to obtain this end (Bodley, 1975). The second thought aligns with the concept of nation states, which restricts cross boundary roaming of the pastoralists as used to be in old times. Many major pastoralist groups spread across national boundaries, which further renders pastoralists marginal and politically vulnerable in the political cultures of

nation states (natural resource institute, NRI, 2010). So the second school of thought entrusts sedentary way of life is preferred to better manage the pastoral livelihoods.

Those who debate against pastoralism claim that the rangelands exploited by pastoralists often cannot be used by conventional agriculture, although as technical advances spread cultivation into remoter regions, pastoralists are forced into increasingly inhospitable terrain. Although spontaneous settlement is quite common on the fringes of the pastoral domain, national governments are often hostile to pastoralists. Many countries have policies of sedentarisation that derive as much from political considerations as a concern for the welfare of those they wish to settle. However, compelling pastoral nomads to settle has a very unsatisfactory history and is unlikely to meet with long-term success (Blench, 2001).

On the other hand, arguments in-favor of pastoralism out speaks that pastoralists make substantial contributions to the economy of developing countries, both in terms of supporting their own households and in supplying protein, both meat and milk, to villages and towns. However, the governments of those countries rarely recognizes these contributions by a corresponding investment in the pastoral sector (Blench, 2001).

One closely follows such scenarios can understand that pastoralism as economic system is under increasing threat. The globalization of the trade in livestock products and unpredictable import policies in many countries also threatens its very existence. Broadly speaking, the trend in this century has been for the terms of trade to increasingly turn against pastoralists.

2.3. Pastoralism in Ethiopian Context

Ethiopia is the tenth largest country in Africa, covering an area of 1,104,300 square kilometers, and located in the Horn of Africa. According to Central Statistical Authority (CSA) projection, the total population of Ethiopia at July 2015 is estimated to be 90,076,012 making it the second populous country in Africa, of which 83.6% lives in rural areas, while the remaining lives in urban areas.

The Ethiopian pastoral areas are estimated to occupy about 60-65% of the total area of the country and are home to 12-13% of the total population. In addition, out of the total estimated livestock population of the country, the pastoral areas constitute approximately 30% of the cattle, 52% of the sheep, 45% of the goats, and 100% of the camels (MOA, 2000). However, the recent livestock population estimates obtained from the pastoral areas indicates that these figures changed a little bit in such a way that the cattle and goat size raises to constitute 49% and 51.5% respectively while the sheep proportion declines to 47.5%. The same estimate indicates that camel remains the same i.e. 100% of the camels (CSA, 2011).

Livestock in the pastoral areas are the major source of food (milk and meat) and income, as well as a source of employment and livelihood. They also serve similar purposes and functions for people living in urban and rural towns adjacent to the pastoral areas. Livestock contribute a significant amount to the national economy. In terms of gross national product, the contribution of livestock to the agriculture sector and the national economy is 40% and more than 20% respectively.

Though pastoralism, the use of extensive grazing in rangelands for livestock production contributes significantly to the national income account, its paramount importance seems overlooked. It is one of the key production systems in the world's drylands. Nonetheless, throughout much of its long history its reputation has been unflattering, its practitioners marginalized by sedentary cultivators and urban dwellers. Pastoral societies have risen and fallen, fragmented into isolated families or constructed world-spanning empires and their demise regularly announced, often in the face of entirely contrary evidence of their persistence (Blench and Karven, 2001.)

However, the pastoral production system and in particular the food security and livelihood situation is highly threatened because of different manmade and natural risks. Following are some of the salient risks and challenges the pastoral communities in the country are facing: i) expansion of sedentary agriculture; ii) expansion of agricultural projects; iii) expansion of national parks inside the rangeland; iv) emergence and expansion of agro-pastoralism; v) encroachment of unwanted plant species; vi) conflict over rangeland resources; and vii) recurrent drought. Amongst the entire problems that threaten traditional pastoral territory with that of sedentary agriculture is the constant expansion of agricultural projects.

Some senior administrators and politicians in the Ethiopian Government view that pastoralism as a primitive, unproductive way of life doomed to extinction, an economic dead end that poses no credible alternative to modern, technologically advanced and input-dependent forms of irrigated agriculture (Behnke et al, 2013). However, these researchers claimed that results of their research called that these presumptions into question. Despite considerable investment by government, pastoralism is consistently more profitable than

either cotton or sugarcane farming while avoiding many of the environmental costs associated with large-scale irrigation projects. As we enter an increasingly climate constrained world, our findings suggest that pastoralism is a surer investment in the longer term resilience and economic stability of Ethiopia's dry lowlands (Behnke et al, 2013).

Since the last 50 years, the Afar Region alone has lost close to 50-60,000 hectares of dry-season grazing area along the Awash River to various plantation projects. Similarly, the Keryu lost about 22,000 hectares for the Methara sugar estate. Specific examples that can be cited in Somali region include the Gode irrigation project with a potential of 27,000 hectares, and the Chinagsen, Serge, Elbaye and Biye dams with a potential of irrigating about 1000 hectares. In Afar, besides the existing irrigable land, an additional study has been conducted to use the rivers of Ewa and Awra for irrigation purposes. In South Omo (SNNPRS) the emergence of large-scale commercial irrigated agriculture using the rivers of Omo and Woyto could also have the same effect. Construction of the Alwero dam with a potential of irrigating 10,000 hectares (MOWRD, 1999) of grazing land and a study to undertake similar irrigated agriculture using the rivers of Bonga and Itang could have a sizeable impact on the rangeland resources in Gambela region (Oxfam GB, 2003).

In all the above cases, according to Bruk (2003) sited various sources he mentioned that at national level a sizable area has been converted and put into crop cultivation. According to the most recent land use/cover of the different pastoral Regions, the area converted to crop agriculture has shown a dramatic increase. These include 178,000 hectares (CEDEP, 1999) in the Afar Region, 390,000 hectares (Regional BoA, 1999) in the Somali Region, 1,332,900 hectares (Zonal DOAs) in the Borena Zone of Oromia Region, 58,503 hectares (SNNPRS, 2000) in South Omo of SNNPR, 32,452 hectares (Socio-economic Study of

Gambela Region, 1996) in Gambella Region, and 38,717 hectares (WARDIS, 1998) in Benshangul Gumz Region. Using crude estimates, the total area of the rangelands that are in the process of being converted to crop agriculture could be approximately 1.9 million hectares.

In addition to the increasing reduction of range lands and pasture areas in ARS owing to agricultural projects and other environmental factors, for the last 25 years, (between 1986 and 2010), woodland in the Lower Awash sub-basin (LASB) alone where the specific project site of this research was mainly converted to bush and shrub land built-up area and cultivated land. This shows that most of the current cultivated land and built up area were established from woodland. Cultivated land mainly got from exposed surface, water body bush & shrub and woodland. Grassland primarily converted to bush and shrub. This is mainly due to the invasion of grassland by different shrub species such as *prosopis juliflora (Woyena Hara), Acacia mellifera (Merkeato)* and *Acacia oerfera (Gerento)*. In addition to this, overgrazing and shortage of rain reduces grass cover and gives way to bush cover. Overall, only 48,462.01 hectare of the total land-use/land cover remains unchanged it shows that there was a significant land use land cover change observed in the sub-basin (ARS, 2012).

The shrink of the grazing land further induced migration in the Afar community. According to Piguet (2007) since their progressive integration into the Ethiopian Empire and the agricultural development in the Awash Valley, the Afar region has faced complex migration movements. Pastoralists have been forced to change the pattern of the transhumance after their eviction from the fertile banks of the Awash River and, in a way parallel, thousands of highlander farmers

have settled into the region. Such migratory movements have occasioned destitution among pastoralists; cultural waste linked to settlement by non-afar civil servants, traders and farm workers, resulting in micro-conflicts; opposing pastoralists groups in competition for water and pasture; and/or afar pastoralists and highlander settlers considered as foreign occupants.

The overwhelming majority of the rural households of Afar region are pastoralist. The geography of the region means it is more suitable for livestock production. However, a few people in some cultivate cereals through rain-fed and small-scale irrigation agriculture to complement livestock production. For the Afar pastoralist, livestock is a source of food, income, security, insurance and above all a means of livelihood.

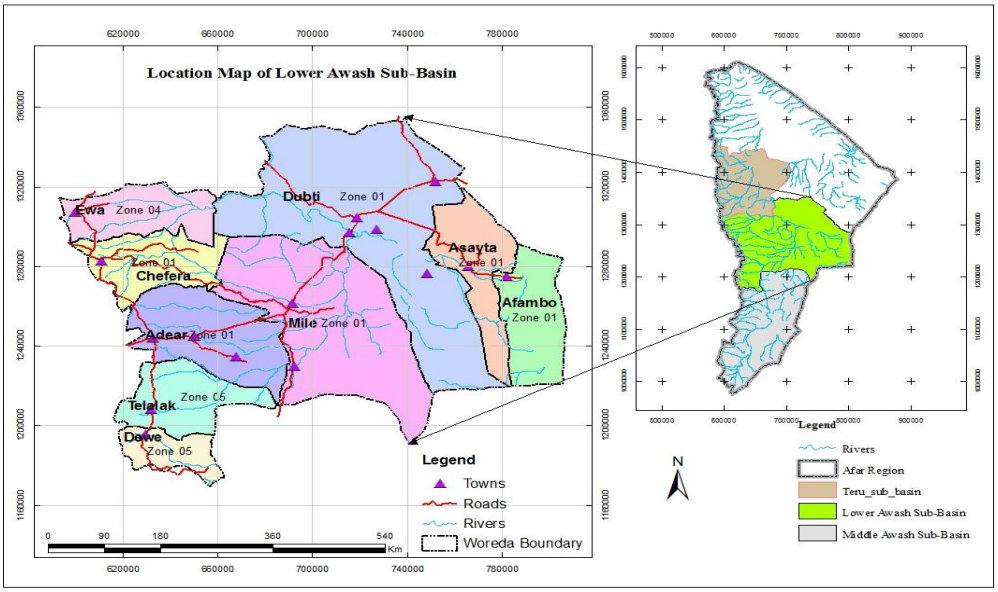
The Livelihood of the afar depends on livestock i.e cattle. Goat, sheep, camel and Donkeys. Donkeys and male Camel are kept primarily to transport water and grain from market. Camels and goats are preferred because they tolerate drought better than other animals and because the former provides large amounts of milk. For all these animals, the source of feed is the dry grazing area, which is now encroached by different agricultural activities.

CHAPTER THREE

RESEARCH METHODS

3.1. Description of the Study

Lower awash sub basin is one of the three basin of Afar region in which this study has been undertaken. It is located between 100 33’ to 120 15’ N latitude and 390 51’ to 410 49’ E longitude. It covers more than 2.3 million hectare. A total population estimated to be 1.4 million and it is sparsely populated basin as compare to other area in the country. It borders Amhara region to the west and Teru sub basin to the North, Middle Awash sub basin the south and republic of Djibouti to the east. The sub basin is divided into three Zones. Zone 1 includes Mille, Dubte,, Asayta, Afambo, Chifra Ada,ar Woreda, Zone 4 comprises Ewa while Zone 5 includes Telelak, and Dewe Woreda. As a border area, the sub basin is of political importance where the regional government sits. Moreover, it has also great economic potential because of its valuable natural resources



Map1: Location map of Lower Awash sub-basin, source, ARS

3.2. Sampling Size

Purposive and random sampling designs were employed in this study. The three districts namely Dubti, Detbari and Asayta, which are administratively belong to Zone One of Afar National Regional State three kebles out of 26 rural kebeles where Tendaho Sugar Cane Plantation and its factory are entirely located were selected for this study.

3.2.1. Data Sources

Quantitative and qualitative data were collected from different sources. Primary data is collected through semi structured questinniare from randlomly selected pastoral housholds, focus group discussion, key informant interview. On the other hand, secondary data is gathered from governmental offices and civil socity organisations (CSO). The government offices from which the data collected include Pastoral and Agricultural Development offcies, Pastoral and Semi Pastoral Research Institution of the region. As a resercher I also conducted a trnasectwalk through the open field of the sugarcane plantation and the irrigation cannals to observe how this state project has impacted and relevant to the exisisting social and economic status-que; and how it is integartated at grassroot level with the community. This field observation and personal experince has helped me as worthy as other data sources in understanding the situation.

The field research occurred in September 2015, and involved interviews with pastoralists and field reconnaissance of pasture conditions. We interviewed hundard households. The interview process included a list of questions that we asked each household. The major objectives were to determine the housholds' perspectives on access to grazing land in accordance with the state sugarcane planation, the expansion of the state projects in their area and its social and economic impact in their livelihood. We also asked salient questions

concerning movement of livestock in search of pasture and water, livestock products produced, trend of marketing of livestock and livestock products, water resource use. The interviews were conducted by enumerators who were so familiar with the pastoral communities and their cultures values and taboos. The interview went well and the interviewees were so keen to be interviewed which is beilived to imply that correct information was collated.

3.2.2. Data Analysis Tool

Descriptive statistical methods were employed in analysing and presenting the data collected from the households and group discussion; and analyses were done with the help of SPSS soft ware.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1. Demographic Structures of the Households

Out of the interviewed housholds female household heads constitute 15.8% while the remaining 84.2% represents male housholds. The mean age of the total household heads is 45 years which indicates that they are in the pick of their productive age according to the country's context. There is a disparity in the average age across sexes; male and female household heads. According to the primary data collected, the mean of age of the male and female household heads were 45 and 42 years respectively.

Table 4.1. Percentage distribution of Households by Woreda and Sex

Woreda	*Distribution by Sex*		*Population (N) by Woreda*
	Male in %	Female in %	
Assayta	72	18	39
Dubti	88	12	32
Detbari	90	10	29
Total	82	18	100

Pertaining the marital status of household heads participated in the response, 91 percent married, 5.6 percent divorced, and 3.4 percent of the household heads are widowed.

The average family size of the sample households is 4.02 encompassing members in different age categories. This figure is almost akin with the population size estimate of the sample woredas in the national population census (CSA, 2015). The average number of economically active memebrs; which are widely categorised as 15-65 years of age per per houshold, is 3.1. In most cases children under 15 years of age are believed to offer labor to

the households in keeping livestock; inspite of this fact the average dependency ratio of the sample households is 1.1 applying the customary dependency ratio calculating techniques.

Table 4.2. Average family Size by age group and woreda

Age Group	*Average family size*			
	Assayta	Dubti	Detbari	Total
Children below 5 years of age	14	10	14	38
Children between 6 and 14	65	46	21	132
Adults between 15 and 65	78	62	44	184
Elders above 65	1	0	0	1

4.2. Economic and Livelihood Situation

Seasonal herd mobility, changing herd composition and traditional institutions of mutual help are used to maintain the sustainability of the system, both ecologically and economically. But over the four last decades, the introduction and expansion of irrigated mechanized farming and the setting aside of large areas of grazing land for national parks and conservation use has had a tremendous socio-economic as well as political impact on pastoralists' and agro-pastoralists' subsistence economy. This system has come under growing pressure and is increasingly vulnerable to environmental stress. Changing land use and politico-economic, demographic and institutional changes have all contributed to the growing crisis of Afar pastoralism (Bondestam, 1974; Gamaledin, 1987 / 1993).

According to the key informant discussion in the area, pasture used to be available surplus. However, because of various factors such as lack of proper management of the resources and expansive state farming ventures it has become increasingly scarce.

More over this research findings show that the pastorals are getting troubled to access the natural resources including water for human and livestock need. According to the primary data of this research, 100 % of the interviewees responded that their livelihood is heavily dependent on the livestock production. Indicated in the figures, 51%, 60% and 60.2% of the respondents produce camel, cattle and goat respectively as their main source of livelihood. Nevertheless, 71 % of the respondents replied that they do not access pasture areas owing to various main reasons; and their accessibility to these crucial resources of their livelihood has become increasingly diminished. As the table below depicts that among those who are willing/comfortable (n=73) to respond to the question "*what is the main reason for inaccessibility to pasture areas and travelling long distance"* the overwhelming majority (75.3%) of them claimed it is because the pasture areas and their territories are occupied by the state projects and related investments. Among the same group of respondents, 19.2% of them responded it is because of inadequacy of the pastures/fodder due to resource depletion resulted from mismanagement. Only 5.5% of them replied it is due to overgrazing which is more or less falls within the second group of respondents.

Table 4.3. Reasons for traveling long distance to access pasture resources including water

	Pasture areas occuppied by state projects	Resource depeletion and lack of proper resource mangemnt	Over grazing
Reasons for traveling long distance for passture resporces	55	14	4
%	75.3	19.2	5.5

For small ruminants (shoats), the respondents (70%) answered that they travel a full day round trip on search of the pasture resources. However, according to the key informant discussion with the regional officials, for cattle and camels the duration of the travel would be through a week or more than that; at times the travel would be about 150kms for finding fodder and water. Likewise, Piquet also uttered similar kind of finding indicating that during normal years, the Afar move their herds from homes based generally within a radius of 20 km, but seldom more than 50 km, from reasonably permanent dry season watering places. In times of severe stress, Afar are forced to move their herds for greater distances of up to 150 km (Piquet, 2007). The worst part of this long journey is that amidst the travel crossing the border of other regions conflicts would often occur, which results in deaths, causalities and other crisis. On detail, conflicts would be further discussed on specific sup topic of this chapter.

Explored previously, expansion of the state projects such as sugar factory and its sugarcane plantation has been identified as one of the main reasons for creating shortage of pastures to their livestock that affects their livelihood. This is owing to three salient factors; the first one is the scarcity of water, which is partly resulted from the sugarcane planation in the area. Sugarcane by its very nature is so water intensive and requiring at least 1,500 mm of rainfall and in the right distribution. Consequently, the rising proportion of sugarcane production has increased the world market's dependence on reliable water supply, which in many parts of the world is becoming a problem (www.czarniknow.com, 2013). Therefore, where sugarcane is planted since its steam holds a great volume of water it drives the land to barren that affects water availability thereby it creates water scarcity to other household and livestock use to the community. According to the key informant's discussion at the arena of the sugarcane field, the writer of this research paper has learnt that the plantation also

creates wind, which is another pushing factor for additional water resource depletion and scarcity through evaporation of the water circulating through the open irrigation system.

The second one is that for the sake of protecting the sugarcane plantation the pastorals are seldom to get access to use the pasture in a formal/legal way. However, this restriction has created damage on the plantation farm per-se. As observed during the field site visit after collecting the first harvest the second round growing is expected to be sprouted or vegetated from the shortly cut stems of the sugarcane. The growing cycle is expected to continue that way. In an uncontrolled manner however; the pastorals let their livestock into the plantation for open grazing before and after the harvest without having a proper permit from the factory farm management. This is a huge blow to the factory; and unless new seedlings are prepared, the growing seems barely to happen continue the growing cycle. This does not only damage the plantation but also believed to trigger its own negative impact on the production capacity of the plant as it affects the supply of the sugarcane juice to the factory mills. The writer of this research paper has also observed that during the time when he was on the field for primary data collection, the mills stopped production owing to lack of adequate supply of this raw material: *sugarcane juice*.

The factory is established with a potential capacity of producing 13,000qt per day in the first phase of the project alone. Moreover, it is projected to grow up to 26,000qt per day when it becomes to its full-fledged capacity. However, currently it is producing 4% of its intended full capacity. Stated it earlier this is overwhelmingly associated with the salient factor of inadequate supply of the sugarcane from the field, which is being damaged by the neighboring pastoral community.

The research finding also indicates that the pastoral community is dismayed by this mega project. Among the interviewed households, 57% of them responded that they were not even consulted when the project was first conceived/established. Thus, its very existence in the area often drives this group of respondents to be hostile and antagonistic towards it. According to the below cross tabulation, among those who responded "*yes, consulted*" (i.e. 43%), 80% of them expressed their agreement to the project's conception in the area. However, when we further diagnose the data (*as tabulated below*), out of those who agreed; 72% of them inhabit at Assayta surroundings where the 5% agro pastoralists (*out of the total sampled households for the entire structured interview*) and the few number of settled pastoralists are included where the impact of the projects might somehow be minimal.

Table 4.4. Consulted Respondents Expressing Their Opinion by Woreda

		Agreed	Disagreed	Indifferent	Total
Woreda	Assayta	23	1	1	25
	Dubti	1	0	0	1
	Detbari	8	2	4	14
Total		32	3	5	40

From the same table (4.4), only 20% of respondents answered "disagreed" and "indifferent" in combination.

Harmonization between the investment and the community should be an area where must be worked out to fetch the desired results and/or think of the alternatives that be inclusive of the community's interests as initially intended in the original mother document. Or even

thoroughly reconsider the restoration of the statuesque which fits with the need, experience, culture, workethic and the environment of that given society.

4.2.1. The Project and Employment Opportunities

A per the key informant discussion conducted with the regional offcials, as an affirmative actions of this state investement; the skilled labors of local Affaris could have got the opportunity to get recruited in the project. Likewise the non-skilled ones as well have gottten the opportunity to get employed in areas where they fit with. Competitive payment is paid according to the national benefit package of federal government for Development Agencies. Albeit this is the fact on the ground; compared to total number of the staff working in the project at all levels of different positions the employment opportunity given to the locals is as such insignificant. For example, as shown in the belwo table (table 4.5), it is only 12 % of the sampled households have gottten job opportunities in this mega state projects in permanent employment basis in which in most cases the incumbent would occupy a low profile positions like guarding. Most of these interviewed households (71%) have got to use as casual labor in these state investments.

Table 4.5. Opportunities vis-a-vis the state Investment by Woreda

Woreda	casual labor	permanent employment	free livestock feed	casual labor and free livestock feeding	casual labor and permanent employment	Total by Woreda
Assayta	27	5	6	1	0	39
Dubti	19	3	0	0	10	32
Detbari	25	4	0	0	0	29
Total	71	12	6	1	10	100

However, as further explored the issue, as indicated in the below table, 53.3 % of the valid cases (92) have been able to compare the benefits fetched from pastoral livelihood and they placed it in a better position than the one to have gotten by working in the state investments in any form of employments.

Table 4.6. Comparing Benefits of Pastoral Livelihood with Any Form of Benefits Asscociated with the State Projects

		Yes	No	
Woreda	Assayta	23	11	35
	Dubti	7	23	30
	Detbari	13	14	27
Total		43	49	92

The existence of pastoral livelihood primarily related with the availability of pasturelands and water and access to it to livestock and human use. However, whenever these resources become scarce because of any factors and/or interventions, the very existence of this life style becomes affected or in danger. In addition, households are forced to destock their livestock. As the below cross tabulation indicates that 60 % of the respondents answered that they sold their livestock because of the increasing reduction of grazing area used to be abundantly accessible to their livestock in lieu of the state projects.

Table 4.7. Sell of Livestock as Reduction of Grazing Land as a result of the Investment Expansion in the area

Woreda	Forced to sell livestock as reduction of grazing land as a result of estate expansion in the area		Total
	yes	No	
Assayta	27	12	39
Dubti	16	15	31
Detbari	15	11	26
Total	58	38	96

As per the discussion with key informants working in the government offices, it is strongly believed that the alternative plans (*such as the fattening projects, fodder production, agro-processing plants and sugarcane out-growers*); which have been designed from the outset in the original master plan of the investment to compensate the pastorals whose livelihoods affected owing to this project, could have changed the picture in a better position if these tailored plans had been implemented in full scale. However this did not seem to happen yet and this has exasperated the grievances of the community against the project.

Table 4.8. The number of Livestock sold as Reduction of Grazing Land as a result of the Expansion Investment in the area

Woreda	Livestock sold in the past three years				Total
	totally	half of them	two third	one third	
Assayta	8	8	2	10	29
Dubti	1	4	3	3	16
Detbari	1	2	10	2	15
Total	10	14	15	15	60

Out of the 60 valid cases responded for the question reflected in table 4.8 above, 16 %, 23%, 25 %, 25 % responded that they have sold totally, half of them, two third and one third of

livestock they have respectively because of reduction of pasture caused by the expansion of the investment.

4.3. Settlement of Afar, Non Afar, Migration and Consequent Social Value Changes

As a along standing tradition, along the Awash river, Afar clan leaders representing the communities have been allocating land to non-Afar farmers who have to pay back up to a third or half of the harvest. After a regression phase in the 1980s and 1990s, linked with drought, economical disorganisation and political disturbances, new concessions and projects have been initiated and will contribute to an extension of the irrigated schemes. The new dam under construction in Tendaho is linked to a project attending to extend Dubti irrigation up to 60,000 ha concentrated on sugar cane, one of the most suitable crops to produce bio carburant (Piguet, 2007).

In the Amibara irrigated scheme and the surrounding pastoral area, Getachew Kassa (2001) noticed a strict labour division where the non-Afar population are working in irrigated farms, administration and business activities together with the descendants of a few Afar leaders representing the dominant class. However, according to the author, the effective conversion of settled pastoralists to agriculture remains an illusion as the main available opportunistic activity so far is charcoal processing. Getachew concludes that for the pastoralists, schemes essentially benefit a rich minority of clan leaders. Settlement schemes, conflicts and insecurity have restricted the mobility of pastoralists and their herds with serious consequences on the productivity of their herds (Piguet, 2007).

Socio-economically, Afar claim that the introduction of irrigation in main part of their pasture and the range lands, which has resulted in the formation of small towns with large numbers of highland migrant workers, has undermined their culture. Prostitution and thievery, which were unknown some years ago, are now widespread in the towns. Many young Afar, both men and women, are absorbed into the urban-based irrigation scheme culture, occupying the lowest skilled activities like watchmen and cleaners. Clan integrity is also beginning to suffer, as the clan is unable to maintain all its members in one place due to the changing nature of pastoral production. While the role of demographic and environmental forces are recognised, political constraints have also contributed to the crisis of Afar pastoralism in the Awash valley. In the end, the Afar have been excluded from the mainstream of Ethiopian development. (Ali Said, 1997)

In the same token, Piguet also sciting Red Cross 1988 report had concluded that there was a cultural marginalization of the Afar pastoral population. The report proceeded saying that "The Afar feel that their way of life has failed in terms of the viability of their pastoral economy, politically in the maintenance of their regional autonomy and competition with their regional adversaries. The introduction of modern institutions, education and technology in the region on a limited scale and the awareness of their inferior position have further undermined the effectiveness of their culture. The traditionally self-reliant Afar that defied any external encroachment or subjugation now find themselves dependent and willing to receive any assistance and protection against stronger opponents and for this they are willing to accept a less loftier position." (Piguet, 2007)

However Afari's livelihood is directly correlated with the availability of the pasture land. To that end Afari pastoralists usually roam from place to place in search of grazing and water for their cattle and other animals. This system of livelihood has helped to balance and protect the eco-system from destruction. In addition to the ecrochment of the area with the mega projects, the area has been affected by drought. The regional documents also prove this fact by claiming that the repetitive and cyclical drought has made the traditional system of roaming in search of water and grazing totally unreliable and is threatening the very existence of the pastoralists (ARS Land Use Planning Survey, 2015).

Low population density is the main characteristics of the pastoral lowlands but due to migrations, within and beyond their boundaries, it grows fast. Shortage of water and grazing land and seasonal availability of these resources are the main determinants of migrations. Internal migration (within the boundaries of the districts or within the larger pastoral lowlands), is common particularly where pastoral population is dominant. During migrations, resources are shared among different ethnic groups either through negotiation with host community or by force and violence. It is the major causes of conflict between different ethnic and clan groups. In addition to this conflict in the Afar Regional State have various demonstrations: nationalism, inter communal conflict, competition for power among political parties, and inter-clan conflict over resources (PFE, IIRR and DF. 2010)..

The secondary document from the regional bureaus also expalins that Afar is composed of from different clans with the same language, religion, tradition, culture, and decision-making power and practice of customary law. Each clan has its own leader and they have been able to settle disputes, conflicts and higher-level feuds through their cultural/traditional

mechanisms. However, owing to external socio-economic and political influences, Afar has had to deviate from their established practice. For example, the growth of small urban centers predominated by migrant workers associated with state investements, has had a far-reaching impact on their way of living (ARS Land Use Planning Survey, 2015.)

Such reported cases become public health concerns in the regional and at national level. Muhudin (2016) refering FMOH's 2014 annual report indicated that HIV/AIDS in Afar regional state is higher than the national avaerage or other regions . According to the Federal ministry of Health, health and health related indicators reported in 2012/13, there were 1.7 per cent of HIV positive cases in Afar Regional state, whereas in Tigray, Amhara, Oromia, SNNPR and at National level per cent of HIV positive cases were 1.4, 1.3, 0.6, 0.6 and 1.1 respectively.

The higher HIV/AIDS transmission in the region is directly or indirectly related with different factors. Commercial sex workers in the main roads of Ethio-Djibouti high way, huge labor movements (*both target groups are termed as key population in the fight agains HIV/AIDS*) connected with state sugarcane farms and dams construction are becoming the new HIV/AIDS hotspot areas where priority is given at national level to control the epedimic (CDC, 2015) .

Therefore, most of the factors that contribute to the unprecedent prevalence of of HIV/AIDS and sexually transmitted infections (STIs) into the pastoralist areas of Afar are linked to changes in land use and property ownership which is associated with the introduction of state farms, road construction, tourism and Ethio-Djibouti highway roads (Muhudin, 2016).

For reducing the movemnt of the farmers which exposes them for various kinds of vulnerabilities, as a strategy of the government to enable the pastorals to be settled farmers, settlement has been attempted for the pastorals. These settlement houses are constructed on the way to Assayta which seem extremely resource depleted. No water and other basic utilities. The area is extremely dry-barren and arid which could not be suitable for crop farming. In Assayta town, there is also large number of condominium houses available for daily laborers and foremen coming from other parts of the country for meeting the labor demand of the factory. Totally this number is close to 10,000. So these labors who are unfamiliar to the local culture often create socially unacceptable things which are against the values and belief of Afaris.

The primary data of this research also augments this assertion which has been obtained from the secondary source of information. The following table (Table 4.9) for example shows almost all respondents (98.5%) out of those entertained this question responded that sexual assault, rape incedences and alarming increase of liquor houses are becoming widespread in the urban towns of the region.

Table 4.9. The Impact of the Non-Afar Settlement against livelihood or cultural values

		sexual assault rape reported	Liquor houses alarmingly increasing	didn't see any problem	Total
Woreda	Assayta	18	19	1	38
	Dubti	7	12	0	19
	Detbari	11	1	0	12
Total		36	32	1	69

4.4. Impact of the Project on the Environment and Community

The effects of irrigated schemes raise common issues about land tenure rights, restricted access to the best traditional lands and grazing areas, pressure on natural resources, effects on patterns of transhumance, the effects of in-migrants notably on the environment, and socio-economic change within pastoralist societies (Piquet, 2007). In regions where people are critically dependent on natural resources with low and uncertain incomes, customary tenure rules had been the main ways of providing security of land tenure and food security. Both State control of land tenure and private investment, however, have tended to be detrimental to the interests of local people living in marginal lands. (Getachew, 2001)

The river which is controlled through dam over the Awash River and diverted through the farm limits the accessibility of water to the community thereby the community has little chance for human and livestock uses. This 44kms main canal in the first phase of the project alone irrigates the field of the sugarcane plantation excluding the community. Thus, the community expresses its grudge to the project by damaging the irrigation canals (*geomembranes*) established through the plantation field for the sake of meeting their households and livestock needs. The third factor is that the irrigation system that the sugarcane plantation uses which is known as hydro-flume or gated pipe. Hydro-flume is widely known for its efficient irrigation method as compared to open field irrigation system (agricultural science, 2014) for its saving capacity of the irrigated water, which might be wasted through percolation. However, efficient method for the farm's efficient use of the water resource this geo-membrane sealed irrigation system creates high shortage of water to the community and restricts them not to access the water in times they are in dire need of it. Per the personal experience (field observation) of the writer of this report, because of this,

the pastorals would go for breaking the irrigation tube to get the water released and accessible to their need. Unfortunately, in some part of the farm salinity has also occurred due to this irrigation system.

Regarding, the natural vegetation it is still in good shape where the sugarcane plantation is not expanded.

4.5. Pasture and Rangeland Conflicts

4.5.1. Land Use Conflicts

According to the ARS Land Use Planning Survey report (2012), inter and intra-clan conflicts over rangeland resources mainly grazing land and water points have partly contributed to the decline in the rangeland resources. This phenomenon not only reduces the resource, but also costs human and livestock losses as well as destruction of properties. The inter clan conflict stays for a shorter period of time and is often solved through traditional social organization. This usually happens among the big clans in the different pastoral Regions including the Afars, Somali and Oromia. On the contrary, the tribal (clan) conflict between two major pastoral clans has far greater consequences and the effect could result in crisis on property, lives and resources. For example, the Afar and Isa's are considered to be traditional enemies. As a result, the use of the Alidege plain (zone 3 of Afar Region) which is over 75,000 ha of good grazing land has been precluded and currently considered as buffer zone for most parts of the year. The resultant effect of the conflicts is that human and livestock lives will be lost and consequently, the use of the resources will be denied to both clans or inter clans or benefit the victor at the cost of the looser. In all the above cases, the ultimate result would be constriction in the overall size of the traditional pastoral territory.

This situation has its own consequences and affects a number of resources including i) the per capita livestock holding ii) livestock production and productivity as well as (iii) animal health of the livestock (ARS, 2012).

According to this research result, 82% of the respondents (out of 95 interviewees) confirm that conflict because of the shrink of resources such as water and pastureland in the area is the major source of conflicts, which never get solution yet.

Table 4.10. Conflicts over Resources particularly Water

				Total
		yes	No	
Woreda	Assayta	26	11	37
	Dubti	28	3	31
	Detbari	24	3	27
Total		78	17	95

The causes of the conflict are as most literatures describe, it is in search of grazing land and water points. Nevertheless, according to Afar elders the causes are beyond these. As has been discussed conflicts are internal and external types in its nature in the region. Internal conflicts are caused by conflicts of interests among the Afars regarding the use of communal grazing land, **expansion of agricultural land** and water points (ARS 2012).

The external conflict areas may be further categorized into the external conflict between Afar and Isa, and Afar and neighboring escarpment areas of Amhara and Oromia Regions. There are also conflicts between Afar and Oromo, and Afar and Amhara over the utilization of grazing area, water points and raiding of livestock. However, the conflict is not that much

serious as the one manifested between Afar and Isa. As example, the picture below indicates that the conflicts among the tribal in Middle Awash of Afar Reginal State.

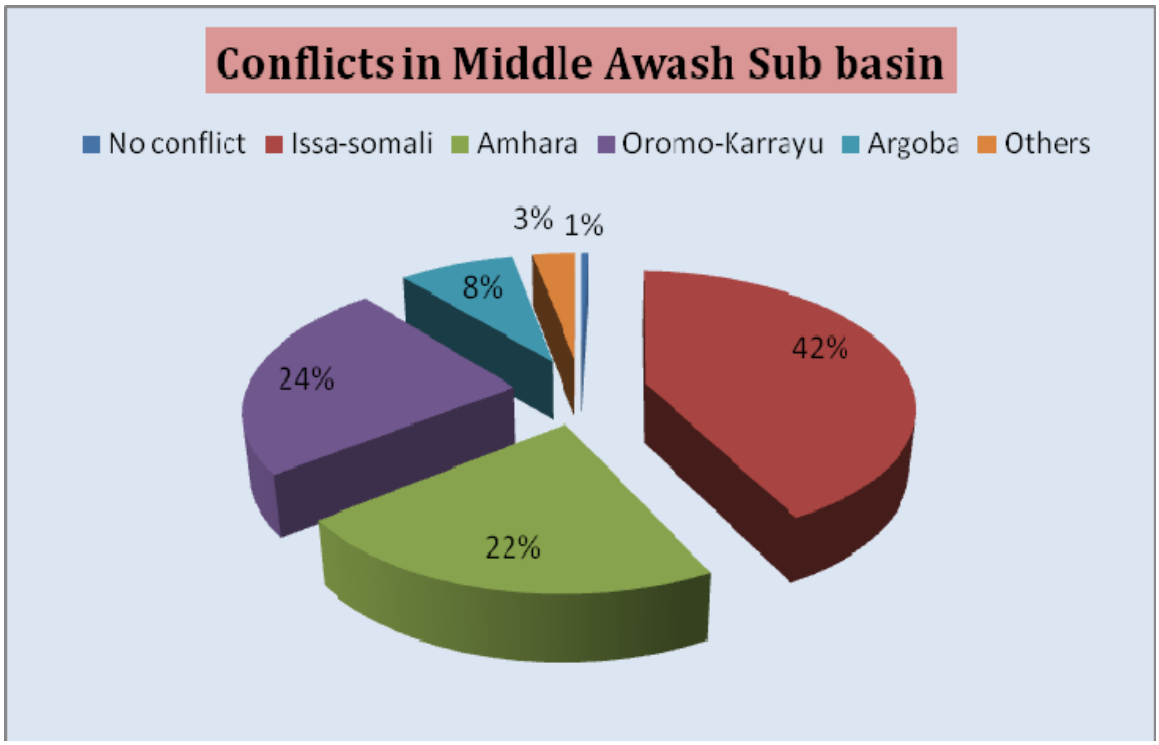


Figure 2: Land Use Conflict, ARS

4.5.2. Traditional Land Use Conflict Resolution Methods

Traditional land use conflict resolution methods are different from the nature of the conflict i.e., internal and external conflicts. Elders, religious leaders and clan leaders from conflict areas will undertake conflict resolution within clan. According to key informants of the regional higher officials, they use Afar Ada to resolute the internal conflict (between Afar clans), afar people have their own conflict resolution method called Afar Ada. Afar Ada is managed by Mekaben. Mekaben is an individual who is selected from clan members. Mekaben resolute the conflict. They take measures or penalize on the clan that made criminal offense on the other clan. The types of penalties are too different depending on the criminal cases the clan or an individual person acted. The system of penalty is “Erena”. Afar

Adaa is responsible for peace resolution of conflicts among clans and individual households in the past period. However, it is not such strong as before at this period. The following figure for example shows the traditional conflicts resolution in the Middle Awash of the region.

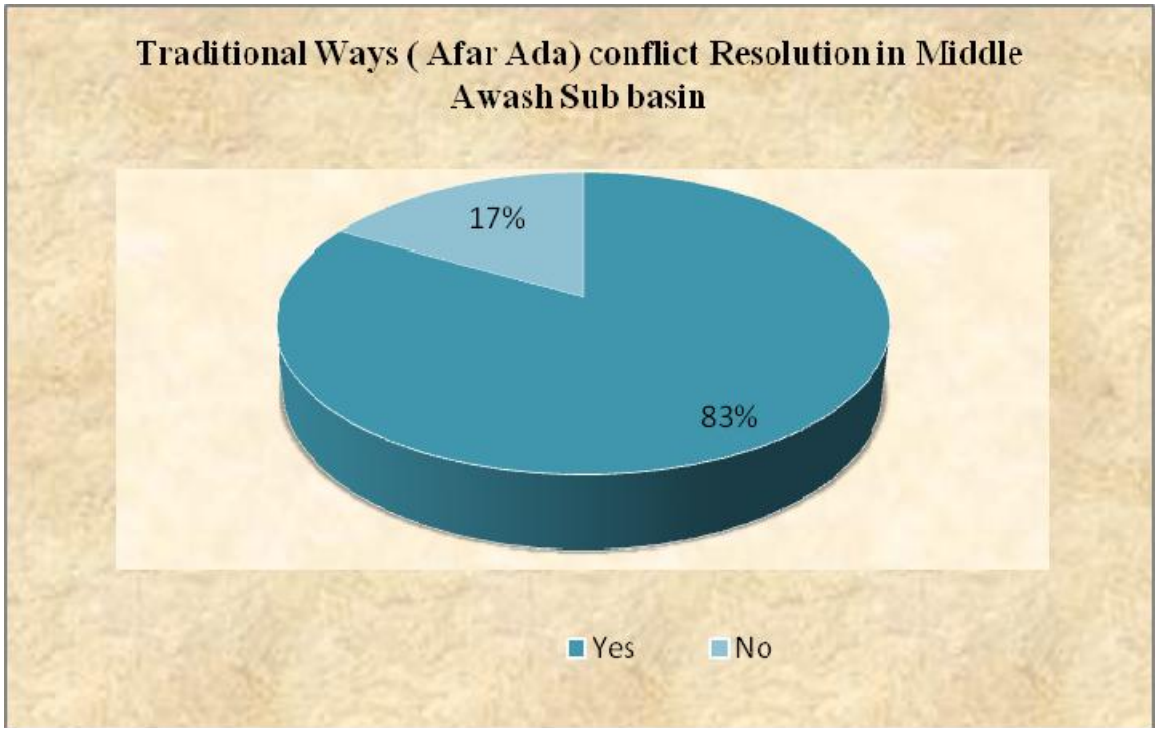


Figure 3: Traditional Conflict Resolution Method, ARS

According to the primary data gathered from the field, the overwhelming majority of respondents augment that most of the conflicts caused by pasture resources are resolved traditionally than legal courts.

4.5.3. The Mega Projects and forced Transhumant movement and Conflicts

According to the vast focus group discussion I had with key informants from the regional officials, since the pastoral community do not use the cut and carry system, they are forced to move to the farthest areas from their localities trespassing to boundaries of other regions of the country. From their acquired or accumulated past experiences they know that which area they should move to get pasture and water. They travel from Zone-1of the Afar region to their neighboring areas such as *Woldeya, Alamata* & *Ray and Azebo* and *Kereyu* of Amhara, Tigray and Oromia Reginal States respectively to get pasture and water to their livestock and family use. Such travels mostly cover from 70kms to 200kms taking more than four days on the road for one-way trip alone. Such trips are a very difficult journey for the Afaris as it often encounters conflicts with other tribes in different regions while trespassing the boarder of such neighboring regions which are sharing boarders with Afar. At times the travel ended up with killings and handful of causalities; but the conflicts as previously elaborated are usually resolved in traditional conflict resolution methods or by interferences of the regional governments on the adjacent areas where conflicts perpetuate. To prevent or deescalate the inter boundary conflicts the regional government of Afar has signed memorandum of understanding (MOU) with other regional state governments such as Tigray and Amhara. The security apparatus of these regions also work jointly in strategic areas such as arm control and inventory so that widely accessible arms in the pastoral communities become so significantly controllable which is supposed to minimize the causality or killing if not avoid the conflicts. Intra conflicts over resources are often ruled according to the undeclared or unwritten "constitution" (namely *Medaa*) of the Afar people. In its applicability in the community as such it is stronger than the official regional

charter/constitution. The latter one is in harmony with or implicitly influenced by the concept of *Medaa*. Tribal leaders even serve as advisors or councilors to the Regional Sate Government from this perspective. The charter is more of tweaked in languages of politics or modern legal languages. This unwritten constitution is predominantly the derivative of Islamic teachings and rulings so that it is intrinsically associated with the Afari's religious beliefs and cultural values thereby able to win the heart and mind of the fellow locals to abide by it. This unwritten tradition encompasses penal codes in which felonies are impeached accordingly. Outlaws breaching the set standards are fined by resources. Resources in Afar is having the number of livestock which is the precious part of their lives and wealth. In consideration of such repercussion, the locals are more of compliant to the law.

As a coping mechanism and avoid conflicts, Afari pastorals they dig out small bore halls (they name it "Buyi") for harvesting rain water come over difficult times.

4.6. Participation and Intended Compensation Plan

According to the firsthand information from the factory senior key informants, the factory had surveyed and planned a 38 billion Birr project (*its first phase proper*) for the benefit of the pastoral community as a compensation. The plan is so comprehensive and it would meet the felt need of the surrounding community if it were implemented as planned in a full-scale. From the outset, the plan was that to implement alternative development packages for the pastorals that were evicted from the field or halted not to access the pasture field. These alternative packages have included different projects such as fattening project and availability of factory residues such as molasses for the individual or group fattening

projects. The alternative package has also been designed to create job opportunity in the state running factory and projects, developing pastures in a nearby rangeland on 10,000ha plot of land, running sugarcane plantation through private out-growers to supply to the state sugarcane factory as a raw material so that it was intended to put the factory and plantation in harmony with the community and to provide alternatives to the community as a compensatory replacement for sustaining their livelihood. The writer's observation of this research; however proved that unfortunately none of these projects were so far executed and meet the need of the pastorals. There have been very few (the likes of the plantation out growers) but with a limited scale. Further, the project neither developed the pasture to the community nor arrange options how they would access the existing pasture field; rather it damages the field, which pastorals used to access it. This situation exasperates not only the livelihood of the pastorals into the worst case scenarios but also encroaches the surrounding physical environments including the Acacia vegetation and other precious forest species which are deforested/cleared for the interest of the sugarcane planation. Until the time this investment came to that area the area has been in a better position covered with vegetation of some tailored species to the area. The natural resources were there as Afaris haven't been known in cut and carry feeding system and seldom damage the resources. Even though they use open grazing system for the livestock they still manage to protect the natural resources through their traditional resources conservation system which is called "Desso" literally means area closure. Despite in place such system its impact has become so minimal for the last 25 years because of the vast encroachment of some unwanted trees the likes of Prosopis Juliflora which is commonly known as "Woyane Zafe" in the area.

Since the series of state investments starting from the cotton farming back in the previous regimes in the sixties have been intervened (Behnke, R. and Kerven, C., 2013) in the area, continued mismanagement of the natural resources of the current investments and deforestation of important vegetation used for the livestock use have heavily been affected with the exception of some areas such as roadsides, residential villages and field boundaries where somehow protected. The deforestation has also resulted in migration of wild lives the likes of lesser-kudo, gazelle's families and some bird species.

The community is also responsible for playing its part for disforesting the vegetation for the sake of producing charcoal for commercial purposes. In this business the daily laborers those who are settled in the area mainly heavily involved and linked to the business. So in the first phase of the project alone large hectares of vegetation land (22,800ha) have already been devastated and cleared which contributes to the loss of grazing land of the community.

Environmentally, since the original plan was not fully implemented, both aquatic/marine and riverine species have been highly affected. So, it is clearly visible the imminent impact of the project intervention on the biotic and abiotic ecosystem in the area.

4.7. Sense of Insecurity and Feeling of Disempowerment

Table 11: Feeling of Exclusion or Disempowerment

Woreda		Exclusion and Disempowerment		Total
		yes	no	
	Assayta	13	25	38
	Dubti	29	2	31
	Detbari	14	11	25
Total		56	38	94

As the above cross-tabulation shows 60% of the respondents answered that, the continued alienation from their accustomed livelihood has left them for the sense of exclusion and disempowerment. In a related analysis, the following table also depicts that out of those that felt insecurity with their future livelihood responded that increasing inaccessibility to pasture area and losing main source of livelihood such as livestock and pasture are the main reasons for feeling of exclusions and disempowerment.

Table 12: Sense of Insecurity

Woreda		increasing inaccessibility to pasture area	losing main source of livelihood, livestock and pasture	conflict among inter and intra tribes	Total
	Assayta	7	11	7	25
	Dubti	17	4	0	21
	Detbari	5	5	0	10
Total		29	20	7	56

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusion

The misery of pastorals may start at the thought or conceptual level across all areas where pastorals are living. For example in Afar region where this research is conducted, there are two different views with regard to the prons and cons of the two life styles among the regional officials as well. As it is known in the academic or research community, they may be called the two different school of thoughts in the region. Some group of the regional elites is arguing that pastoralism is so primitive and is no more to meet the dire need of the contemporary pastoral community because of different reasons. Following are few of them this group asserts its stance. Firstly, the system is increasingly becoming unproductive and so easily vulnerable to natural calamities, which resulted in lack of pasture resources and shortage of water in the area. As a result, main stay of the pastoral livelihood has been affected. The chief livestock production such as milk has become so low and unable even to feed the households let alone surplus for the market. Secondly, it also causes the loss of human lives, which is often happened because of fatal conflicts whenever the pastorals travel within or outside of the regions in search of livestock feed and water. Some of the proponents of this school of thought in the region believe that conditions, which have been able to sustain pastoral life style, are alarmingly getting so worse and not dependable for main stay at all. Therefore, this group believes that transforming this life style to settled agricultural and sedentary livelihood would be more appropriate to secure the future of the pastorals in the area. They also refere the regional land use policy for asserting their stance. The policy is scited as “Afar pastoralists usually roam from place to place in search of

grazing and water for their cattle and other animals. This system of livelihood has helped to balance and protect the eco-system from destruction. However, the repetitive and cyclical drought has made the traditional system of roaming in search of water and grazing totally unreliable and is threatening the very existence of the pastoralists. Creating suitable environment to settle pastoralists has therefore become an urgent and important task. This issue and direction has already been given sufficient attention in the Rural Development Policies, Strategies, and Tactics document of the Federal Democratic Republic of Ethiopia; and other documents that outline the visions for pastoral areas development and good governance" (Afar Region Land Use and Administration Policy, 2011).

In contrast, the other group rejects this opinion by labeling it as unprofessional, invalid, and baseless. It is baseless because it does not contain any proven records and is against the facts of scientific results. Besides, it is baseless because sedentary life could never meet and is unable to resolve the pastorals need and the challenges they face today. This group believes that in many factors the system the other group proposes does not fit with the extremely harsh environment of the area where basic service packages are not fulfilled at bare minimum level in places where settlement is tried in the region. This group furthers its argument by claiming that the proposed system is also against the life style and established experiences of Afaris for years. Hence, it is very difficult to customize the system in the area. The primary data collected via this research and through field observation is also in favor of this latter idea the second group voices out. In section 4.3 the result is discussed in detail.

Ethiopian pastoralists, like pastoralists in many other countries, are facing natural and manmade threats. Misconceived pastoral policies and erroneous perceptions about the pastoral way of life are exasperating the problems they are facing from climate change and population pressure. Successive Ethiopian governments viewed pastoralism as an unfavorable livelihood choice and attempted to sedentarize pastoralists without success. However, the FDRE Constitution guarantees pastoralists the right to their grazing lands and not to be displaced from their lands, what is happening is a bit contrary to this enshrined rights of the locals. In spite of the federal and regional constitutional provisions discussed above, the pastoralists and agro pastoralists in Afar region have no a well defined and equitable use right to lands (ARS, 2015). A parliamentary standing committee has also been created in the federal Parliament to represent pastoralists, monitor that the laws enacted in the country do reflect their interests, and advocate for the rights of pastoralists at various forums. A Pastoralists' Day is also declared and celebrated every two years at a national level. Despite all this national instruments and event, pastoralists are becoming more and more insecure as a result of myopic perceptions, policy and interventions. As explained in the previous passage, as the second school of thought in the region believes, one source of insecurity is sedentarization. The government, like the previous socialist military government has a conviction that pastoralism is not productive and pastoralists need to be sedentarized. This policy orientation is reflected in various government documents, strategic plans, and laws. The plan of sedentarization is now changed to Voluntary Villagization Scheme (VVS) where millions of pastoral households will be congregated in village so that government will find it easier to provide them with social services (Abebe *et al*, 2015).

Another source of insecurity to pastoralists is the establishment of formal administrative units in pastoral areas that have brought about two negative consequences. First, the administrative units and structures are created without considering the traditional units of pastoral grazing lands which fragment the unified rangeland resources access. The fragmentation of rangelands in different administrative units also means the administration and management will be fragmented and access to resources will be difficult. Secondly, the establishment of formal administrative structures in pastoral areas without recognizing the role of customary land governance institutions in managing rangelands and natural resources is tantamount to repealing them impliedly (Piguet, 2007). This has resulted in weakening of customary institutions and cannot manage rangelands as before because offenders reject their sanctions and appeal for relief from the formal administrative units.

The weakening of customary institutions has resulted in a vacuum of authority in managing rangelands, leading to wanton tree cutting, expansion of enclosure of communal lands often resulting in degradation of the rangelands because there is no one to enforce customary rules on the proper use of rangeland resources. Land Administration to Nurture Development (LAND), which is a five year project funded by USAID and implemented by Ethiopian Ministry of Agriculture and six regional states and whose main objective is strengthening the land policy and legal frameworks in order to enhance and ensure property rights and tenure security of farmers and pastoralists in the country is assisting the government of Ethiopia in tackling the issue of securing pastoral land use rights. LAND project experts have considered various options and on the basis of studies and assessments selected an approach to registration of communal lands and empowerment of customary institutions.

As Abebe *et al* (2015) explains under this approach, LAND will work with respective regional bureaus and offices in order to develop legislations that provide for the registration of traditional pastoral rangeland units irrespective of formal administrative boundaries and in which customary institutions will be recognized as managers of their rangelands and other natural resources. Their accountability to their people and the government will be defined. As this approach is new and experience in this field is very limited LAND will proceed cautiously with studies and consultations with federal and regional government officials and pastoralists.

5.2. Recommendations

The sugarcane plantation and sugar factory affected the liveliohhod of pastoralits in Afar. A lot of issues were discussed under the "result and discussion part". The finding indicated that the community barely owned the investment. There are some manifestations discussed in detail in the results and discussion chapter. The following are remedial measures to correct off-truck outputs of Tendaho Sugarcane Plantaion:

- As Behnke and Kerven suggested in 2011 concluded pastoral livestock husbandry much profitable than the current sugarcane investment and the former cotton farming. Both researchers continued that livestock is more profitable than cotton farming. While private cotton cultivation may occasionally achieve rough productive parity with pastoralism, state cotton farms lost money for decades and their mismanagement has led to soil salinisation, water logging, lost soil productivity and weed infestation. It would appear that the irrigated fields that were once part of the state farms are no longer productive enough or profitable enough to pay for the

reclamation and repairs that they now require, and that cotton production in these areas is unsustainable without additional capital investments or public subsidies.

- They continued claiming that sugar cane cultivation presents much the same picture. On the favourably situated plantation examined in this study, cane farming equalled the returns to livestock in one of four years, and fell short in three of four years. Despite high levels of government investment and the expropriation of local communities' land, there is no evidence of consistently higher economic returns per hectare to sugar cane rather than pastoralism.
- As indicated in the comprehensive plan of the Tendaho Sugarcane Plantation plan there is a compensatory plan to compensate the displaced pastorals and lose access to rangelands. These plans have never been implemented fully to address the issues raised in the discussion part.
- At finally yet importantly, ownership and sustainability are the two key catchwords in the economic and social development concepts. Community participation and their active involvement starting from the inception stage of a given project or program is bedrock of continued developments endeavors and intervention. As the facts of this research's findings indicate the community participation during the project initial stage was so minimal. A remedial actions should be designed and be in place to take a full advantage out of this huge mega investments.

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ANEXES

Annexure I: Questionnaire Used for HH Data Collection

Questionnaire for collecting data in Dubti, Assayta and Detbari Woredas of Afar Regional State

Instruction: After greetings, please introduce yourself, state the objective of the baseline in accordance with the information you received from the trainers. Then, proceed with the questions. For all the questions, circle or mark the number (s) of the answer(s) provided by respondent or write answers in the space provided under "other specify" for those answer(s) which are provided by the respondent, but not listed in the choice.

Be patient to collect reliable data. At the end, do not forget to THANK the respondent.

Identification:

HH ID No: _____

Kebele/PA name:_____ Village _____

Date of the Interview: _____

Name of respondent (head of household): _____

Household Head: 1) Male head 2) Female head

For male head, number of wife: _____

Enumerator (Name and Signature): _____

…… To be completed at the field after interview has been done ……

Name and signature of supervisor: _____

Date: _____

…….FOR OFFICE USES ONLY……..

Encoded by: _____ Entered by: _____

1. Household size and features (Table 1)

S.N	Name of family members	Sex (1= Male 2=Female)	Age (Years)	Highest level of education*
1				
2				

* 1-12= write grade completed; 13=university/college; 20. Religious school, 30. Adult education, 99 did not attend school education;

1. livestock and Crop Production and use of pasture area

1.1 Livestock production

1.1.1 Are you engaged in livestock production? 1) Yes 2) No

1.1.2 If yes to the above question, please tell us the following (use table 2):

Table 2: Livestock holding now, sales and income during the last 3 years

Code	Livestock type	Livestock/beehive number available, now	Number sold during last 3 year	Income earned from sales (birr)
1	Camel			
2	Oxen/adult bull			
2	Cow			
3	Heifer			
4	Yung bull			
5	Calf			
6	Sheep, adult			
7	Sheep, kids			
8	Goats, adult			
9	Goats, kids			
10	Chicken			
11	Donkey			
12	Horse			
13	Beehive			

1.1.3. If "no" to the above question, why?

a. I have never been engaged in livestock production.
b. I destocked my livestock asset for the interests of a business which is more worth than keeping livestock.
c. Since no adequate pasture area owing to expansion of state projects which forced me to destock?
d. others

1.1.4. Livestock production during the last 3 years and household income earned from sales of livestock by-products the last 3 years (Table 3).

Table 3: Product type, No. of animals involved, unit of product, quantity produced, price

Sr. No	Livestock by-products	No. of animals involved	Unit	Qty	Average price per unit during the last three years (birr/unit)
1	Camel milk		Litre.		
2	Cow milk		Litre.		
3	Goat milk		Litre		
4	Butter produced		Kg.		
5	Egg produced		Number		
6	Hides and skin	--------	Number		

* 1= male (spouse); 2= female (spouse); 3= children; 4=every household member

1.1.5. Landholding and land use of the household (hh) (Table 4)

Code	Land use type	Area (ha) (3 years ago)	Area (ha) (now)	Reason if landholding of the hh got shrunk owing to any factor
1	Annual crops			
2	Perennial crops			
3	Irrigated land			
4	Forest/wood lots			
5	Grazing/pasture area			
6	Home stead			
	Total			

1.2. Crop production

1.2.3. Did your household produce crop the previous production year? 1) Yes
2) No

1.2.4. If yes to the above question, tell us the following: (use Table 4)

Table 4: Crop production, income and damage during the last production year:

Code	Type of crop produced	Area (hectare)	Production (qt)	Amount sold (qt)	Income from sales (Birr)	Amount consumed (qt)	Amount damaged (qt)	Amount stored to date (qt)*
	Staple crops							
1	Maize							
2	Sorghum/							
3	Finger millet/							
4	Teff							
	Oil crops							
5	Sesame							
6	Niger seed/Noug/							
7	Groundnuts							
8	Flax *(Telba)*							
9	Saflower (*suf*)							
	Pulse							
10	Haricot bean							
11	Horse bean							
12	Pea							
	Vegetables							
13	Carrot							
14	Beet roots							
15	Cabbage-local							
16	Cabbage-exotic							
17	Onion							
18	Tomato							

**If there production is more than the sum of what is sold, consumed, damaged or stored, give the quantity and associated remark.*

1.2.5. If "no" to the above question, tell us the reasons:

a.

b.

c.

1.2.6. Do you own fruit trees? 1) Yes 2) No

1.2.7. If yes to the above question, please tell us the following (Table 5):

Table 5: Production and income from perennial crops during the last three years

Code	Type of crop produced	No. of trees/ bushes owned	Production (qt)	Amount sold (qt)	Income from sales (Birr)	Amount consumed (qt)	Amount damaged (qt)	Estimated fruits not harvested yet (qt)
1	Mango							
2	Banana							
3	Papaya							
	Others specify							

1.2.8. If not, why

1.3. Accessibility and use of Pasture Areas

1.3.1. Do you access pasture in your vicinity or neighborhood?

a. Yes b) no

1.3.2. If "no" to the above question, how many kilometers do you travel everyday to get pasture for your livestock?

a. Full day
b. Half day
c. Less than a day
d. Less than half day

1.3.3. What are the main reasons or challenges forcing you travel long distance?

a. The pasture areas we used to access some years ago are now occupied for state investment like sugarcane plantation/factory so that the pasture in the neighborhood is becoming inadequate to the whole community
b. The pasture or fodder has become inadequate owing to resource depletion which is resulted from lack of proper resource conservation.
c. The fodder has been inadequate as compared to what was available some years back owing to overuse of resources like overgrazing.

d. Other

1.3.4. Because of increasing reduction of grazing land which resulted from expansion of state projects, have you been forced to sell your livestock?

a) yes b) no

b) If "yes" to the above question, how many have you sold the last three years?

a. Totally
b. Half of them
c. 2/3 of the total
d. 1/3

1.3.5. How has been daily meal pattern in your family during the past three years after destocking (if incase)?

a.) One meal per day

b.) Two meals per day

c.) Three meals per day

1.3.6. Have you been able to cover the health costs of your family members during the last three years?

a) Yes b) no

b) If "no" to above question, why

a. The main source of my income (*livestock production*) is no more supporting my basic needs.
b. Health service cost becomes more expensive.
c. The health center is located very far or mostly in the town so that I cannot cover the transportation costs
d. other

1.4. Settlement

1.4.1. Have you noticed new settlement/settlers related with the sugar cane planation/factory in your area?

a) Yes B) no

1.4.2. If "yes" to the above question, do you have any idea why they are here?

a) For labor to the factory?

b) other

1.4.3. Their availability to the area do you see it as an opportunity for the area?

a) Yes B) No

1.4.4. If yes to the above question, what opportunities do they have brought to the area?

a. They are potential customers for our income generating activities.
b. They enhance heterogeneity and diversity in our community.
c. other

1.4.5. If you get employment opportunity to work in this state projects, do you think you can meet the labor demand of the factory and plantation?

a. Yes b) no

1.4.6. If no, why?

a) Lack of acquired experience other than keeping livestock
b) It is not worthy compared with breeding livestock to subsist my family.
c) Resistance against such dynamics in the area
d) Lack of work ethic or discipline
e) other

1.4.7. What do you think the impact of the settlers in your livelihood or cultural values?

a) Sexual assault (like rape) is reported.
b) Liquor houses alarmingly increasing
c) Prostitution houses are widespread
d) other

1.5. Participation of people

1.5.1. Had you been consulted while the sugarcane planation and factory was being established in your pasture area and alongside the river stream?

a) Yes B) no

1.5.2. If yes to the above question, what was your opinion

a) Agreed
b) Disagreed
c) Indifferent

1.5.3. If you disagreed, what was your main reason?

a)

b)

1.5.4. Do you currently take advantage in any form from this state farming and factory?

a) Yes B) no

1.5.5. If yes, what?

a) Casual Labor
b) Permanent employment
c) Free livestock feeding
d) other

1.5.6. If you are benefited in any form, is this benefit better than pastoral life?

a) yes b) no

1.5.7. Do you think the state investment in your area ensure your future livelihood?

a) Yes B) no

1.5.8. If not, what possible remedial action do you suggest?

2. Current Household assets

2.1. Inventory of household assets and estimate value (Table 8)

Table 8: Household asset

Code	Component	Unit	Quantity owned	Unit price or value (Birr/unit)
	Physical capital			
1	Own animal cart	Number		
3	Own Television	Number		
4	Own Radio	Number		
5	Own private water well	Number		
6	Own water pump	Number		
7	Own mobile phone	Number		
8	Hand watch			
	Specify other asset if any			
	Financial capital			
10	Own saving, now	Birr		
	Social capital			
11	Membership in associations	Number		

3. Water and Sanitation for the last three years

3.1 Where does your household get water for drinking? 1. Hand dug well 2. Spring 3. River 4. Pond 5. Others, specify

3.2 In dry season where do you get water?

1) River 2) pond 3) spring 4) other_____

3.3 Do you pay for water? 1) yes 2) no

3.4 If yes, how much do you pay (per 20 L jerry can)? _____

3.5 Where do you get water for your animals?

1) river 2) pond 3) spring 4) other_____

3.6 Is it sufficient for the animals of the community? 1)Yes 2) No

3.7 Is there any conflict over water for either animal or human consumption?

1) Yes 2) no

3.8 If yes, how do you solve it?

1) Police 2) traditional means

3.9 How many times do you take bath?

1) At least once in a week 2) once in a week 3) twice a week 4) once a fortnight 5) other_____

3.15. What is the reason if 4 or 5 is chosen for question 3.14 above,

a. Lack of water:
b. Lack of awareness
c. A and B

4. Nutrition

4.1 How many months can you feed your household from the crop/livestock produced during the last three production seasons?_____ months/season

4.2 What do you do when there is insufficient food for the household? (Tick in Table 10)

Table 10:

No.	Strategy	
1.	Use own saving to buy food/grain	
2.	Sell livestock to buy food/grain	
3.	Sell household assets to buy food/grain	
4.	Hunt animals	
5.	Depend on wild fruits, roots,	
6.	Borrow from relatives	
7.	Depend on social support	
8.	Cut and sell trees/charcoal	
9.	Migrate to urban area	
10.	Decrease meal consumption/day	
11.	Remittance support	
12.	Others (specify)	

4.3 Did your child acquire diarrheal diseases? 1. Yes [ ] 2. No [ ]

4.4 If yes, what did you do for him/her during the episode of diarrhea?

1. Go to clinic/health post 2. Go to traditional healer
3. Treated with traditional medicine at home 4. Take ORS/ORT
5. Do nothing 6. I don't know
7. Others (specify) _____

4.5 If you choose "do nothing" for question 4.6, why

a. Lack of adequate income
b. Lack of awareness

5 Market oriented activities:

5.1 Has any of your household member participated in non-farm income generation?
1) Yes 2) No

5.2 Is there any factor leaves your household member to engage in IGA activities? If yes, tell us the reasons.

a) Opportunities are getting limited in running livestock production
b) Accessing pasture lands getting so limited
c)
d) other

5.3 Has anyone in your household ever participated in rural saving and credit group?

1) Yes 2) No

5.4 If yes, is there anyone regularly saving money in the saving and credit group?

1) Yes 2) No

5.5 If yes, who saved money? 1) Male 2) Female

5.6 How much is the saving? 1) Male = _____Birr; 2) Female = _____ Birr

5.7 If no, what is the reason?

a. No unspent income less consumption for saving
b. other

5.8 Which market do you sell your livestock?

1. Forma/legal 2. Informal/smuggling

5.9 If "informal" marketing, what pushing factor lead to this?

a. better price in the formal one
b. no proper formal market in the area
c. The taxation is high in the formal market
d. other

6 Sense of Insecurity

6.1. Do you feel sense of security owing to the dynamics in your area?
a) Yes b) no

6.2. If you say "no" to the above question, what is the reason?

a) Increasing inaccessibility to pastor areas
b) Losing main source of livelihood i.e. livestock, pasture
c) Frequent intra and inter conflicts over scarce resource like water and pastures
d) other

6.3 Do you feel sense of exclusion and disempowerment after such state farming expansion?
a) Yes b) no

6.4. If you believe such huge intervention weakens you, do you think that it exposes you to local rivalries?

Annexure II: Unstructured/Open-ended Questionnaire

1. Physical Environment

    - Does the establishment of this farm and factory affect the physical environment of the surrounding?
    - Does the catchment area vegetation and soils depleted or eroded?
    - What looks like natural resource protection or management before and after such mega state investment? Please compare
    - Do the rivers found in the area used only for the farm or optimal use of the resources for pastorals in the vicinity as well?
    - The physical investment of the factory and related premises like the construction/housing for the settlement of the factory workers; and the farming destabilizes the natural ecosystem of the area?

2. Economic and Social Impact

    - Does the establishment of the factory and the farming improves the (quality) lives of the locals?
    - If not, what aspect does it negatively impact the livelihood of the locals?
    - Does it open up new economic opportunity for the locals? Feed for the livestock
    - Employment generated? What facts do you justify?
    - Does the investment create scarcity in use of the natural resources (like pasture land and water) for the locals?
    - Is there conflicts between rival tribes over resources because of the scarcity of resources caused by the investment?
    - How is the impact of the housing/settlement for the factory workers?
    - Were people displaced because of the investment? If so, what alternative were arranged for their livelihood?

3. Health
    - HIV/AIDS and STI widespread in the area? If so, do you have the data and what are the main causes?

Annexure III: Thesis Research Proposal

INDRA GANDHI NATIONAL OPEN UNIVERSITY

SOCIOECONOMIC EFFECT OF TENDAHO SUGAR CANE PLANTATION ON THE PASTORAL LIVELIHOOD OF AFAR NATIONAL REGIONAL STATE

MA(RD) Thesis Research Proposal

By

Jibril Ibrahim

Feb 10, 2015

ADDIS ABABA, ETHIOPIA

PROFORMA FOR SUBMISSION OF M.A. (RD) PROPOSAL FOR APPROVAL

Signature : _____

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Enrolment No: ID 1216851

Date of Submission: January 22, 2015

Name of Study Centre: St. Mary's University College, Centre Code 8105

Name of Adviser: Dr. Wondimagegn Chekol

Title of the Project: SOCIOECONOMIC EFFECT OF TENDAHO SUGAR CANE PLANTATION ON THE PASTORAL LIVELIHOOD OF AFAR NATIONAL REGIONAL STATE

Signature of the Student : _____

Approved/Not Approved_____

Date:_____

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LIST OF ABBREVIATIONS

CSA	Central Statistics Authority
SNNPRS	Southern nations and Nationalities Peoples Regional State
ARS	Afar Regional State
MOA	Ministry of Agriculture
BOA	Bureau of Agriculture
MOWRD	Ministry of Work and Rural Development
TSP	Tendaho Sugar Planation

1 INTRODUCTION

1.1. Background of the Study

Expansion of crop production and irrigation agriculture is one of the factors that resulted in rangeland encroachment in Lower Awash Basin. According to Hellnad (2015), irrigation agriculture first started in the 1960s with a large-scale concession for cotton farming in the Lower Awash, followed by a number of farms in the Middle Awash, usually set up as joint ventures between the Awash Valley Authority and foreign companies.

The Ethiopian pastoral community is estimated to occupy about 61-65% of the total area of the country and are home to 12-13% of the total population. In addition, out of the total estimated livestock population of the country, the pastoral areas constitute approximately 30% of the cattle, 52% of the sheep, 45% of the goats, and 100% of the camels (MOA, 2000). However, recent livestock population estimates obtained from the Central Statistics Agency pastoral areas raise these figures to 49% of the cattle, 47.5% of the sheep, 51.5% of the goats, 100% of the camels and 12.9 % of the equines (CSA, 2011).

In these areas, where pastoral production system is the dominant way of life, livestock is the primary source of existence, providing milk and cash income to cover family expenses for food grains and other essential consumer goods. Further more, the lowland pastoral areas have been the traditional source of export animals (Belachew, 2003 as sited by Hayatudin 2006). Pastoralists have the greatest contribution for the national livestock resource, accounting for more than 28 percent of cattle, 26 percent of sheep, 66 percent of goats and 100 percent of camels (Hayatudin, 2006).

Pastoralism in the past was highly successful in supporting people who depend on a fragile natural resource base and marginal lands even under adverse conditions (Ayalew, 2001). The situation now is dramatically changing. Recurring drought has become a common scenario in the pastoral areas. High population growth coupled with declining productivity is making the crisis vicious. More than 50 percent of the chronic drought-affected population in the country is from pastoral areas (Biruk, 2002).

The challenges the pastoral production system facing are myriad. Largely due to widespread misconception about the system among national governments and planners, the policies devised for these areas were detrimental for the pastoralists. Such policy measures include allocation of land for non-pastoral use mainly the development of irrigated commercial agriculture, attempts to disrupt herd movement which severely disturb the grazing cycle, moving agriculturalists in the pastoral areas, coercive settlement of pastoralists in agriculture and related schemes, arbitrary reduction in herd size (Ayalew, 2001). These actions, which resulted from the presumption of pastoralism as irrelevant to development and often damaging to the habitat, had significantly affected the pastoral production system. On top of this, the establishment of wildlife conservation areas in traditional grazing lands of pastoralists had also contributed its share in making the situation worse.

The focus of wildlife conservation in Ethiopia is based on a system of delineating wildlife conservation areas. The reserve areas are widely distributed in the country representing different eco-system including alpine, aquatic and arid areas. There are nine national parks, three sanctuaries, eleven wild life reserves and 18 controlled hunting areas. In total, these areas cover about 194,000 square kilometers or approximately 14 percent of the country's total area (Leykun, 1995).

Various attempts have been made in different countries to minimize the impact of conservation parks on local inhabitants and to make them beneficiary by following "participatory" management approach. This move was triggered by the realization of the importance of incorporating the needs and perspectives of local people for sustainable development. Although the adoption of this approach and the projects it undertakes offer a wide range of benefits to local people, such schemes have rarely been subjected to full cost benefit analysis using social indicators and therefore, their ecological and socio-economic viability cannot be guaranteed (Lane, 1995).

The majority of these schemes aim to compensate local people for the loss of access to natural resources by providing alternative livelihood sources. By doing so, it is assumed that the incentive to encroach into protected areas and /or poach wildlife is removed (Lane, 1995). In practice, these schemes usually are carried out under the auspicious donor funded projects. Which view local people as passive beneficiaries. However, benefits are not always distributed equally. Compensation is rarely proportional to the amount of income forgone, and the services do not address sufficiently the needs of the people (Hayatudin, 2006). Basically this is one area of the problem the pastoral areas are facing; but this paper doesn't attempt to go into details of such scenarios.

Rather in a different scenario, state farm expansion the likes of sugarcane plantation and factory plant is aggressively underway in pastoral areas particularly in Afar by clearing the river flood plain for sugar plantations (Roy Behnke and Carol Kerven June 2011). A comparable analysis has been done by the two researchers pertaining cotton, sugar farms

and cattle herding. According to their study, a well-run private cotton farm may achieve rough productive parity with pastoralism. However, state cotton farms lost money for decades. Current development programmes suggest that the Ethiopian government is aware of this situation. For some time it has been either turning the operation of its cotton holdings over to private interests – the Afar clans or investors – or transforming old government cotton farms into sugar plantations. The state's sugar estates are more profitable than its old cotton estates, but whether farming sugar cane is more profitable than livestock production is doubtful. Pastoralists in Afar are nonetheless currently losing additional land to expanding state-owned sugar plantations (Roy Behnke and Carol Kerven, 2011 and 2013).

Therefore, this study is proposed to make an empirical research prove that if state sugar cane plantation and its subsequent sugar factory is a blessing or a curse to the pastoral people of Afar Regional State by taking Tendaho Sugar plantation/factory as a reference. The research theme particularly focuses on how the factory and its related settlement affect the nomadic living patterns of Afars from both positive and negative perspective of the state farm intervention.

The output of this research is believed to have much contribution as an input for the policy and planning machineries operating at different level of the political structure at regional and national level. It is also believed to indicate corrective measures if the current sugar cane plantation and sugar factory entails negative results to the overall socio economic and political and cultural settings of the region contrary to what is envisaged from the outset.

1.2. Statement of the Problem

The Ethiopian pastoral areas are estimated to occupy about 60-65% of the total area of the country and are home to 12-13% of the total population. In addition, out of the total estimated livestock population of the country, the pastoral areas constitute approximately 30% of the cattle, 52% of the sheep, 45% of the goats, and 100% of the camels (MOA, 2000). However, recent livestock population estimates obtained from the pastoral areas raise these figures to 49% of the cattle, 47.5% of the sheep, 51.5% of the goats, 100% of the camels and 12.9 % of the equines (Bruk, 2003).

Livestock in the pastoral areas are the major source of food (milk and meat) and income, as well as a source of employment. They also serve similar purposes and functions for people living in urban and rural towns adjacent to the pastoral areas. Livestock contribute a significant amount to the national economy. In terms of gross national product, the contribution of livestock to the agriculture sector and the national economy is 40% and more than 20% respectively.

However, the pastoral production system and in particular the food security and livelihood situation is highly threatened because of different manmade and natural risks. Following are some of the salient risks and challenges the pastoral communities in the country are facing: i) expansion of sedentary agriculture; ii) expansion of agricultural projects; iii) expansion of national parks inside the rangeland; iv) emergence and expansion of agro-pastoralism; v) encroachment of unwanted plant species; vi) conflict over rangeland resources; and vii) recurrent drought.

Amongst the entire problems that threaten traditional pastoral territory with that of sedentary agriculture is the constant expansion of agricultural projects.

Since the last 50 years, the Afar Region alone has lost close to 50-60,000 hectares of dry-season grazing area along the Awash River to various plantation projects. Similarly, the Keryu lost about 22,000 hectares for the Methara sugar estate. Specific examples that can be cited in Somali region include the Gode irrigation project with a potential of 27,000 hectares, and the Chinagsen, Serge, Elbaye and Biye dams with a potential of irrigating about 1000 hectares. In Afar, besides the existing irrigable land, an additional study has been conducted to use the rivers of Ewa and Awra for irrigation purposes. In South Omo (SNNPRS) the emergence of large-scale commercial irrigated agriculture using the rivers of Omo and Woyto could also have the same effect. Construction of the Alwero dam with a potential of irrigating 10,000 hectares (MOWRD, 1999) of grazing land and a study to undertake similar irrigated agriculture using the rivers of Bonga and Itang could have a sizeable impact on the rangeland resources in Gambela region (Oxfam GB, 2003).

In all the above cases, according to Bruk (2003) sited various sources he mentioned that at national level a sizable area has been converted and put into crop cultivation. According to the most recent land use/cover of the different pastoral Regions, the area converted to crop agriculture has shown a dramatic increase. These include 178,000 hectares (CEDEP, 1999) in the Afar Region, 390,000 hectares (Regional BoA, 1999) in the Somali Region, 1,332,900 hectares (Zonal DOAs) in the Borena Zone of Oromia Region, 58,503 hectares (SNNPRS, 2000) in South Omo of SNNPR, 32,452 hectares (Socio-economic Study of Gambela Region, 1996) in Gambella Region, and 38,717 hectares (WARDIS, 1998) in

Benshangul Gumz Region. Using crude estimates, the total area of the rangelands that are in the process of being converted to crop agriculture could be approximately 1.9 million hectares.

Therefore, this research endeavor will attempt to look into what is the overall impact of the increasing expansion of agricultural land in the pastoral areas. Does such expansion and settlement affect their current socio economic and their livelihood? Does such large-scale investment have received the consent of the local inhabitants? Does it have gradual impact on future internal geopolitics of the region and the nation as a whole?

Thus, this research will deal with to answer such question by considering Tendaho Sugar plantation (TSP) and its related settlement as a case. TSP is located in Afar regional state (ARS) of Ethiopia.

1.3. Objectives of the Study

1.2.1. General Objective

This academic research aimed at conducting a study how the increasing expansion of agricultural lands over the rangelands in ARS affected the nomadic way of livelihood and the overall lives of the pastorals in the area.

1.2.2. Specific Objectives

- To investigate the extent of the increasing shrink of grazing land in ARS affects the pastoral lives.
- To explore whether the agricultural investment impacted the physical environment.

- To look into how the settlement effort of the pastorals and migrant workers with regard to the sugar cane plantation in Tendaho affects the socio cultural values of the Afar pastoralists.
- To investigate if such large-scale agricultural investment was carried out on participatory basis at grass root level..
- To indicate corrective measures if such government initiatives did not consider the actual context of the area.

1.4. Research Hypothesis

The expansion of sugar estates in ARS has seriously affected the economic/livelihood and socio-cultural condition of the pastoralist communities who has been using the grasslands as a primary source of pasture for their livestock.

1.5. Coverage or Scope of the Study

The study is to be conducted in the ARS where the Tendaho Sugar Cane Plantation and factory is located. In the selection of this pastoral region certain important factors were taken into consideration. The first one is that it is this pastoral region, which is perpetually affected by the increasing expansion of agricultural land and plantation in Ethiopia.

The scope of the study is just to learn if such expansion is an advantage or a gradual devastation to the pastoral lives of the area. In addition, the area is accessible for modern transportation facilities for easily collecting the required data.

1.6. Significance of the Study

The impact of agricultural land expansion on pastoral areas is becoming an issue even on international arena. There is a growing disparity among various proponents of different school of thoughts. There is of course an effort to enable the pastoralists to take advantage out of the sugar cane plantation as being daily laborers. However, this is quite in opposite with tradition, experience and practice they are accustomed with for centuries. Thus, in this study it is intended to scrutinize the extent of the expansion and existence of the plantation on the lives and need of the pastorals in the area. Unless such expansion is carefully studied in comparison with their nomadic way of lives, any development or investment intervention may crumble or not last as envisaged. Therefore, this study will have a great contribution in understanding the actual need of the inhabitants and be also an input for correct policy formulation which is in compliance with actual context of the pastoral area..

2. RESEARCH METHODOLOGY

2.1. The Study Area

The Afar Region is located in northeastern part of Ethiopia sharing international border with Eritrea and Djibouti. In terms of area coverage, the Afar region is the fourth largest with a total area of 100,860 square km and is structured into 5 zones and 29 woredas. The population size is 1,559,001 (CSA, July 2011) of which about 92% live in rural areas while the remaining dwells in truck-stop urban centers. The Afar pastoralists raise mixed species of primary livestock, including camels, cattle, and keep supplementary herds of goats and sheep usually for commercial purpose. The northern part of Afar region, around the lower Danakil plain, is predominantly a semi-desert with thorny species of shrubs and acacia, which have developed dwarf forms and is not as such suitable for livestock production. The middle part of the region is characterized by arid climate where pastoralists are more mobile. In the southern part, the density of pastoralists is relatively high as this area is better in pastoral resources. Three districts (woreda) namely, Dubti, Assayata and Detbari which are found in the northeastern part of Afar region, has been covered in this study. These woreda were selected as the sugar factory and the sugarcane plantation is located.

2.2. Method of Data Collection

The study is based on both primary and secondary data. The primary data will be collected from individual households and focused groups using semi-structured questionnaire. The secondary data will be collected from the state farms in this case Tendaho Sugar Factory, NGOs and CBOs and the woreda administrative office in order to augment the primary data. Prior to formal survey, an informal survey will be conducted to have overall information

and to consider what variables need to be included during the questionnaire design. The following steps will be used to identify the sample households/pastoralists. First, using lists of household heads in each village of the woreda, pastoral households are to be stratified into three groups (poor, medium, and better off) with the help of the local elders. Thereafter, equal sample size will be randomly drawn from each stratum totaling 120 households for the interests of time and resource limitation. 0913795088

In addition to questionnaire-based interviews, a series of discussions will be held with elders and key informants along with the household survey.

2.3. Data Processing

The completed interview questionnaires shall be scrutinized, verified, edited and arranged in sequential manner. The findings of the research will be presented in a descriptive statistics and data is to be processed on SPSS statistical software.

2.4. Chapterization

Chapterization of this research endeavor is proposed to be presented, according to the objectives and hypotheses.

The first chapter shall be an introduction to the subject-matter of the present study. In this chapter, an attempt shall be made to describe the concept of pastoralism, its distinct characteristics as a way of living and how it differs from the sedentary settlement. To what extent state farming and its related settlement continuously affect it. Why its way of life is judged in comparison with the sedentary farming and what are the pushing factors driving policy makers to formulate policies in this perspective. Such and related issues are to be elaborated in the introduction part.

The second chapter shall deal with the literature review.

In the third chapter research methodology of the study and data collection is to be presented.

The fourth chapter shall explain results and discussion. The socioeconomic profile of the sample households taken for the present study are elaborated here. The extent of the state farming and the settlement on the socioeconomic and cultural condition of the pastorals will be presented.

The fifth chapter shall presnt conclusion and recommendation of the study.

3. WORK PLAN

	Activity	**Time of Execution**
1	Questionnaire development	January 25-30
2	Training of enumerators	February 1-5
3	Data collection	February—March, 2015
4	Data processing and report writing	April— May 2015
6	Submission of thesis	June 2015

4. LOGISTICS

4.1. Summary of Expenses

	Expenses	Birr
1	Personnel	**13200**
2	Per dime	**18000**
2	Transportation	**4000**
3	Fuel, oil lubricant and maintenance	**13000**
4	Utility and other service	**1000**
5	Stationery	**2896**
	Sub Total	**50896**
	Contingency (5percent)	**2545**
	Grand Total	**54641**

4.2. Detail Expense

Personnel

	Particulars	Number	Duration (in days)	Payment per day	Total
1	Supervision fee	2			6000
2	Wage for enumerators	4	15	120.00	7200
	Total				**13200**

Per Diem

	Particulars	Number	Duration (in days)	Payment per day	Total
1	Per diem for student	1	30	300.00	9000
2	Per diem for driver	1	30	300.00	9000
	Total				**18000**

Transportation

No.	Payable to	From	To	Means of transport	No of persons	Round trip cost	Frequency	Total cost/Birr
1	Student	A.A.	Dubti	Vehicle	1	1000.00	4	4000.00
	Total							**4000**

Fuel, Lubricants, and Vehicle Maintenance

No	Fuel	From	To	Km	Frequency	Total (including Survey)	Fuel per km	Required Fuel (liter)	Unit cost per liter in Birr	Total fuel cost
1	Benzene	A.A.	Awash Fentale	395	4	3000	.20	600	21	**12600**
2	Maintenance									**500**
3	Oil 2 litter									**200**
	Total									**13300**

Utility and Other Services

No	Item	Birr
1	Internet service	400.00
2	Telephone and postage expense	300.00
3	Printing expense	300.00
	Total	**1000**

Stationery

No	Item	Measurement	Amount needed	unit cost	Total cost
1	Toner	Unit	1	1000.00	1000.00
2	Flash disk	Unit	1	100.00	1000.00
3	Clip board	Unit	4	15.00	60.00
4	Pen	Unit	20	1.00	20.00
5	5Pencil	Unit	12	3.000	36.00
6	Lined paper	Pkt	1	80.00	80.00
7	Duplicating paper(for Questionnaire)	Pkt	7	100	700
	Total				**2896**

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