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**DEPARTMENT OF RURAL LIVELIHOOD AND**  
**DEVELOPMENT**

**Pastoral Livelihood Diversification: Practice, Challenge and Opportunities Evidence From Middle Awash Valley Gewane *Woreda***



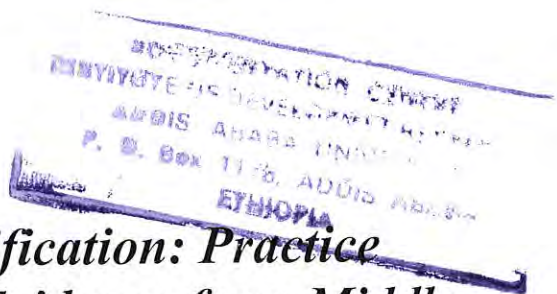
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*Title*

*Pastoral Livelihood Diversification: Practice  
Challenge and Opportunities Evidence from Middle  
Awash Valley Gewane Woreda*

By

*Anniley Engidawork*

**DEVELOPMENT STUDIES**

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Acknowledgement.....	IV
List of Tables.....	V
List of Figures.....	Vi
List of Acronyms.....	Vii
Glossary.....	Viii
Abstract.....	lix
<b>CHAPTER ONE.....</b>	<b>1</b>
<b>INTRODUCTION.....</b>	<b>1</b>
1.1 Background.....	1
1.2 Statement of the Problem.....	2
1.3 Objectives of the Study:.....	4
1.3.1 General Objectives of the study.....	4
1.3.2 Specific Objectives of the Study.....	4
1.4 Research Questions.....	4
1.5 Significance of the Study.....	5
1.6 Limitation of the Study.....	5
1.7 Structure of the Thesis.....	5
<b>CHAPTER TWO.....</b>	<b>7</b>
<b>LITERATURE REVIEW.....</b>	<b>7</b>
2.1. Theoretical Review.....	7
2.1.1 Definition and Concepts of Pastoralism and Livelihood.....	7
2.1.1.1 Pastoralism.....	7
2.1.1.2 Livelihood.....	9
2.1.1.3 Livelihood Assets.....	10
2.1.1.4 Livelihood Strategies.....	11
2.1.1.5 Livelihood activities and diversification.....	11
2.2 Empirical Literature.....	12
2.3 Analytical Framework.....	16
<b>CHAPTER THREE.....</b>	<b>19</b>
<b>RESEARCH METHODS.....</b>	<b>19</b>
3.1 INTRODUCTION.....	19
3.2 Study Design.....	19
3.3 Research Approach.....	19
3.4 Sampling Techniques.....	19
3.4.1 Selection of the Region.....	20
3.4.2 Selection of the <i>Woreda</i> .....	20
3.4.3 Selection of the <i>kebeles</i> .....	20
3.4.4 Sample Size Determination.....	21
3.4.5 Selection of Sample Household.....	21
3.5 Method of Data Collection.....	21
3.5.1 Types of Data.....	21
3.5.2 Data Sources.....	22
3.5.2.1 Primary Data Collection.....	22

A. Household Survey .....	23
B. Case Studies.....	23
C. Key Informant Interview (KII).....	24
D. Direct Observation .....	24
E. Focus Group Discussion (FGD) .....	25
3.5.3 Secondary Sources .....	26
3.4 Method of Data Analysis .....	27
<b>CHAPTER FOUR.....</b>	<b>27</b>
<b>DESCRIPTION OF THE STUDY AREA AND DEMOGRAPHIC CHARACTERISTICS OF THE STUDY</b>	
<b>HOUSEHOLDS.....</b>	<b>27</b>
4.1 Introduction.....	27
4.2 Biophysical Information .....	27
4.2.1 Location.....	27
4.2.2 Administrative Structure of Gewane <i>Woreda</i> .....	28
4.2.3 Population .....	28
4.2.4 Agro ecology of the Study Area.....	28
4.2.5 Topography .....	28
4.2.6 Rainfall Trend .....	29
4.2.7 Soil .....	30
4.2.8 Livelihood and Economic context .....	30
4.3 Demographic Characteristics of the Sample Households .....	32
4.3.1. Sex of the Sample Household Heads .....	32
4.3.2. Family Size of the Sample Households .....	32
4.3.3 Marital Status of the Heads of the Households .....	32
4.3.4 Age Structure of Members of the Sample Households .....	33
4.3.5 Educational Status.....	34
<b>CHAPTER FIVE.....</b>	<b>36</b>
<b>HOUSEHOLDS LIVELIHOOD RESOURCES POSSESSION .....</b>	<b>36</b>
5.1. Natural capital .....	36
5.1.1. Conflict with Issa Somali .....	36
5.1.2 The Expansion of <i>Prosopis juliflora</i> .....	44
5.1.3. The Diversion of Awash River .....	46
5.1.4 Recurrent Drought.....	47
5.2 Physical Capital.....	51
5.3 Human Capital .....	52
5.3.1 Education.....	52
5.3.2 Health.....	57
5.3.3 Labor Power .....	58
5.4 Financial Capital .....	59
5.5 Social Capital .....	61
5.6 Livelihood activities.....	63
5.6.1 Livestock production.....	66
5.6.2 Crop Cultivation.....	66
5.6.3 Wage Labor.....	68
5.6.4 Sales of wood and charcoal.....	69
5.6.5 Trading.....	71
5.6.6 Handicraft ("Gadetta" Making).....	71

5.6.7 Blacksmithing or metalwork (like “Gille” making) .....	71
5.6.8 Migration to Other Area for Non pastoral Livelihood Activities .....	72
<b>CHAPTER SIX.....</b>	<b>72</b>
<b>CHALLENGES AND OPPORTUNITIES OF PASTORAL LIVELIHOOD DIVERSIFICATION.....</b>	<b>73</b>
Introduction .....	73
6.1 Some of the Challenges of Livelihood Diversification.....	72
6.1.1 Access to Market.....	74
6.1.2 Poor availability of Infrastructure .....	78
6.1.2.1 Road .....	78
6.1.2.2 Telephone and Electricity .....	79
6.1.3 Drought .....	79
6.1.4 Poorly Developed Education .....	81
6.1.5 Lack of Start up Capital .....	81
6.1.6 Lack of Capacity and Training Facilities.....	82
6.1.7 Natural Resource Depletion .....	83
6.1.8 Fear of Being Outcast by Other .....	83
6.1.9 Paucity of Veterinary Services.....	84
6.1.10 Lack of Agricultural Inputs.....	85
6.2 Opportunities of Pastoral Livelihood Diversification.....	86
<b>CHAPTER SEVEN.....</b>	<b>87</b>
<b>CONCLUSION AND RECOMMENDATION .....</b>	<b>87</b>
7.1 Conclusion .....	87
7.2 Recommendation .....	89
Reference.....	91
Appendices	

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## List of Tables

Table: 4.1 Sex of the Heads of the Sample Households .....	32
Table 4.2 Family Size of the Sample Households .....	32
Table 4.3 Marital Status of the Heads of the Sample Households.....	33
Table 4.4 Age of Member of the Sample Households.....	33
Table 4.5 Age of the Heads of the Sample Households.....	34
Table 4.6 Educational Status of the Heads of the Sample Households .....	35
Table 4.7 Educational Status of the Members of the Sample Household.....	35
Table 5.1 Wet and dry season pasture in Mount Ayelu and the eastern side of the Mountain...	41
Table 5.2 Some of the Wild plants becoming inaccessible due to Afar-Issa Conflict.....	42
Table 5.3: Dry weather pasture becoming inaccessible due to <i>Prosopis juliflora</i> in the bank of the Awash River	
Table 5.4: Some of the wild food becoming inaccessible due to <i>Prosopis juliflora</i> in the bank of the Awash River	
Table 5.5 The Effect of Transport on the Livelihood of the Studied Households.....	52
Table 5.6 Total number of Enrolled and Drop out Students .....	55
Table 5.7 The reason the Heads of the Sample Households didn't send their Children to School (multiple responses are possible) .....	56
Table 5.8 The reason the Head of the Sample Households send their Children to School (multiple responses are possible) .....	56
Table 5.9 The way the Sample Households handles Health problems in the last 12 months.....	57
Table 5.10 The way the Labor shortage handled in the Community .....	58
Table 5.11 Assistance from Kin group .....	62
Table 5.12 Types of Assistance from Kin group (multiple responses are possible).....	62
Table 5.14 Household Livelihood Activities .....	65
Table 5.15 Total number of livelihood activities the studied household engaged in their respective <i>kebeles</i> .....	72
Table 6.1 Major Challenges for Livelihood Diversification (multiple responses are possible) ..	73
Table 6.2 Constraints to Livestock Trading (multiple responses are possible) .....	76
Table 6.3 The Effect of Lack of Transport Facility in the Study Area .....	78
Table 6.4 Training for Livelihood Diversification.....	82
Table 6.5 Application of Training in Livelihood Activities .....	82

## List of Figures

Figure One: Conceptual Framework for the Analysis of Pastoral Livelihood diversification....	18
Figure Two: Total Annual Rainfall, Gewane, 1980 - 2006 (mm).....	29
Figure Three: Map of Afar National Regional State.....	31
Figure Four: The Awash Valley.....	43

## List of Acronyms

APDA	Afar Pastoralists' Development Agency
ANDP	Afar National Democratic Party
AVA	Awash Valley Authority
CSA	Central Statistical Agency
DAs	Development Agents
DPPA	Disaster Prevention and Preparedness Commission
EPRDF	Ethiopian People Revolutionary Democratic Front
ESRDF	Ethiopian Social rehabilitation and Development Fund
FAO	Food and Agricultural Organization of the United Nations
FDRE	Federal Democratic Republic of Ethiopia
FGD	Focus Group Discussion
ha	Hectare
IDS	Institute of Development Studies
Kg	Kilogram
KII	Key Informant Interview
Km	Kilo meter
m.a.s.l	Meter above sea level
mm	millimeter
MoFED	Ministry of Finance and Economic Development
NMSA	National Metrological Service Agency
NGO	Non-Governmental Organization
OSSREA	Organization for Social Science Research in Eastern and Southern Ethiop
PCDP	Pastoral Community Development Project
SLF	Sustainable Livelihood Framwork
SPSS	Statistical Package for Social Sciences
TLUs	Tropical Livestock Units
UNICEF	United Nations Children's Fund
USAID	United States Aid for International Development
VOCA	Volunteers in Overseas Cooperative Assistance
WFP	World Food Programme

## Glossary

Aynce	A container that holds milk during milking period
Birr	Ethiopian Currency
Zone	an administrative unit in Ethiopia above Woreda and below region
Woreda	An administrative unit in Ethiopia that is below zone and above kebeles
Kebele	Lowest administrative unit in Ethiopia
Hantilla	milk stock loan
Katayisa	friend
Karma	main rainy season
Sugum	short rain

## **Abstract**

*This study explored the pastoral livelihood diversification and its challenges and opportunities in the two selected Kebeles of the Gewane Woreda Afar National Regional State. The sustainable livelihood framework approach was used to have a comprehensive and holistic view on the factors for pastoral livelihood diversification. It has been drawn based on data gathered through a combination of qualitative research method and quantitative household survey.*

*Despite the greater contributions of the livelihood diversification to improve the long-run resilience in the face of adverse trends or sudden shocks; to improve the household livelihood security; the livelihood diversification of the pastoralists to other lucrative and advantageous portfolio of activities was hindered by different factors. Hence a lot of pastoralists in the Middle Awash valley are predominantly engaged in less profitable activities. Results obtained revealed that livelihood systems in the study areas are dominated by pastoralism and these activities are engulfed by different hindering factors like resource conflict, encroachment of the dry weather prime grazing land by *Prosopis juliflora*, the diversion of Awash River to the immediate neighbors of the target Woreda and the occurrences of recurrent drought. The influence of these entire phenomena, led to the overexploitation of immediate environs, reduction of livestock productivity, deterioration of livelihood resources, and persistent vulnerability to drought and drought induced calamities. Furthermore, the finding demonstrates that as a result of the above factors, the pastoralists are expelled to other no- pastoral livelihood activities.*

*The conclusion of this research is that currently the livelihood of the pastoralist Afar in the Middle Awash valley of Gewane Woreda is overwhelmingly constrained by the different factors and they are in a very deplorable condition. Finally, this research argues that most pastoralists diversify their livelihood activities out of necessity and the extent of their diversification is also very minimal since it is constrained by different factors. The solution to alleviate the problem would be through intervention that must comprehensively incorporate different dimensions. Some of these can be: rehabilitation and development of livelihood Resources, institutional capacity building, credit Service provision, construction of accessible and feeder roads, provision of veterinary services, conflict management and conservation of natural resources.*

**Key words:** - Pastoralism, Livelihood diversification, challenge, opportunities, practice

# Chapter One

## Introduction

### 1.1 Background

Pastoralism is a way of life for more than 7.5 million people in Ethiopia, which is around 12% of the total population of the country. Geographically they are located in the lowland parts and they also cover 61% of total area of the country (Getachew, 2001b). Their livelihood is largely depends on livestock herding combined with other subsidiary economic activities like crop cultivation, wage employment, local and cross border commercial activities and others (Getachew, 2001a; Getachew, 2001b). Pastoralism, in the past, was highly successful; self sufficient and viable in supporting people whose livelihood mainly depends on it. In addition, their mode of adaptation is ecologically sound and be able to tackle the problem of poverty (Ayalew, 2001; Mette and Leif, 1990; Getachew, 2001b).

In the last six decades, however, pastoralist and their traditional means of livelihood has been exposed to 'intense pressure' (Ayalew, 2001; Ali, 1997). The establishment of large-scale irrigations farming; parks; delineation of international boundaries, the settlement of the agriculturalist into the pastoralists areas, conflict with the neighboring pastoral and non pastoral communities and others have resulted in the displacement of many pastoralists from their traditional dry and wet weather pasture land (Markakis, 1993; Getachew, 2001b). As a result, they are confounded to marginal areas that are less suitable for both livestock and crop production. In addition, pastoralists were forced to settle permanently in specific areas against their traditional pattern of movement between various areas in response to variation in rainfall and pasture. Due to these factors their resource base has shrunk and has led many pastoralists to be vulnerable to drought. The unfolding tragic phenomena have also led to the disruption of traditional local institutions which are crucial for sustainable livelihood (Ayalew, 2001, Getachew, 2001a, Kloos, 1982).

Under such circumstances, Ethiopian pastoralists have attempted to respond to the challenge they are facing by engaging in non pastoral economic activity; they have also adopted new coping and adaptive strategies which include a shift to new pattern of settlement and mobility, reliance on economic activities outside of the pastoral sector like, wage labor, 'opportunistic farming', commercial activities etc to cope up the problem of poverty (Getachew, 2001b). This thesis aims

to document the practice, challenge and opportunities of pastoral livelihood diversification generated as a result of the above mentioned problems by taking the experience of the pastoralist Afar in Gewane Woreda of Afar regional State of Ethiopia as a case in point.

## **1.2 Statement of the Problem**

Before the introduction of large scale irrigation farming and tourist attraction areas, in the Awash valley the livelihood of the pastoralist was viable, self-sufficient, and largely self supporting by itself (Ayalew, 2001; Getachew, 1999). However, after the intrusion of such projects, the pastoralist resource base has become constricted; the mobility of the herd has also been curtailed and started to exploit the near by grazing land, which has a serious impact on the grazing cycle of the pasture; the pastoralist themselves were influenced to settle in specific areas (Ayalew: 2001). Moreover, the development interference has left most of the pastoralists in the valley to remain in a very uncertain situation. Accordingly, pastoralism has increasingly been unable to meet the needs of the pastoralist and has become unreliable means of livelihood. Consequently, many pastoral households were forced into downward spiral of poverty and the pastoral areas are categorized under drought prone areas (Beruk: 2004; Ayalew: 2001, Getachew, 1997).

The Middle Awash Valley that extends between Metehara and Tendaho and this area during the 1960s and 1970s as well as 1980s, the dry and wet season pasture were expropriated from the pastoralist Afar to establish large scale irrigation farming (Getachew,2001a; Desalegn,2008).In addition, large tracts of land have been protected for the development of tourism industry as well as they have also lost wet and dry weather pasture due to resource competition with Issa Somali (Kloos, 1982:29).

Accordingly, the mobility patterns of the pastoralists, the dry and wet season coping and adaptive strategies have been seriously affected. Consequently, most pastoralists have entered into persistent food and livelihood insecurity; and have become vulnerable to recurrent drought and other related risks. Starting from 1950s to 1980s the Afar land is affected by “*severe drought five times*” (Ali, 1996:204). However, all of them were not caused entirely by the failure of the rain rather it was “*aggravated by dispossession of the wet and dry weather grazing land, dam construction, devegetation and degradation of the rangeland and others*” (Ali, 1996:204). Besides, the previous prosperous and well established way of life has ruined and replaced by a life of poverty and insecurity (Desalegn, 2008).

Currently, pastoralism in the rural parts of Afar, is unable to fulfill the food and livelihood security of the herder. for example, in the rural parts of Afar in general and Gewane *woreda* in particular the Kilo calorie intake per adult equivalent (AE) per day is 1852.56 kcal which is 11.9 % below the minimum requirement at national level (2100 calories per Adult equivalent per day, equivalent to 225 kg per Adult equivalent per year – FDRE 1996).The food share in total expenditure in rural areas is also 0.67 this means that out of the total annual income they earn, 67% of it is invested on food; leading to the reduction of investment in health, education and saving (MoFED, 2002:105). Therefore, in order to fulfill their basic needs including the non food requirements, many pastoralists are required to look into other non-pastoral livelihood activities such as crop cultivation, wage labor, selling of fuel wood and charcoal etc.

Despite the greater contributions that livelihood diversification plays to improve the long run resilience and diversified sources of income. The livelihood diversification of pastoralist in the studied areas is extremely less and those diversified engaged in less profitable activities and even some of the activities were socially unacceptable. Furthermore, the extent of livelihood diversification in the study community is very less since the livelihood diversification of the pastoralists, in the studied area, is hindered by different factors.

Within the academic disciplines there are studies that have attempted to capture pastoral livelihood diversification in the above mentioned situation. However, studies conducted so far in relation to the practice, challenge and opportunities of the pastoral livelihood diversification by using Sustainable Livelihood Framework (SLF) are not many. The study undertaken by different researchers such as Assefa Sewalih (2007), focuses on the dimensions and determinants of livelihood diversification in Dalifagie *Woreda* by using Sustainable Livelihood Framework (SLF).However, it gives due attention to the determinants of livelihood diversification and the target area is also different from that of the area under consideration in this study. Whereas, Ali Said Yesuf (1997; 1996) looked into resource use conflict in the Middle Awash Valley of Ethiopia and the survival strategies of the pastoralist Afar in the middle Awash valley. These two studies, on the one hand, deal with the resource use conflict in Middle Awash valley of Amibara *Woreda* which was emanated from the intervention of large scale commercial farming and, on the other hand, the adaptive strategies of the pastoralist under the constriction of their pasture land and curtailment of their mobility. The study undertaken by Getachew Kassa (2001a) focuses on what seems the pastoralist tradition before the intervention of the large scale irrigation farming and what are the changes and continuity in terms of socio-economic circumstances after

the intervention. Even though the focus of these three studies is in middle Awash they lack the understandings of pastoral livelihood diversification from the Sustainable Livelihood Framework (SLF) point of view and have ignored the challenge and opportunities of pastoral livelihood diversification.

Therefore, these studies lack the understanding of what seem the challenges and opportunities of pastoral livelihood diversification by using Sustainable Livelihood Framework (SLF). This means that there are lack of many research works which resulted in lack of adequate information and better understanding. The study takes into account the prevailing knowledge gap and inadequate information on the practice, challenge and opportunities in the study area. It is hoped that this study will be significant enough by contributing towards a broader and more comprehensive understanding of the practice, challenge and opportunities of the pastoralist diversified economic activities with in the context of the pastoralist Afar in the Middle Awash valley *Gewane woreda*.

### **1.3 Objectives of the Study:**

#### **1.3.1 General Objectives of the study**

The overall objective of the study was to look into the practice, challenge and opportunities of pastoral livelihood diversification among the pastoralist Afar in *Gewane Woreda*.

#### **1.3.2 Specific Objectives of the Study**

The specific objectives of this study were:

1. To explore the accessibility and ownership of livelihood asset/resources such as natural, human, physical, financial, and social capital in the study area
2. To investigate some of pastoral livelihood activities in the study area.
3. To identify the major, challenges, and opportunities of pastoral livelihood diversification in the study area.

### **1.4 Research Questions**

The leading questions of this study were:

1. What are the main livelihoods assets/resources accessed and owned by households in the study area?
2. What are the major pastoral livelihood activities in the study area?

- 3 What are the major challenges, and opportunities of pastoral livelihood diversification in the study area?

### **1.5 Significance of the Study**

This study, therefore, intended to contribute towards a broader and more comprehensive understanding of the practice, challenge and opportunities of the pastoralist diversified economic activities within the context of the pastoralist Afar in the Middle Awash valley Gewane *woreda*. Besides, this study aims to contribute to the existing knowledge gap through the application of Sustainable Livelihood Framework (SLF) approach.

### **1.6 Limitation of the Study**

Due to lack of time and sufficient financial support this study has focused on two rural *kebeles* and highly depended on the information collected from two rural *kebeles* by considering other rural parts of the *woreda* do have similar features.

In addition, the crisis of pastoralism in the Middle Awash Valley is explained by other broader context like global warming, political instability in the Horn of Africa especially Somali and the dominance of the Issa Somali in Djibouti and Somali land. But in this study, I did not take into consideration these factors as a cause for the crisis of pastoralism in the Middle Awash Valley, Gewane *woreda*.

Lastly, in discussing the livelihood resources possession and its trend in the study area, specifically the natural capital, some of the key informants told me that large part of the grazing areas were expropriated from them by the Issa Somali. But in some part of it I couldn't get any historical evidence that support their claim. Hence, I just put it as it is with out substantiating by secondary sources.

### **1.7 Structure of the Thesis**

The remaining parts of this thesis are presented in 6 chapters. Chapter 2 starts with the brief review of the literature and related works. Chapter 3 sets forth the research design and methods of data collection. Chapter 4 looks into the description of the study area and demographic characteristic of the target households.

Chapter 5 and 6 represent the empirical parts of the thesis, with each chapter addressing the objectives outlined above. To this end, chapter 5 deals with the household livelihood resources

possession by examining the resource availability and livelihood strategies of the households in the two *kebeles* in which the study was undertaken.

Chapter 6 discusses the fundamental challenges and opportunities that the pastoralist Afar in the Middle Awash Valley Gewane *woreda* face so as to diversify their livelihood activities. Chapter 7 offers the conclusion and recommendations of the work.

## Chapter two

### Literature Review

This study examined the explanation of pastoral livelihood diversification that the Afar pastoralists have undergone in the face of external intervention and internal dynamics. However, in this section, an attempt will be made to present the theoretical and analytical framework in view of which the empirical data of the study will be analyzed.

#### 2.1. Theoretical Review

##### 2.1.1 Definition and Concepts of Pastoralism and Livelihood

###### 2.1.1.1 Pastoralism

Varying factors have direct bearing on the loss of unanimously accepted definition for Pastoralism. These include *"the pattern of movement, mode of habitation, and degree of resilience on supplementary economic activities and others"* (Abdel Ghafar et.al., 1996:2). Nonetheless, some of the given definitions by considering pastoralism as an extensive system of livestock production combined with their mobility pattern. Some of the definitions are presented as follows

*Pastoralism is a mode of production which depends on natural forage. In the arid regions this requires constant or periodic movement in search of pasture, a factor that differentiates this form of livestock production from those practiced by farmers and ranchers* (Markakis, 1993: 1).

The other definition is provided by Khazanove which states:

*It is the predominant form of economic activity characterized by maintenance of herds all the year round on a system of free range grazing, periodic mobility with in the boundary of specific grazing territories, or between these territories and the orientation of production towards the requirement of subsistence* (As Ali, 2008 quoted from Khazanove, 1994: 16).

These two scholars give a definition that take into consideration the periodic mobility of the pastoralist in search of the grazing land for their herds. However, according to Swift and Hamilton (2001) pastoralism is simply defined based on the proportion of gross household income derived from the livestock activities. In light of this, pastoralists get more than 50 percent of their gross household income from livestock activities. This definition doesn't consider pastoralism as a way of life rather it looks as an economic activity which merely reduces what

pastoralism means in terms of gross household income the pastoralist get from the pastoral activities.

The definition given by Swift and Hamilton (2001) totally ignores the interaction of the pastoralist with their biophysical environment and adaptive strategies as well as the emotional and psychological attachment of the pastoralists have with their cattle and livelihood activities. In this regard Baxter (2001:238) persuasively argues that. "... *the herder not only depend on the stock they herd for their subsistence, but also have emotional and religious attachment to it; stock which is used for exchange and sacrifice is source of pride, social position and ritual fulfillment.*" Therefore, the definition given by Swift and Hamilton is merely income reductionist even if what pastoralism means transcend the boundary of sources of income for the pastoralist.

Pastoralism can be classified into different categories by using different variables. Some of the classifying factors, among others, are the mobility pattern, composition of herds, ecology and others. This and others classifying factors are not objectively accepted; and the classification made by different scholars is dissimilar based on the criteria they used to classify pastoralism (Ali, 2008). Though they all refer to livestock production systems or practices, terms like "pastoralism", "nomadism", "transhumance", and "agro-pastoralism" remain confusingly unclear in their application. In what follows, I shall try to give the definitions for these terminologies.

Wane (2006: 2) define Nomadism as

*the mode of life of pastoralists who, though very often rooted in an "Attachment territory," have no fixed and permanent habitat, and who move with all or part of their families on relatively long distances.... Because the movements have varying amplitudes, nomads tend not to practice agriculture; or if they do, it is only for the sake of subsistence.*

Abdi also goes on to define Nomadism as a type of

*Pastoral system in which pastoralist are "exclusively" livestock producer who don't grow crops and thus simply depend on sale or exchange of animals and their products. In this system herder movement is opportunistic and follows the pattern of pasture resources (As Ali, 2008 quoted from Abdi, 2003).*

These two definitions considered that nomadism is a type of pastoralism that doesn't have very specific residential areas and their mobility is in need of forage for their livestock, and the pattern of their mobility is loosely defined. In addition to that, their means of livelihood depends

on livestock and its products: they also argue that the nomads aren't participating in crop production. but Wane goes on one step further and said that: if they do produce crop it is only for sake of subsistence.

Whereas, when you come to the concept of transhumance, it has to do with "*a repetitive, seasonal and to-and-fro practice of moving herds and humans following very specific routes*" (Wane, 2006: 2). Furthermore, "*Transhumance pastoralists have permanent place of residence or base camp where older members of the community stay the whole year. Herd splitting is characteristics of transhumance.*" (As Ali, 2008 quoted from Ayalew, 1995).

The transhumance pastoral system intends to look for rangelands or water points necessary for feed or effective for improving productivity and sustain their means of survival. What transhumance pastoral mobility make different from nomadic pastoralism is that the mobility pattern is not loosely defined rather it is a little bit restricted.

In other words, when the movements are considerably reduced due to "development" intervention, conflict with neighboring pastoralist and settled agriculturalist and others, the pastoralists might be influenced to participate in other activities like agriculture, without the "*abandonment of pastoralism*". Therefore, the term "*agro-pastoralism becomes appropriate to give account of the co-existence of agricultural and pastoral activities on different scales*" (Wane, 2006: 2). But Abdel Ghafar et.al argues that definitional problem has been occurred to give a distinguishing definition for pastoralism and agro pastoralism rather he tries to propose to look at them as "*a continuum of modes of utilization of resources in time and space*" (Abdel Ghafar et.al, 1996:2) Ali also strongly agrees with this idea by saying that agro-pastoralism is a continuum between pure pastoralism and pure agriculture (As Ali, 2008 cited from Ayalew 1995).

#### **2.1.1.2 Livelihood**

The concept of livelihood was initially brought into the floor of the development discourse by Robert Chamber and Gordon Conway in the 1990s, henceforth, different writers gave different definition to livelihood with minor changes; some of them are presented as follows.

According to Chamber and Conway (1992)

*A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when*

*it can cope with and recover from stress and shock, maintain or enhance its capabilities and assets while not undermining the natural resource base (Kollmair, et.al cited from Chamber and Conway, 2002).*

Ellis went on to define livelihood as: *“A livelihood comprises the assets (natural, human, physical, financial, and social), activities and access to these (mediated by institution and social relations) that together determine the living gained by the individual or household” (2000:10).*

The main features of rural livelihood in the current developing countries are its capability to adapt and survive. The construction of assets is not a static process rather it is dynamic, in which it can't maintain the element throughout the year or from one year to the next. Asset can be accumulated, eroded or ruined due to man-made or natural catastrophes: the existing livelihood activities also vary over time especially in relation to the global and national economic trend. Access to resources and opportunities may change for individuals and household due to shifting norms and events in social and institutional context surrounding their livelihood (Ellis, 2000).

### **2.1.1.3 Livelihood Assets**

Livelihood assets are the various types of capital and important building blocks available to people and household from which the means of survival of the people or household will be generated to sustain their material well being (Ellis, 2000; Swift et.al.2001). In the analysis of livelihood assets different scholars such as Ellis (2000; 2005; 1999), Ali (2008) and Kollmair, et.al (2002) categorized them into five categories such as;

**Natural capital:** - refers to land, River, Vegetation, dry and wet weather pasture, different water resources and other biological resources utilized by the community under consideration to generate their means of survival. The availability and accessibility of the above natural resources are the determinant factors for pursuing of livestock production system which is totally dependent on the natural resources (Ellis, 2000; Ali, 2008).

**Physical capital:** - comprises of capital that is created by “economic” production processes. Irrigation canals, roads, electricity, market center, water points and so on. In the same vein, the availability of these infrastructures improve the opportunity to trade, market and other social services; it also facilitates the economic and social integration of the local people to another community which has beneficial effect for their social and economic wellbeing (Ali,2008; Ellis,2000).

**Human capital:** - refers to the labor available to the household and its education, skill and health status (As Ellis cited from Carney, 1992).

**Financial capital:** - refers to money in the form of credit or saving and loan access. The household has access to utilize for the purchase of either production or consumption goods. In the case of the pastoralists, livestock is their *'easily disposable asset'*; therefore it represents financial resources (Ali, 2008:197).

**Social capital:** - Social capital refers to intangible assets as well as the social institutions and the participation of the household in different social and traditional institution. According to Ellis et.al. *"the quality of the certain types of social connectedness can make a big difference to people's livelihood prospects; this quality factor is difficult to pin down."* (2005:4).

#### **2.1.1.4 Livelihood Strategies**

Livelihood strategies comprise of activities that generate the means of household survival. Individuals or household may use a particular strategy so as to meet the minimum requirement for his survival or for his future accumulation (Swift et.al, 2001; Ellis, 2000). It includes both the adaptive and coping mechanisms that people perform so as to improve their living standard. It is retained by the local people depending on the availability and access to asset/ capital (Degefa, 2005).

#### **2.1.1.5 Livelihood activities and diversification**

According to Ellis (2000:15) rural livelihood diversification defined as *"the process by which rural household construct an increasingly diverse portfolio of activities and assets in order to survive and improve their standard of living"*. The livelihood diversification of the rural household has its own implication specially in avoiding risk and vulnerability. In line with this Degefa also claims that, *"household need to diversify in order to attain sustainable livelihood"* (2005:235). Moreover, Ellis et.al. claim that livelihood diversification is a risk reduction mechanism through which *"effective risk reduction occurs by spreading risk across assets and activities that have different types of risk associated with them"* (2005:7)

The overall reason that individuals or a household pursue diversification as a livelihood strategy are broadly categorized into two parts namely, necessity and choice. Necessity refers to involuntary or distress reason for diversifying; some of the fundamental causes of this are population pressure, land fragmentation, environmental degradation and others; whereas.

diversification by choice implies that a voluntary or proactive reason for diversifying. These classifications of diversification have an implication; especially with respect to diversification for distress reason has undesirable repercussion that the household or individuals engaged in economic activity which has gloomy prospect as compared to the previous economic activities (Ellis, 2000).

Therefore, in the context of this research, pastoral livelihood diversification is that the process by which the pastoral household construct diverse portfolio of activities and assets in order to sustain and improve their standard of living and also to mitigate the risk factor that surrounds their livelihood activities. Ellis et.al (2005:5) goes on to define activities as

*activities include remote as well as the near by sources of livelihood for the resident household; thus migration and remittances by family members is considered as a category of livelihood activities, as well as, crop cultivation, livestock keeping, brick making and so on.*

## **2.2 Empirical Literature**

As it has been explained in the introductory part, pastoralist in Ethiopia constitutes more than 7.5 million people. The majority of them live in the lowland parts of the country. The rainfall patterns are erratic and unpredictable. These areas are endowed with rich natural resources and transboundary water resources like Abay, Genalle, Tekeze, and Awash River and others (Getachew, 2001b; Ayalew, 2004).

Pastoralism in Ethiopia, in the near past, was depicted as a very efficient and self sustained way of life: their mode of adaptation and production is also best suited to a sort of unsteady environment in which the pastoralists live. The pastoral production system has to do with highly fluid production systems and highly adaptable to the arid and semi arid rangeland environments. Because of this, the pastoral production system more of depends on large tracts of land so as to get the advantages of potential water and grazing resources (Getachew, 1999).

Before the intervention of the large scale commercial farming in the Awash valley, the pastoralists “secure their basic need through livestock production”. Above all their traditional mobile production system, land tenure, social and political institutions are more efficient in mitigating environmental degradation and conflict, which has been instigated from the exploitations of the seasonally available water and vegetation resources (Nyambi, 2001; Getachew, 1999).

However, since the last six decades, especially during the Derg and Imperial regime different development projects were planned and implemented in the pastoralists areas in the Awash Valley. These are, the development of large-scale commercial farming, which was mainly responsible for the transformation of the pastoral land use through introduction of state sponsored large scale commercial farming; Rangeland Development Projects which were supported by the international capital and they were intended to absorb “*the traditional pastoral economy so as to meet growing demand for live animals and low price meat in urban and export market*” (Ayalew,2001:75); and demarcation of the tourist attraction areas for the promotion of the tourist industry by expropriating the large tracts of flood fed dry and wet season grazing land. Some of the large scale commercial agriculture and national parks, wild life reserves and sanctuaries in Afar specifically in Gewane *woreda* are depicted in table 2.1.

**Table 2.1: Parks, Wildlife Reserves, Sanctuaries and State Farm in the Surroundings of Gewane *woreda***

Parks/Wild life reserves/ Sanctuary and State Farm	Areas in hectares
Yangudi Rassa national park	47,310
Gewane wild life reserves	24,390
Gewane controlled hunting areas	59,320
Aledegehi wild life reserve	18,320
Kuda state farm	700
Gewane state farm	550
Geleladora state farm	250
Ayroli state farm	200
Intiadoyta state farm	200
Total	151,240 <sup>1</sup>

Source: As Ali quoted from Beruk 2003; ESRDF, 2003

These phenomena are resulted in inevitable consequences for the pastoral Afar by impoverishing them not to access the dry and wet season grazing land. The intrusion of these projects challenged the traditional land use pattern of the pastoralist Afar in the middle Awash valley.

In this connection, Ayalew also persuasively argue that, the grave consequences of the development intervention in the Karrayu pastoral group is that “*reduction of the natural resources base, disruption of seasonal mobility and deprivation of access to water and the*

<sup>1</sup> The total size of the Woreda i.e. 58,640 includes only Kuda state farm, Gewane state farm, Geleladora state farm, Ayroli state farm, Intiadoyta state farm. The national parks, wild life reserves and sanctuaries are not included.

*displacement of the pastoralist from their ancestral lands*" (2004:251). In the same vein, Assefa (2000) and Ayalew. (2001), for the declining of the Karrayuland they also attributed the expansion of the immediate neighbors of them namely, the Argoba, Afar, Ittu and Arsi Oromo. This phenomenon led to the externalization of the pastoralist to the peripheral areas. Consequently, the resource base of the pastoralist has dwindled over time and bit by bit the pastoralist entangled in the *"spiral of less productivity and increasing impoverishment"* (Ayalew, 2004:251).

In this regard, Degefa (2008: 162) also argues that the decline of the viability of the pastoral sector can be explained by the interplay of various factors such as *"biophysical factors, population increases, unfavorable property right arrangements, and rural policies that have been biased against herder societies"*.

Generally, different scholars (Leif, 2000; Getachew, 2001a; Getachew, 2001b) went on to say that the development plan in the pastoral areas of East Africa in general and Ethiopia in particular are planned from:

*...misunderstanding and conscious policies of marginalization based on simplistic assumption. The most common of these are a wide generalization that accuses pastoralists of creating desertification, of managing their stock according to irrational economic principles and being technically stagnant and backward, of wandering about destroying nature (Leif, 2000:1).*

This misconception profoundly influenced the political and economic attitudes towards the pastoralists and the plan designed for their development in Ethiopia. The fundamental assumptions seem not to be built on the pastoral mode of production rather it is highly interested to transform to other forms of mode of production like settled agriculture (Tadesse, 2006).

Generally, through time the capability of the pastoral sector to sustain the mobile livestock production together with their mobility pattern is highly affected; traditional institutions eroded and unable to play its role for the sustainability of their production system. This is actually explained by a range of internal and external factors; such as the introduction of the large scale commercial agriculture, the delineation of parks and tourist attracting areas, conflict with the neighboring pastoral or agricultural community; as well as, other interventions increasingly restricted access to key resources of pasture, water and through-passage in the pastoral areas of Ethiopia.

This has increased pastoralist vulnerability to drought, herd loss and threatens the sustainability of the pastoral production system (Getachew, 1999). In the same vein, this sort of state sponsored intervention became an instrument for the destruction of pastoral way of life by promoting changes which has undesirable repercussions on communal resource tenure system upon which the pastoral way of life is founded (As Tadesse cited from Boku, 2000).

In addition to the development intervention, the constant threats of armed conflicts, cattle raids, ecological changes like lowering the level of water bodies as well as bush encroachment are the most obvious and immediate causes of disaster for the pastoral livelihood, and it fosters the general trend towards a largely sedentary life (Turton, 1995; Osterle, 2008).

Moreover, the above factors have placed a considerable constraint on the capacity of the rangelands to support pastoralism as a viable livelihood option. As a natural response to the decreasing returns of pastoral production in the area, many pastoralists in the Awash valley are beginning to diversify their income sources to other non-pastoral subsidiary economic activities, such as, wage labor, commercial activities, settled agricultural, firewood and charcoal production, and others.

The pastoralists take part on these activities to keep away from the *"impact of drought and other undesirable effects"* (Ali, 1997). Diversification to other non traditional pastoral livelihood activities is the result of the combination of but in general Degefa *"underscores that the inability to generate sufficient means of survival from livestock pushed the Urrane people away from pastoralism"* (2008: 150). Assefa also argues that,

*The miserable living condition the karrayu are experiencing is forcing them to adopt a mode of life which were alien and in some cases culturally disapproved to the karrayu. These include the sale of fuel wood and the burning and sales of charcoal.....sales of immature and emaciated stocks* (2000: 30).

Pastoral livelihood diversification in the case of Karrayu pastoral community is one of the 'responses to hazards'. But the indigent part of the community highly depends on *"natural capital (fire wood and charcoal production) and on social capital (mutual support and transfer)"* (Girum et.al.2008: 205).

Generally, the involvement of the pastoralist in different economic activities, which were outside the domain of the pastoralist economic activities, is explained by different other explanatory

factors such as unfair terms of exchange between livestock and cereals i.e. the terms of trade is disadvantageous for livestock products, tenure insecurity and the displacement of the pastoralist are some of the fundamental causes for pastoral livelihood diversification. Nonetheless, most of the economic activities held by the pastoralist tend to be unskilled and financially has been unprofitable (Ayalew, 2001).

### **2.3 Analytical Framework**

In examining the livelihood of the pastoralist and the changes that the pastoral way of life passes through time by using the elements of Sustainable Livelihood Framework (SLF) makes easier the understanding and identification of the causes and dynamics of the pastoral livelihood.

Whether a household livelihood is sustainable or vulnerable, it largely depends on the interplay between access to various forms of assets, the existing context (shocks and trend), the mediating processes (institutions, organizations, and social relations at work.), the activities and the resulting livelihood activities that the household pursues. Added to that,

*the livelihood framework places the welfare of the pastoralist in the dynamic context of risk seasonality and long term trends which affect livelihood resources and strategies and determine the level of vulnerability. (Rass, 2006 :2)*

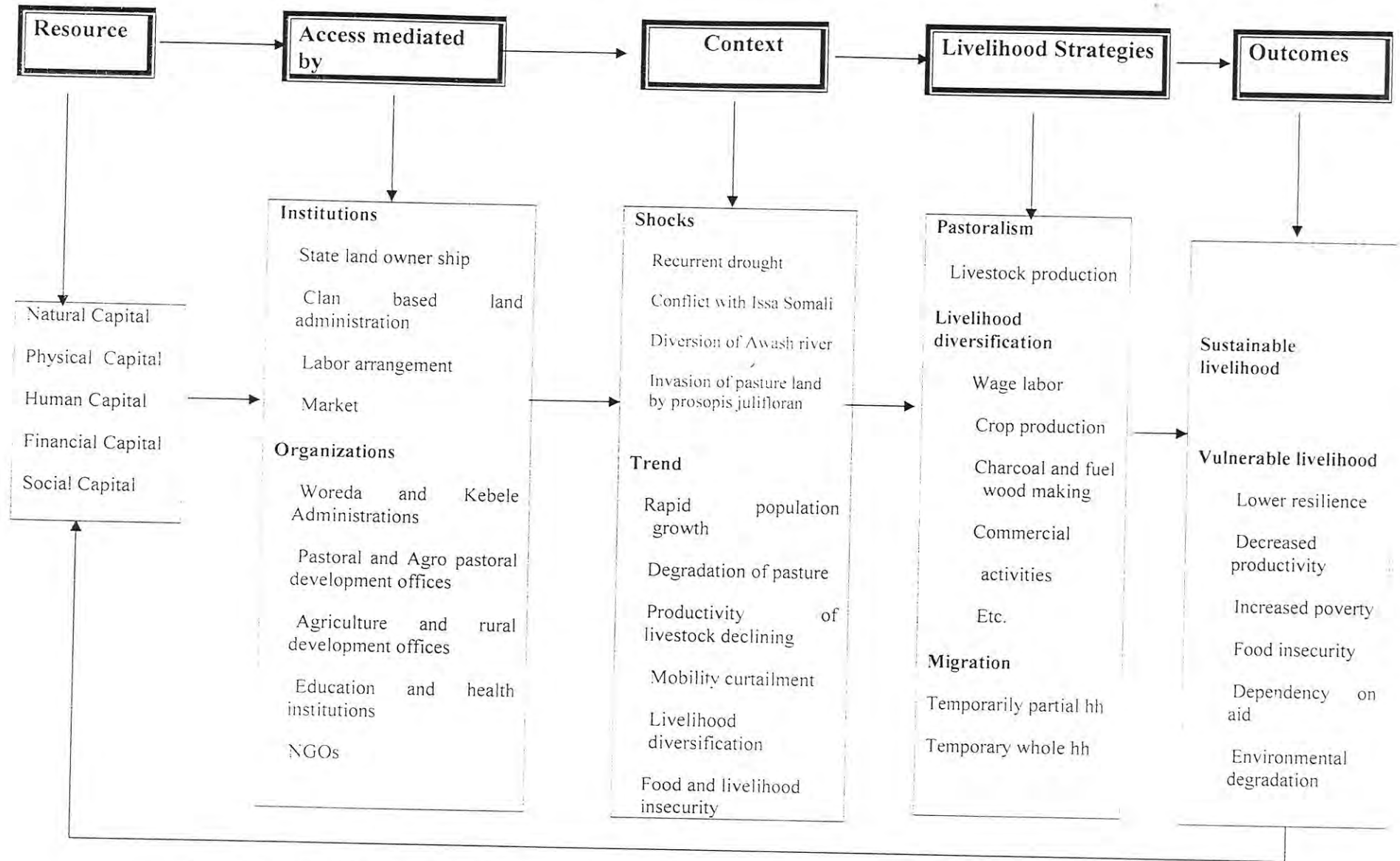
In this study, the Sustainable Livelihood Framework is adopted for analyzing the livelihood diversification situation by investigating the functional relationship between different factors. Livelihood diversification and vulnerability context are investigated as outcomes of livelihood and the sustainable livelihood framework developed in the Institute of Development Studies (IDS) by sustainable livelihood programme, and modified and adopted by different researchers (Ellis, 2000; Degefa,2005) is used in this study.

Related to this, the most important features of the livelihood framework include resources factors, mediating access (institutions, organizations, and social relations) to resources required to build viable livelihood strategies. The success of these livelihood strategies could also be in turn influenced by prevailing contextual factors (trends and shocks) over which the individual or the household has very little control. Finally, the end result of the interaction of all these variables in a system is a livelihood outcome that can be characterized as sustainable (desirable) or vulnerable livelihood.

As it has been explained earlier, the major component of the livelihood resources that determine the livelihood strategies and activities is natural capital which includes vegetation, water, pond, wells, river, land, and others. The physical capital/ consists of different social and economic infrastructures, cattle trough, irrigations cannel etc, whereas the financial capital/ includes money in the form of saving or credit; in the pastoralist areas livestock is considered as easily disposable asset, furthermore, the human capital/ embrace the educational level and health status; it is one component of the asset which affect livelihood activities/ strategies in the pastoralist areas. The availability of labor is very essential for different types of activities, specially, for their mobility during dry and wet seasons. Finally, the social capital is an invisible asset like participation in traditional pastoral institution that has a fundamental contribution to the survival of the individuals and households with in the society.

On the other hand, the accessibility of the aforementioned capitals is affected by vulnerability context, which include the trend, shocks and livelihood outcomes. Under the context of pastoral Afar in Gewane *woreda* the trend includes; mobility curtailment, shrinkage of natural resources base, overgrazing, range degradation, expansion of irrigation farming, and others whereas the shocks include drought, conflict over natural resources and invasion of *Prosopis juliflora* and diversion of the Awash River. The final outcomes, to the contrary, affect the livelihood asset/resources, particularly the poor pastoralist which are less resilient to absorb the trend and shock might end up with an unviable herd size.

Figur1 Conceptual Framework for the Analysis of Pastoral Livelihood Diversification



Source: Adapted from Ellis (2000) and Degefa (2005)

## **Chapter Three**

### **Research Methods**

#### **3.1 Introduction**

This chapter intends to brief the whole process that I have undertaken in this research in the study area. It gives a spot light on how the data was collected, organized and interpreted, all the way down to the different phases of this research. Besides, it also describes why both the qualitative and quantitative research methods were employed to attain the research objectives. It also further states the way the respondents were selected and further explicates the identification of the sources of the data that held both primary and secondary data. At the end, it demonstrates how the qualitative and quantitative data were analyzed and interpreted.

#### **3.2 Study Design**

By taking into consideration the existing financial and time constraints, it was difficult to undertake the research in the extended periods of time through visiting the area frequently at different points in time to collect the primary and secondary data. Therefore, this study was conducted through cross sectional study.

#### **3.3 Research Approach**

This thesis has relied on the mix of the qualitative and quantitative methods of data collection in balanced manner. This approach had been employed to get the wider and detailed data to analyze the practice, challenge, and opportunities of livelihood diversification. The qualitative approach has encompassed key informant interview, focus group discussion, direct observation and case studies, whereas the quantitative approach employed a cross sectional household survey.

#### **3.4 Sampling Techniques**

Despite the accepted superiority of probability sampling, non probability sampling methods has been used in substitutions in circumstances where there was lack of sampling frame. The sampling techniques in this research reflect the strategy of substituting probability sampling by non probability sampling. Due to the lack of

sampling frame both at the *woreda* and *kebele* level. I have used non-probability sampling techniques based purposive sampling for selecting households. Purposive sampling techniques has also been employed for the selection of the first, second, third and fourth elements of the research subject i.e. the region, the study *woreda*, the two selected *kebeles* and the studied household for household survey. The selection process will be presented as follows.

#### **3.4.1 Selection of the Region**

I purposively selected Afar National Regional State for this study. The fundamental reason for the selection of the region is the familiarity of the researcher to the region.

#### **3.4.2 Selection of the *Woreda***

Initially, the selection of Gewane *woreda* was also done purposely for many reasons; among others, the accessibility of the *woreda*, the existence of high intervention through the establishment of large scale irrigations project which is highly responsible for the pastoral livelihood diversification. Furthermore, this *woreda* is exposed to other external factors that ferociously affected the pastoral way of life i.e. resource competition between the Afar and the Issa Somali, the diversion of Awash River to neighboring Buremodaito *woreda*, the invasion of the pastoralist traditional dry weather pasture land by *Prosopis juliflora*; the occurrence of recurrent drought. These and other factors which have a serious debilitating impact on the traditional pastoral way of life are highly observable.

#### **3.4.3 Selection of the *kebeles***

The selection of the *kebeles* was executed purposely for many reasons. The critical reason for the selection of the Urafito and Beriforo *kebeles* is their accessibility as compared to the other rural *kebeles* and many pastoralists in the two *kebeles* engaged in non-pastoral livelihood activities, specifically food and cash crop production as compared to the rest of rural *kebeles*. Added to that, In Gewane *woreda* there are two dominant clans confederation known as *Mademameiesera* and *Weletomodaito*. Under *Mademameiesera* there are different clans of which I tried to select *Abamela* from Beriforo *Kebele*. Whereas *Weletomodaito* encompasses different clans but I select *Maheserra* from Urafito *Kebele*. Moreover, according to some key informants, the two clans live in a place highly

susceptible to the recurrent conflict with Issa; especially, the *Maheserra* clan, lost large tracts of land due to the conflict. Currently, as a result of population pressure and the introduction of settled agriculture as well as the depletion of natural resources, the two clans are fiercely compete for grazing and agricultural land. These all and other occurrences have their own implication on the livelihood of the pastoralist Afar and they also give high momentum for the diversification and accommodation of livelihood activities outsides of traditional pastoralism.

#### **3.4.4 Sample Size Determination**

In this study, there were 555 households in Urafitu *kebele* and 410 households in Beriforo *kebele*. Therefore, due to financial constraints 10% of the total household from each *kebele* was selected. The total sample size again distributed proportionally to each *kebele*. Accordingly, a total of 97 respondent households (56 households from Urafitu and 41 households from Beriforo) were selected as a research subject for the household survey.

#### **3.4.5 Selection of Sample Household**

After the identification of the sampling techniques and determination of the total sample size of the study; the next step was the selection of sample respondents for household survey. The sample households were selected based on purposive sampling techniques. The selection of the research subject was materialized through people whom I know very well during my stay in Afar. I know one individual who is the head of the Finance Office of Gewane *woreda* Administration and I told him why I was there, I also found another individual who is an investor in Urafitu *kebele*. as usual, I introduced myself and my intention. Consequently, through these two individuals I introduced my self to the target community members and started to recruit respondents for the household survey.

### **3.5 Method of Data Collection**

#### **3.5.1 Types of Data**

Under this study, both qualitative and quantitative data has been collected through various methods. Likewise, primary and secondary data were gathered. Qualitative and quantitative data as well as primary and secondary data has been combined in order to

triangulate and crosscheck the data gathered from different sources and also to make the data and findings of the research more reliable.

### **3.5.2 Data Sources**

When it comes to data sources, research data can be collected from various sources depending on the type of data to be collected and the objectives of the study. This study has tried to involve both primary and secondary data as well as quantitative and qualitative data sources. The primary and the secondary sources of data were used for the acquisition of firsthand and secondhand information, respectively. The firsthand information were collected through the use of household survey, case studies, focus group discussion, key informant interview and direct observation while the secondary data were also collected from published and unpublished documents such as Office records, journals, proceedings and books etc. The way that first hand information was collected is presented as follows.

#### **3.5.2.1 Primary Data Collection**

In this study, primary data were collected from sample households, focus groups and key informants, case studies and direct observation. The primary data can be either quantitative or qualitative. The major types of primary data collected were:

- **Household demographic characteristics:** The demographic data that has been collected from the studied community are sex, age, labor capacity and educational status of the members and heads of the households as well as marital status of the heads of sample households.
- **Livelihood Assets:** the types, access and ownership of the major livelihood resources such as natural, physical, human, financial, and social capitals upon which the pastoralists Afar depend on for their living in the study area.
- **Livelihood Diversification:** this has also encompassed the diverse livelihood strategies and activities which are used to earn income including the reason why the pastoral communities diversify their livelihood to other non-pastoral sector.

- **Constraint and Prospects of Livelihood Diversification:** The major constraints of pastoral livelihood diversification which comprises of market inaccessibility, poor infrastructure availability, frequent drought, natural resource depletion, unavailability of start up capital, lack of capacity building and training facilities, poorly developed education, fear of being ostracized by others. Given these constraints, an attempt has been made to gather information on some of the opportunities the pastoral communities in Gewane *woreda* have to diversify their livelihood activities.

### **A. Household Survey**

Household survey is one method to gather primary data from the sample household. It was administered to the total of 10% of the total residents of the target Kebeles. A structured questionnaire that include both close and open-ended question had constructed and employed to generate data from respondents. Initially the questionnaires were prepared in English then it was translated into Amharic to make it easy for the data collectors. Besides, a well-trained four enumerators who speak both Amharic and Afar language under the close supervision of the researcher have collected data. The household survey was conducted through face-to-face interview between the respondent and the interviewer.

### **B. Case Studies**

A case study serves to supplement the finding that has been found by other research methods including quantitative techniques. Obviously, the main purpose of case study is to gain a detailed understanding in a process involved within a specific context. The case study is more advantageous when the researcher wants to get an answer for 'how' and 'why' questions (Yin, 2000). In this study, the case study method of data collection has been used to get an intensive understanding about the practice, challenge and opportunities of livelihood diversification within the context of pastoral societies in the middle Awash Valley, Gewane Woreda. The case studies informants were recruited purposively based upon the personal experience of the respondents. Finally, the findings of the case studies are presented in the result and discussion parts of this research.

### **C. Key Informant Interview (KII)**

Key informants are the research subjects in qualitative studies that have a disproportionate weight and role in the outcome of the research (Payne, et.al. 2004). Key informant interview was used to collect in-depth information about the practice, challenge and opportunities of livelihood diversification in the study area of Middle Awash valley as well as the historical trend of the livelihood resources and its implication of the pastoral livelihood system. The information gathered through key informant interview has also been triangulated with other data collected from household survey and other method of data collection. A total of 12 individuals who have deep and better knowledge about the pastoral livelihood, its diversification and the fundamental causes behind it, as well as its challenge and opportunities were selected, and interviewed to obtain the relevant data. These 12 individuals are people from different walks of life namely, two clan leaders from Abamela and Maheserra clan. Three elders; two development agents and the other three of them are experts of in Gewane woreda Administration as well as the remaining two of them from members of Gewane woreda administration.

### **D. Direct Observation**

The data collected through this method was used to triangulate with the data collected from other sources. This study was carried out through systematic observation of livelihood activities, namely; commercial, agricultural, wage labors; as well as, livelihood resources such as land, cattle and others. Added to this, market access, different kinds of pastoral and non pastoral livelihood activities, availability of schools, health institutions and others were also observed.

### **E. Focus Group Discussion (FGD)**

Focus Group Discussion is one of the most important research tools to collect qualitative data. According to Geoff Payen and Judy Payen, focus group discussion is *"a means of collecting data in one go from several people (who usually share common experience) and which concentrates on their shared meanings"* (2004:103). Wanda goes on also to say that focus group discussion used to *"engage participants in a focused discussion of*

*an issue and to produce qualitative data that provide insight in to the attitudes, perception and opinions of participants” (2000:175)*

In this study, a total of three focus group discussions were undertaken in the two target *kebeles*; of which, two of them were women groups i.e. each group from each kebele and the remaining one is men group after recruiting the participants from the two target *kebeles*. Therefore, for both groups the members were selected purposively based on their personal experience and better understanding about the livelihood condition of the respective community. The total number of the participants in the women group was 5 for Beriforo and 6 for Urafita *kebeles*. Their age ranges from 27 to 39. Whereas, the men group encompassed a total of 8 individuals and their age ranges from 31 to 67. In addition, the members of the focus group were selected from different portfolio of activities. Checklist was also prepared to guide the open-ended discussion. These focus group discussions were conducted to get an insight into the attitudes, perception and opinion of the participants about the activities, challenges and prospects of pastoral livelihood diversification and the trend of pastoral livelihood assets.

### **3.5.3 Secondary Sources**

The main sources of secondary data under this study were different books, published and unpublished materials, proceedings, project reports, and annual reports found in the *Woreda* Offices. The major types of secondary data that were included were information on natural resource, social and economic infrastructures, major livelihood asset, strategies/ activities and others. The data gathered from different secondary sources corroborated with the primary data collected through different sources.

To sum up, this data collection process wasn't without limitation which was being encountered in the process of data collection. From the early beginning, it was very clear that the researcher would deal with the language problem but with all its limitation and disadvantages the researcher has relied on interpreters who speak both Amharic and Afar Languages.

### **3.4 Method of Data Analysis**

Quantitative data generated from household survey through face to face structured interview were analyzed by using Statistical Package for Social Science (SPSS), version 15.0 Software Programme. Descriptive statistics such as mean, frequencies, and percentages were used in explaining and describing the final results. The findings of the processed data were presented in table and figures.

The qualitative data obtained through key informant interview, focus group discussion, observation and case studies were analyzed and presented and the situations explained in detail so that the real picture of the pastoral livelihood diversification and its challenges and opportunities can be understood in a very clear and vivacious way under the context of the pastoralist Afar in Gewane Woreda Middle Awash Valley.

## Chapter Four

### Description of the study area and Demographic Characteristics of the study Households

#### 4.1 Introduction

In this part, an attempt is made to examine the local people perspectives on the livelihood resources, their current status and trend. It also strives to understand the effects of such changes on livelihoods of pastoralists Afar and the demographic characteristics of the study households.

#### 4.2 Biophysical Information

##### 4.2.1 Location

With a total population of 1,411, 092 Afar National Regional State constitutes 1.9% of the total population of the country and it is one of the pastoral regions in the lowland areas of north-eastern Ethiopia. It shares international boundaries with Eritrea and Djibouti as well as national boundary with Tigray, Amhara, Oromiya and Somali Regions (Pantuliano et.al. 2008; Getachew; 2001a; CSA, 2008).

It is inhabited by the Afar ethnic group. Map 1 shows the location of Afar Region in Ethiopia. The change of government in Ethiopia in 1991 led to the introduction of the regionalization. Under this new federal system, the Afar National Regional State was newly established with its own regional government. The inhabitants of the region are pastoralists and agro-pastoralists. Pastoralists remain to be the majority of the region's population. However, agriculture has increased in importance particularly since the 1960s. Pastoralism is the dominant activity in the whole region. Agro-pastoralism is practiced in the Awash valley where households cultivate their own clan's land by using Awash River and herding their animals not faraway (ESRDF, 2003: Page).

Gewane *woreda* is one of the 30 *Woredas* of Afar National Regional State, under Zone 3 administrative structure. Gewane 01 *Kebele* (Addisu Gewane) is the capital of the *woreda*. It is located at 376 km from Addis Ababa, 216 km from Semera, the capital city of Region and 110 km from Worer, the capital of Zone 3. Gewane *woreda* is bordered by

Undufo town in the North, Somali National Regional State in the east, Gedamaito town in the south and Awash River in the west (ESRDF, 2003).

#### **4.2.2 Administrative Structure of Gewane Woreda**

Gewane *woreda* consists of 7 rural and 2 urban *kebeles*. Three of the *kebeles*, namely Beriforo, Beida, and Mattaka 02 are located in the southern part of the *woreda* at a distance of 21km, 30km and 25km, from the capital of the *woreda*. Gebayabora, Gelleladora rural *kebeles* are the north west of the *woreda*, 20km and 18km respectively from the capital. The other 3 rural *kebeles* in the south and south east are Urafita, Egile and Adbaror, 12km, 15km and 51km respectively from the center. Gewane 01 and Mattaka 02 are the two urban *kebeles* of the *woreda* (ESRDF, 2003).

#### **4.2.3 Population**

Based on the data from Gewane *woreda* Administration office, the total population of Gewane household heads was 4,947. The average household size was about 7 people per household. According to national census, the total number of people were, 31, 313, of which, 25,331(81%) of them live in rural areas, while the remaining 5,982 (19%) reside in urban centers of the *woreda*. (CSA, 2008)

#### **4.2.4 Agro ecology of the Study Area**

The area size of the *woreda* is about 58,640 hectares, of these 3,896 hectares is cultivated land while 20,524 hectare is grazing land, 14,664 hectare is covered with forest, and 9,328 hectares is bare land. There is 8,796 hectares of cultivable land. The remaining 1,382 hectare is covered with water. The whole area of Gewane *woreda* is characterized by lowland agro-ecological Zone (ESRDF, 2003).

#### **4.2.5 Topography**

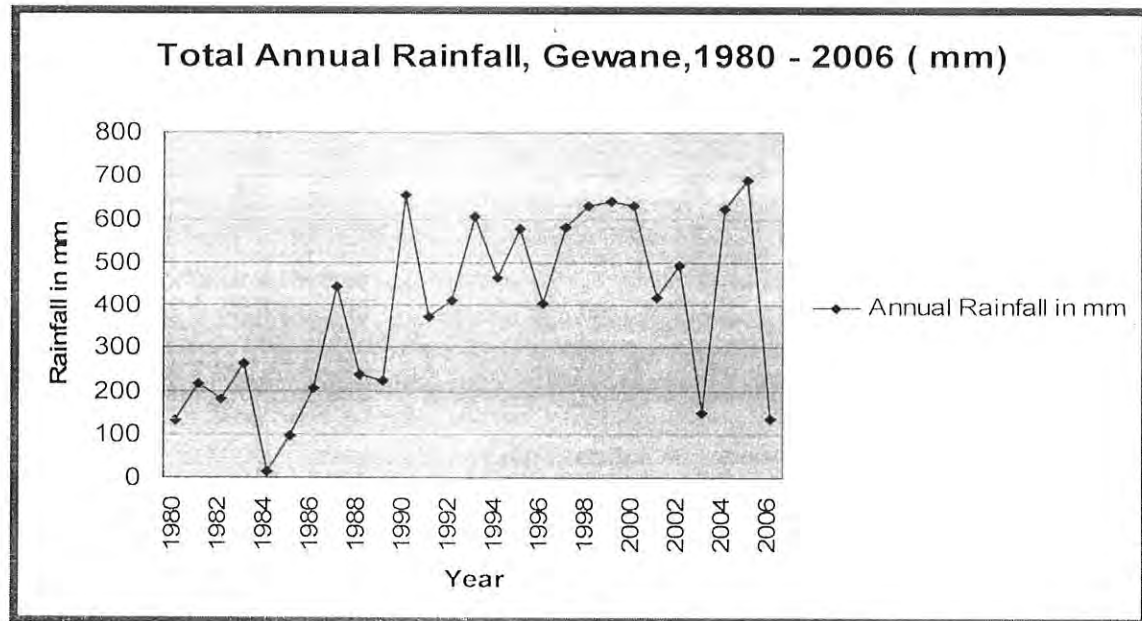
The topography of the study area is predominantly plain which is cultivable for irrigation given the Awash River flowing through it. The altitude of the Woreda ranges from 500 to 2120 m.a.s.l., the highest point is Mount Ayelu (ESRDF, 2003).

#### 4.2.6 Rainfall Trend

The pastoralist areas in Ethiopia are overwhelmingly explained by erratic and unpredictable rainfall pattern and the pastoralist way of adaptive strategies enable to cope up the occurrences of the recurrent drought. A closer look at the trend of the rain fall pattern in Gewane *woreda* indicates complex history. As usual, figure 1 indicates the unpredictability of the rainfall in the studied area. According to Deveroux (2006), the minimum amount of annual rainfall needed to support viable pastures in the Horn is 300mm. However, according to the National Metrological Agency report, the average annual rainfall of the Woreda is 388mm for the last 27 years. It is 29.3% above the minimum threshold.

In addition to this, the precipitation records also indicates that the Woreda gets the better annual rain fall starting from 1987 onwards with the exception of 1988, 1989, 2003 and 2006 that has been recorded 237.5, 224.5, 147, 133.6 respectively. On the other years, the rainfall pattern had been much better. Especially, during the 1990s, the rainfall pattern was by far better than the previous times. Almost all of the recorded data demonstrates above 400mm annual rainfall except 1991 that had been recorded 372.7mm. This is also 24.23% above the minimum amount of rainfall needed to support viable pastures.

Figure 2



Source Authors construction based on NMSA data

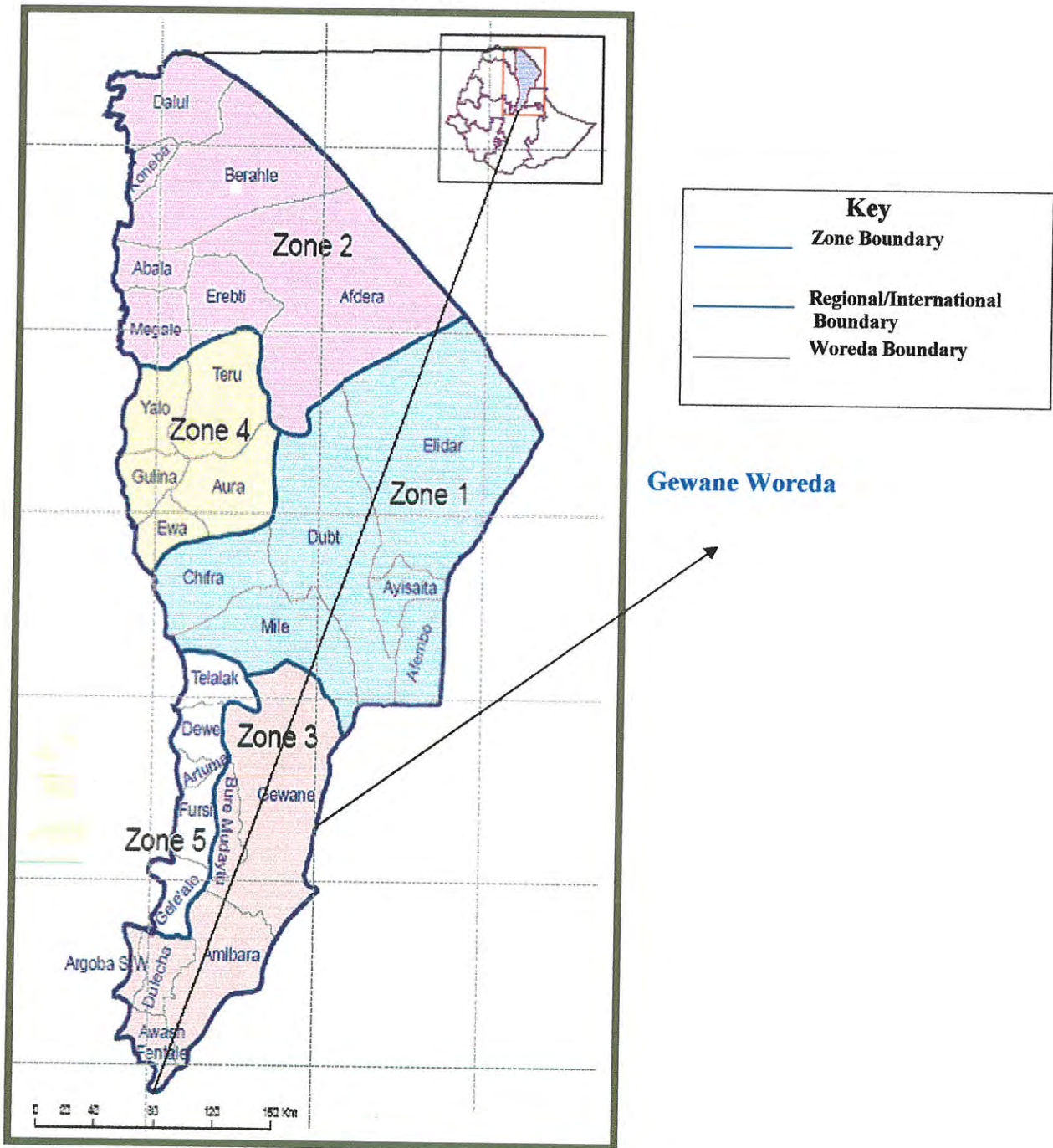
#### **4.2.7 Soil**

The major type of soil in the area is sandy loam soil. This soil type is suitable for crop cultivation. The soil fertility is affected largely by the salinity and erosion of the soil. Excess deforestation and thus disturbance of the natural ecosystem is the main reason for low soil fertility. Trees are cut down in numbers for charcoal and firewood (ESRDF, 2003).

#### **4.2.8 Livelihood and Economic context**

Afar people in Gewane *woreda* are engaged in different economic activities to earn their income. Traditional pastoralism, crop cultivation, commercial activities like livestock trading, petty trading, handicrafts, like *Gadetta* making, and daily laborer are the main economic activities of the population of the study area. According to the Gewane *woreda* Agricultural Rural Development Office, out of the 9 Kebeles (7 rural and 2 urban) Adbaro and Aroge Gewane (under the administration of Gewane 01 *kebele*) are categorized as pure pastoralist; the remaining seven Kebeles of which one is urban are agro-pastoralists. A sizeable proportion of the people are engaged in agricultural activities as a subsidiary economic activity; followed by handicraft, trade and other activities to earn their livelihood. Pastoralism is the dominant means of living and source of income for majority of the people. In the rural areas, the next non-pastoral income generating activities are blacksmithing especially *Gille* making and handicraft, i.e *Gadetta* making by women.

**Figure 3: Afar National Regional State**



Source (Pantuliano et.al, 2008)

### 4.3 Demographic Characteristics of the Sample Households

#### 4.3.1. Sex of the Sample Household Heads

Regarding the sex of the head of the households, the male headed households are 80 (82.5%) and the female headed households are 17 (17.5%). Out of the 56 sample households in Urafita *kebele*, 48 (85.7%) of them are male headed households and the remaining 8 (14.3%) respondents are female headed, whereas in Beriforo *kebele* out of 41 respondent households, 32 (78%) are male headed and the rest 9 (22%) respondents are female headed. If you look at the distribution of the male heads of the households with respect to the sample *Kebeles*, 60% of the male headed households are from Urafita and 40% of them are from Beriforo. (Table 4.1)

**Table: 4.1 Sex of the Heads of the Sample Households**

Study Kebele	Sex		Total
	Male	Female	
Urafita	48 (85.7%)	8 (14.3%)	56 (57.7%)
Beriforo	32 (78%)	9 (22%)	41 (42.3%)
Total	80 (82.5%)	17(17.5%)	97(100%)

Source: Household survey, 2009

#### 4.3.2. Family Size

The average family size of the sample households was 6.6 persons per household. The minimum family size is 2 people while the maximum is 11. As can be seen from the table 4.2 the largest proportion of the sample households, i.e. 44 (45.4%), have family size that ranges 7 to 9 person.

**Table 4.2: Family Size of the Sample Households**

Family Size of the Sample Households	Frequency	Percent
1-3	7	7.2
4-6	38	39.2
7-9	44	45.4
10-11	8	8.2
Total	97	100
Mean		6.6

Source: Household survey, 2009

#### 4.3.3 Marital Status of the Heads of the Households

Table 4.3 illustrates the marital status of the heads of the sample household heads. As computed from survey result 79 (81.5%) of the heads of the households were married.

The remaining sample household heads fall under the category of divorced, widowed and single which counted 1 (1%), 16 (16.5%) and 1 (1%) respectively.

**Table 4.3 Marital status of the Heads of the Sample Households**

Marital Status of the Heads of the Households	Frequency	Percent
Married	79	81.5
Divorced	1	1
Widowed	16	16.5
Single	1	1
Total	97	100

Source: Household survey, 2009

#### 4.3.4 Age Structure of Members of the Sample Households

With regard to the age structure, 61% are children between the age of 0-14, and 38.7% fall under the category of 15-64 years and lastly 0.3% of the population were elderly that are 65 years and above. Children are the predominant feature of the structure consisting 61% of the population. Therefore, 61.3% of the populations are at young and old age.

**Table 4.4: Age of member of the Sample Households**

Age	Frequency	Percent
1-10	346	53.4
11-20	98	15.1
21-30	93	14.4
31-40	66	10.2
41-50	29	4.5
51-60	10	1.5
61-70	4	0.6
>70	2	0.3
Total	648	100.0

Source: Household survey, 2009

#### 4.3.5. Age of the Heads of Households

Based on the survey result, the average age of the heads of the studied households was 39.7 with 22 years old the youngest and 72 years the oldest. About 38.1% heads of the sample households are with in age of 31-40.

**Table: 4.5 Age of the Heads of the Sample Households**

Age of the Household Head	Frequency	Percent
21-30	21	21.6
31-40	37	38.1
41-50	24	24.7
51-60	9	9.3
> 61	6	6.2
Total	97	100.0
Mean		39.7

Source: Household Survey: 2007

#### **4.3.6 Educational Status**

Table 4.6 demonstrates that about 77 (79.4%) heads of households of the total sample households were illiterate. The higher the educational hierarchy is the lower the number of people. The members of the households who participated in formal education constitute 119 (35.63%) individuals and the larger proportion of the members of the household i.e. 193 (57.78%) were illiterate. This indicates that, the educational status of the members of the studied households were extremely low which is by implication has undesirable repercussion on the livelihood activities and the diversification of their livelihood. The household members who have better educational status are in a better position to accept and adopt various technologies and to diversify their livelihood activities other than pastoralism and improved working system as compared to the illiterate ones to increase productivity. Generally, the educational status of the household members highly influenced the diversification of the household economic activities.

As per the survey result, illiteracy rate is high in the studied *kebeles*. Household members who are illiterate computed from the survey result are 193 (57.78%). Similarly, 18 (5.39%) of the members of the household read and write and 35.63% of the household members attend formal education during the survey period. In addition, only 4 (1.2%) individuals reach the educational level above grade 12. This implies that, the educational level of the target households in the study *kebeles* is very low.

**Table 4.6 Educational Status of the Heads of the Sample Households**

<b>Educational Status of the Heads of the Households</b>	<b>Frequency</b>	<b>Percent</b>
Illiterate	77	79.4
Read and write	10	10.3
Grade 1-4	2	2.1
Grade 5-8	3	3.1
Grade 9-10	1	1
Grade 11-12	1	1
above grade 12	2	2.1
Total	97	100

Source: Household Survey: 2009

**Table 4.7 Educational Status of the Members of the Sample Households**

<b>Educational Status of the Household Members</b>	<b>Frequency</b>	<b>Percent</b>
Illiterate <sup>2</sup>	193	57.78%
Read and write	18	5.39%
Grade 1-4	76	22.75%
Grade 5-8	32	9.58%
Grade 9-10	9	2.69%
Grade 11-12	2	0.60%
above grade 12	4	1.20%
Total	334	100%

Source Household survey, 2009

<sup>2</sup> The illiteracy rate is computed after deducting the total non school age children which counts 179.

## Chapter Five

### Households Livelihood Resources Possession

#### 5.1. Natural capital

According to the focus group participants and key informants, the natural capital particularly pasture land together with different types of vegetation including the water points and rivers available for the pastoral production system are the main resources for sustainability and viability of the pastoral livelihood system in the study *woreda*. Some of the distant pasture land for the pastoralists in the two case study *kebeles* extends up to Adayitu in the North and Gedamaito in the south which is around 186 km and it extends to the vicinity of Dire Dawa and near to the Djibouti boarder in the eastern side. In addition to this, during the dry season the pastoralists are more dependent on the bank of Awash River.

However, a number of adverse factors such as invasion of the Issa Somali, encroachment of the pasture land by the unpalatable plant species known as *Prosopis juliflora*, the diversion of Awash River to other neighboring *woreda*, and the occurrence of recurrent drought affect the resource possession of the pastoralists. Let me briefly look into the effect of the above mentioned factors on the status and the current dynamics of natural capital possession as follows.

##### 5.1.1. Conflict with Issa Somali

Afar and Issa share the same boundary in the northeastern parts of Ethiopia especially in the Middle Awash valley. The two groups have common Cushitic languages and Islam beliefs. They also share the same ecology, and geographically they are close to each other. However, for several decades, the relation between Afar and Issa is not healthy. This situation is further exacerbated by competition over natural resources possession in the wet weather pasture land in the Alaideghil plain (Getachew, 2001; Ali 2008).

According to the key informants interview, historically areas starting from *Lewa'ad* to Mount Ayelu were the main sources of pasture for the pastoralist Afar in the Middle Awash Valley. These areas have accommodated the pastoralists Afar from other *woreda*, especially from *Zone 5* of Afar National Regional State as well as the pastoral Afar from

Amibara and Burmodaito *woredas*. However, due to recurrent conflict between Afar and Issa Somali these areas have become inaccessible to the pastoralist Afar in the Middle Awash Valley (Qualitative survey interview, 2009).

According to the informants, Afar and Issa were from the same family; Issa is an Afar in his father side and he belongs to the Somali in his mother side. *Gelela* is also his elder brother, he is an Afar in both side. When their father died, they started to quarrel on the issue of inheritance. Issa was not satisfied on the amount of asset he inherited from his father. Consequently, he has stolen a camel and departed from his family; finally, he asked an alliance with the Somali; henceforth, he assimilated with the Somali. From this time onwards, the Afars call him “*Alella Issa*” meaning *the person who stole the camel*. Many years later, for the first time Issa came up with his herd and started to feed the pasture, which has been utilized by the Afar; and they started to compete on pasture for their livestock. When the competition became tense and conflict ensued, the Afar left the place and went to other area so as to calm down the conflict. The informants explain this phenomenon by saying that:

“*Gellela Digiree habte bukee kooda aberiilee bessaa*”

*What Gellela did for peaceful coexistence and fun, it becomes a reality.*

Therefore, the above statement incorporates ill feeling that underlies this phenomenon. The key informants also stated that, starting from that time on wards, the pastoralist Afar lost a huge coverage of land which serves both as a dry and wet weather pasture. Furthermore, in the past, some clans like the *Maheserra* resided in *Gellalu* whereas *Bedule* lived in *Mandaela* and others live in the areas that have been expropriated by Issa. As a result of the conflict; *Maheserra* and *Bedule* were displaced from their own clan land and restricted their mobility to the bank of Awash River (Qualitative survey interview, 2009).

According to some of the key informants, during the *Menelik II* the eastern direction of their mobility extends up to *Lewa`ad* which near Djibouti border. Next to this comes, a place called *Sehtille`Ali*, named after the name of *Ali* who was a very powerful and

influential Afar that administered the area. The people gave the name *Sebtille* which means *Tushah* in Afar language. In Afar it is common to name a place after prominent administrator of a place or water bodies. *Adolle*, and *Aisha Dewelle* were the other places that were administered by the pastralists Afar, the later was a place After the name of an Afar women. *DireDawa* before coming to be called by the present name was called *Derdaaba* meaning 'hills' in Afar language. The Issa overtook it and modified the name a bit. The displacement of Afar from *Dire Dawa* was followed by continuous wars between Afar and Issa in which the Issa were the winners. As a result of the continuous war, the Afars lost three rivers namely *Adu*, *Mille* and *Harew* which are located in the western side of *Diredawa*. *Mille* was a swampy area known for its plant known as *gurrento* which was favorite forage for camel. After that, they lost river *Harre* (Qualitative survey interview, 2009).

According to the informants. Emperor Haile Selassie demarcated their territory, by using river Errer, in order to solve their problem. Mount *Errer* was on the western side of the river in the territory of the Afar. The informants extended that the demarcation of the boundary didn't deter the Issa from expanding even to *Afdem*. *Afdem* was named after a river that passes through it. The place was known for vegetation locally known as *ideakenani* which was consumed by camel. This plant grows also along *Hamoisay* river bank which is located next to *Afdem*. Located next to *Hamoisay* is *Merro* that situated between two mountains. This place naturally reserve water for dry season. There was a river *Afaaso* which flows to *Mullu*. Along with river *Afaaso* there was natural forest that serves as forage for the livestock during dry seasons. The displacement continued to the next lines i.e., *Gellela*, *Hurusso*, *Beeki*, *Gelaideghi*, and *Sisselu*. The last one is a plain land which has a river. *Mullu* was also a place of a large river. In relation to this Kloos (1982:32) argues that "in the middle Awash Valley several thousands Afars of Waima tribe, under pressure from the Issa, moved from areas around Mount *Afdem*, Mount *Azebot*, and the Mulu River to Melka Sedi Amibara Plain" (refer also figure 4). He wrote the displaced Afar to Amibara *woreda* but Kloos writing verified that some day in the past, the stated places were under the administration of the Pastoralist Afar. Still, according to the informant. Issa pushed the pastoralist Afar further to *Burdodda* which

stands both for a name of a river and a land suitable for livestock rearing. There was a saying that expresses this place during the traditional dancing i.e.

“*Burdodda yubellela wodela omerba*”

*The cattle that saw Burdodda never wanted to go into the goat's house.*

This statement is used to show how much the place is favorable and conducive for cattle production but due to the recurrent conflict with Issa they have remained far away from it up until now. Furthermore, there were also rivers called *Kaho*, *Bidbeeda*, *Sebellola*, *Biyoo*, and then comes *Kilelimero* which holds water that flow through different direction. In the eastern sides of it *Assaeaba*, *Afrangue* is situated: then comes *Alaideghiel* plain (Qualitative survey interview, 2009).

However, still due to west and northwest movement of the Issa, never gave up on the *Halaideghiel*, rather they continued to move on to invade other places like, *Abiida* and *Argaheto*. At the bottom there was a river called *La'ateba*, as you travel directly westward to the direction of Mount *Ayelu* locally they call it *Ayelu Ali*; from *Mullu* river you come to places called *Liliagewto*, *Hinallu* and *Maanda* then to Mount *Ayelu*. Traveling northwest, next to *Mullu*, you come to *Bodeli*, *Ahaw*, *Halesira*, *Buguleiti*, *Adda*, *Inahayaa*, *Aytinabatoli*, *Golla*, *Adda'ado*, *Adaa'ela*, *kerewa* and *Manda'ela*. These were places that belonged to *Bedul* clan who currently live in *Arogew Gewane*. *Yangudi* hill, *Sendieita* were places for *Maheserra* clan who currently live in *Urafitu Kebele*; to the west of *Yangudi* hill there are also places known as *Derehadoda*, *sendie*, *Kusuri* and a river known as *Begulledear*. The other place is *Undufo* that is located 20 km from *Gewane 01 Beralle* and *Kesellimero* which contains water, *Adaitu* located 130 km from *Gewane 01* that encompasses a river and different water points. *Bililidedaa* and *Medgelledora* are places at the bottom of *Yangudi* hill; that contain water for one year. These are lists of places overtaken by Issa from Afar (Qualitative survey interview, 2009).

The informants also explain that, ten years ago, the total number of the rural *kebeles* of *Gewane woreda* was eight by now it is reduced to seven. The main reason for the reduction of one rural *Kebele* (i.e. *Adamaburi*) was due to the displacement of the Afar

clans. This area was inhabited by different clans such as *Alisira*, *Koborto*, *Dabu*, *Hireegille* and *Haremella*. They were displaced and move to the west of the Awash River. They, again, were further displaced to Dalifaghe *woreda*, making communication with Gewane *woreda* difficult. There was only 80 kms difference before but now, after the displacement, the *woreda* officials have to travel through Mille, Kassa gitta and Dalifaghie for 371km to get into the community for any administrative work or assembly. Consequently, last year it was decided by Afar National Regional State to include the Adamaburi *kebele* in Dalifaghe *woreda*, zone five (Qualitative survey interview, 2009).

In response to conflict resolution between the two, the focus group participants said that

*In 1998/1999 Government tries resolve the conflict between Ajar and Issa and the Afar started to mobilize up to Mulu. After 2 years i.e. in 2000/2001 Neina Tairo, a well known person in the community, was killed and the conflict started again. The government started to negotiate between us and we made an agreement. Again after one month, around a place called Bunket, two women of 80 years old and another three individuals were killed, more than 300 camel were raided; starting from that time up until now there is no any consensus between Afar and Issa (Source: Focus group discussion, 2009)*

The Afar pastoral communities in Gewane *woreda* are further and further pushed by the Issa Somali and their traditional pasture land and area specific pasture types are minimized over time. Added to that, for the pastoral community like Afar the constriction of their wet and dry season grazing land has a serious implication in their traditional pastoral livelihood; some of the implications are that they lost their area specific pastures, their mobility is curtailed and they started to concentrate and settle in a very specific area. This also accelerated the problem of overgrazing. Some of the vegetation types that lost as a result of the recurrent conflict between Afar and Issa are illustrated in table 5.1

Table 5.1: Wet and Dry Season Pasture becoming inaccessible due to Afar and Issa Conflict

Local Vernaculars	Scientific Vernaculars <sup>1</sup>	Types of browsing animal for a plant	Part browsed
Adadoita	<i>Acacia senegal</i>	Camel and Goat consumed	leaves and fruits
Mekaarto	<i>Acacia mellirera</i>	Camel and Goat	leaves and fruits
A'aepto	<i>Acacia tortillis</i>	Camel and Goat consumed its	leaves and fruits it also produced "a'abe" which is consumed by human being
Adimegalita	<i>Cadaba rotundifolia</i>	Camel and goat	Leaves
Kilayito	*	Camel and goat (consumed by sheep if its leaves dried up and come down to the ground)	Leaves, grow both in River bank of Awash and the mount Ayelu
Habeleeta	<i>Gerewia villosa wild</i>	Camel and goat; its fruits consumed by human being	Leaves
Gurento	<i>Acacia oerfota/A.nubica</i>	Camel and goat	Leaves
Buete	*	Camel	leaves and used also as traditional tooth brush
Da'arteba	*	Camel and cattle	Leaves
Askena	*	Goat and camel	Leaves it grows up during the rainy period
Udayito	<i>Balanittes aegyptica (L) Del</i>	Camel and goat	leaves and fruits
Durfue	<i>Chrisopogan plumulosus</i>	Consumed by all livestock type	Leaves
Issisu	<i>Chymbopogon pospishilii</i>	Consumed by all livestock type	Leaves
Gileyta	*	consumed by all	It is a type of grass
Ayti'adoita	*	Consumed by all	Leaves and fruit
Halal	*	Consumed by all	Leaves grow both in Awash river bank and Mount Ayelu
Yemaruhta	<i>Blepharis persica Burm.fil</i>	Grown in Awash river bank and mount Ayelu consumed by camel	Leaves
Sa'arota	*	Camel and goat	Leaves it grows up in both places during the rainy season
Bunket	<i>Tribulus terrestris</i>	Consumed by all	Leaves and grown both in Awash river bank and Mount Ayelu
Hidayito	<i>Gerewia ferruginea (Hochst)</i>	Consumed by camel and goat if the leaves comes down it consumed also is by sheep	Leaves
Ideakenani	*	Consumed by camel	Leaves totally inaccessible

Source: Focus group discussion and Key Informant Interview

\* Scientific name is not identified

<sup>1</sup>The scientific vernaculars was taken from Ali. 2008 Ali. 1997

In addition to these, there are some wild plants which grow around Mount Ayelu and are used by the pastoral community as food, especially during drought period. These plants species are used as coping mechanisms and by now their accessibility has declined due to Afar-Issa Conflict. Some of the edible wild plants are depicted in table 5.2

**Table 5.2: Some of the wild plants becoming inaccessible due to Afar-Issa Conflict**

Local Names	Scientific vernaculars <sup>4</sup>	Remark
Habeleta	<i>Gerewia villosa wild</i>	Its fruit consumed with out preparation.
Mederaa	<i>Cordia sinen sis lam</i>	Its fruit consumed with out preparation
Hamuka	*	It looks like an incense and consumed with out preparation
Gerssa	<i>Dobera glabra</i>	The cover part is <i>sucked</i> and the second part will be cooked for 7 hrs then it gets ready for eating
Hedda	*	consumed as it is

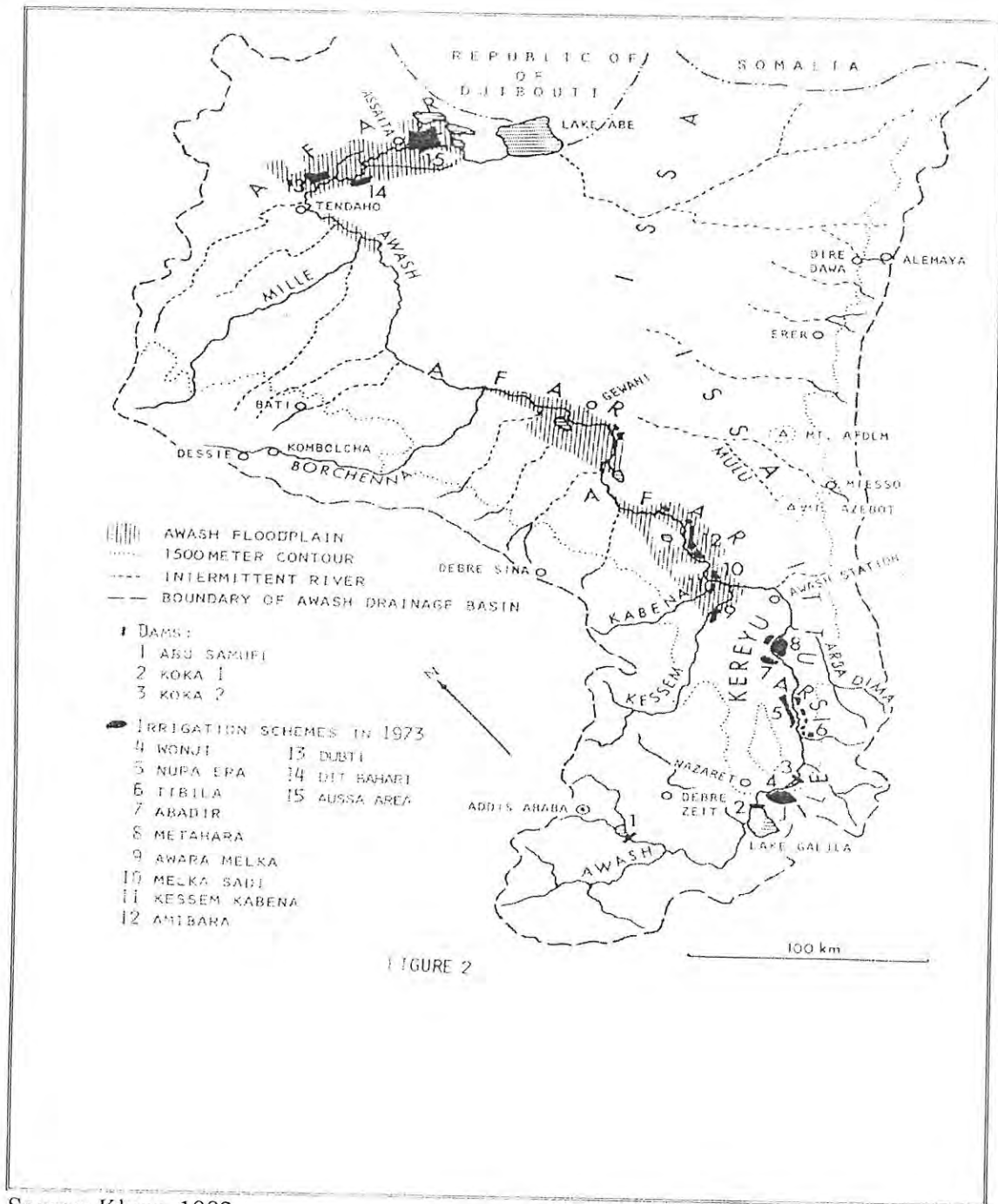
Source: Focus group discussion and KII

\* The scientific name not identified

These vegetation types are not accessible now due to Afar and Issa conflict in the wet weather pasture land at Mount Ayelu and its immediate surroundings. Some of the fundamental impacts of the conflict are: the pastoralists lost the above stated vegetation types and water points, in addition, their mobility is the hallmark of their success and adaptive strategies have been threatened and their resource base is constrained. The above problems are also further increased and accelerated by the influx of *Prosopis juliflora* to the study area. Now we shall see to what extent the expansion of this plant affects the pastoral livelihood system.

<sup>4</sup> The scientific vernaculars was taken from Ali, 2008 Ali, 1997

Figure 4: The Awash valley



Source: Kloos, 1982

### 5.1.2 The Expansion of *Prosopis juliflora*

*Prosopis juliflora* is a plant which was initially introduced during the Derg regime at the time of the state farm. The administration of the state farm demonstrated this plant to the community so as to protect desertification in the Awash valley, due to its dry land adaptability. Initially it was introduced without the consent of the community. Every member of the community was forced to plant and protect it until it properly grows up, otherwise, not doing so resulted in a punishment. By now, the local community attach three different names to this plant, these are, *Derghie harraa* which means *Derg's plant* since it was introduced during the *Derg* regime; the other is *Woyanne Harraa* which means *Woyanne's plant* since it was expanded during the EPRDF period, and lastly, they call it *Abas Harraa* since the person who distributed and controlled as well as implemented the order of the state farm and carried out the punishment was the peson named *Abas*.

The species invaded the flood plain and resulted in loss of both the dry season grazing reserves. It had also encroached and expanded on to the grassland. Based on the information gathered from the focus group participants and key informants, there are main problems associated with the bush. One is its ability to suppress the growth of other pasture because of the shading effect of its dense canopy. It has also denied livestock access to pocket grazing areas, as the thorns are injurious; moreover, it becomes a home for wild life like hyena and lion which have endangered the life of the community and their livestock in the satellite camp. The invasion of this plant is becoming difficult and the eradication is also laborious and expensive. Added to this, due to the expansion of this unpalatable plant species, some of the vegetations which serve as the dry weather pastures are being diminished over time. Some of the vegetations that are in a state of declining around *Beadu* (the bank of the Awash River) are presented as follows.

**Table 5.3: Dry weather pasture becoming inaccessible due to *Prosopis juliflora* in the bank of the Awash River**

Local Name	Scientific Vernaculars <sup>5</sup>	Remark
Rareyta	<i>Cynodon plectostachyus</i>	It is a grass type consumed by all livestock type except camel. It is almost vanished due to <i>Prosopis juliflora</i>
Sitabu	*	It is totally vanished
Kutublee	*	
Iyayito	*	
Halal	*	Consumed by all grow both in Awash river bank and Mount Ayelu
Muusa	<i>Echinochloa colonum</i>	Consumed by all
Adigento	<i>Acacia seyal. Del.</i>	Consumed by camel
Bayireba	*	
Hamilto	<i>Sporobulus cosimilis</i>	
Bunket	<i>Tribulus terrestris</i>	Consumed its leaves by all species and grows in both places during the rainy season

Source: Focus group discussion and Key informant interview

\*Scientific name not identified

Moreover, some of the plant types that have been grown in *Beadu* (Awash river bank) and have been used by human being as food by now have become inaccessible due to invasion of *Prosopis juliflora*. (see table 5.4)

**Table 5.4: Some of the wild food becoming inaccessible due to *Prosopis juliflora* in the bank of the Awash River**

Name	Remark
Fura	It is collected by women and has two parts white and yellow. The yellow part is used as traditional medicine for Malaria; the white part looks like potatoes and used as food.
Buree	Its size is a little bit larger than potato. First it is dried up and then ground to prepare porridge and traditional bread locally known as <i>Mufee</i> . The plant decreased in quantity due to <i>Prosopis juliflora</i> .
Urghee	It was collected from the root of <i>Gadetta</i> grass like <i>Enset</i> and is dried up and ground to prepare traditional bread i.e. <i>mufee</i>

Source: Focus group discussion and Key informant interview

N.B: The scientific name for the above three wild food is not found

<sup>5</sup> The scientific vernaculars was taken from Ali, 2008 Ali, 1997

### 5.1.3. The Diversion of Awash River

In Gewane Woreda there is no rain fed agriculture. Rather, the agriculture is based on irrigation from Awash River which is the main source of water for both agricultural production and human consumption. The other water sources in the *woreda* are Lake Ertele, Lake Bada Gelealu, ground water sources and hot spring water which is found in Mataka *kebele*.

The Awash River rises from Mount Worqie in the Shawan plateau 70 km west of Addis Ababa and flows east ward to enter the Rift valley (As Ayalew cited from Mesfin, 1964). In the past the potential of the river was not recognized, and the place was considered as economically useless for development and swarmed with malaria, it was also considered as not conducive for human settlement until the full incorporation of the area under the rule of the central government and recognition of the development potential of the valley for development by the Imperial government (Kloos, 1982; Getachew, 1997). After the integration of the pastoralist to the Ethiopian state, the Awash Valley Authority was established in 1962 and the project of large scale cotton and sugar plantations were started and three dams were built on the Awash valley since 1960. These are Aba Samuel, Koka 1, and Koka 2. Koka 1 is the largest of all and with its 230 million cubic meters is used for hydroelectric power generation. The control of the Awash River sharply reduced the seasonal floods in the downstream (Ayalew, 2001; Kloos, 1982).

*The proportion of total annual Awash water discharged during the main rains (July to September), at wonji fell from 84% prior to the dams to 35% after their completion in 1960. The new river flow pattern completely eliminated floods from the upper valley and significantly reduced them in the middle Awash valley (Kloos, 1982:29).*

In addition to that the water is highly consumed by the irrigation agriculture in the middle Awash valley in Amibara and other districts of the zone, before it reaches Gewane *woreda*. After the collapse of the state farm, following the fall of the Derge regime, in the year 1997 G.C. the Awash River was diverted to Buremodaito *woreda* which is the immediate western neighbor of the study *woreda*. Due to the change of the river course down stream occupants in Beriforo, Urafita, Geleladora, Beida, and Gebeyabora, *kebeles* are gravely affected. There is no sufficient water in the river course for irrigation as well as for cattle and domestic consumptions. Currently, the water passes through the course of Awash River is from Lake *Ertele* which is located in between Adbaror *kebele* *Abaso* village and *Beida kebele Askerehuri* village at the

bottom of there is a small mountain called *Kurbille*. The lake flows to the course of Awash, the water is salty; it is not suitable for either irrigation or cattle and domestic consumption. The study communities during group discussion said that their life is in danger because of the change in the direction of Awash River.

The recent irrigation practices of using this water by agro pastoralist and investors aggravated the shortage of water in the area. Above all, due to the change in the direction of the Awah River the amount of water which outflows to the river bank decreased to a large extent and this has a negative impact on the growth of specific pasture which is grown around the river and further flooding of the river bank. Furthermore the transhumance mobility pattern of the pastoralists which has been made in response to the outflows of Awash River is also distorted. This implies that, there is an overlap on the grazing cycles of pasture; in turn this situation seriously affects the growth of the dry season pasture.

#### **5.1.4 Recurrent Drought**

Like the previous factors, drought has also been affecting the pastoralist Afar in the Awash valley at different points in time. Now, an attempt will be made to look into the occasions of some of the particular drought occurrence in the areas under consideration by taking into account the long-term data available.

According to the Focus group participants, during the Imperial period i.e.1972-1974 there was one devastating drought phenomena, which was given the local name *Girekelle* meaning *the time that gun's are sold*. Since the pastoralists save the lives of their families by selling their guns and large number of livestock to highlanders, the drought was a cause for the death of many.

#### **Box 5.1: Case study- Sheik Abdulkadir Humed**

Sheik Abdulkadir is a pastoralist from Beriforo Kebele, Solodas Village. He owns three camels, seven oxen, two cow and twenty two shoats. He is 57 years old man. He was 22 when "Girekele" occurred in Gewane Woreda. In describing the phenomena he said:

*At the time the government gave 'red maize'. But this area was quite productive then there wasn't such difficult circumstances like now. Awash was with us during that time, there was no "Woyane Zaff" (Prosopis juliflora) and it was possible to access the grazing areas beyond Mulu River. The drought was seriously affecting our livestock, but in the aftermath of the drought I recovered immediately.,*

(Source :qualitative survey interview, 2009)

Back then, in the Aftermath of the drought, the grazing land wasn't heavily populated by unpalatable plant species like *Prosopis juliflora*; the influence of the Issa Somali was not also as such quite serious like now and Awash River used to flow through its normal course; hence, the legacy of the drought was not as serious as the drought that happened in the near past. The next drought period after the 1974 was the famine of 1984. The pastoralist called it *Kedde Amena*, it means *great famine*, according to the key informants; it was quite devastating as compared to the previous drought period. The focus group Participants also said that

*During that time the government gave us cereal by airplane and different relief workers came to our villages using boat and other means of transport to provide the necessary assistance such as sugar, oil, and other items of consumer goods which were necessary for us and our families. When the problem became more serious the government took us to different relief center but huge number of individuals and livestock died in "Beadu" and in the relief center due to this calamity. (Source: the focus group discussion, 2009)*

During that time, most of the pastoralists lost their dry and wet weather pasture due to the expansion of the large scale commercial farming; consequently, their mobility pattern has been constricted. Furthermore, there was no market to sell their livestock which were on the verge of death because of the drought. If they could get the market during this time, the price offered wouldn't be fair; therefore, the pastoralists were forced to accept the death of their livestock without taking any measures.

### Box 5. 2 : Case Study- Molito mohammed Ali

He is 63 years old man. He is from Urafitu Kebele, Ure'ess village. He was in his late 30's when the 1984 famine occurred. In describing how the 1984/85 famine affected his livelihood resources and activities, he said :

*At that time the famine was quite serious and devastating. The problem was much more serious in zone 5 around Telalak, Dewie and others. When the community from those areas came in search of grazing forage for their livestock their cattle were seriously affected by the drought and many of them were infected by livestock diseases. The infected cattle were mixed with our cattle transmitting the diseases to our cattle and the communities; hence our cattle began to die. At that time, I wanted to sell my livestock but there was no market; hence, I lost almost all of my cattle. For example I had 50 camels but only 10 of them survived; out of 100 sheep only 20 of them stayed alive. Out of 100 Cattle, only 3 of them survived and from 200 goats 35 remained. After the drought period of the 1984/85, things were bad for me and my family. I was planning to move to Djibouti in search of a better job opportunity so as to assist my family. I had lived there for 17 years as casual laborer. (Source: qualitative survey interview, 2009)*

The above case study explicated that before the 1984/85 drought the case household had 201 TLU. However, due to the drought of 1984/85 the livestock possessions of the household reduced to 22.8TLU which was 88.7% below what he had before the drought. This implies that the occurrence of recurrent drought adversely affects the livestock possession of the pastoral community in the Gewane *woreda* in general and the household in particular.

Though the Gewane *woreda* pastoralists have been affected by several droughts for the past several decades, there was no like the 1999/2000 drought that has caused high human and animal mortality. Gewane *woreda* is dominantly occasioned by dry weather. But there are three seasons that have little rain. The main rainy season is from the third week of June through September locally known as *Kerma*; the second rainy season short in span and rains from mid February to the end of April, this is called *Sugum*. The third rainy season is known *Dedda* and in this season it rains for not more than five days. The *Sugum* rain is very important for the replenishment of pasture and supply of drinking water. Since 1999/2000 the *Karra* and *Sugum* were late to come and when they came, the amount of rain was below the normal amount it used to be and was unpredictable in distribution. In 2000-2002 even this scant rain was totally reduced to none. (DPPA,2002)

The dry weather pasture land at the bank of Awash River had been overwhelmingly encroached by *Prosopis juliflora* and the wet weather pasture areas in Mount Ayelu had also become inaccessible due to the conflict of Issa and Afar. The permanent water sources of the community had dried up and Awash had also been diverted to other *woreda*, consequently, the community is exposed to serious problem of water shortages both for livestock and human consumption. The 1999/2000 drought was a defining moment for the pastoralists in the areas under consideration, at that time large number of cattle had died. Already there are large numbers of destitute people who have “dropped out” of pastoralism and are now entirely dependent on social and humanitarian support. For example in the survey study 5.2% of the respondents didn't have any type of livestock therefore, the occurrence of this drought adversely affect the community at large.

The pastoralist way of life is very familiar with low and unpredictable rainfall pattern and it is much more resilient and well adapted to the drought cycles (Deveroux, 2006). However, according to the key informants, starting from the mid of the 1980s and the whole parts of the 1990s, the community was exposed to adversely affecting drought. However, against the assertion of the community the precipitation records of the studied *woreda* indicates that the *woreda* gets the better annual rain fall starting from 1987 onwards with the exception of 1988, 1989, 2003 and 2006 that has been recorded 237.5, 224.5, 147, 133.6 respectively. On the other years, the rainfall pattern had been much better, specifically during the 1990s. Almost all of the recorded data demonstrates above 400mm annual rainfall except 1991 that had been recorded 372.7mm. This is also 24.23% above the minimum amount of rainfall needed for viable pastures.

There are other constraining factors that highly hindered and seriously affected the drought response mechanisms of the pastoralist such as mobility curtailment, inaccessibility to prime wet and dry weather pasture land .The 1980s and 1990s were times that *Prosopis juliflora* encroached the pasture land and the conflict between Issa and Afar became tense and the Issa Somali overtook the northern parts of Gewane *woreda*, specifically Adaito and Undoffo as well as the surrounding areas of *Yangudi Rassa* National Parks. At the middle of 1990s Awash River was also diverted to the neighboring *woreda*. Therefore, problems in Gewane *woreda* is not solely attributed to climate extreme events and erratic rainfall alone, rather the above stated

phenomena also made the community much more vulnerable to drought since they affected the coping and adapting strategies of the pastoralist during drought time.

To sum up, the effects of drought in the studied area has serious impact on the ecological balance like the replenishment of pasture; traditional water sources also dried up and the level of the perennial river also decrease bringing undesirable repercussions on the livestock and crop production. Together with this, the herders are unable to access the previous drought retreat areas due to fear of conflict with Issa Somali. Starting from 1999/2000 drought, according to the key informants, the direction of their mobility redirected to western direction. Some of the new drought time destination places are *Debaboriburee*, *Sidihaitoarehita*, *Arenfafa*, *Undabadulle*, *Sidehadullul* and others. These places are the place for the Pastoralist in Buremodaito *woreda*. In addition, the informant noted that at that time they went up to Cheffa area of Kemissie Zone Amhara National Regional State. This implies that, the inability to access the former drought period retreat areas due to fear of Isaa influence the pastoralists to move long distances in search of better access to forage and water for their livestock in times of climate extrem.

## **5.2 Physical Capital**

The analysis of the existing situation in the areas under investigation indicated that, with in the two case study *kebeles* there was a very limited access to physical infrastructures. The non-availability of infrastructures created a hindrance to the practice of their means of livelihood. For example, in the two *kebeles*, due to the erratic nature of the rainfall, rain fed agriculture is not promising. Thus, communities in the two *kebeles* depend on irrigation agriculture by using furrow and border irrigation. The former is more of capital intensive and it needs too much money and predominantly has been practiced by investors and individual households that are economically better off. Whereas, the latter is labor intensive and it approximately needs up to 200 birr for construction. Predominantly it has been practiced by less better off households.

Furthermore, there is no road which is functional through out the year in the two Kebeles; consequently, there is no transportation facility. The road that currently functions is a dry weather road, and during the rainy season, the connection of the two target communities with the rest of the rural communities and other *woredas* has stopped. As per the survey respondents, 85.6% of the respondents claimed that the non availability of the transport facilities created a

hindrance for their livelihood activities. The problem of road is further worsened by the non availability of the market center in Gewane *woreda* in general, and the target *kebeles* under consideration in particular. Therefore, the community of the Gewane *woreda* use *Worer* and *Dalifaghie* market centers.

**Table 5.5: The effect of transport on the livelihood of he studied households**

Does the transportation problem affect your livelihood activities	Frequency (n=90)	Percent
Yes	77	85.6
No	13	14.4
Total	90	100

Source: Household Survey, 2009

From this, one can say that, the community has no access for transportation and market facilities which in turn have adverse effect on the livelihood of the pastoralists. The other physical capital in the community includes electricity, telephone service and water points. The only place that has an access to hydroelectricity and telephone service is Gewane 01 *kebele*; the rest of the rural and urban *kebeles* never have an access to electricity and telephone services. The existing water point in Urafita *kebele* was a hand dug well which was not functional at all. In Beriforo the water point drilled for human consumption is not potable, even if it serves for livestock consumption.

### 5.3 Human Capital

In this regard, human capital in the context of the studied community refers to the availability of productive labor force at the household and clan level along with education and health status that pave the way to diversify their sources of income out side of the pastoral livelihood activities. The three components of human capital are described under the context of the areas under consideration in the following sub-sections.

#### 5.3.1 Education

The educational status of the community is one factor for diversifying the means of livelihood and risk reduction mechanism. In the past as well as the present, the education sector in Gewane *woreda* has faced many obstacles, due to paucity of skilled man power, unavailability of resources, cultural factors, seasonal mobility and lack of sufficient proactive support from governmental and nongovernmental organizations. The education sector is totally suppressed and

its contribution to the over all development of the community is insignificant. In this regard, I would like to look into the educational status of the community and the perception of the pastoralist to educate their children in the studied *Kebeles*.

As per the survey result, illiteracy rate is high in the studied *kebeles*. Household members who are illiterate computed from the survey result are 193 (57.78%). Similarly, 18 (5.39%) of the members of the household read and write and 35.63% of the household members attend formal education during the survey period. In addition, only 4 (1.2%) individuals reach the educational level above grade 12. This implies that, the educational level of the target households in the study *kebeles* is very low (refer table 4.7).

In Urafita *kebele*, there are six villages such as *Intiadoyta*, *Urafita*, *Umerfagie*, *Leias*, *Uru'ess*, and *Rasadas*. Urafita *kebele* has one junior secondary school (found in *Intiadoyta* village) and one first cycle elementary school in *Umerfagie* village. In the 2007/2008 academic year the total number of registered students in *Intiadoyta* Junior secondary school were 93 males and 55 females, totally 148 students registered, of which 39 (26.4%) of them (23 male and 16 female students) dropped out while. In *Umerfagie* first cycle elementary school the total number of registered students were 48 (36 males and 12 females) but out of the total registered students 17 (35.4%) of them have dropped out in the 2007/2008 academic calendar. These villages situated with a maximum of one hour travel distance (it is a one way travel) from the school.

In Biriforo *kebele*, there are five villages such as, *Beriforo*, *Solodas*, *Abmasaburi*, *Adgura*, and *Dali*. In this *kebele*, there was one junior secondary school (found in *Amasaburi* village). The total number of registered students was 279 of which 189 of them were males, the rest 90 of them were females; the total number of dropped out students was 36 (20 male and 16 female) i.e. 12.9% of the total students; These villages situated with a maximum of one hour travel distance (it is a one way travel) from the school.

According to the key informant, in a junior secondary school there has to be 10 teachers with 4 diplomas and 6 certificates. But, in *Intiadoyita*, Junior secondary school there were only one diploma and eight certificates, making only a total of 9 teachers. So as to handle the problem of lack of diploma holders three of the certificate holders teach above their standard. Added to that,

these schools are ill equipped with the necessary teaching materials; for example, students' text book ratio was that 1:4. Moreover, the total amount of budget per student was also 8 birr and 56 cents whereas the minimum threshold must be not less than 12 birr and 50 cents. If it is below this figure, it has bad implication on the quality of the education.

According to the key informant, provision of food for students in the school compound that has been funded by WFP in collaboration with UNICEF positively contributes for motivating students to attend the class and to minimize the drop out rates. However, this programme doesn't embrace all schools in Gewane *woreda*. In the areas under consideration it is only *Umerfajie* first cycle elementary school which is not included under this project. According to the informants, the enrollment rate and the total number of drop out students was better off in the school which was targeted as compared to the non targeted ones.

For example, if we compare the total number of enrolled students and drop out rates in the two junior secondary schools in the target *kebeles* and with non targeted *Kebeles*; especially from Beida *kebele Askereburi* junior secondary school, the total number of drop out and enrolled students is by far better off in the targeted schools than that of the non targeted schools. The other explanatory factor for high drop out and less enrollment rate is the pastoral livelihood activities of the community. In the past, children were expected to keep only shoats in a near by grazing areas around the permanent satellite camp and adults were expected to keep cattle in a distance temporal satellite camp. But as result of the deterioration of the pastoral sector the adult labor force are engaged in non pastoral livelihood activities such as wage labor, and this absorbs the available labor from pastoralism to non-pastoral sector, in turn the task previously done by the adult labor force is expected to be performed by children, therefore, children are more forced to do the task formerly executed by the adult.

**Table 5.6: Total Number of Enrolled and Drop out Students**

Name of the School	Total number of enrolled students	Total number of dropped out students	Percentages of dropped out students
Amasaburi Junior Secondary school	279 (male,189 and female, 90)	36	12.9
Intiadoytay Junior Secondary school	148 (male,93 and female, 55)	39	26.4
Askereburi Junior Secondary school	111 (male,71 and female, 40)	63	56.8

Source: Annual report of Gewane *woreda* education sector

In order to solve this problem, the education office of the *woreda* in collaboration with some NGOs, especially, Afar Pastoral Development Association (APDA) delivered alternative education that "*takes into consideration the existing local condition*". The alternative education is provided in five different places. The main difference the alternative education does have as compared with that of the formal one is that the teachers are not well qualified and trained from the formal educational institutions. Rather they are recruited from the community and are provided with a short term training of three to six months. In addition, the first cycle in alternative education is only up to grade 3 which is one year less than to that of the formal one. But when a student passes to the next stage, their educational level is equated with grade 4 of the formal one and therefore they directly pass to grade 5.

*Amasaburi* and *Intiadoytay* are also included in alternative education programme. The total number of students registered for this programme in the last academic year in Intiadoytay was 39, of which 28 were males and 11 were females; where as, in *Amasaburi* a total of 32 students were included under this programme, of which 22 of them were males and the remaining 10 of them were females. But according to the key informants and Gewane *woreda* Education Office, this alternative education is not as such successful in solving the problem stated above, and the drop out rate is higher than the formal one.

Furthermore, from the gender balance point, the total number of girls attending schools is lower than that of male students in both cases. Such disparity has been occurred due to lack of awareness about the value of education and early marriages. Girls were motivated to attend the school by giving a reward for less absentee students in the target schools.

Key informants and focus group discussion participants, on the other hand, noted that the out look of the community is positively changing from time to time. For the question, *do you send your children to school?* More than half of the respondents i.e. 57.4% said 'yes'; and the remaining 42.6 % of the respondents didn't send their children to school. The main reasons for not sending their children to school are presented in the table below.

**Table 5.7: The Reason the Heads of the Sample Households didn't send their children to school (Multiple responses are possible)**

Why household heads didn't send their children to school?	Frequency (n 40)	Percent
they have to keep cattle	27	67.5
in accessibility of school	6	15
the cost of educating children is too high	3	7.5
Not at school age	15	37.5
I do not have a child	1	2.5

Source: Household Survey, 2009

The survey respondents who send their children to school were also identified some of the main reasons why they send their children to school; 75.9% of the respondents said that they want them to engage in livelihood other than pastoralism, where as, 66.7% of the respondents also reasoned out that the educated children do have the chance to get a job in government offices. In other words, the community educated their children so as to diversify their means of income.

**Table 5.8: The reason the Head of the Sample Households send their children to school (Multiple responses are possible)**

Why the household Head Send Their Children to School	Frequency (n=54)	Percent
Make it easy for them to pursue livelihood other than pastoralism	41	75.9
Educate children can help their community	14	25.9
Educated children can get jobs in government offices	36	66.7
Educated children can help their parents	20	37.04
Bring skill to farming	1	1.9

Source: Household survey, 2009

To sum up, even if the level of the community awareness from time to time has increased, the community is not well endowed with educational facilities, and the educational status of the community is not in a state of giving a momentum for the diversification of the livelihood activities of the community.

### 5.3.2 Health

As one of the major components of the human capital development, the health sector is the most important indicator of the status of the human capital. In this regard, in the two studied *kebeles* i.e. Beriforo and Urafita, there were health posts in *Amassaburi* and *Umerfagie* villages respectively. However, the health institutions were not well equipped with the necessary health facilities like medical practitioners and pharmaceutical tools. Regarding the medical practitioners, in *Amassaburi* health post there were one health extension worker and three front line health workers whereas in *Umerfagie* health post, there were two health extension worker and two frontline health workers. The health extension and frontline health workers give medical treatment that does not go beyond first aid i.e. provision of anti-pain, and other simple treatments. According to the response to the survey question “were any members of your household sick in the last 12 months?” 96.8% of the heads of the households noted that their family faced a problem of health in the last 12 months. Table 5.10 depicts how sample households handled the problems of their family members.

**Table 5.9: The way the sample Households handles Health Problems in the last 12 months**

Way Handling Health problem	Frequency	Percent
Using traditional medicine	43	47.3
Take to health post found in the locality	21	23.1
Take to health center	27	29.7
Total	91	100.0

Source: Household survey, 2009

Out of the 91 respondent who said ‘yes’ in the previous question, 43 (47.3%) respondents stated that they use the traditional medicine whereas 21 (23.1%) individuals said that they used the health post found in their locality; the remaining 27 individuals or 29.7% reported that they took the patient to the health center in Gewane 01 *kebele*. About 70% of the respondents haven’t used the health institution found in their locality. Particularly, the large proportion of the respondents i.e. 47.3% of them said that they use traditional medicine. According to these respondents, the

main reason for this is that the majority of the local communities are not satisfied in the service they get from the health institutions.

### 5.3.3 Labor Power

Labor power is also another component of human capital in the pastoral community like Afar. In this regard, Ali (2008) underscores that in the pastoral community like Afar their traditional livestock production system heavily depends on the “*seasonal mobility, keeping and the splitting of the livestock based on their age, sex and productivity.*” However, for the success of such strategies, the availability of labor at a household, community and clan level has to be assured.

The lack of labor power is much more serious problem for the production and sustainability of pastoral system; in the target community the average labor force per adult equivalent was 4.97. To guarantee their survival, the pastoralists started to participate in non-pastoral livelihood activities and thus the available labor power diverted to the new means of livelihood activities has become a problem. In relation to this, to the question “do you have labor shortage in your livelihood activities?” 12.3% of the respondents responded that they did not have any labor shortage, whereas the remaining 87.7% of the respondents said that they did have labor shortage. About 18.6% of them noted that they tried to handle the problem by hiring additional labor. 7% said that they incorporate assistance from friends. The majority of the respondents i.e. 64 (74.4%) of them said that they could handle the problem through assistance from clan members.

**Table 5.10: The way the labor shortage handled in the community**

<b>Mechanism for Handling Labor Shortage</b>	<b>Frequency</b>	<b>Percent</b>
By hiring additional labor	16	18.6
Got assistance from friends	6	7.0
Got assistance from clan members	64	74.4
Total	84	100

Source: Household survey, 2009

#### **Box 5.4: Case Study: Momina Mohammed**

This is a household of five in Urafita Kebele, *Intiadoyita* village. They own three camels, ten shoats and 13 cattle. Her husband is working in Lower Awash Valley Tendaho sugar factory, as a result, the responsibility of managing the household affairs shouldered up on her. In describing how she is getting support from her clan members she said :

*I am expected to herd small livestock in the near grazing area. But I don't have any problem on the herding of cattle and camel which is mostly handled by the adult members of the community during the dry season and market day. Since the community knows my husband is working in Dubti, the members of the community help me in herding and taking the cattle to Worer or Dalifagie market place. (Source: qualitative survey interview, 2009)*

The case in Box 5.4 illustrates the importance of labor sharing in the studied community which could allow the herding and marketing of their livestock. That is, it demonstrated how a particular household handle his labor shortage by getting a support form his/her clan members.

According to the focus group and key informants, the community mobilized their labor power in search of grazing pasture for their livestock based on their clan. Therefore, a household with labor shortage for the pastoral production has the right to use the labor force from the clan members. Nonetheless, the respondents said that the shortage, in the study *kebeles*, is at the clan level because starting from 1999/2000 large number of pastoralist engaged in crop production. Others participate in investors' plantation as a wage laborer. Hence, the existing labor force has been diverted to non-pastoral activities. This has adversely affected the traditional livestock production system.

#### **5.4 Financial Capital**

Access to credit sources and deposited money in the form of saving is one of the typical features of the financial capital of the household which is used to pursue livelihood other than pastoralism, like commercial activities, handicraft and others. In addition, livestock possession is categorized also as financial resources. In this regard, the pastoralist Afar in the study *woreda* in general, and the two case *kebeles* in particular did not have any credit access since there was no any institution which gives credit services.

In the studied community, according to focus group discussion, before the inception of state sponsored large scale commercial agriculture and demarcation of tourist attraction areas the number of cattle they possess was by far better than the current possessions. However, livestock both in terms of quality and quantity is seriously dwindled over time. For 97 of survey respondents, the percentage composition of each livestock type i.e. camel, ox, cow, sheep, goat, and donkey are 9.9, 17.5, 13.4, 21.6, 37.1 and 0.5, respectively. The total number of goats comprises of 37.1%, above all other livestock types. This is due to the fact that, the on going process of bush encroachment which favors browsers like goat unlike cattle and sheep; the availability of many children who constitutes an ideal work force for herding goats, as well as the availability of high market demand for goat in Gewane urban *kebeles*.

Furthermore, according to Ali Yusuf (1996: 196), the average livestock in terms of tropical livestock unit to live a decent way of life in the pastoral community in the Middle Awash valley Amibara *woreda* is around 87.61TLU i.e. "27 camels, 41 cattle, and 80 small stock to remain viable to support the household needs for food and cash, and to be able to recover the herd after drought and other disaster." but by now the survey results, for the studied households, show that the total average livestock in terms of Tropical Livestock Unit is 20.7, which is 76.4% under the average requirement.

Added to that, in the two *kebeles* there is no Veterinary Clinic. The only place the Veterinary Clinic exists in the *woreda* is in Gewane town near *Aroge Gewane*. In order to solve this problem different non governmental organization like FAO and FARMAFRIC in collaboration with the Gewane *woreda* Pastoral and Agro-Pastoral Development Office, trained paravets from the whole *woreda*. Especially, FARMAFRICA organized them as an association under the name of "Deharsitoo": whenever there is disease outbreak they tried to report to the *woreda* Veterinary Clinic. In this regard, in Urafita and Berifiro *kebele* there are four and six trained paravets, respectively.

### Box 5.5 : Case Study : Hamedu Ali

He is a 63 years old man from Beriforo Kebele. Before the inception of the state farm Hamedu herd the cattle of his family. Hamedu tells us how the livestock resources and product in his household deteriorated over time :

*At that time there was sufficient cattle pasture and pasture land. When I got married I had more than 350 (200 shoats, 100 cattle, 50 camel) livestock and the amount of milk produced were a minimum of twice per day. In each production time I were able to get full of the traditional container i.e. "Ayienee" that contains around 10 litters, but due to the 1984 famine I have lost 40 camels, 177 shoats, and the whole cattle. In addition to that, the total amount of milk produced declined from that time onwards because of the pressure from the Issa Somali and the coming of 'Woyanee Zaff'*  
(Source: Source: qualitative survey, 2009)

The above case indicates that the total number of livestock decreased from 191.5 TLU to that of 16.6 TLU which is reduced by 91.3% .The main explanatory factors for the deterioration of the cattle both in terms of quality and quantity were the constriction of the pasture, drought and encroachment of *Prosopis juliflora*. Consequently, the amount of milk and milk products also decreased.

### 5.5 Social Capital

Kinship ties as a social capital play roles both as adhesive tool which creates an enabling environment to meet their financial obligation and to network people in one way or another. On the other hand, some social linkages also contribute to keep the poor in their place than to overcome the problem of poverty. for example, cast system (Ellis, 2005: 4).

Related to this, in the context of the pastoral community, specifically in the area under investigation, the existing social capital manifested itself in the form of strong social ties, clan membership, mutual help and cooperation through different social institutions. According to the focus group participants, in the past the existing social network in the community influences the livelihood securities of the community through stock transfer. One of the best examples of the stock transfer institutions in the Afar pastoral community is *Hantilla*. However due to deterioration of the cattle size and the integration of the community in to market, this institution became more or less malfunctional. but the cooperation of the community in their day to day

activity is so strong. What follows next is the survey respondents reply to the question whether they got any assistance from the kin group or not.

**Table 5.11: Assistance from kin group**

Have you got any assistance from your kin?	Frequency	percent
Yes	80	88.9
No	10	11.1
Total	90	100.0

Source: Household survey, 2009

Table 5.11 reveals that 80 (88.9%) heads of households out of the 90 noted that they got assistance from their kin which implies that there is a very strong social tie in the communities. However, as to the function of local institutions which encourage the stock transfer, it deteriorated considerably.

**Table 5.12: Types of assistance from kin group (multiple responses are possible)**

Types of Assistance	Frequency (n=80)	Percent
Lending milk animal <i>Hantilla</i>	4	5
Livestock	15	18.75
Cash	32	40
Cash loan	1	1.25
Food or grain	22	27.5
Free labor	51	63.75

Source: Household survey, 2009

Table 5.12 also vividly indicates that out of 80 heads of households only 4 (5%) of them reported that they possessed milk animal through *Hantilla* and 15 (18.75%) heads of households also said that they owned free provision of other types of livestock whereas 51 (63.75%) of them claim that they got assistance in the form of free labor. In addition, the survey respondents also reacted to the question: *whether they lent out their livestock or not to other individuals*. Out of 85 heads of households, 64 (75.3%) of them said that they lent out their livestock to other individuals whereas the remaining 21 (24.7%) heads of the household responded to the contrary

Accordingly, out of the total of 64 heads of households who said 'yes' for the above questions only 4 (6.25%) of them lent out their livestock for *Hantilla*, the other 55 (85.94%) heads of households said that they lent out their cattle in return for cash. The remaining 5 heads of the household said that they lent out their cattle in return for labor service. Generally, 93.79 of them said that they got livestock in return for what they gave in the form of money or labor service.

The above responses revealed to what extent the traditional social institutions deteriorated and are becoming in a state of losing their function.

### **5.6 Livelihood activities**

The livelihood resources possession of the pastoral community in the middle Awash valley Gewane *woreda* is almost imperceptibly deteriorated. As a result, the pastoralism as a means of livelihood underwent through silent crisis for a long period of time. Particularly, the situation has been exacerbated in the last five to six decades. The possession of the livelihood resources also determines the type of livelihood activities the pastoral community engaged in. However, the status of the resources, especially the natural resources, is very crucial for the sustainability of the pastoral livelihood activities; it has been in a very precarious situation. In turn it has adverse implication on the sustainability and viability of the pastoral livelihood activities. In this regard 69% of the survey respondents noted that the difficulty to rely on livestock production influenced them to participate in more than one livelihood activities. Similarly, 61.7% and 63.8% of the heads of the studied household affirm that shrinking of the pasture and recurrent drought, respectively were the other explanatory factors for the inclusion of livelihood activities other than pastoralism. The survey respondents also went on to say that, encroachment of unpalatable plant species namely *Prosopis juliflora* and conflict with Issa were also the other factors.

In addition, as computed from the survey responses, 78.8% of the respondent (head of the household) reported that livestock production combined with crop (both food and cash crop) production are their viable means of livelihood activities in the future. To the contrary, 14.6% of the respondents identified livelihood activities that are totally out side of pastoralism as their viable means of activities in the future. The rest, in one way or the other include other livelihood activities with out undermining traditional pastoralism. For further information, look at table 5.13.

**Table 5.13: Viable means of livelihood in the future (Multiple responses are possible)**

What is your viable means of livelihood in the future	The studied <i>kebeles</i> of the research				Total	
	Urafitu		Beriforo		Frequency	Percent
	Frequency	Percent	Frequency	Percent		
Livestock production combined with crop production	41	78.8	29	78.4	70	78.7
Crop production	7	13.5	2	5.4	9	10.1
Livestock rearing combined with commercial activities	2	3.8	2	5.4	4	4.5
commercial activities	0	0.0	3	8.1	3	3.4
livestock combined with <i>Gille</i> making	0	0.0	1	2.7	1	1.1
Livestock production combined with charcoal and fuel wood making	1	1.9	0	0.0	1	1.1
Crop production combined with commercial activities	1	1.9	0	0.0	1	1.1
Total	52	100	37	100	89	100

Source: Household survey, 2009

According to the focus group participants and Key informant, the spatial and temporal mobility of livestock highly ensured high livestock productivity and possession. Nonetheless, the mobility of the herds became difficult. On account of these and other factors, the number of cattle possession per household is decreasing at increasing rate, to the extreme; according to the survey result, 5 (5.2%) households have no cattle during the survey period.

In replying to the question, "In the last 12 months was the annual income you earned from primary livelihood activities enough for your means of survival?" 76 (78.4%) of the survey respondents said that it was not enough. This implies that even if pastoralism is a dominant means of survival in the target community, due to loss of the natural capital, the productivity of the pastoral system declines. Hence, the livelihood system of the pastoralist entered into very precarious circumstances.

As a natural response to the decreasing returns of pastoral production in the area, the pastoral community in the rural *kebeles* under consideration started to diversify their income sources in an attempt to avoid and alleviate poverty as well as to spread the risks associated with the increasingly vulnerable pastoral livelihood. In the coming section, an attempt will be made to look into some of the livelihood activities that the pastoralists engaged in as a means of sustaining their means of survival.

**Table: 5.14 Household livelihood activities**

Livelihood Activities	Primary livelihood activities		Secondary livelihood activities		Tertiary livelihood activities	
		Percent		Percent		Percent
Livestock rearing	76	79.2	10	10.53	5	6.33
Crop cultivation (cash and food)	3	3.13	31	32.6	5	6.33
Wage labor	1	1.04	21	22.1	25	31.66
Sales of wood and charcoal	0	0	15	15.8	23	29.1
Trading in livestock grass and fodder crop petty trading, food and soft drinks	4	4.2	6	6.3	6	7.6
Government employee	5	5.21	3	3.16	0	0
Handicraft ( <i>Gadetta</i> Making)	2	2.08	5	5.3	15	19
Blacksmithing or metalwork (like <i>Gille</i> making)	2	2.08	2	2.1	0	0
Migration to non pastoral livelihood activities	3	3.13	0	0	0	0
Total	96	100	95	100	79	100

Source: Household survey, 2009

Table 5.14: illustrates that, there are different livelihood activities that have been executed by the pastoralist Afar in the middle Awash valley, Gewane *woreda*. Based on their kind, these activities could be classified into two broad categories, namely pastoral and non-pastoral. These activities can also be divided into three different categories based on the amount of income the household earned from them i.e. the major activities in terms of its income generating potential considered as primary, secondary and tertiary activity.

### **5.6.1 Livestock production**

The study area is characterized by pastoral way of life, therefore the livestock production system is considered as one of the vital components of agricultural activity on which the majority of the pastoral community in Gewane *woreda* depended for living. According to Gewane *woreda* Pastoral and Agro-Pastoral Development Office, in 2007 the main livestock type and their respective number in the *woreda* were cattle (118,720), sheep (85,000), goat (132,142), camel (72,800), Poultry (580), horse (20), donkey (610). Culturally as well as economically, livestock is considered as the most important asset and main sources of food, and means of transportation. They are also used as the most disposable income in time of need and emergency situation. Therefore, rearing of livestock is intrinsically attached to the Afar pastoral community in every aspect.

According to the household survey, 76 (79.21%) heads of the households responded that their livelihood is predominantly dependent on the livestock production. In addition, 10 (10.53%) individuals said that cattle rearing is their secondary activity in the same vein, 5 (6.33%) individuals also claim that their means of survival depends on pastoralism at a tertiary level. But out of the total 97 sample households only 3 of them are pure pastoralist.

### **5.6.2 Crop Cultivation**

Crop production in the Awash valley is practiced since time immemorial. Different travelers in their travel account stated that they have observed the practice of crop cultivation in the Lower and Middle Awash Valley particularly in Aussa and Beadu (As Ali, 2008 quoted from, Nesbitt (1935) and Trimmingham (1976)) for a very long time. Some of the key informants indicated that

the practice of crop production in Afar started around the Lower Awash Valley in Afambo *woreda* by the Arab migrants from South Yemen.

After the coming of large scale commercial agriculture in the Valley, the crop production became the dominant and one of the main complimentary livelihood activities. Currently, it is the most crucial means of livelihood activities. Crop production is carried out mainly by using Awash River. Currently, Awash River is diverted to Buremodaito *woreda*; as a result, the level of water in Awash River is decreasing from time to time. Consequently, the pastoral community faces difficulty in using Awash River for agricultural purpose. According to the household survey 3 (3.13%) household heads said that they depended on crop cultivation as a primary means of livelihood, whereas, 31 (32.6%) and 5 (6.33%) household heads identified crop cultivation as secondary and tertiary means of livelihood respectively.

According to some of the key informants, both cash and food crop products are produced in the studied community. The trend in the production is increased as compared to the previous time, particularly, after the 1999/2000 drought. The year 1999/2000 is a watershed for the pastoralist Afar in the Middle Awash Valley Gewane *woreda*. At that time, large number of cattle died and the prospect of the pastoralism in the area became gloomy. The type of crop produced in the area is maize which is the dominant followed by tomato, pepper and onion. The last three were started to be produced in the last two years which were not frequently practiced by the pastoralist. Cotton is also produced in Gewane *woreda* but it is produced predominantly by investors and well-to-do pastoralists. While I was in the field, I have observed crop cultivation predominantly executed in *Intiadoyita*, *Umerfagie*, and *Urafita* villages of the Urafita *kebele* whereas, *Solodas* and *Amassaburi* villages in the Beriforo *kebele*. I have also observed investors' plantation both in Urafita and Beriforo *kebele*.

According to the key informants, investors expected to make an agreement to get farm land. There are two ways of agreement. The first is with the ratio of 70/30 or 80/20. Under such agreement, the investors cover all the necessary investment cost. After they sell their product, then they deduce the cost of production and share the profit based on their agreement. As per 70/30 agreement, for example, the investor take 70% percent of profit and 30% goes on to the clan. In the other agreement pattern, the clan rent their land on contract for investors. The

investors obviously are expected to pay the rent as per their agreement whether the investor is profitable or not. The contractual agreement is made between the clan leaders and investors. After they finalize their agreement, it will be approved by the *woreda* and then approved by the Zone Investment Office and finally the investor gets registered in the Regional Investment Bureau. In addition, the investor as part of the agreement is influenced to employ some of the clan members of the owner of the land as wage laborers for different activities such as canal clearing, weeding and guarding the plantation from wild pig and others.

**Box 5. 6 : Case study : Kurbilli Agro industry private limited company**

Kurbilli Agro-industry private limited company invest in Gewane *woreda* Urafita *kebele* Intiadoyita village. The company has an intention to produce cotton and other cash crops on 2000 ha of land. Ato Zinabu is the General Manager of this organization. He shares us his experience on their investment and the relation that they have with the members and leaders of clans in the studied community.

*This organization started investing in Urafita Kebele Intiadoyita village in December, 2008. The agreement was made with three clan leaders. Three of them are representatives of the sub-clans of Mahesera namely, Huda Dubno who is the leader of the whole clan, Hamedu Gelmo from Gemee sub-clan and Adembera Mohammed from Sheka sub-clan. This agreement is further approved by woreda agricultural Development Office and we went to Zone finally we got investment license from Regional Investment Bureau. As per our agreement the community is expected to facilitate and protect the plantation. The company also employs 12 coordinators and the above three clan leaders with 300 and 500 birr per month respectively. In addition, till now, 94 daily laborers also work in our plantation. The land is totally encroached by "Woyane Zaff" and quite inaccessible for agriculture as well as other agricultural activities. Thus, our agreement is that we clear and prepare the land for agriculture by covering the whole cost. Whereas, the community also allow us to use the land for 5 years with out any charge. After 5 years, we agree to pay 300 birr per hectares of land per month.*

(Source: Source: qualitative survey, 2009).

### 5.6.3 Wage Labor

In Gewane, the practice of wage labor is initiated when the state farm was functioning in the area. At that time, displaced pastoralists from their traditional pasture land started to engage in the state farm as wage laborers. According to the household survey, only one individual earn his means of income primarily from wage labor. Whereas, 21 and 25 individuals considered wage

labor as secondary and tertiary means of livelihood respectively. In *Urfita Kebele 'Leasitaa'* village, I have observed large number of Afar pastoralists together with non Afar wage laborers employed in a private investors agricultural schemes. Besides, the amount of payment for the Afar and non Afar was not the same. The pastoralists were working as a part timer and for half of a day they earn 6 birr. For example, if one who works at the morning session he/she is not forced to work in the after noon session. But in the case of the non Afars, they agree at contractual basis per day, they form a group consists of 11 individuals and one group is expected to clear 1 hectare per day. The employer is also expected to pay 24 birr per day. The amount of money for the Afars and non Afar is not uniform throughout the *woreda*. It is based on their agreement. As per my observations, it was 6 and 24 birr for the Afars and non-Afars respectively. Women also participated in the wage labor activities. According to the survey, there were also 4 (25%) female headed households who participated in wage labor as a secondary means of livelihood and 6 (40%) female headed households in the tertiary livelihood activities. But, predominantly women participate in the collection and harvesting of cotton, however, they are also engaged in this activity so as to support themselves.

#### **5.6.4 Sales of wood and charcoal**

From the Table 5.14 one can see that the community does not depend on this activity as a primary means of livelihood. The whole pastoral communities who are engaged in this activity described above take it as a secondary and tertiary activity, 15% and 23% respectively. In addition, as per the informants the pastoralist Afar didn't directly involve in the above activities particularly in charcoal making, rather they do it through employing wage laborers from the highland parts of the country. Because, according to the key informants, in their culture, charcoal making is a taboo and it was totally prohibited by the community at large. Their oath shows how they feel about charcoal making "*Diyeeta Yoraeesay*" literally it means *if I cheat you may God dispossess me from all my wealth and makes me dependent on Charcoals or charcoal making*. This type of swearing is made when two people hardly agree and one wants to convince the other. This shows that to what extent the charcoal making is considered as a strictly forbidden activity by the community.

However, through time, when life in the pastoral community became miserable due to loss of the dry and wet weather pasture and loss of confidence in the pastoral livelihood and lack of social

control in the community at large, the pastoralists earn some income from this activity sharing with some of the wage laborers who came from the highland parts of the country. Besides, the pastoralists went on to form a cooperative society which they call it "*Leiado integrated cooperative society*" which has been organized to collect charcoal from producers and transport it to Addis Abeba for sale. This implies that the deterioration in life of the pastoralists forced them to enter into other activities which were once strictly forbidden by the community. In the past the community considered the production of charcoal as the task of *Bontas* and non Afars but these days the attitude is changing though the pastoralists don't directly participate in the production process. However, some of the pastoralist livelihoods still depend on it indirectly.

#### **Box No. 5. 7 Case Study Ahemed Hamedu**

He is 35 years old from Urafita Kebele Intiadoyita village. He was the chair person of the 'Leiad integrated cooperatives society', an association that actively engaged in distribution of charcoal. Regarding the function and the formation of their cooperative, he says

*This cooperative initially formed by 3 individuals with an initial capital of 500 birr. We collect charcoal from the producers and we take it up to Addis. It was the best opportunity for the members of this cooperative and the charcoal producers. There is a high demand for charcoal in Gewane, Nazreth and Addis Abeba etc. Within two years time we have profited 72000 birr*

(Source: qualitative survey, 2009).

The above case indicates that, some of the pastoralist engaged in livelihood activity which was culturally disapproved in the past. However, now a day due to the declining and non viability of pastoral production; they went on to the extent of forming an association whose activity is directly related to livelihood activities not allowed by the culture of the community.

Due to this activity the biophysical resource of the *woreda* deteriorated over time. Specifically, the producers were motivated to use *Prosopis juliflora* for the production of charcoal. But according to the key informants, the demand for this charcoal was very low since it produces huge amount of spark. But a charcoal produced from *a'abto* (*Acacia tortillis*) and *Kesalto* (*Acacia nilotica*) have huge demand in large parts of the country. But using these plants (*a'abto* and *Kesalto*) for charcoal production is strictly forbidden by the clan leaders and *woreda*

administration. The pastoralist engagement in such activities that are culturally rejected by the community implies their lack of option; in addition to the deterioration of their traditional means of survival.

### **5.6.5 Trading**

This activity includes commercial ventures related to livestock trading, grass and fodder, crop and petty trading, preparation of food and soft drinks. According to the survey result, 4 (4.2%) of the respondent households take it as a primary means of income generation. Whereas as 6 (6.3%) and 6 (7.9%) of the respondent households made it as a secondary and tertiary livelihood activity, respectively. From the two *kebeles*, the commercial activity is more conducive in Beriforo Kebele due to the existence of Gewane TVT College. However, this livelihood activity is dominated by the non-Afar community who came from Northern and southern parts of the country. The participants of the focus group illustrated that

*These activities are overwhelmingly dominated by the non Afar since they do have the skill and the tradition but for us it is a new beginning and we entered into it since our traditional means of survival is under serious pressure on several fronts and hence found ourselves in a state of transition to accommodate other means of survival like commercial activities, which were not done ever before.*

### **5.6.6 Handicraft (“Gadetta” Making)**

This activity is predominantly done in the southern parts of the *woreda*, specifically the Beriforo and Mattaka Urban *kebele* because in these two *kebeles* there are swampy places which are very conducive for the growth of grass that is used as a raw material for the production of the traditional carpet locally called *Gadetta*. The statuses of the livelihood assets pave the way for the women pastoralist in Beriforo *kebele* to get an option to engage in this livelihood activity. There are around 22 householdheads whose livelihood is dependent on the production of *Gadetta* of which, the total number of households dependent on this activity as primary, secondary and tertiary means of livelihood is that 2, 5 and 15 head of the households respectively.

### **5.6.7 Blacksmithing or metalwork (like “Gille” making)**

In Gewane *woreda*, there are some clan members who are predominantly dependent on this activity. This group of people lives in *Beriforo*, *Gelleladura* and *Egille kebeles*. They are predominantly engaged in the production of traditional sword and other types of metalwork. This

group of people call themselves as *Bonta*. From the survey respondents, only 4 heads of the households are engaged in this activity out of which 2 of them considered it as primary livelihood activity and the remaining 2 of them as a secondary activity. All of the clan members who are engaged in this activity live in Beriforo *kebele*.

### 5.6.8 Migration to Other Area for Non pastoral Livelihood Activities

Migration is understood as a separation from ones household and family in search of jobs or any other thing. As an adaptive strategy, pastoralism is characterized by migration from place to place in search of grazing land and water points. However, migration in search of non pastoral livelihood activities is quite insignificant due to low human capital and availability of employment opportunities in my study area. Out of the survey respondents, only three heads of households' livelihood primarily depend on migration related activities, out of the total survey respondents of heads of households; three of them, work in the Lower Awash Valley, Dubti *woreda*, in the newly established sugar factory as car driver and construction worker.

Generally, out of 97 studied households only 3 (3.1%) of them did not engage in any livelihood activities other than pastoralism. The rest 94 (96.9%) households were engaged in two or more than two livelihood activities. But, the type of livelihood activities they participated is low paid type livelihood activities for further information see table 5.15.

**Table 5.15: Total number of livelihood activities the studied household engaged in their respective, *kebeles*.**

Number of Livelihood activities	Kebele				Total	
	Beririforo		Urafita		Frequency	Percent
	Frequency	Percent	Frequency	Percent		
One livelihood activity	3	7.3	0	0	3	3.1
Two livelihood activities	8	19.5	11	19.6	19	19.6
Three Livelihood activities	21	51.2	40	71.4	61	62.9
Four livelihood activities	9	22	5	9	14	14.4
Total	41	100	56	100	97	100

Source: Household survey, 2009

## Chapter Six

### Challenges and Opportunities of Pastoral Livelihood Diversification

#### Introduction

In the previous parts of this paper, I tried to look into the livelihood resource possession and some of the occupational activities of the households in the study *woreda*. According to the findings, the livelihood resources possession in the target community has been deteriorating from time to time, thus, the livelihood of the community is becoming unviable and insecure. To help themselves live and lead secured way of life and to make their livelihood sustainable, the pastoral community started to diversify their livelihood to other means of economic activities. However, the living standard as well as the sustainability of their activities in the areas under consideration move in downward spiral because the pastoral community diversify their livelihood activities to non-profitable activities and at a very low level. Here I tried to look into the main constraints for pastoral livelihood diversification on the two target *kebeles* of the Gewane *woreda*.

#### 6.1 Some of the Challenges of Livelihood Diversification

**Table 6.1: Major challenges for livelihood diversification (Multiple responses are possible)**

Major challenges for livelihood Diversification	Frequency	Percent
Market inaccessibility	81	86.2
Poor infrastructure availability	72	76.6
Lack of agricultural equipments	72	76.6
Frequent Drought	68	77.3
Paucity of veterinary services	67	71.3
Unavailability of start up capital	64	68.1
Shortage of water	33	35.1
Lack of capacity and training facilities	32	34.0
Poorly developed education	17	18.1
Fear of being ostracized by others	6	6.40

Source: survey Result. 2009

According to Table 6.1, the survey respondents identified 10 different factors as the major constraints for lack of further diversification in their livelihood. Let me look into each one of the constraints by corroborating the survey, the focus groups' responses and key informants interviews results.

### 6.1.2 Access to Market

*The capability of the pastoralists to market their livestock and livestock products in a timely fashion at a fair price is essential to overcome temporal and seasonal calamities at a household level. It also helps them to save, invest and manage their money by decreasing the threat to environmental degradation which comes through overgrazing. Above all they will be motivated to participate in other forms of activities (Pantuliano et.al. 2008:10)*

Market is one of the physical livelihood resources that enhance the Pastoralists' access to different kinds of consumer goods. In the Gewane *woreda*, Middle Awash Valley, the community does not have any market center. According to the survey, out of 88 respondents, 81 (92%) of them said that market inaccessibility is one of the critical factors that incapacitate the livelihood diversification of the community. Currently, the pastoralist Afars in Gewane district uses the market at *Worer* in Amibara *woreda* of the same *zone* together with *Dalifaghie* market centre. *Worer* is located 110 km away from Gewane 01 and 95 km and 89 km from Urafitu and Beriforo *kebeles*, respectively, through Addis Abeba Djibouti high way. Whereas, the *Dalifaghie* market of *zone* five Afar National Regional State, is located about 70 km from the Gewane 01 *kebele* and 80 Km and, 93 km from Urafitu and Beriforo *kebeles* respectively.

In the past the dwellers of the two *kebeles* didn't use the *Dalifaghie* market center, instead they prefer *Senbete* market center, locally called *Dille* which is located in Amhara National Regional State. Due to the frequent conflict between the Afar and the Oromo at a place called *Hadelela*, the Afar never went to *Senbete* open market; rather they prefer to go to *Dalifaghie* in *Zone* 5, Afar National Regional State. The focus group participants noted that compared to the *Senbete* market place the community in the Gewane *woreda* preferred to go to *Worere* open market largely for its provision of pasture and water around the market place which is unavailable in *Senbete*; insecurity along this market route is also a reason to prefer *Worere* as compared to *Senbete* in this regard the focus group participants noted that:

*Dille (Senbete) market place is situated in Amhara National Regional State .It takes four days while Dalifaghie takes a two day journey. When we go to Dille, the area administrators didn't allow us to hold any weapon even for self protection from raiders and wild beasts. The Oromo are our main enemy. They raid our cattle and sometimes kill us without any reason. The market place that we went to was rugged mountainous and dominated by forest and whenever we trekked through forest and over the mountain they wait us inside the bush to kill or confiscate all of our property. In addition, the market is also not fair in terms of the price we are*

*offered to sell our cattle; and we reach there after a travel of long distances. It takes us almost four days; on the way the cattle lose their weight; as a result, the price also goes down. During the drought period the problem becomes worse. But after the change of the market place to zone 5, it has been better both for our life and for the revenue we earn from the market.*

*As we go to Dalifagie, we pass through "Lake Yardi" and we take a rest the whole night at Buri. The next day we also take rest at Duleila. Early in the morning we set out to Dalifagie market place. It takes two days journey. As we travel to Worer market center which is far from Gewane we have to move following the Awash River course and we cross Awash three times at three different places namely: Adbaror, Buremodaito fagie, Huntie fagie. We also take a sleep at three different places Adbaror, Haledebi and Aligeta and in the fourth day early in the morning started to go to Worer market place and we reach there at 12 am of the market day. When we go to Worer there is a fear of Issa especially around Lake Kurbille. At that place, there might be a possibility to find Issa but we don't approach that area instead we go through the villages of Afar and the Issa don't have the courage to come to raid inside these places. Finally, after four days journey we get there. (Source FGD, 2009)*

This indicates that the communities have a serious problem in accessing the market place. So the pastoralists are expected to make a difficult journey over rough mountainous terrain, which seriously affects the appearance of the cattle by taking their weight away. This results in a very low price for their cattle. According to Pantuliano et.al, (2008:12)

*One key element of marketing is price risk. If prices are relatively stable, lucrative and predictable over space and time, planning horizons for producers and traders are improved and marketing efficiency can be enhanced. If, however, prices are relatively volatile, low and unpredictable, this provides disincentives for producers and traders and market dysfunction can occur.*

In this connection, the informants and the discussants also said that the above market place is important only for selling their cattle; they never take their small animals i.e. shoats to the market. Regarding this, the focus group participants noted that.

*When we take our cattle to Worer our expectation from the trading activity is to get a fair price to purchase other commodity for our household consumption, and we need some of the money to cover the medication and other necessary costs of our household. However, in the market place, no one comes and asks about our commodity rather when time comes at the end of the market day; the market for the cattle reinstates. The main reason is that the purchasers come at the end of the day from far away towns like Awash Arba, Awash Sebat kilo, Nazreth, Metehara and other parts of the country. They come and ask us about the price; as if they*

*consult each other on the amount of market price, they extremely distort the market price for cattle seeing that we have no other alternatives as the day is wearing out and we need some good for our households. We usually face with difficulty in deciding whether to sell or not. If we don't sell, we have to go bare hand to home and there is also danger of losing our cattle on the way owing to the long distances they traveled. So we are forced to sell our cattle for low price to buy the relatively higher price commodity that we have to take back home (Source FGD, 2009).*

The unfair price at a distance market discourages the pastoralists to participate commercial activities. As it can be seen, the price for their cattle is low while the prices they are asked to pay for household consumption are high. This fact usually demoralizes the pastoralist to participate in trade. In the Table 6.2 the respondents stated obstacles which hinder them from participating in trading.

**Table 6.2 Constraints to livestock trading (Multiple responses are possible)**

constraint	Frequency	Percent
Long distance to market place	90	97.80
Unfair price for livestock	73	79.30
Lack of market to livestock and their products	26	28.30
The market isn't functional throughout the week	17	18.50
Lack of water and grazing land around the market place	2	2.20

Source: Household survey, 2009

According to Table 6.2, 97.8% of the respondents said that the long distance from the market place is the major constraint for livestock trading. In addition, unfair price for livestock and lack of market to livestock and their products are constraints to livestock trading according to 79.3% and 28.3% of the respondents respectively. The rest 18.5% and 2.2%, of the respondents maintained that non functionality of the market center through out the week and lack of water and grazing land around the market center are some of the constraints.

Currently, most of the pastoralists in Gewane *woreda* are overwhelmingly expectants to see more markets opened in the *woreda*, a control of price fluctuations and the removal of barriers to access market. In order to solve this problem, FARMAFRIC established the market place in Gewane 01 *kebele*. However, due to market fluctuation and unfair price, the pastoralists were dissatisfied. Moreover, the markets place itself is not accessible by the whole community. For example it is 21 km away from Beriforo *kebele* and 12 km from the Urafita *kebele*. The

customers of the market were predominantly from the same *woreda* since there was not strong promotional work executed outside the *woreda*; the remaining majorities in Gewane *woreda* therefore are exposed to huge transaction costs and price uncertainties which discourage the pastoralists from participating in the market. The market place itself was not well equipped with the necessary facilities like cattle trough, grazing land and others; finally, for these reasons the market place is now closed down. Currently, USAID in collaboration with VOCA Ethiopia constructed a market place in Gewane 01 *kebele* that has all the necessary facilities but again it is far away from the rural *kebeles*; particularly it is 21 and 12 km from the two target communities and hasn't started functioning up to now.

The proximity of the community to market centers promotes an enabling environment for the pastoral household to actively engaged in non pastoral livelihood activities like livestock trading. But in the above context, the community has not an access to any market center within the confines of Gewane *woreda*. Hence they are compelled to use the neighboring *woredas* market centers. Even to access the existing meager market potentials in Gewane urban *kebele* i.e. Gewane 01 for their small stock the inhabitants of the Beriforo and Urafita expected to travel 12 km and 21km. Therefore, it is difficult for them to use that opportunity. It creates inability to access market and get maximum price to livestock and livestock products.

Taking into account the real and pressing problems the pastoralist in Gewane *woreda* has encountered, there is no question that the issue of market development is a critical component of any movement to trigger the diversification of the pastoralist to other non pastorals livelihood activities. Therefore, to this end the policy makers, concerned government officials and others are considering how and in what institutional ways the pastoralist can be linked to markets, how they can organize themselves, and how to address their vulnerability to market risk along with the importance of infrastructure for markets.

### 6.1.3 Poor availability of Infrastructure

Infrastructure in this section includes only the road, electricity and telephone services.

#### 6.1.3.1 Road

In the Gewane *woreda*, rural *kebeles* are geographically isolated from communications and basic services. The two target *kebeles* are located at a place inaccessible by road, particularly during the rainy season. There is no all weather road functioning throughout the year; the only road that exists in the *woreda* is the Ethio-Djibouti international road that dissect the *woreda* into two that is the wet weather pasture land that is Mount Ayelu with that of Beadu (the rural area). Whereas, in the rural areas there is no road that serve the community both during the dry and wet season. PCDP (Pastoral Community Development Programme) constructed 18 km road that connects Egille, Urafitu, Geleladura and Gebeyabora rural *kebeles*. However, by now the road is functional only during the dry season up to 14km. The rest is almost not functional at this moment. In addition, their communications with neighboring *woredas* during the rainy seasons are disconnected; the problem is tense especially during the period of crisis when food aid can't be delivered easily. Besides, there is no transportation service in the target *kebeles*. The survey respondents asked about what are the fundamental problems they face due to the non availability of the transportation services.

**Table 6.3: The effect of lack of Transport facility in the study area**

The effect of Transport facility in the locality	Frequency	Percent
Delay to reach on time to buy goods and for sale	72	74.2
Perishable goods spoil before delivered to customers	17	17.5
We cannot be reliable suppliers in the eye of our customers	8	8.3
Total	97	100.0

Source: Household survey, 2009

72 (74.2%) of the respondent said that lack of transport facilities create problem to reach the market place on time; 17 (17.5%) of the respondent said that perishable goods spoil before delivered to the customers, the rest 8 (8.3%) of the respondents said that they can't be reliable suppliers of in the eyes of the customers.

### Box No. 6.1 Case Study Halima Abedu

She is 36 years old, from Beriforo Kebele. She is a mother of two sons and one daughter. Currently, her husband is working in private investor's land as a guard. She manages her own business particularly, *Gadetta* making. She is the master mind for the production and sell of her product. Regarding her experience on the process of the production and some of the challenges she face, she noted:

*In the past Gadetta making was not allowed and the community takes it as a taboo even I myself accepted this thought. However, after the 2001 drought, my family lost almost all of the cattle; my husband and I started to participate in non-pastoral livelihood activities like Gadetta making. I have been making Gadgetta for the last 8 years. I use traditional tools and available resources. The production of one "gadetta" takes almost one day. Initially I have brought Gadetta grass from Amassaburi which is around 7 hours travel (Two way travels). There is no any means of transport; I have to walk to the area on foot and then I start to make the grass ready for "gadetta" making. Finally, I put it along the highway of Addis-Djoubouti road which passes through Gewan since there is no market center. The price is not also satisfactory. It sold for 35-40 birr. The main challenges for this activity are lack of transportation and market. (Source: qualitative survey, 2009)*

#### 6.1.3.2 Telephone and Electricity

Telephone service and electricity are key players to any development endeavor. Hence, the role of telecommunication as a catalytic element of growth for the advancement of information exchange cannot be underestimated. The same is true of the role of electricity. Related to this, in Gewane *woreda* only Gewane 01 *kebele* do have the facility of hydroelectric power and telephone access both mobile and home phone. All in all, 72 (76.6%) of the survey respondents identify lack of infrastructure is one constraint for diversification.

#### 6.1.4 Drought

The losses of productive assets and increasing household food insecurity due to drought have become defining features of pastoralist areas in Ethiopia. As has been explained in the table 5.1, 68 (77.3%) of the respondents identified drought as the challenge to livelihood diversification. Both the participants and informants noted that, the impact of drought on the pastoralist Afar before the coming of *Prosopis juliflora*, diversion of Awash river, during the time that the

pastoralist Afar freely access the wet weather pasture land around Hailaideghil plain and the coming of large scale irrigation farming was not as such quite devastating and serious. However, due to the aforementioned factors the pastoralist became highly vulnerable to drought and its impact adversely affected the pastoral livelihood system. During the drought period the market price for livestock and livestock products went in favor of the consumers rather than the producers. During the drought period there is high livestock mortality and the herders are compelled to sell their livestock for which reason the price of livestock goes down. The high supply of the products brings the price down. Pastoralists are not motivated to engage in livestock related commercial activities.

Furthermore, there are no physical infrastructures like road, transportation facilities, and market center. The absence of these services forced the pastoralists to move long distances in search of market center; this, however, affected their livestock on the way as there is lack of water and pasture for the cattle they might die before reaching the market center. Even if they reach to the market center with out any problem there is high rate of supply and low demand and then the pastoralists are influenced to sell their cattle with minimum price. Finally, they end up losing their livestock for lower price. After the end of the drought when the price goes up, they are destitute and have nothing to offer to market. Recovery from the loss is not easy for the pastoralist, leaving them in problem even after the drought is over. Out of 97 respondents, 5 of them or 5.2% of them didn't have any livestock unit all in all, the interaction of all these things undermined livestock and related activities; in this regard the women focus group participants noted that

*Seven years before, we formed a cooperative association under the assistance of FARMAFRIC; during the formation period FARMAFRIC gave us 5000 initial capital, Butter churn, and other necessary materials. We also contribute one Gadetta, one goat/sheep and 40 Ethiopia hirr. The purpose of the association was to collect milk from the rural areas and produce other milk products and sell it as it is for the urban consumers. We also had a cooperative shop in Gewane 01 kebele to distribute and sell our products but at that moment there was high prevalence of drought. As a result the productivity of the cattle became less. The production of the community never goes beyond household consumption. When we collect it, it wouldn't be sufficient for the market some times due to paucity of milk in Gewane. We also bring from Awash. The communities themselves depend on dried milk from market and aid given during the drought time, locally, called it "Henhan" meaning milk provided by assistance. Finally the association was dissolved since it was unable to be profitable (Source: FGD, 2009).*

This indicates that to what extent the recurrent drought affected the productivity of livestock and the community's ability to produce enough milk products for market as well as for household consumption. Finally, the existence of recurrent drought impedes the engagement of the pastoralists in other livelihood activities by deteriorating the livelihood assets as well as reducing the productivity of prominent pastoral livelihood assets i.e. their livestock.

#### **6.1.5 Poorly Developed Education**

According to Theodore W. Schultz, the decisive factor for development is the enhancement of the population quality and advances in knowledge through education which is a very crucial factor for economic development (Schultz, 2008). According to table 6.1, 17 (18.1%) of the survey respondents, low access to education is one of the limiting factors for the diversification of livelihood activities in the area under consideration. For further information refer section 5.3.1

#### **6.1.6 Lack of start up capital**

According to 64 (72.7%) heads of households, lack of start up capital is one factor for low level of participation of the pastoralists in other non pastoral livelihood activities. The availability of capital to begin new livelihood activities is a necessary precondition and this is found to be one of the main constraints for not starting other activities among pastoralist Afar in the Gewane *woreda*. There are no formal institutions like banks and credit suppliers and saving association that give start up capital.

The major effect of the absence of the initial capital can be easily noticed, especially when the community need to engage in other livelihood activities like crop cultivation. In order to engage in crop cultivation, the pastoralists need to clear out the land from the unpalatable species. However, based on the information from Pastoral and Agro-Pastoral Office of Gewane *woreda*, they need a minimum of 1500 Ethiopian birr for one hectare of land; sometimes, if the pastoralists don't have the money, and the laborer wanted the weed plants for charcoal and fuel wood production, the value estimated of the weed plant is reduced from the total cost of clearing. During the preparation of the land for cultivation, the pastoralist might be influenced to use tractor for cultivation and generator for pumping water because Awash River is sometimes inaccessible by gravitational force since its level decreases due to diversions. The pastoralist

have a free access to tractor from Gewane *woreda* Pastoral and Agro-Pastoral Development Office but sometimes they either have to buy or rent generators from individual owners; they are also expected to cover per diem costs for the driver of the tractor and the cost of diesels for the tractors and generators.

### 6.1.7 Lack of Capacity and Training Facilities

According to 32 (36.4%) of the survey respondents, for the diversification of their livelihood activities lack of training and capacity building is one of the constraining factor. The provision of credit service or policy promulgation for the development of the pastoralists without enhancing their capacity through training, exchange visits, and other means of capacity building to help them engage in other means of livelihood activities, which was not done previously, cannot help to ensure attaining the objectives of the policy.

**Table 6.4: Training for livelihood diversification**

Have you got any training in managing your livelihood activities?	Frequency	Percent
Yes	20	25.0
No	60	75.0
Total	80	100.0

Source: Household Survey, 2009

To the question: “have you got any training in managing your livelihood activities?”, only 20 (25%) household heads replied ‘yes’ while the rest 60 (75%) of them said ‘no’. Those who said that they had got the training were asked about the type of training. Almost all of them received two trainings; one provided by FARMAFRICA for formation of cooperatives. The second is training provided by the Afar National Democratic Party (ANDP), the leading party of Afar National Regional State. However, out of a total of the 20 individuals who had taken the trainings, only one individual said that he applied the training that he got in the development of his /her livelihood activities. This result is shown in table 6.5.

**Table 6.5: Application of training in livelihood activities**

Are you applying the lesson you have learned in the training?	Frequency	Percent
No	19	95.0
Yes	1	5.0
Total	20	100.0

Source: Household Survey, 2009

Asked why they are not applying the lessons from the training, 21.1% of the respondents said that the training is not enough. Whereas, 78.9% of the respondents claim that the training was not compatible with their interest. From the above response, it is possible to say that, the community isn't well equipped with different kinds of capacity building programme; even if, the programme has positive contribution to the livelihood diversification of the livelihoods of the community at large.

### **6.1.8 Natural Resource Depletion**

The depletion of the natural resources is another setback to diversify pastoral livelihood. According to this survey, 66 (75 %) of heads of households said that natural resources depletion is one constraining factor for the diversification of pastoral livelihood. The depletion of the natural rangeland influenced the community to exploit the near by grazing land and hence it led to the total degradation of the rangeland. Therefore, they face lack of forage resources for their cattle which leads to the decline in productivity of cattle and reduced the amount of milk and milk production for consumption and market. This implies that the depletion of the natural resources can obstruct the participation of the pastoralist in selling milk and its products, only confining them to produce for household consumption.

The depletion of the natural resources has bidirectional influences for the diversification of the pastoralist livelihood. On the one hand, it led to the crisis of pastoral livelihood system in response it sets off the diversification of livelihood. On the other hand, the shrinking of the pasture land inhibits the diversification through declining the productivity of livestock. This phenomenon has serious implication on the livelihood of not only the pastoral sector but also the other means of the livelihood activities because unless the pastoralists do have enough money by extracting out of pastoral livelihood activities, the demand for the other consumers will be reduced significantly. Therefore, the increase in the productivity of the pastoral sector creates a demand for other livelihood activities.

### **6.1.9 Fear of Being Outcast by Other**

In the survey conducted in the middle Awash valley Gewane *woreda*, 6 (6.8%) of the respondents claim that fear of marginalization by members of the community is one factor for low rate of the livelihood diversification of the pastoralist. This idea is firmly confirmed by the

focus group participants that *Bonta* are local community that resides in Berifiro Egile and Gelleladora *kebeles*. They are socially excluded by the community due to their occupation. Since the Bontas are heavily involved in metalwork activity as their main economic stay the rest of the community excluded them. Among the communities especially, in the rural parts of Gewane *woreda* people never seat and eat with them and they never get married with them. This and such views stifle the development of the livelihood diversification of the community.

#### **6.1.10 Paucity of veterinary services**

67 (71.3%) of the respondents also noted that paucity of the veterinary service is another accountable factor for obstruction of diversification of pastoral livelihood to lucrative activities. According to the veterinary experts, there were no veterinary clinics out side of Gewane 01 *kebele*. Whenever there is a sudden outbreak of infection the community informs officials of the *woreda* through their representatives and Paravets, and the *woreda* in collaboration with other non-governmental organization like FAO tries to address the problem. However, for their day to day problems related to livestock diseases, they don't have an access to get veterinary services. Consequently, the possibility of the community to loose their animals due to the absence of veterinary services is too high and the productivity of the livestock is also adversely affected.

#### **6.1.11 Shortage of water**

As it has been explained in the previous section, Awash River is one of the main sources of water for both livestock and household consumption but due to the diversion of the river to other *woredas* the quality and quantity of the water is gravely deteriorated. 35.1% of the survey respondents also confirmed this idea by saying that shortage of water is one factor for less livelihood activities specifically, for agricultural activities (both livestock and crop production). Moreover the diversion of the Awash River makes the river water to be static as a result it has become a home for different waterborne diseases, like Ameaba, Jardia, Typhoid and others. In addition, the stagnant water creates conducive environment for spread of malaria. This has also adversely affected the health of the productive labor force and it reduces the amount of time the productive labor spent on the job. As it has been explained earlier, the communities in Gewane did their crop cultivation by using Awash River; the diversion of the river to the other *woreda* reduced the level of the river water and the community is forced to use generators and other means to access the river water. Those who do not possess generators are exposed to additional

costs; therefore the diversion of the river and thus the reduction of its volume affected the diversification of the livelihood of the pastoralist.

#### **6.1.12 Lack of Agricultural inputs**

According to 72 (76.6%) of the household heads, lack of the agricultural inputs is one inhibiting factor or constraint for livelihood diversification. As it has been explained in the previous parts, due to the crisis of the pastoralist sector in Gewane *woreda*, the community entered into non pastoral livelihood activities; like crops cultivation; they produced maize, tomatoes, cotton and onions. Sometimes these crops are infected by different kinds of weeds, worms and natural calamities which put the production in peril. They don't get all the necessary inputs for the protection of the plant. For example, Maize is predominantly infected by Stalk Borer, tomato by Afid, White fly and Trips, cotton by America Bool Worm (ABW), Sudan Bool Worm, Jasid and Afid, and onion is infected by frost and trips. In order to avoid these and other related problems, the provision of pesticides, herbicides is not sufficient to the extent of creating an enabling environment to control these hazards. Predominantly, these services are provided by the *woreda* agriculture Office but the services are not provided at the appropriate time or were not available whenever there were in demand by the pastoralists.

## 6.2 Opportunities of Pastoral Livelihood Diversification

In Gewane woreda the Development Agents (DAs), agricultural experts and some of the key informant identify some of the opportunities the areas under investigation have so as to diversify their means of livelihood activities. Some of these are stated as follows

1. The existing livestock population together with the suitability of the climate for animal husbandry and the existing indigenous knowledge among the local community in animal husbandry give suitable ground for livestock related activities. The possibility to diversify their livelihood activities to livestock related activities like commercial livestock production, commercial milk and milk production, hides and skins might be got better opportunities.
2. The establishment of the new market center lessens the problem the community face in search of market and it also opens up opportunities for the community to engage in commercial activities.
3. If *Prosopis Juliflora* is eradicated and the conflict with Issa Somali is resolved, the pastoralists may get more land both for their pastoral and other livelihood activities, like food and cash crop production in the diversification of their means of livelihood.
4. Relatively, the proximity of the community to the Addis Ababa Djibouti road which passes through Gewane woreda is also an opportunity towards creating access for market, communication and other aspects.
5. The availability of vast and fertile land as well as perennial rivers potentially suitable for both food and cash crop production through irrigation.
6. Accumulated experience of Afar women in making *Gadetta* mat through the excessive locally available raw material *Gadeta* grass.
7. Unexploited livelihood activities such as metalwork, bakery, tailoring and embroidery, and service giving activities like grain mill, shops especially in rural areas are some of the potentials of the livelihood activities in the area under consideration.

## Chapter Seven

### Conclusion and Recommendation

#### 7.1 Conclusion

This research has attempted to scrutinize, pastoral livelihood diversification, its challenges and available opportunities through examining evidences from Gewane *woreda*. In order to have comprehensive and holistic view regarding pastoral livelihood diversification, the study has used the analytical lenses of Sustainable Livelihood Framework (SLF).

This study has addressed three research questions, the first research question deals with pastoral livelihood resources accessibility and control; related to this, the research has attempted to argue that due to external factors and internal dynamics the basic livelihood resources of the pastoralist, especially the natural capital have shrunk over time. The other livelihood resources possessions like market center, credit service facilities, livestock possessions, education and health service provision are not up to the standard and even some of them are nearly unavailable in the area under study.

The second research question has dealt with the investigation of some of the major livelihood practices. In this regard, the research has found blacksmithing or metalwork (like “Gille” making) handicraft (“*Gadetta*” Making), trading, sales of wood and charcoal, wage labor, crop cultivation, livestock production, and migration to other area. These are some of the major livelihood activities the pastoralist engaged in as a means of income sources in the area under investigation. The third research question has been about identifying and analyzing some of the constraining factors for pastoral livelihood diversification. It has also intended to identify some of the options and opportunities that open up other means of income generating activities apart from traditional pastoralism.

The pastoralists Afar in the Middle Awash Valley live in the areas of north-eastern Ethiopia. Before the inception of the large scale commercial agriculture; the delineation of tourist attraction areas; and other interventions, they live a descent way of life; their livelihood is secured and they were not vulnerable to other calamities.

However, after the inception of these large scale development interventions in Gewane *woreda* the mobility pattern and their traditional adaptive strategies were exposed to mounting external pressures. In addition, the encroachment of the dry weather pasture land by unpalatable plant species known as *Prosopis juliflora*, which undermines the growth of dry season pasture in the Awash River bank curtailed the mobility of the pastoralist together with their livestock in search of pasture and water points. Furthermore, diversion of the Awsh River to the neighboring *woreda* highly constrains the accessibility of the river by the pastoralist and the overflow of the river water during the wet season which has positive impact on the replenishment of livestock forages at the bank of the Awash River. They, therefore, are being influenced to exploit the pasture near the homestead. Moreover, the age-old animosity with Issa Somali that has been manifesting itself through raiding and counter-raiding livestock resources left its own legacy. Currently, it is one of the main factors for the crisis of Afar pastoralism in the Midde Awash valley of Gewane Woreda. As a result, the Afar lost their wet and dry season pasture land starting from *Lewa'ad* near Djibouti border to *Adamaburi*.

The combined effects of these external pressures have led the pastoralists to constrict their mobility pattern which was the hallmark of their success; and influenced them to exploit the pasture near the homestead. This led to overexploitation of specific area; the overlapping of the dry and wet season grazing areas, which has been seriously affecting the grazing cycles of the pasture land. The interaction effect of all these phenomena led to the degradation of the rangeland, loss of key wet and dry season vegetation types, the reduction of the wet and dry season prime grazing land and the reduction of the Awash River. Consequently, the pastoralists become highly vulnerable to recurrent drought and drought induced famine. In turn, this also affected the livelihood resources through high livestock morbidity and death; the pastoralists are forced to sell their animal with low price and the replenishment of the livestock forage is highly suppressed.

As a result of all these phenomena, pastoralism underwent a silent crisis and currently the viability of pastoralism as a means of livelihoods has highly declined. The pastoralists' way of life and the productivity of the livestock have also been diving down; accordingly, they are entangled by precarious way of life. Finally, so as to extricate themselves and the betterment of their life, most of the herders are influenced to engage in other non pastoral livelihood activities.

However, the diversification of the pastoralist livelihood to other subsidiary livelihood activities as a means of attaining sustainable livelihood and reducing risks are very less and the type of livelihood activities they are engaged in are low paid types, some of them are culturally disapproved. Owing to this fact, they are influenced to engage in activities which are less profitable. This is so due to the fact that the available options and opportunities of livelihood diversification are constrained by different factors. To mention, some of them are; lack of agricultural inputs, shortage of water, paucity of veterinary services, fear of being outcasted by others, natural resource depletion, lack of capacity building through training, lack of start up capital, poorly developed education, drought, poor infrastructure, market inaccessibility. If these challenges have been solved, the studied area has also its own potential to diversify their means of livelihoods.

## **7.2 Recommendation**

The existing livelihood resources destruction and deep rooted pastoral poverty and lesser extent of the livelihood diversification in the Afar pastoralist areas of north-eastern Ethiopia is a result of various factors that are discussed so far. Therefore, the solution to alleviate these problems is to undertake an intervention which comprehensively incorporates different dimensions must be made. The researcher would like to recommend the following ones.

- 1. Rehabilitation and Development of livelihood Resources:** The existing livelihood resources determine the type of livelihood strategies in the pastoral community. Currently, the livelihood resource potentials of the area under consideration are highly deteriorated (Natural, financial resources and social capital) and some of them are below their standard (human and physical capital); therefore, the rehabilitation and development of these resources is highly recommendable to facilitate diversification of livelihood with in the study community.
- 2. Institutional capacity building:** Institutional capacity building and human resource development are required. Human resource development involves the development of a plan for those workers in different social services.

3. **Credit Service provision:** Credit service facilities that take into consideration the existing local variations and further suited to cultural background of the local community are necessary. The establishment of the credit service institutions needs to be built in line with the existing local pastoralist rehabilitation institutions.
4. **Construction of accessible and feeder roads:** The construction of accessible and feeder roads facilitates the interaction of the pastoral community in Gewane *woreda* with other neighboring *woredas* and the people with in the *woreda* themselves. This in turn enhances the diversification of pastoral livelihood and it facilitates market opportunity for the community.
5. **Provision of veterinary services:** One of the main challenges of the livestock production in Gewane *woreda* is lack of veterinary services in each *kebeles*; and the community health workers are not functional since they don't get any incentives out of the services they give to the pastoral community. Therefore, it is highly recommendable to train more community health workers and encourage the veterinary privatization through credit system.
6. **Conflict management:** One of the main constraints for the pastoral livelihood in Gewane is the recurrent conflict between Afar and Issa. In the past, there was a conflict resolution mechanism between the two pastoral groups. Therefore, it is better to revitalize the traditional conflict resolution institution through bringing together elders and religious leaders from both parties and arrange negotiation forum to reduce conflict.
7. **Conservation of Natural Resources:** Clearance of the unpalatable plant species and pasture development; concurrently, the afforestation programme centered on the growing of fodder and trees of economic value acceptable by the local people has to be executed. In addition to this, the redirections of the Awash River contributes to the rehabilitation of the flood fed dry season grazing areas and solves the problem of water for crop cultivation.

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3. What type of livelihood activities did the member of the household perform to earn food or income in the last 12 months?

No.	Activity	Yes	No
1	Livestock rearing	1	2
2	Crop cultivation(Cash and food)	1	2
3	Sales of grass and fodder	1	2
4	Sales of wood and charcoal	1	2
5	Wage laborer	1	2
6	Trading in livestock	1	2
7	Trading in crops	1	2
8	Government employee	1	2
9	Food preparation and sales of water and other soft drinks	1	2
11	Gadetta making	1	2
13	Blacksmithing or metal work ( like Gille making)	1	2
14	Traditional healer	1	2
15	Traditional birth attendant	1	2
16	Pension	1	2
17	Remittances	1	2
18	Renting out oxen	1	2
19	Renting out camel	1	2
20	Renting out land	1	2
21	Cattle fattening	1	2
22	Selling milk and Yoghurt	1	2
23	Handicraft	1	2
24	Petty trading	1	2
25	Salt production	1	2
26	Preserving hide and skins	1	2
27	Migration	1	2
28	Migration for non pastoral livelihood activities/ Migration for daily labor	1	2
29	Migration for pastoral livelihood activities	1	2
30	Other activities(specify)	1	2

3.1 Out of the above listed activities which one of them is your primary means of livelihood activities for your household.....?

3.2 Out of the above listed activities which one of them is your secondary means of livelihood activities for your household.....?

3.3 Out of the above listed activities which one of them is your tertiary means of livelihood activities for your household.....?

4. What are the main reasons for participating livelihood activities other than pastoralism?

1. Recurrent drought
2. Currently, pastoralism is not viable means of livelihood
3. For additional source of income
4. Degradation of livestock forage
5. Expansion of irrigation farming

6. Is the income from the primary livelihood activities enough for your family? [1. Yes 2. No]

7. If 'no' to question number 6, how do you overcome the deficit (multiple responses are possible)

1. Diversification of the economic activities
2. Kinship support
3. Reduction in consumption
4. Support from Friends (*kattayisa*)
5. Relief assistance
6. Borrowing from traders
7. Others

8. Have you participated in any non pastoral economic activities during the last twelve months? [1. Yes 2. No]

9. If your answer is 'no' to question number 8, what was the main reason for not participating?
1. I didn't need it
  2. Household responsibility
  3. Busy with pastoral activities
  4. Lack of initial capital
  5. Lack of market information
  6. Lack of business skill
  8. Located in far from market
  9. other specify

**Trend in Pastoral Livelihood**

1. In your locality do the local people have permanent camps/ settlement? If yes why?
  - Because of limits imposed on the livestock mobility
  - Because of limits imposed on grazing land
  - Other specify
2. Have you maintained your traditional water points? [1. Yes 2. No]
3. If your answer is 'yes' to question number 2 why?
  1. The water points became dried up
  2. The area that the water points existed overwhelmingly encroached by irrigation farming
  3. As a result of population increment their service is not enough
  4. Other
4. Have you maintained your traditional grazing land /dry season grazing land? [1. Yes 2. No]
5. If your answer is 'yes' to question number 4 why?
  1. Grazing land converted into other use
  2. Conflict with neighboring group
  3. Agricultural expansion
  4. Depletion of pasture
  5. Other
6. What happened to your household when you lost grazing land?
  1. I lost my livestock
  2. I started crop cultivation
  3. I had to move my livestock to distance places
  4. I had to confine livestock close to my village
  5. Other
7. Did you mobile your livestock as you did it before 20/30 years? [1. Yes 2. No]
8. If your answer is 'no' to question number 7, which factors have led to further reduction in livestock mobility? (Multiple responses are possible)
  1. Risk of conflict
  2. Pasture and vegetation decrement
  3. Risk of animal diseases
  4. Expansion of irrigation agriculture
  5. Water points decrement
  6. Other
14. Was the livestock production enough to provide food for your family at that time? [1. Yes 2. No]
16. Is the livestock production enough to provide food for your family now? [1. Yes 2. No]
17. Is the current livestock production less viable than it was in the past? [1. Yes 2. No]
18. If your answer is 'yes' to question number 17, why is the traditional livestock production less viable now?
  1. Environmental change/degradation of pasture
  2. Expansion of irrigation farming
  3. Prolonged drought or severe recurrent
  4. Population increment
  5. Animal epidemics
  6. Other
19. How do you evaluate the viability of animal rearing for future?
  1. Less viable
  2. Remain the same
  3. More viable
  4. It is difficult to predic
20. If your answer is to question number 19 is less viable, why?
  1. Recurrent drought risk
  2. Lack of water
  3. The establishment of commercial farming
  4. Animal raiding
  5. Risk of animal disease
  6. Future lack of pasture
  7. Other
21. Which livelihood system(s) will be viable for your family in the future?
  1. Rearing livestock
  2. Combining animal rearing with crop cultivation
  3. Combine animal production with trading
  4. Trading in animal and other marketable goods
  5. Other specify

**Adaptive responses (Additional activities)**

16. Which activities does your household resort to other than primary livelihood system?
1. Rain fed crop cultivation
  2. Small scale irrigated farm agriculture
  3. Running shops and small restaurant
  4. Wage labor
  5. Trading (out side of livestock)
  6. Trade in livestock
  7. Other specify
17. What are the reasons that led your household to resort to one or more of the above activities?
1. Loss of livestock due to drought
  2. The difficulty to rely on livestock production alone
  3. As an additional source of income
  4. Shrinking/lack of pasture for livestock rearing
  5. Expansion of irrigation agriculture
  6. Other (specify)

**Access and Ownership of Livelihood Resources/Asset**

**3. Access to Land**

4. Does your household own farming plot? [1. Yes 2. No]
5. If yes, how many hectares did you cultivate in the last agricultural season?

Crop type	Size in hectare	Production in quintals
Maize		
Cotton		
Pepper		
Onion		
Tomato		
Other (specify)		

6. How the land is cultivated
1. My self (by one of the household member)
  2. Share cropping
  3. Hiring labor
  4. Rent out
  5. Support from friends
  6. Other specify
7. If you are not cultivate your agricultural land why? (Multiple answer possible)
1. Lack of oxen
  2. Lack of money to buy inputs
  3. Lack of enough man power
  4. Busy in my cattle rearing
  5. Lack of access to land
  6. Other specify.....

**4. Livestock access and holding**

- 1 Did you have access to livestock in the last 12 months? [1. Yes 2. No]
- 2 Number of owned including those which are looked after and those which are parts of owned

Types of livestock	Number	Types of livestock	Number
Camel		Cow	
Oxen		Bull	
Heifer		Calf	
Goat		Donkey	
Sheep			
Others (specify)			

3. In the past 12 months have you lent out livestock? [1. Yes 2. No]
4. If 'yes', is it
1. Free for *Hantilla*
  2. In return for labor
  3. In return for cash
  4. Other
5. In the past 12 months have you borrowed livestock? [1. Yes 2. No]
6. If yes, is it
1. For free
  2. In retune for labor
  3. In return for cash
  4. Other
7. What are the Sources of the fodder in the wet season?
1. Grazing
  2. Trees and leaves
  3. Crop and residues
  4. Others
8. What are the Sources of the fodder in the dry season?
1. Grazing
  2. Trees and leaves
  3. Crop and residues
  4. Cut and carry (grasses, leaves and trees)
  5. Hay
  6. Others
9. Which factors have affected your animal husbandry (multiple responses are possible)
1. Loss of grazing due to bush encroachment
  2. Loss of grazing due to expansion of commercial farming
  3. Recurrent sever drought
  4. Conflict with neighboring clans
  5. Scarcity of water
  6. Livestock diseases
  7. Other

**5. Access to Credit/Finance**

1. Do you have an access to credit? [1. Yes 2. No]  
 2. If your answer is 'yes' to question number 1, from which source did you get credit in the last 12 months?

Source of credit	Amount borrowed	Purpose to use the money
Family/Relatives		1, 2, 3, 4, 5, 6, 7, 8, 9, 10
Money lender		1, 2, 3, 4, 5, 6, 7, 8, 9, 10
Traditional institutions		1, 2, 3, 4, 5, 6, 7, 8, 9, 10
Government institutions		1, 2, 3, 4, 5, 6, 7, 8, 9, 10
NGOs		1, 2, 3, 4, 5, 6, 7, 8, 9, 10
Other(Specify)		1, 2, 3, 4, 5, 6, 7, 8, 9, 10 Codes: 1.to buy food 2.to buy clothes 3.buy other consumption item 4.to buy farming inputs 5.to buy livestock 6.capital to trading 7.for non pastoral businesses 8.education 9.health 10.other(specify)

4. If 'no' to question number 5, what are the reason for not to have credit/finance access? (Multiple response possible)

1. Didn't need credits 2. Fear of debt 3. Too high interest/repayment  
 4. Terms or conditions of credits not good 5. Absent of lending institution /individual  
 6. Other (specify)

**6. Human and Social Capital**

1. Is there any health institution in your locality? [1. Yes 2. No]  
 2. If yes, in how many hours walking distance is the health he service/facility located?  
 1. Less than one hour 3. Two to three hour  
 2. One to two hour 4. Other specify  
 3. Was any member of the household sick in the last 12 months? [1. Yes 2. No]  
 4. If yes, what measure did you take?  
 1. Traditional medicine/treatment 4. Take to hospital  
 2. Take to health post 5. Other (specify)  
 3. Take to health center  
 5. Is there any education institution in your locality? [1. Yes 2. No]  
 6. If yes, in how many hours walking distance is the education center located?  
 1. Less than one hour 4. More than three hours  
 2. One to two hour 5. Other (specify)  
 3. Two to three hour  
 7. Do you send your children to school? [1. Yes 2. No]  
 8. If no why? (Provide the most relevant response to your household)  
 1. they have to keep cattle  
 2. inaccessibility of school  
 3. other(specify)  
 9. If yes, why is it important to educate children? (Multiple responses are possible)  
 1. Educate children help their parents  
 2. Educate children can get jobs in government offices  
 3. Bring skills to farming  
 4. Make it easy for them to pursue livelihood other than pastoralism  
 5. Educate children help their community  
 6. Other (specify)

10. Do the community members support each other during bad and good times?

1. Yes                      2. No

11. If your household had a problem and needed money urgently, would you be able to get it from your community or from your relatives? [1. Yes                      2. No]

12. Have you ever received assistance from your kin in the last 12 months? [1. Yes 2. No]

13. If your answer is 'yes' to question number 12, what was it?

1. Livestock      2. Cash                      3. Food                      4. Other (specify)

15. What is the reason that your household was the beneficiary of the above assistance?

1. Sever food shortage                      3. It is a free distribution  
2. Loss of livestock                              4. Other (specify)

16. In the last 12 months has your household received any of the following types of assistance from anyone outside the household?

Item 15	1. Yes 2. NO	From whom 16	why 17	Where do they live 18
Hantilla (lending milk animal)	1 2	1, 2, 3, 4, 5	1, 2, 3, 4, 5,6	1, 2, 3, 4, 5
Livestock	1 2	1, 2, 3, 4, 5	1, 2, 3, 4, 5,6	1, 2, 3, 4, 5
Cash	1 2	1, 2, 3, 4, 5	1, 2, 3, 4, 5,6	1, 2, 3, 4, 5
Cash loan	1 2	1, 2, 3, 4, 5	1, 2, 3, 4, 5,6	1, 2, 3, 4, 5
Food or grain	1 2	1, 2, 3, 4, 5	1, 2, 3, 4, 5,6	1, 2, 3, 4, 5
Free labor	1 2	1, 2, 3, 4, 5	1, 2, 3, 4, 5,6	1, 2, 3, 4, 5
Free use of oxen	1 2	1, 2, 3, 4, 5	1, 2, 3, 4, 5,6	1, 2, 3, 4, 5
Free use of camel	1 2	1, 2, 3, 4, 5	1, 2, 3, 4, 5,6	1, 2, 3, 4, 5
Other(specify)	1 2	1, 2, 3, 4, 5	1, 2, 3, 4, 5,6	1, 2, 3, 4, 5
		<b>Code:</b> 1. relative or kin 2.own clan members 3.other clan member 4. non Afar friends 5. other specify	<b>Code:</b> 1.food shortage 2.to buy consumer goods 3.for marriage ceremony 4. for funeral ceremony 5.loss of stock 6.other(specify)	<b>Code:</b> 1.Same village 2.Ayisaita 3.logia 4.Djibouti 5. other (specify)

17. In the last 12 months was your family labor adequate for pastoral production?

1. Yes.                      2. No

**Access Physical Capital**

1. Where do people from this village go to buy or sell livestock or other commodities

Market or	Use of market (tick all that apply)				Average travel time From the center	
	buy grain	sells livestock	buy livestock	buy other commodities	On foot	By vehicle
A						
B						
C						
D						

2. How many kilometers away from the center? \_\_\_\_\_

3. How do you describe the type of road in your locality?

1. Gravel road    2. Asphalt road    3. Muddy road    4. Other specify

4. How is the transportation facility in the areas?
  1. Very hard to get transport
  2. There is no problem of transportation facilities in the area to travel out of the woreda
  3. Other specify
5. Do you think the transportation problem in the area (if any) affect the activity of your non-pastoral economic activities [1. Yes 2. No]
6. How did it affect your business?
  1. Delay to reach on time to buy goods for sell
  2. Perishable goods spoil (milk fruit) before delivered to customers
  3. We can't be reliable suppliers in the eyes of our customer
  4. Other specify
7. What is the source of drinking water for your household?
  1. River 2. Protected spring 3. Unprotected spring 4. Pond 5. Wells 6. Other specify
8. How many hours walking distance does this source of drinking water (mentioned above) is located.....
9. What is the source of drinking water for your cattle?
  1. River 2. Protected spring 3. Unprotected spring 4. Pond 5. Wells 6. Other specify

#### **Challenge to livelihood diversification**

1. How do you learn the skill you used for the non-pastoral activities?
  1. From parents [family tradition]
  2. Through working as apprenticeship
  3. From friends (through contact with other)
  4. From government finance training
  5. Own effort 6. From NGO funded training 7. Other specify
2. What are the major requirements to participate in non pastoral economic activities? Please prioritized according to their importance (based on the perception of the non pastoral economic activities operator) rank it from 1-3
  1. Access to finance
  2. Market availability (customers need for goods and services)
  3. Access to work/market places
  4. Availability of business information advisory services and business training
  5. Availability of all weather roads
  6. Availability of transport facilities
  7. Encouraging social net work
  8. Access to business management skill
  9. Access to technical skill (new way of doing things)
3. Have got any training in managing your livelihood (both pastoral and non pastoral) activities? [1. Yes 2. No]
4. If yes, what type of training was that? \_\_\_\_\_
5. Are you applying the lesson you have learnt in the training to your work? [1. Yes 2. No]
6. If no, what was the main reason for not applying the training you have taken to your work?
  1. Need more skill or advice 2. The training is not compatible with my interest
  3. No place for work 4. Shortage of money
  5. Lack of cooperation from other 6. Lack of market information
  7. Lack of confidence 8. Other specify
7. What are the major barriers to the non-pastoral activities? (Multiple responses are possible)
  1. Lack of initial capital
  2. Lack of business awareness
  3. Lack of technical skill
  4. Lack of working place
  5. Fear of being ostracized by others
  6. Lack of market
  7. Lack of input
  8. Poor infrastructure [electricity, telecommunication, roads]
  9. Other (specify)
8. What are your problems in relation to finance?
  1. Lack of access to finance
  2. Cost of finance (interest rate)
  3. Timing of loan distribution
  4. Loan procedure
  5. Money management (proper usage of the money)
  6. Other specify
13. Have you ever been visited by development agents? [1. Yes 2. No]
14. If yes, how many times in the last 12 months
  1. Once 2. Twice 3. Three times 4. Other specify \_\_\_\_\_

15. What kind of support do you get from them?

1. Providing technical assistance

2. Providing management assistance

3. Creating business linkage

4. Linkage to finance institution

5. Other specify

17. Which of the followings are the major challenges to livestock marketing?

No.	Constraints	1. Yes	2. No
1	Long distance to the market center	1	2
2	Unfavorable market condition	1	2
3	Lack of market for stock and their product	1	2
4	Unfair terms of trade	1	2
5	The market is not functional through out the week	1	2
6	Other specify	1	2

What are the major challenges for livelihood diversification? (Multiple responses are possible)

Major challenges for livelihood Diversification	Yes	No
Access to market	1	2
Poor infrastructure availability	1	2
Lack of agricultural equipments	1	2
Frequent drought	1	2
Paucity of veterinary services	1	2
Unavailability of start up capital	1	2
Shortage of water	1	2
Capacity building through training	1	2
Poorly developed education	1	2
Fear of being ostracized by others	1	2

## Appendix: 2

### Checklist for Key Informant Interview

Name \_\_\_\_\_

Age \_\_\_\_\_

Sex \_\_\_\_\_

Marital status \_\_\_\_\_

Household size \_\_\_\_\_

Educational status \_\_\_\_\_

1. Land use type, change and competition, water points, Vegetation cover changes, rainfall pattern, History of the area,

2. The way they recall the major trends (shocks and stresses) over the last decades

3. Perception on various capital and their availability status their dynamism etc

5. Changes in livelihood system time line in historical events

6. Perception on principal constraints and opportunities (shocks or risks to which household are exposed their ability to cope with those shocks and their resilience to future shocks)

8. The availability of alternative livelihood options

14. Perception on drought and erratic rainfall

15. The type and the location of market where household sell or buy their product. what are the main problems the community faced in relation to market?

16. Perception on Awash River from historical point of view. is it accessible now. if not. why? What are the major trends in accessing Awash River from the past to as well as the present?

### Appendix: 3

#### In-depth interview Guide selected household head

Name of the respondents \_\_\_\_\_

Age \_\_\_\_\_

Sex \_\_\_\_\_

Marital status \_\_\_\_\_

Educational background \_\_\_\_\_

Livelihood activities he engaged \_\_\_\_\_

1. How do you describe the trend of pastoralism overtime?
  - The impact of 1984 famine
  - The expansion of irrigation farming
  - Productivity of patoral sector from time to time
2. How do you decide to start non pastoral economic activities?
  - what are the factors pull/push factors to participate in non pastoral economic activities
  - Is there any relation between the success and failure of non-pastoral business with the availability or non-availability of transport facilities
  - What benefit do you get from your non-pastoral livelihood activities please indicate both financial and non financial benefit.
3. Have you engaged in both pastoral and non pastoral livelihood activities at the same time? If yes, describe the income generated from the two activities, what advantages and problem do you see in engaging in non pastoral activities in terms of family welfare? Compare to farming and livestock rearing
4. Do you have enough market access for your product?
  - Market information
  - Storage
  - The Price of pastoral Vs non pastoral commodities
  - Transportation
  - Is the market functional through out the week
  - What kind of commodities the pastoralist take into the market
7. Please indicate the major constraints of non pastoral livelihood activities
  - Lack of access to finance
  - Lack of market and market information(price, storage, and other)
  - Lack of skill in running and managing non-pastoral activities
  - Lack of access to raw materials
  - Lack of government support
8. Do non pastoral activities have negative / Positive effective on pastoral production system?
9. What factors are important or necessary to facilitate diversification to non pastoral activities? (Example. infrastructure, finance etc)

### Appendix: 4

#### In-depth interview Guide (for Women)

Name of the respondents \_\_\_\_\_

Age \_\_\_\_\_

Sex \_\_\_\_\_

Marital status \_\_\_\_\_

Livelihood activities \_\_\_\_\_

2. In which non pastoral livelihood activities do women mostly engaged?
4. What factors encourages or discourages women to involve in non pastoral activities
5. What are the constraints and access barriers that you consider to affect the development non pastoral economic activities in your village?
6. Are you interested more in pastoral or non pastoral activities? Why?
7. Are there any barriers that block the participation of women in non pastoral economic activities? (Gender, cultural, or religious barriers)
10. How effective and useful are they for women to engage in non pastoral activities?

11. Suggestion and recommendations for overcoming problem and constraints associated with non pastoral livelihood activities for women?
12. How do you decide to start non pastoral economic activities?
  - a. what are the factors pull/push factors to participate in non pastoral economic activities
  - b. do you get any support from other concerned bodies
13. Please indicate the major constraints of non pastoral livelihood activities
  - Lack of access to finance
  - Lack of market and market information(price, storage, and other)
  - Lack of skill in running and managing non-pastoral activities
  - Lack of access to raw materials
14. Do non pastoral activities have negative / Positive effective on pastorals production?
20. Suggestion/recommendation for overcoming problem and constraints associated with non pastoral livelihood activities?

#### Appendix: 5

#### Discussion points with Agricultural rural development office experts. General physical environment

1. Areas of the Woreda
2. Agro-climatic pattern
3. Land use type, change and competition.
4. Vegetation cover, soil condition, and rainfall pattern
5. Number of rural and urban kebeles
6. CBOs, NGOs and other civic organization available in the community and their purpose

#### People and culture

7. Population size and related issue
8. Main economic activities
9. Livestock production
10. Main agricultural problems
11. Non pastoral livelihood activities.
12. Vulnerability situation: type and history of distress causes and coping strategies
13. Identify major changes, trends and activities over the last few years (particularly with reference to population and environmental issues)
14. Change in mobility and settlement pattern.
15. Give your opinions about the causes of these changes?
16. What are the barriers/ constraints to non pastoral economic diversification?
17. Suggestion/recommendation for overcoming problem and constraints associated with non pastoral livelihood activities?

#### Prospect for non pastoral livelihood activities

18. What motivates people to diversify their livelihood?
19. What type of non pastoral economic activities have good prospect in this community

**Appendix: 6**  
**Discussion points with DAs**

1. Population,
2. Areas coverage.
3. Agro climate
4. Crop production
5. Livestock rearing
6. DAs collaborations and integration with community administrators
7. Major problems of pastoralist in the community with regards to crop production    livestock raising, use of common property resources
8. Pastoral livelihood activities trends and current situation
9. Vulnerable group to livelihood and food insecurity
10. Academic knowledge
11. Skill and training
12. Psychological readiness to accept pastoralist view
13. Credit facilities
14. Market and transport
15. Modern inputs (improved seeds, chemical fertilizers, pesticides, herbicides)
16. Imposition of government's line office in terms of new technology, modern inputs used and credit /loan availability.

**Appendix: 7**  
**Checklist for Focus Group Discussions**

Name of the FGD participants	Age	sex	Educational status	Livelihood activities

1. What are the main types of non pastoral livelihood activities in Gewane Woreda?
2. Why do people enter into the non-pastoral livelihood activities?
3. Discuss the major changes observed in the locality regarding pastoral/ non- pastoral activities through time?
4. What are the roles of non pastoral livelihood in the livelihood system of the population? And in alleviating the problem of poverty in general?
5. What are the major trends of the pastoral livelihood productivity and cattle possessions?
6. Does the culture of the society encourage/discourage the participation of the people out side of pastoral economic activities?
  - i. Is craft making a taboo?
  - ii. Is metal work a taboo?
7. What are the major constraints for crop production?
8. What are the major constraints for livestock rearing?
9. What are the major constraints for other non pastoral economic activities?
10. Discuss the major challenges the non pastoral operators faced in the community?
11. What are the linkages between pastoral and non pastoral economic activities?
12. How do people participate in non pastoral economic activities? Do they undertake in parallel to their farming activities or as a sole activity in income generating means why do people enter into the non pastoral livelihood activities?
13. History of the area landscape and, settlement
14. Disaster type and history (drought, flooding, pests, animal diseases)
15. Land resources changes Vegetation soil water use and distribution
16. Perception on various capital and their availability status their dynamism etc
17. Perception on principal constraints and opportunities (shocks or risks to which household are exposed their ability to cope with those shocks and their resilience to future shocks)

**Access to natural capital**

- A. Main problem of pastoral practices
- B. Land conservation and land management
- C. Sources and access to water for human and livestock use and the associated problem
- D. Access to natural vegetation and pasture and perception towards deforestation and its status in the past and the present
- E. Problem associated with the exploitation of natural vegetation and pasture
- F. Perception towards resource use conflict (on water resource, grazing land)
- G. Perception towards the recurrent drought and erratic rainfall

**Financial capital**

- ❖ saving, credit, remittances, pension,
- ❖ Livestock possession

**Social Capital (social relation, networking and institutional process)**

- ⊕ Institutions operating in the community
- ⊕ Participation in informal institution
- ⊕ Networks
- ⊕ Membership in groups

- ↓ Social relations and access to wider institutions
- ↓ The level of trust and shared norms that exist in the community to reduce risks,

**Human capital**

- Skills
- Knowledge
- Health
- The ability to labor

**Physical capital (availability and access to rural infrastructures)**

- Availability of basic infrastructures
- Example: - transport, potable water sources, schools, health centers, communication, credit, irrigation work, veterinary services, market place.

**Livelihood strategies**

- Pastoral livelihood
- diversifications
- Migration

**Outcomes**

Access to food, health care, education, habitat, social network participation, Mobility curtailments, new type of mobility, and settlement pattern

**Appendix: 8**

**Coefficients for converting livestock asset into TLU**

Animal type	TLU	
ox	1	
cow	1	
heifer	0.6	
Bull young	0.6	
calf	0.1	
camel	1.43	
horse	0.8	
mule	0.7	
donkey	0.5	
goat	0.1	
sheep	0.1	
chicken	0.01	
coefficient for converting household labor into standard labor unit Adult equivalent		
Age group	Male	Female
Less than 8	0	0
8 to 14	0.5	0.5
15 to 65	1	0.7
66 to 75	0.5	0.35
above 75	0	0

Source: Workneh: 2006

## Declaration

I, the undersigned, declare that the thesis is my original work, has not been presented for a degree in any other university and that all sources of material used for the thesis have been duly acknowledged.

Declared by:

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