Research Study on Livelihoods Systems in Zone Four of Afar National Regional State

Livelihood Situation Assessment

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2014

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List of Acronyms

ANRS Afar National Regional State
APDA Afar Pastoralist Development Association
AU African Union
BFED Bureau of Finance and Economic Development (of ANRS)
FDRE Federal Democratic Republic Of Ethiopia
FGD Focus Group Discussion
GIZ Gesselschaft für International Zussamenarbeit (German Development Cooperation)
KII Key Informat Interview
PASDEP Plan for Accelerated and Sustained Development to End poverty
PCDP Pastoral Community Development Project
PSNP Productive Safety Net Programme
RDPS Rural Development Policies and Strategies
SSD Support for Sustainable Development
WB World Bank

i. Executive Summary

This report documents the findings of a livelihoods assessment carried out in Zone Four of Afar region as part of ***GIZ's*** *program to* ***Strengthening Drought Resilience of the Pastoral and Agro-pastoral Population in the Lowlands of Ethiopia.***

With an overall objective of informing development intervention, the study set out to pinpoint the major opportunities and constraints to production and livelihoods in the study area and to explore what productive resources are currently available and how these are being utilized. It also probes recent events and longer-term trends with the objective of capturing how these might have an influence on production and livelihoods. In addition, it captures the current utilization of different products and services from the perspective of the local pastoral communities of the two Woredas. The study also set out to comprehend perceptions of wealth and its dynamics and find out the proportion of study participants belonging to different wealth categories.

The major part of this study was conducted during the last quarter of 2013 in four kebeles of Awra and Ewa Woredas of Zone Four. Focus groups were carried out in the selected four Kebeles using semi-structured interviews complemented by participatory exercises including community mapping, timelines and ranking and scoring exercises. The study also included key informant interviews as well as household surveys.

The assessment results point to a number of recent events and trends that are having an impact on livelihoods. Rangeland degradation continues to have a negative impact on livelihood and food security.

Poverty is also deep and widespread in the study areas and manifests itself in different ways. It seems as though poverty is increasing at least when defined in terms of livestock possession. It has been found out that more people have fewer livestock than they did in the past and this has had a major impact on income and food security for the majority of people.

The decline of livestock assets may in part be due to dwindling rangeland resources in the region. However, disease related livestock mortality together with frequent drought have contributed to gradual decline of livestock holding.

The gradual decline in livestock assets has also contributed to another longer-term trend of people exiting pastoralism and becoming increasingly dependent on external assistance and crop production. Although this trend is not unique to Awra and Ewa Woredas, it could have major implications on poverty and food security as the expansion of crop cultivation could also potentially undermine the livestock sector which currently represents the greatest economic potential for the region.

Challenges to production and economic activities in the area include drought and rain failure, livestock disease, rangeland degradation, pest infestation and conflict. The absence of basic inputs and services together with poor and limited infrastructure, particularly roads, also undermine the economic potential of the area. Misguided development policies along with government neglect and poorly conceived interventions have and may well continue to restrain economic growth in the area.

However, the study area has considerable natural resources and economic potential. As mentioned, the potential of the livestock sector is largely untapped and could be an engine of local economic growth and social development. The expansion of the livestock sector is, however, contingent on sustainable rangeland utilization and herd growth that can be achieved through proper natural resource management and investments in animal health. Pro-livestock development policies are also much needed and possibly the best way to advocate for these would be to raise awareness of the commercial benefits of transhumant livestock production.

There is also possibility for supporting the cultivation of crops along the perennial rivers of the study areas. These include cereals, pulses, fruit trees, vegetables and even fodder production. Aside from the problem of flash flood, crop production is currently constrained by the lack of seeds, tools, fertilizer and draft animals. Improved access, availability and quality of these products and services along with agricultural loans, extension services and crop insurance would all help to improve this sector.

However, any project to encourage crop production in some of the villages at the expense of livestock production should not be recommended. To do so would be not only risky from a livelihoods perspective, but it also has limited economic potential in these areas.

One of the greatest development challenges for the communities in the study area will be to identify and promote alternative income earning opportunities for people outside of crop and livestock production. Although these activities will continue to be a mainstay of the local economy, people will continue to exit pastoralism and dependency on crop production could not absorb all who are exiting pastoralism. However, not everyone is an entrepreneur and there is no blueprint for creating tens of thousands of jobs in this context. At present, there are few employment opportunities other than temporary casual labor work. . This partly has to do with the fact that other sectors are underdeveloped and even so the Afar pastoralists do not have the necessary skills to take advantage of these. Nonetheless, opportunities exist to develop certain sectors and build people's capacity to exploit these. For instance, Kebeles like Hidelu are endowed with wild plants that produce gum which has significant economic potential. Identification of buyers and markets for this product and the development of supply chains and value addition could help promote this sector. Honey is another product that could potentially be expanded.

The growth of town centers and villages in the study areas is an ongoing trend that represents both opportunities and threats to livelihoods. On the one hand, this trend will create employment and income earning opportunities with the increase in demand for agricultural and livestock products as well as bush products and building materials. It will also create employment opportunities in the retail, service and construction sectors and increases the ties between highland farmers and pastoralists. If the Afar communities are to take advantage and benefit from this trend, there should be investments in education, adult literacy, business skills and financial literacy. The establishment of small local industries with the intention of value addition and processing agriculture products, meat, dairy and leather, could help the creation of jobs and business opportunities for the local community.

However, the growth of these towns will also fuel the demand for firewood and charcoal, and the exploitation of these will ultimately undermine the natural resource base without any significant economic returns for the local population. The promotion of alternative fuel sources will be critical if the natural resource base is to be preserved.

Finally, what the study Woredas need most is for the status of the natural resource base to be improved along with a responsible long-term development strategy and improved infrastructure and services. If the natural resources of the study areas are improved and well managed and investments in development, infrastructure and services continue, this in turn will encourage communities to protect and manage their environment. In this context of interdependence among the natural environment, local communities and development interventions, the Woredas have significant livelihoods opportunities and economic potential.

1. General Introduction and Objectives

The Afar are a Cushitic speaking people living in the arid and semi-arid areas of Ethiopia, Eritrea and Djibouti. The Afar are classified into two distinct decent groups: the Asaimara ("Red") and Adaimara ("White"). The former are considered a nobility group, while the latter are said to form the class of the commoners (Lewis 1969). Historically, their economy was based on multispecies livestock husbandry. But with increased vulnerability to drought and famine, they now depend mainly on camel and goat pastoralism.

Pastoralists in Afar region in general and in the study areas in particular have been affected by manmade and natural disasters over the years and drought is a frequent phenomenon in the history of the community. The region in general is one of the least-developed. More than half of the 1.4 million inhabitants live below the absolute poverty line (ANRS BFED 2009). As the region has a dry climate and is not well endowed with natural resources, semi-nomadic pastoralism is the source of livelihood for the majority of the population. However, what is fundamentally adaptive and resilient economic system is now coming under increasing pressure. The resilience of pastoralists in the Afar region of Ethiopia has been increasingly challenged by the concurrence of various ecological and socio-political changes within the last 50 years (Getachew 2001 Rettberg 2010). Weak institutional capacities of the regional government of Afar to implement as well as the development strategies and policies that have been adopted so far are hardly able to cater to the special needs of a semi-nomadic way of life in the semi-arid region.

In recent years, building the resilience of pastoralists has been considered as a remedy to the old styles of doing development. However, as any other development buzz-word, there is no clear consensus as to what resilience mean and how it is built or re-build. The notion of resilience has been analyzed from different disciplinary vantage points, and any discussion of resilience needs to acknowledge the subjective nature of the term. One approach in framing resilience comes from the social-ecological perspective. This approach, however, has come under criticism for not considering the human system adequately. Social scientists have felt particularly uncomfortable with notion of linearity and 'measurable' resilience responses assumed to be equally present in both social and ecological systems (Folke 2006). In other words, it is not sure whether resilient ecosystems enable resilient communities (Adger, 2000: 347).

Accordingly, social resilience is defined as "the ability of groups or communities to cope with external stresses and disturbances as a result of social, political and environmental change" (Adger, 2000: 347). The notion of social resilience, therefore, captures the way communities develop adaptive capacity to respond to endogenous disturbances or exogenous threats (e.g. drought, flood). Furthermore, scholars argue that in an attempt to understand human-environment interactions, attention to power relations, politics and culture should also be at the center of resilience approach.

In line with the social resilience literature that urges us to focus on broader socio-political changes, the losses of critical grazing and watering points and the resultant decline of pastoral resilience have their roots in development interventions that have visited the region in the early 1960s. These processes have increased the vulnerability of pastoralist households to drought and thereby rendering them food insecure over the years (Getachew 2001; Rettberg 2010; Müller-Mahn, et al. 2010). Although the ever increasingly unpredictable climate variation manifested in the form of distorted rainfall patterns are the immediate causes

of chronic and acute vulnerability to food insecurity, it is also equally important to bear in mind the underlining political, social and economic forces as root causes for the loss of pastoralists' resilience. Besides, the ever increasing population pressure and land degradation also exacerbated the problem of food insecurity and thereby erode the practice of pastoralism in the study areas.

Accordingly, one can argue that the present 'context of vulnerability' is the result of combined long term process of social and ecological forces that directly and indirectly influenced the livelihood strategies pursued by the Afar community with a particular outcome. Hence, improving the capacity of pastoral communities to respond to and building their resilience to climate change needs to follow a holistic consideration of various factors to respond to drought in a timely manner. The notion of social resilience, in this regard, can be viewed as both an outcome especially when linked with adaptive capacity of communities, and a process linked to dynamic changes over time associated with community learning and the willingness of communities to take responsibility and control of their development pathways (Chaskin 2008). Here, one has to also bear in mind that community resilience and vulnerability can best be conceptualized on the basis of how well different capitals are developed in a community, particularly the three key arenas of economic, social and environmental capital as shown in the table below (Adger 2000; Magis 2010). Within the broader vulnerability contexts and policy frameworks, pastoral communities have practiced their everyday livelihood activities by combining different assets together. These activities in turn may strengthens or weaken the asset of pastoralists with the consequence of better resilience or increase vulnerability (see the conceptual framework below).

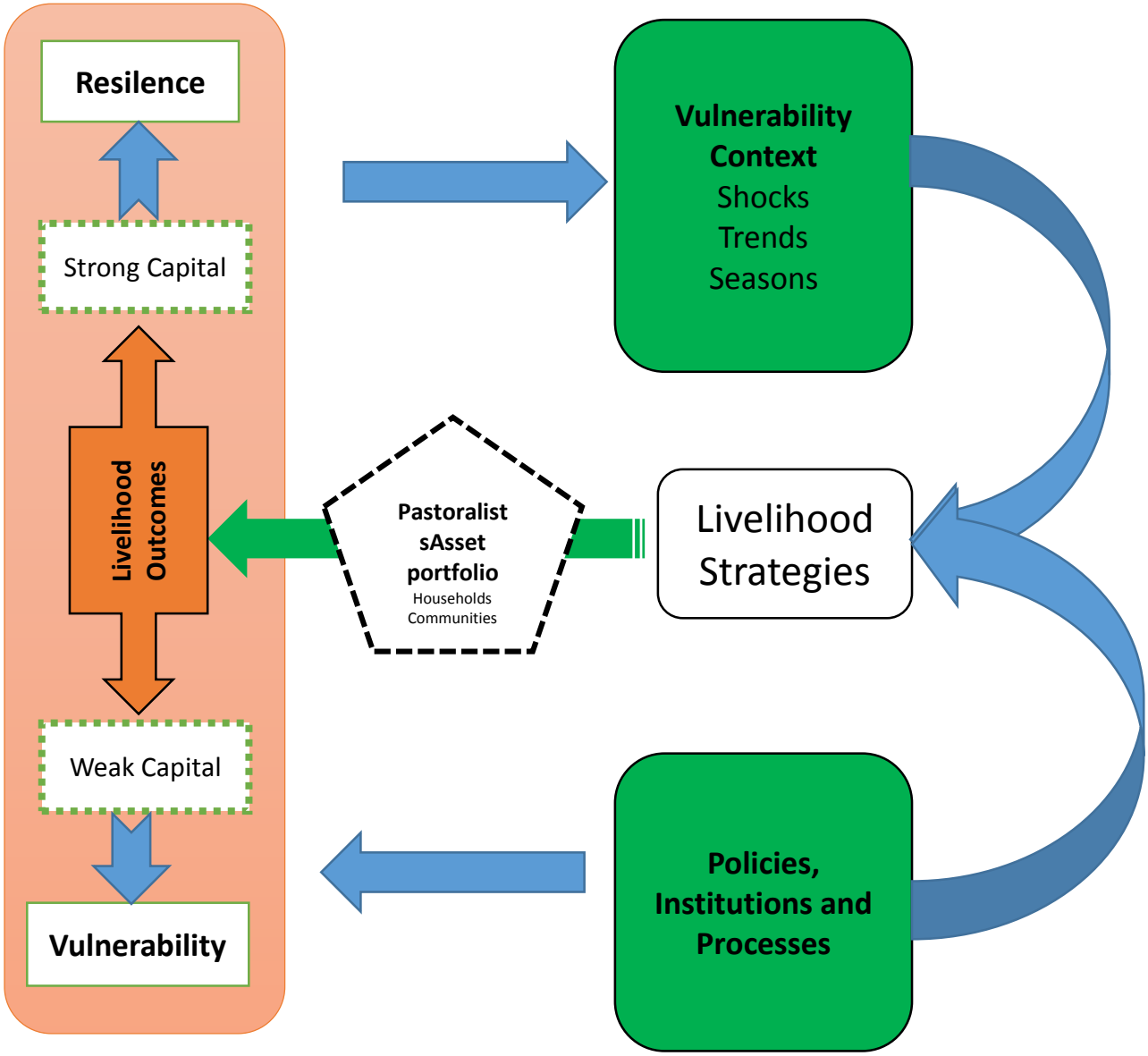
Table 1:-Possible Indicators of community resilience in pastoral context

Community Resilience	Strong Capital	Weak Capital
Environmental Capital	High levels of biodiversity Good water quality and availability Good pasture and fodder conditions Sustainable management of environmental resources	Degradation of land/desertification Invasive plants Poor water quality and availability
Social Capital	Ability to rely on other members of the community in times of crisis Close interaction between people Availability of skills training and education Good health and sanitation Availability of multiple services Good communication between stakeholder groups Empowerment of women Ability to accept change (open-mindedness) Good and transparent land ownership regulations (control over means of production) Stakeholders in control of development trajectories Strong governance structures at multiple geographical scales (democratic participation)	Lack of community leadership Mistrust and suspicion Lack of control over destiny of community Low life expectancy Poor communication between stakeholders Gender-based lack of decision/Female dependency Weak land ownership patterns General dissatisfaction with community pathways

Economic Capital	Diversified livelihood activities (income sources) Low dependency on external funds (aid programs)	Over dependency on primary production Poor infrastructure High dependency on external funding (aid)

Source: Based on Smith and Wandel 2006

Figure 1:- Conceptual framework of the Livelihood System baseline study



Objectives of the study

This conceptual background informs the following sections which present the results of a livelihoods situation assessment among pastoralists in Awra and Ewa Woredas of ANRS. This study was commissioned by GIZ in order to understand asset levels and livelihood strategies in a particular year which can provide a context for assessing future livelihood changes. Issues researched focused on:

- Major shocks, trends and seasons that influenced livelihood dynamics
- Major household assets and livelihood strategies
- Policies, institutions and processes that directly or indirectly impact livelihoods
- Perception of key challenges in pursuing their livelihoods

Based on this the following research questions were identified:

- ❖ What trends and events have or are likely to have an impact on the pastoralists' production and livelihood activities?
- ❖ What are the major constraints to livelihood activities in the selected study areas?
- ❖ What resources and opportunities exist in the program area?
- ❖ What access do the pastoralists have to productive resources and services?
- ❖ What interventions might improve livelihood activities for the different households in the area?

2. Study Area Description

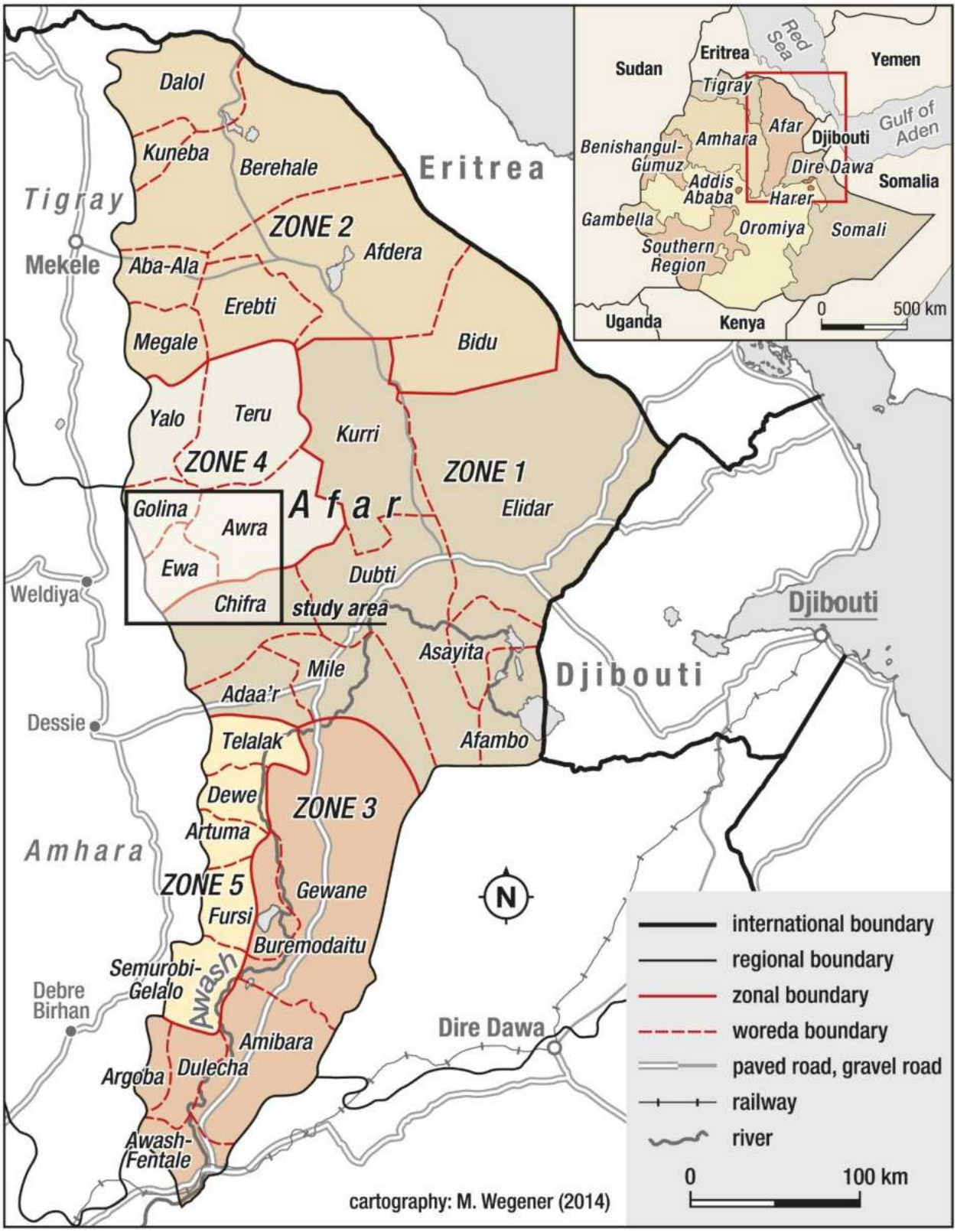
The two study Woredas (Awra and Ewa) are located in Zone 4 of Afar regional state. Ewa and Awra Woredas are among the 32 districts of Afar National Regional state that are located in the south western part of the region (see the map below). The Ewa District shares borders with Awra District (in the east), Amhara region (in the west), Chifra District (in the south) and Dubti District (North east).

The two permanent rivers in the Woreda are Awra and Ewa Rivers. Seasonal rivers such as Hida, Mokoli and Deraytu cut across the two Woredas. There are three rainy seasons; *Karma* (July-Aug-Sept); *Sugum* (March-April) and *Didaa* (December). The *Karma* is the main rainy season. The major sources of livelihood activity in Awra and Ewa Woredas are livestock rearing. The majority of the households within the study areas (i.e Hidda and Hidelu in Awra and Badoli-1 and Buti in Ewa)[1] keep camel, goats, sheep and cattle. However, along the two permanent rivers (Awra and Ewa) crop production is also practiced by some households.

Ewa District is situated at a distance of 193 km from the Regional capital, Semera. Located in the Lower Awash Sub-basin, Ewa is considered to have greater economic potential than other *woredas* due to a higher presence of valuable natural resources (ANRS 2012). The District capital-Alele Subla town is situated in Bolotomo kebele on the way that links the Awra District with Chifra. Ewa Woreda has 10 rural and 1 town kebeles with total area coverage of 123,700 ha in size (ANRS Ewa Woreda 2011). The population of Ewa Woreda is 47,195 (CSA 2007). Existing kebeles in the district are Bolotomo, Bilu, Buti, Andegna Badole, Huletegna Badole, Kofoburur, Duba, Regden, Fialo and Burqa. Bilu and Badole are the nearest and Burqa is the distant Kebeles. The Woreda capital, Alele Subula, serves as an administrative and government service center.

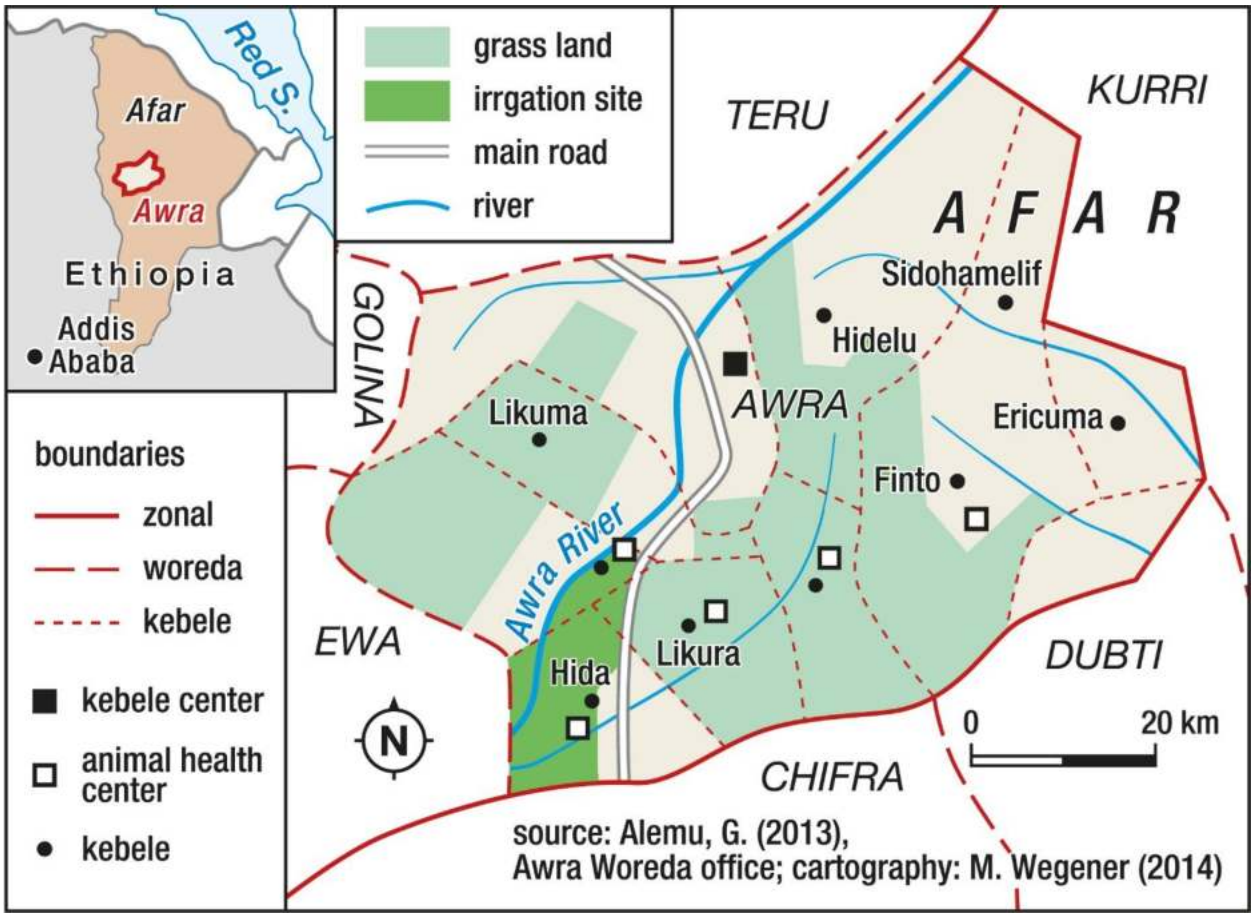
[1] The location of Hida Kebele town center is N 11˚ 55’ 53.6” E 039° 59’ 00.4” at an altitude of 948m whereas Hidelu kebele around Layde locality is located at N 12° 9’ 34.4” E 040° 14’ 26.7” at an altitude of 772m. Whereas the location of Badoli-1 in Ewa Woreda is N 11° 51’ 24.6” E 039° 57’ 18.1” at an altitude of 1012m and Buti Kebele around Habule Mari locality is located at N 11° 50’ 16.1” E 039° 58’ 53” at an altitude of 968m.

Figure 2:- Location of Awra and Ewa Woredas in zone 4 of ANRS



On the other hand, the adjacent Awra Woreda is composed of four agro-pastoralist *kebeles* and six pastoralist *kebeles*, and is 309,600 hectares (ANRS Awra Woreda 2011). The Woreda has a total population of 35,753 (CSA 2007). Awra Woreda is serviced by one of the sub-basin's key perennial rivers, Awra River, which originates in the Amhara region as well as various seasonal rivers in each *kebele*. Located in the Teru sub-basin, it is heavily affected by wind and soil erosion (splash, sheet, rill, and gulley) as well as by flash floods originating in the highlands of Tigray and Amhara regions resulting in stream bank or roadside erosion (Technical Report: Land Degradation Assessment 2011). In Awra, the agro-pastoralist *kebele* of Hida and the pastoralist *kebele* of Hiddalu were selected (see study area map below). Hida has a population of 8,438 whereas Hiddalu has 2,485 inhabitants (Awra Woreda ANRS 2011). Both *kebeles* are serviced by the perennial Awra River and seasonal rivers.

Figure 3:- Map of Awra Woreda showing the different Kebeles with grass land and irrigation sites



Livestock production is the main livelihood activity in the remotest and/or driest parts of the two Woredas. The larger parts of the pastoralists Kebeles are located in remote areas and are served only by small trading centers. Basic social services and infrastructure such as roads are poorly developed. Most parts of the Kebeles have little physical access to major markets and wage labor opportunities.

On top of this Awra and Ewa Woredas also comprise the most important grazing sites in Zone-IV of Afar. The two study Woredas are bordered by the highly elevated areas of Yalo, Megale, & Golina which are adjacent to the Amhara and Tigray highlands. The altitude in these adjacent Woredas is over 800m above sea-level that also influences availability of pasture and movement patterns for the study sites. Seasonal rivers such as Fokissa and Deraytu emerge from Amhara region and cut across these Woredas (BFED 2009).

Patterns of temperature and precipitation

The climate of the study area is semi-arid and arid, with the aridity increasing from west to east. Temperature ranges moderately between 20° and 35° Celsius (BFED 2009). The hottest months of the year are May, June and July. Both Woredas receive their main rain during the months of June to September and the two short rainy seasons in December and from March to April. However, the informants from the study areas mentioned that it has been long time since the *Dadaa* rain stopped and both the *Suguum* and *Karma* rains become increasingly unpredictable and irregular. As you go further to the north-eastern parts of the two Woredas the amount of rainfall decreases.

Natural resources and vegetation

In comparison to other Woredas of Afar the two study Woredas comprise abundant water resources which is mainly due to their location close to the highlands. Water sources comprise the permanent rivers of Ewa and Awra, seasonal rivers that emerge during the rainy season, spring water and well water. In Awra Woreda, for instance, the key informants mentioned that *Hira* is spring water considered as a very valuable source of water for both human and livestock.

Awra Woreda has also several deep wells as a source of water (see Table 1 in the Appendix). Kebeles like Finto-Asela, Urikumam, Sidoha Malif, Hedelu and Debal use wells as sources of water. There are three wells in Finto/Asela Kebele (namely Finto well, Asela well and Sulu well). In Sidoha Malif kebele there are wells known as Ur Ela, Sheka Ela and Bodo. Bodo is a natural water catchment that is deep and it reserves significant volume of water for a good part of the year. Uri Komam Kebele, the remotest Kebele in Awra Woreda, uses Ur Ela well located in Sidoha Malif Kebele. The major vegetation cover of the District is closely related to patterns of rainfall and temperature, with variations in soil and drainage factors. The vegetation cover of the Ewa woreda exhibits different features. The dominant vegetation cover types are grass land, scrubland, riverine forest, exposed soil, sand and exposed rock. About 58% of the Woreda is scrubland, 17% grassland, 8% exposed rock and 6 % exposed soils and sand. Most part of the Woreda is characterized by plain topography. There are wet period grazing and dry time grazing lands. As part of the Teru-Basin, Awra woreda is also endowed with a vast plain grazing area called *Begaraba* where herders from Hidelu, Urikumam, Sidohamelif and Finto Kebele meet to graze their livestock. According to the key informants, these

vast grazing areas used to have the capacity of holding camels and cattle for 5 and 3 consecutive days respectively.

Social service

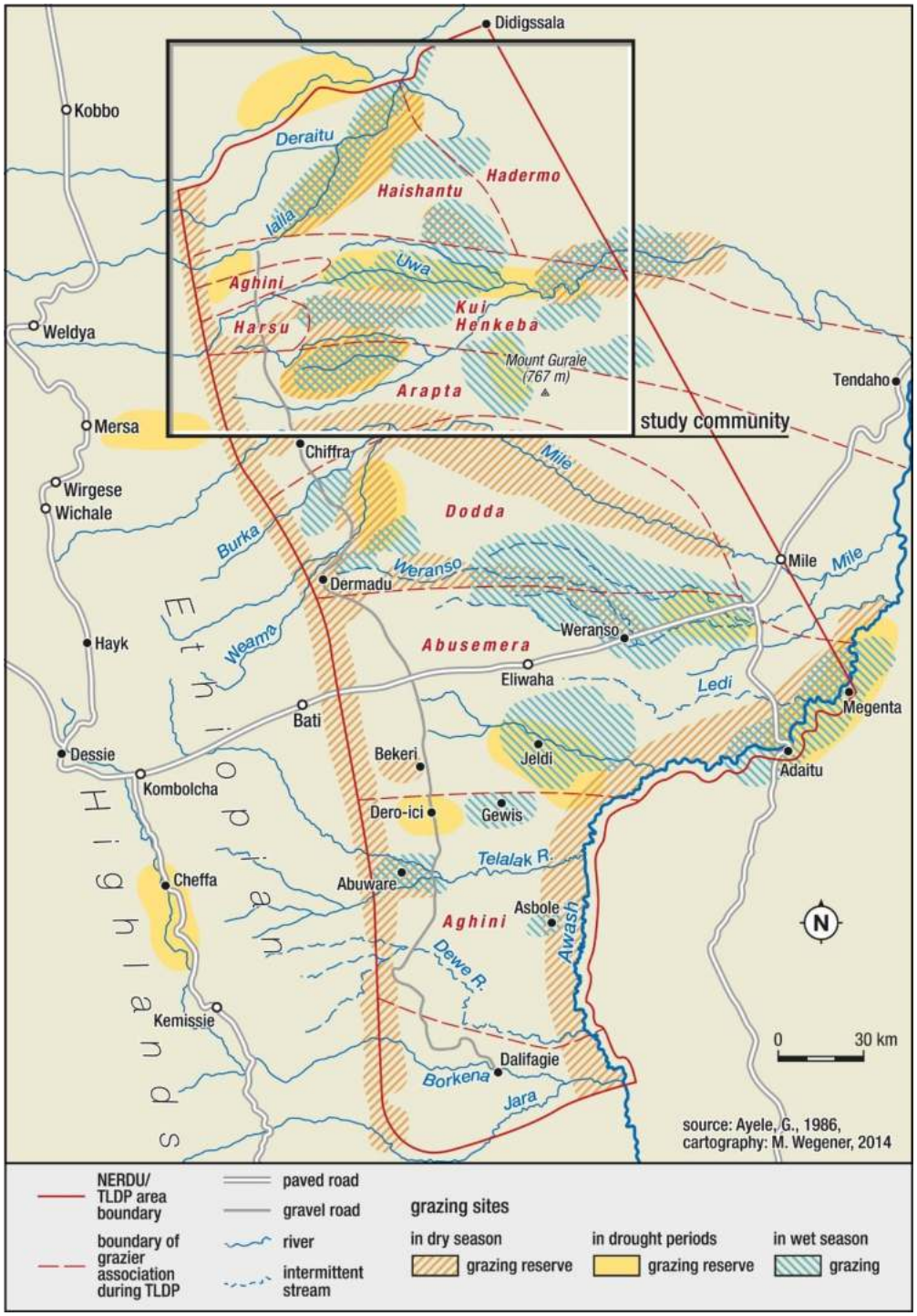
The two woredas are connected to the main Chifra-Woldia route by gravel road. The adjacent woredas bordering Amhara region can also be reached through Awra and Ewa Woredas by gravel roads. During the wet season, floods and seasonal rivers flowing from Amhara and Tigray disrupt transport services. The poor condition of road infrastructure combined with the absence of transport services often leads to extreme food shortages and seasonal price fluctuations. Except the remotest settlement sites of Ericumam, Hidelu, and Sidohamelif, most of the villages in Awra and Ewa Woredas have access to telecommunication service (i.e. mobile coverage). The pastoralists benefit from the use of mobile phones in communicating information on rainfall, pasture and water availability, migration, marketing of livestock/livestock products and security surveillance. This is a major improvement in communication for the pastoralists, who have traditionally depended on sending scouts as a way to communicate and get information. Furthermore, there is regular and alternative education coverage at elementary level throughout the Kebeles in Awra woreda. Beside the government effort to reach pastoralists with education facilities APDA is also playing greater role in producing teaching materials in Afar language and reaching remote areas through its community workers. However, parents are obliged to send their children to farther places such as logia if their children have to continue their high school study. There are a total of 7 health posts and only 2 clinics located in Awra woreda for a population of more than 35,000. Furthermore, during the focus group discussions it has been mentioned that the available health posts are also ill-equipped with the appropriate facilities to provide services to the people. So during serious illness and complexion residents of Awra Woreda are obliged to travel to distant places where they can find better treatment that costs them a lot. There are animal health posts in eight of the above ten Kebeles as well. However, Uri Kumam and Sidoha Malif Kebeles have neither human nor animal health facilities.

Social Organization and Settlement

Like many other pastoral groups in Ethiopia, the Afar pastoralists in the two study woredas organize their livelihood activities and geographical locations along clan lines. For instance, in Awra woreda, it has been observed that within each Kebele there is one dominant clan that literally administers the social affair of households within its geographic boundary through the clan leader (*Kedo Aba*). The clan leader is responsible for any social, economic and political matters of its clan. The clan leader makes decisions on matters like settlement of disputes within his clan, use and management of rangeland, water and other natural resources and conflict resolutions. Even though the political administration exists till Kebele level, the power vested upon the clan leaders is still significant and they serve as advisors for political leaders at various level of the regional government (see Table 2 & 3 in Appendix 1 for the dominant clan types in each Kebele of the two Woredas). However, here one has to be careful not to generalize that these clans are the only one residing in the Kebele and the extent and sphere of influence of the dominant clan over other clans residing in the Woredas. It is beyond the scope of this baseline study to map out the territorial influence of particular clans and how it has evolved over the years and the implication it has for social organization and resource

management and control. However, it is important to bear in mind the clan based social organization of the Afar community in any development intervention in the area. For instance, the following map shows the territorial positions of the major clans in earlier times.

Figure 4:- The major clans and their territory in the past and the different grazing areas



3. Methodological Approach

This study was conducted with the objective of carrying out a situational livelihoods analysis about the livelihood activities of Afar pastoralists in Awra and Ewa Woredas that will be used in guiding GIZ's project implementation in the area using mainly qualitative approach. The study included a total of 16 Focus Group Discussions (FGD) in the four selected Kebeles. The FGDs were used to assess people's access to resources and services; to investigate inequality and wealth distribution; and to assess the impact of recent events and trends. This component of the study used a checklist structured around a set of standardized participatory methods that was developed in a gender sensitive manner. The study included a number of Key Informant Interviews (KII) with community leaders, Woreda administrators and experts.

Scope of the study

As a snap-shot livelihood assessment this study concentrated only in four kebeles of Awra and Ewa Woredas of Zone four. In general it relies on qualitative data generated through interviews and focus group discussions. Though only the four kebeles are selected with an aim of representing different livelihood activities, there might be specific peculiarities in each Kebele depending on the character of each and every households residing in the respective kebeles. Furthermore, during the research process equal time was not allocated to each selected Kebeles. Rather, emphasis was given to Hidelu and Hidda kebeles of Awra Woreda in an attempt to have an emic perspective and based on this Badoli-1 and Buti has been handled from an epic perspective that relies on less participant observation and engagement with the community. Accordingly, we have stayed among the community in Hidelu and Hida Kebeles and hosted by the pastoralists themselves for few days. This has helped us to enrich our understanding on the various aspects of livelihoods practiced within these communities. In general, we have managed to observe similarities among the four Kebeles despite their differences in physical location. The general picture has also been reflected in the household survey that was conducted to corroborate the qualitative study. In the first round of the brief visit, the four study kebeles were purposively selected based on the following criteria:-

- Accessibility by road and the availability of substantial number of settlements, and
- The type of livelihood activities practiced by the communities (Hidelu and Buti exclusively pastoralists whereas in Hida and Badoli-1 crop cultivation is also practiced supplementary to livestock rearing)

However, the two Kebeles in Ewa Woreda have been selected only to cross check and verify the information gathered in Awra Woreda. Accordingly, major emphasis during the field research was given to Hidelu and Hida Kebeles in Awra woreda compared to Badoli-1 and Buti Kebeles in Ewa Woreda.

The major part of the field research was conducted at various stages in the month of October and November 2013. During this period qualitative and participatory tools were utilized to better understand the specific livelihood context of the study sites. Both primary and secondary data were used in this study. A combination of different techniques was applied in collection of the data required to analyse the livelihood situations. Participatory Rural Appraisal (PRA) tools, Focused Group discussion (FGD), Key Informant Interview (KII) and visual observation were used to collect primary data. Secondary data were also collected from different district offices. In addition, relevant literature and documents were reviewed to provide theoretical

background. Accordingly, both informal conversations and interviews were conducted with individuals residing in the four selected Kebeles. The key informants identified for this study were elders, Woreda and Kebele administrators, and various experts at the Woreda level who have a better understanding of the community.

Photo 1:- Key Informant Interview

Photo Girum (2013)

In selecting respondents for the interviews (community representatives) and focus group discussions (wealth group representatives), a gender-sensitive approach was adopted. Key information gathered focusing on household assets and strategies, sources of food, income sources; livelihood hazards and coping strategies; seasonality; livestock herd dynamics; and other relevant information.

Semi structured interviews were used as the primary data collection tool. These were structured around a set of standardized participatory exercises including community mapping, timelines and participatory ranking and scoring methods. The timeline was used to identify trends and events and the mapping exercises were used to identify community resources, services, and human and livestock mobility. A comprehensive checklist was used during these exercises although not every question was necessarily asked or answered. This included a set of questions on production and livelihoods, access and utilization of services, and livelihoods shocks and events.

A participatory wealth ranking exercise was used to establish the proportion of households belonging to different wealth categories. During a pre-testing exercise participants were asked to classify the community into different wealth categories. They felt comfortable with the three categories i.e. better off, middle and poor so these classifications were used across all study villages. During each focus group, participants were asked to identify characteristics for each wealth category. Once consensus had been reached on which characteristics (indicators) applied to each category, volunteers were asked to estimate what proportion of their community belonged to each wealth category using proportional piling with 100 small stones. Furthermore, household survey was conducted in order to corroborate the livelihood situational analysis and get some basic information on the various activities of the people in the study area. A snowball sampling technique was used in order to find all the 120 households in the four purposively selected kebeles.

Photo 2:- Focus group discussion

Photo (Girum, 2013)

4. Changing Contexts: Policy, Institutional and the Physical Environment

4.1 The general policy context

The livelihood of the Afar pastoralists in the study community operates within general socio-political and environmental conditions collectively called vulnerability contexts. These contexts have very far reaching consequences for the type of livelihoods presently practiced by the various groups in the study community. Understanding of resilience at community level requires an understanding of the wider policy and institutional frame within which the locals operate. In addition to ecologically related exogenous sources of change, the macro-structural policy and power structures determine the current livelihood pathways followed by rural people.

The Afar pastoral and agro-pastoral communities in the two study Woredas are part and parcel of the entire pastoral system in the region and changes that have occurred in the past decades also impacted the type of livelihood practiced by households in the study areas directly or indirectly. These processes of institutional and policy changes have their roots in the middle of the 20th century with the arrival of large scale commercialized farms into Afar. In the following section, we briefly revise the major development policies and strategies of the government in order to shed light on how this is related with livelihood activities on the ground.

Pastoralists in the government's eye: A brief review of policies and Strategies

The Ethiopian government's policy for pastoralist areas is not formulated in one clear document or law but in many different papers and strategies. The Rural Development Policies and Strategies (RDPS) paper of 2001 contains the government's policies and strategies for rural development. Though much of the paper focuses on crop cultivation, it also has policies on pastoralist development. The short and medium term strategies focus on reducing pastoralist mobility.

The RDPS notes that development activities must match pastoralists' needs. It highlights the need to improve livestock development and prevent natural resource degradation. Rangeland management and conservation based on traditional management systems is recommended as a way of improving the availability of water. It also recommends a wide range of other activities be made in cooperation with pastoralist clan leaders and elected representatives. In general, the RDPS acknowledges the wide range of traditional livestock husbandry knowledge among pastoralists. To this end the policy recommends:

(i) Preparation of a package that can strengthen people's knowledge of livestock husbandry;
(ii) training extension workers and provision of extension services focusing on the indigenous knowledge,
(iii) provision of veterinary and livestock development extension services which go well with pastoralists' mobility;
(iv) Creation of an efficient livestock marketing system that can make pastoral systems market-oriented (FDRE, 2002a:141-142).

In the long-term, however, the RDPS aims at the sedentarization of pastoralists based on the development of irrigation (FDRE 2002a). It states that "unlike of highlanders, settlement in pastoral areas is a question of changing people whose life has long been rooted in pastoralism, into cultivators who have to learn the ways of sedentarization" (FDRE, 2002a:145). Thus RDPS envisages the preparation and implementation of settlement programs that focus on extensive training on settled farming system to be given to pastoralists and undertaking the settlement activities step by step. This is in contrast to strategy in the highlands, where land use policies confirm to the highland inhabitants way of life.

Sedentarization

The Interim-Poverty Reduction Strategy Paper (I-PRSP) issued by the government in 2000 notes a persistent knowledge gap in pastoralist areas and suggests "improving the welfare of pastoral people by increasing productivity and minimizing risk through infrastructure development, improved market access and other support" (World Bank, 2001:16).

The overarching Sustainable Development and Poverty Reduction Program (SDPRP) recognizes the general unfavorable socio-economic and institutional constraints affecting pastoral development. It also acknowledges lack of clarity of vision and strategy for pastoral development (donor driven, non-sustainable programs and projects, inadequate consultation and involvement of pastoral communities in the project design and implementation) (FDRE, 2002b:72). It puts forward the following strategies for working with pastoralists (FDRE, 2002b:73):-

- ⇒ Mobile pastoralists should settle on a voluntary basis;
- ⇒ Encouraging and stabilizing those who are already settled or semi-settled through improved water supply, pasture and social services;
- ⇒ Viable and reliable river courses should be selected for future sedentarisation based on irrigation, and link these places through roads and other communication lines;
- ⇒ Mobile social services including health and education should be provided in a united package for those that continue to be mobile.

A number of initiatives started under the PASDEP and are deepened and strengthened under the Plan for Accelerated and Sustained Development to End poverty (PASDEP). The main elements of the pastoralist program outlined there are:

- ⇒ Improving pastoralists livelihoods and asset bases
- ⇒ Livestock marketing, veterinary, and livestock feed improvement
- ⇒ Water development and environment protection and management
- ⇒ Natural resource conservation policies
- ⇒ Building infrastructure and social services like education and health in pastoral areas

The PASDEP document suggests that the above mentioned issues can be addressed by:-

- ⇒ Developing participatory drought management mechanisms, including community-based drought early warning systems and mitigation measures;

- ⇒ Encouraging livelihoods/assets diversification such as in fisheries, agro-pastoralism, herd diversification and mining;
- ⇒ Facilitating local and cross-border livestock trading with better market information, credit provision, and certification for quarantine;
- ⇒ Strengthening veterinary services, in both the public and private sectors, to enhance the possibility of controlling livestock diseases; and training of community based animal health workers from the pastoral communities;
- ⇒ Expanding strategically placed dry season water points, including traditional deep wells, boreholes, and environmentally friendly water harvesting technologies;
- ⇒ Modernizing the rotational range use system.

Resettlement

Resettlement programs are part and parcel of the national economic and social development program. Government policy expects pastoral associations, community elders and regional administrations to work together to solve the problem of how to use resources effectively and efficiently.

Following this the Afar National regional state has developed a three year resettlement plan (2012-2014) and has been implemented in the region. During the field research we have also observed the development of infrastructure in Horongo grazing site (in Ewa Woreda) with the aim of settling pastoralists. According to the regional document (Amharic version 2012), over the three years, they have planned to settle 100, 633 pastoral and agro-pastoral household heads in 66 suitable settlement sites where water is available. The following table summarizes the activities planned over the three years:-

Table 2:-Planned and Expected Resettlement activities in ANRS

Planned and Expected Activities	**Yearly Target**			**Total**
	2012	**2013**	**2014**	
No. of households to be resettled	38,359	33,100	30164	**101,623**
Distributed irrigated farm land	74738	66200	60328	**201,266**
Pasture land	74738	66200	60328	**201,266**
No. of settlement sites	59	55	52	**166**

Source: Based on the ANRS Resettlement plan (2012 Amharic version)

In the two study Woredas, the general tendency is that the poor pastoralists without livestock resources may be willing to resettle and practice farming. However rich herd owners usually have more than one wife, allowing one of the wives to do farm work while the rest herd animals. This allows them to resettle but also to remain pastoralists. Better-off pastoralists usually prefer to have vast range lands to feed their livestock and exercise mobility by benefiting from both pastoralism and crop farming.

It boils down to Land: Pastoral Land use and policy

It has been long since the mobile pastoral way of livestock production has been recognized as an effective and efficient strategy of managing and utilizing the extensive rangeland (Galaty 2013). However, due to the malign nature of policies towards pastoralists, in the past decades the most important and invaluable lands had been taken over by large-scale agricultural farms which in turn led to the constriction of access to important dry season grazing areas and hence breakdown of the harmonious existence of institutions, natural resources and seasonal mobility. With a monopolized control over land by governments, the recognition of pastoralists' rights to their land and making an all-inclusive and genuine development is at its infancy.

In general, policies and institutional set-ups that directly or indirectly influence the development of pastoralists all boil down to the issue of access to important grazing and watering points. The key concern among pastoralists is insecurity of tenure. The Afar regional state Rural Land Administration and Use policy (2008) says that the traditional range management system is important for mainstreaming a healthy eco-system. In Afar land is owned by the state but pastoralists' right to use it is ensured. The policy recognizes the existence of large tracts of land suitable for grazing based on traditional mobility patterns. All proclamations, regulations and directives to be enacted in the region are required to adhere to the policy. The policy does not take into account the existing different types of communal landholding and says nothing about dry season grazing land, especially that of the river banks.

It has been evident that malign state policies that acted against the interest of the pastoralists have seriously hampered the resilience of the pastoralists in Ethiopia. Even though regions with high pastoral population have started to develop their own land policies, they do not seriously address the interests of the pastoralists themselves. These policy dissonances usually arise when there is insufficient policy learning between the state and communities or when the state is using its coercive power to implement policies against the will of communities. For instance, the constitution of Ethiopia (1994) that recognizes the right of the pastoralist to their rangeland and the right not to be evicted has at the same time a provision that states the alienation of pastoral land if it is needed for development. However, progresses have been made in terms of devising a policy document that acknowledges the pastoral mode of life in Africa in general. For instance, recently the Policy Framework for Pastoralism in Africa (AU, 2010) states pastoralists' rights to important spatially distributed resources and their crucial relevance for the regional food systems, ecosystems and trade. On top of this, livestock production in pastoral systems is important for stability through livestock based social relations and exchange networks.

In summary, the general tendency in Ethiopia is to settle the pastoralists over longer periods and transform their current way of living. However, one has to bear in mind that the pastoralists' way of life in the study areas is uniquely connected to local agrarian cultivation systems. Thus, simply taking pastoralist areas and allocating them to other uses would weaken the agricultural-pastoral synergies that enhance both the value and benefits of each through complementary land use.

4.2 Changes in Physical Environment

The physical environment in which the pastoral communities of the study area operate in is also decisive for the resilience of their livelihood. In other words, a healthy ecology adds value to the practices of livelihoods. However, due to reasons highly related to grazing rights and the lack of them, the environment in the pastoral areas of the region has degraded over the past 50 to 60 years. In this section we present and explain the major sources of vulnerability that emanate from the unpredictable environment where the pastoralists pursue their livelihood.

Climate change-induced hazards and trends

The people living in the different Kebeles of the study Woredas mainly engaged in a pastoral mode of life—where people largely depend on livestock production for their livelihood. On the one hand, the ecology in the area is fragile with an increasing trend of natural resources degradation. According to the informants rainfall pattern is changing from time to time and temperature generally increasing. Such variability in the climate is exposing the people to the risks of several climate related disasters. Because of erratic and unreliable rainfall the people are exposed to drought and chronic food shortages, risks of flooding hazards, and conflict over increasingly scarce and fragile resources. On the other, the broader socioeconomic and political upheavals that the Afar experienced over the years put them under pressure. The institutional and policy frameworks that also shape the vulnerability context of the pastoralists are discussed in section 4 above. In this section, the major sources of natural hazards are discussed.

Trends in temperature and rainfall

Since the rainfall pattern is totally changed due to continue increase in climate change together with the geographical location of the district with short elevation above sea level, the temperature situation is increasing time to time. In addition to this, deforestation and overgrazing caused deterioration of vegetation coverage and lead to increased hot environment and discomfort. Compared to highland regions in the country, the temperature increase in the lowland regions has been much faster with bigger implications. Coupled with declining and unreliable patterns in the rainfall, increasing temperatures will exacerbate the water and feed shortages thus making the environment more and more vulnerable to increased aridity and degradations (ANRS Awra and Ewa Woredas 2003).

Key informants from the study areas also described that it has been long time since the area got sufficient rain during the rainy periods of the year. According to the informants, there is no more *dadaa*-which fall in December and it was a connecting season to *Suguum* after long dry and cold period. Therefore, the *dadaa* season used to be vital as it appears right mid-way between *Karma* and *Suguum* rains. Informants from the two Woredas similarly described that both *Karma* and *Suguum* rains also started two to three weeks later and stopped two weeks earlier during the past consecutive years. They mentioned for instance that during the 2013 Karma season, it rained fewer than 10 days and when it rained it took all the soil and did not infiltrate into the soil. Rather it is creating big gully erosions that are threatening to take their homesteads and destroy the trees.

In zone 4 in general, it is common sense that rainfall patterns are perceived to have changed over the past decades, particularly in terms of timing and duration. The frequency of drought is viewed as increasing particularly over the past two decades. Changes in the seasonality, distribution and regularity of rainfall were more of a concern than the overall amount of rainfall. The main rainy season is also seen as becoming progressively shorter – it now starts later and finishes earlier than it used to be – and the rains in general are becoming more unpredictable.

Flooding hazards

Another source of hazard that is affecting the livelihood of the community in the two Woredas is the problem of flash flood. This is partly because some of the Kebeles in these Woredas are located along the two major perennial rivers. Furthermore, geographically also the two woredas are adjacent to the highlands where the major rainy season is heavy and the run-off water drains into many of the perennial rivers. Increase in the intensity of the rain due to poor vegetation lacks to break marine wind and facilitate water infiltration. This situation causing heavy flooding hazard lead to loss of livestock, infrastructure damage, damage to farm lands, erosion of pasture lands and creation of deep gully. The negative impact is more complex and significant to the district pastoral communities as they are residing at the margin bottom to the neighboring Amhara Mountain. Such flood is aggravated over steep channel slopes with limited valley storage. They have the potential of causing land to slide. The recent phenomena of *Karma* rain which had felt between August and September 2012 was mentioned as a simple exemplary by FGD participants both in Ewa and Awra Woredas. Heavy flood due to heavy rain mixed with heavy wind that falls in the highland of Amhara and in the Woredas produced serious damage in the area. Some of effects are death of livestock including camels, damage to irrigation farms of Badoli, Bolotomo, Kofo Burur and Regden kebeles. In addition, we also observed the level of damage created by flood on bridges and roads in Ewa Woreda that restricted easy movement in and out of the Woreda.

Future Trends

In the medium to long term, mobility and access to water and rangeland will likely be further restricted due to several factors and this could potentially have profound implications on livestock production. Firstly, it appears evident that the strategic objective of the government is to expand agricultural production in Afar through various settlement and irrigation projects.

Not only will this translate into the direct loss of rangeland to crop production, it will also restrict mobility and potentially cut off transhumant livestock routes. Agricultural expansion will almost certainly take place in fertile grasslands and riverine areas[2], denying pastoralists access to critical dry season grazing and water. Increased competition between settled farmers and pastoralists over scarce resources will likely increase the potential for conflict. With an increase in settlement and associated growth of small towns, pastoralists might

[2] Ongoing projects like Sunuta presurized ground water irrigation construction (200ha) and Hida-Debel pressurized water irrigation are clear manifesations of the government's prioritization of agriculture/crop production with a long term consequence for a pastoral way of life in the Awra and Ewa Woredas.

also resort to sale of firewood and charcoal making as a coping strategy, resulting in even greater bush encroachment and loss of rangeland.

Climate change could also have a considerable impact – either positive or negative – on livestock production in Afar although it is extremely difficult to predict which scenario will occur. For example, Eriksen *et al,* (2013: 78) explain that an increase in temperature in the presence of more rainfall combined with an increase in carbon dioxide improves water use efficiency, resulting in greater productivity. On the other hand, the interrelationship between precipitation, evapotranspiration and the frequency of dry spells could have an impact on browse and species composition and a corresponding impact on net productivity (Eriksen *et al,* 2013).

Community perceptions of changes

Any attempt of understanding human-environment interactions in resource dependent community like that of pastoral groups of Afar needs an emic understanding of the major sources of livelihood vulnerabilities. As explained above, the major sources of hazards in the study areas are drought and flash floods. Persistent and prolonged droughts in particular have been experienced by generations of Afar pastoralists in the area. In light of this, it is important to understand the way the local pastoralists experience and memorize these sources of livelihood hazards. In other words, in this section we present the perceptions and articulations of the local communities towards the major sources of hazards and the implications that this may have on their livelihood activities. Researchers for long have attempted to capture the social memories of particular communities in relation to human-environment interactions. The notion of social memory is predicated on the assumption that the position of a system in any transitional process is directly linked to events in the past. This means that transitional pathways do not occur in a vacuum but that they are embedded in often complex antecedent histories (Brierley 2010). These experiences and perceptions have implications for the resilience of the community with regard to the multitude of livelihood pathways taken by the pastoralists. In the following sections we present the understandings of the pastoralists in the study area towards the major sources of hazards starting with drought.

Community Perceptions of Drought events

Although drought is not a new phenomenon, there is a general perception among people in the study area that the frequency and intensity of drought episodes has increased over time. This means, weather and rainfall patterns have become very volatile and erratic. In other words, with the increased unpredictability of the wet and dry seasons, old and established cycles of seasons that the pastoralists put in their memories and integrate into their everyday practices of livestock herding have been put under a big question mark. All sources of information indicate that drought is the single most important source of vulnerability and shock in the two study areas and beyond.

It is clearly known that pastoralists' livelihood is directly dependent on the spatial and temporal availability of natural resources (pasture and water in particular) which in turn are dependent on weather and rainfall conditions. As the saying goes in the study area: "there is no life without

rainfall". The impact of drought on the pastoralist communities of the study area that solely had depended on livestock herding is so much so that it became deeply entrenched in the social memory of the population. Besides, the local pastoralists in the study areas have also developed a typical narrative around drought and its effects. Our investigation on local memories of drought and its impact has generated interesting information about the history of drought with distinctive local terminologies and classification of periods according to major drought episodes which is summarized below.

Table 3:- Major drought events that affected the pastoralist community in the study Woredas

	Local name	Meaning and the situation	Effect	Responses
1974	**Yahum**	**Empty** The term empty implied to the fact that the area was abandoned and became totally deserted due to mass migration and death	Famine/hunger Loss of human life Loss of livestock. Displacement of the local people	moving livestock to highland areas (Cheffa valley) mobilizing informal support collecting wild fruits
1984	**Deteli**	**Darkness** There was no signs of fire or smoke from houses because there is nothing to cook	Famine Loss of human life Displacement of the local people Lack of feed and water Loss of livestock	moving livestock to Cheffa, Bati mobilizing informal support collecting wild fruits
1994	**Ubuuli**	**No rain, only white cloud/foggy** The area was covered by thick white cloud day and night without any sign of rain and hence it was named the drought of the fog	Severe food crisis Displacement of the local people Feed stress and loss of livestock	moving livestock to Cheffa, Bati mobilizing informal support
2004	**Arkakis**	**Being scattered** People have migrated to every direction to the extent of not knowing where to go	Drought forced all people to migrate, scatter around Livestock death	Unusual migration to Kombolcha area Abnormal migration and family splitting Reduce number of meals
2006	**Dumus**	**Expectation** There was no rain for the whole year and everyone was waiting for it	No Pasture	Increased livestock sales Few households have taken up farming
2007	**Caben sele**	**The remainder is lost** Those livestock that survived the previous drought perished	Poor pasture and water status Poor livestock prices	Increased livestock sales Increased demand for outside support
2008	**Godimali**	**Cut by the Axe** This was the year when people started to use Axe to cut tree branches to help the animals survive	Poor pasture and Water	Cutting tree branches to help the animals survive Increased livestock sales

Source: compiled based on FGDs, key informant interviews (2013) and various documents

The commonalities of the stories associated with these major droughts are those of massive loss of livestock, human starvation, suffering and death, and mass migration. The labeling of the droughts using local terminologies enables to promote collective and shared memories as the stories of these droughts are told and transmitted from generation to generation. According to the key informants, for example, the recent devastating drought event named *Arkakis* was one of the most severe and extended drought that has caused massive loss of livestock and human suffering. The informants from the four study Kebeles emphasized that it was difficult for them to revive back their livestock because of the successive drought years since 2004 that negatively impacted livestock conception rates, leading to low birth rates and low milk availability in the study area. In the words of a former pastoralist from Hida Kebele:

> *You understand how keeping livestock is a hard life when you are in it. In 2004, I was young and my father sent me with the cattle. I remember, I was the one who took the cattle to the direction of Chifra with the hope of saving them. But, many died there. Have you felt hunger before? How it feels? That was the time when I was really hungry because the cattle didn't have milk. From then on wards, my family has completely shifted to farming. Who wants to have a miserable life? For me drought became the source of learning.*

The idea of 'drought as a source of knowledge' to shift away from a complete dependence on livestock widely resonates among different members of the community both in Awra and Ewa Woreda. Participants in the focus group discussions from Hidelu Kebele also mentioned the difficulty of finding a good pasture for their cattle and they have to move further distances than usual. In the course of time the distance between the water source (i.e. Awra River) and pasture land is getting far apart. Abdu Walao of Layede locality of Hidelu Kebele stated that during the past 10-15 years rain has declined and it became difficult for the livestock to recover. The disappearance of important grass species locally known as *Sitahaboyta* (special grass for cattle), *Isissu*, *Hamamto*, *Melif*, *Yemarugta* (a bit thorny and used to grow on the hills and a favorite for camels) from the grazing areas made the survival of the livestock left a difficult one. The soil become too dry and when the rain comes it erodes the soil with force and all the streams in the villages are becoming wider and wider.

Photo 3:- Soil erosion and land degradation is a serious problem (Hidelu Kebele)

Photo (Girum, 2013)

It is difficult to establish the exact magnitude of the impact of the recent drought events with regard to the loss of livestock without undertaking a full scale and systematic survey which is beyond the scope of the present study. However, all sources of information indicate significant loss of livestock by households due to the severe and extended drought that prevailed in the study area.

In general terms, although drought has been a common problem in the Afar Region of Ethiopia, it is the recently increasing frequency and severity of drought that made livestock herding a difficult task and render pastoralists vulnerable. The recent severe and frequent drought events are still fresh in the memory of everyone and the impact is still visible in terms of local criteria. The severity and frequency of droughts as explained by different informants can be summarize in terms of the following impacts:-

- The occurrence of local droughts one after the other without giving a brake;
- When it rains, it is erratic and uneven;
- There is a trend in increasing water stress and scarcity;
- An increase in the reduction of grass and tree cover and an increase in unpalatable species cover (bush encroachment);
- Some important indigenous grass and tree species disappeared

According to the informants, the severe and extended drought over the past years has a chain of impacts on the environment and thus on their pastoral way of life. These include but not limited to the decrease in pasture availability, shortage of water as nearby ponds no more hold water, decrease in livestock productivity in terms of milk supply that leads to food insecurity at the household level, increase in abnormal mobility and an increase in human's susceptibility to diseases such as malaria and cholera.

The encroachment of unwanted plant species

In Awra and Ewa Woredas, it has been observed that there is an increase in the invasion of new and unpalatable plant species. The informants from the study Kebeles mentioned that species locally known as *Goronto* and *Democracy ((Parthenium hysterophorus)* are taking over their pasture and farm lands replacing important grass species. Residents in Badoli-1 kebele mentioned that Gorornto has managed to sustain itself in an area where the important grass species called Durfu used to grow. This situation is causing severe economic and ecological losses for pastoral communities in both Woredas. The bush encroachment is the most important factor hampering sustainable livestock production, food security and improved livelihoods. Accordingly, the problem is becoming a threat to feed and food security in the area.

During the field research, we have also observed that several grazing sites and farming areas both in Awra and Ewa Woredas are facing bush encroachment with *Congress Weed (Parthenium hysterophorus)* and *Goronto*, which drive out more nutritive browsing vegetation. It has invaded large grazing areas and farm lands. In addition, most important palatable grass and tree species for livestock are replaced by unwanted plant species like *Partheniun hystrophorus*, *Tribulus terrestris*, and other tree species such as *Acacia nubica.* Parthenium hystrophorus is consumed by livestock when nothing is there and when it matured. However, villagers in the woredas complain mentioning that those animals that ate this plant produce very bitter milk unpleasant to drink.

Photo 4:- The invasion of Goronto in the rangeland of Ewa is common to observe

Photo (Girum, 2013)

To add fuel to fire, the problem of an increase in the expansion of unwanted plant species into the pasture lands together with frequent drought is also squeezing the available grazing and browsing species. This in turn is negatively influencing the pastoralists' ability of coping with feed shortage during the dry season causing livelihood insecurity. With the increasing depletion of grasses, pastoralists tend to chop the leaves and branches of trees to feed their animals. Acacia pods are also used as important sources of dry season feed for goats, camels and cattle. The informants further explain that invasive plants such as *Goronto* also become a place where predators like Hyena hide and attack their livestock in the evening. In general terms, the locals perceive that there is an increase in the expansion of unwanted plants and the local indicators for this are summarized below:-

Source of Livelihood threat	**Local evaluation**	**Influence on livelihood**
Encroachment of unwanted plant species	-Expansion of *Goronto* (Acacia Nubica) and *Democracy* (Parthinium) -Decline in size of pasture land -Decline in important grass species (e.g. *Durfu*)	- decline in forage availability for cattle in particular -Increased presence of predators such as Hyena -Increase in food insecurity -Demand for more labor to weed out Parthinium from farm land

Summarized from various FGDs (2013)

Dwindling of rangeland resources and feed scarcity

Another important aspect of change in the study area which is communally perceived as rapidly changing is the dwindling of the natural resource base and the associated scarcity of feed for livestock. Again, the key informants and FGD participants identified the frequent and persistent droughts and the unpredictable and variable rainfall pattern as the immediate forces behind resource depletion. Others also associate the number of people living in the same area with the establishment of new settlement (administrative centers) has also attracted people to keep their livestock near. This in their view hindered the grasses from reviving back even if it rains.

The dwindling of resources from the range land is the most serious challenge for the practice of a pastoral way of life both in Awra and Ewa Woredas. Major reduction in the quantity and nutritional quality of the vegetation available for grazing in the rangelands as well as expansion of barren areas were reported. The Woreda natural resource experts also agree with this concern and associate this change with the combined effect of climatic variations and human factors leading to the overexploitation of natural resources. Despite the general trend of pastureland degradation in the two woredas, during the field stay we have also observed variations within the Woredas based on geographical location and concentration of grazing animals and settlements. However, the ever increasing dwindling of resources from the range land is manifested in the following ways:

- ⇒ Continued decrease in the quantity of native pasture resources and an increase in the unpalatable plant species;
- ⇒ Changes in plant cover particularly loss of important riverine browsing species through clearing of forest for farming purpose (observed largely in Hida and Badoli-1 kebeles)
- ⇒ Deterioration of soil conditions and reduced germination rate due to trampling by livestock and increased aridity.

The amount of *Durfu* (*chrysopogon plumulosus)* and Malif *(andropogon canaliculatus)*, two popular grazing grasses is either dwindling or has been depleted in all focus kebeles due to overgrazing and a lack of suitable rainfall, in some areas they have completely disappeared. Besides the decline of pasture, general water stress and scarcity has also been mentioned as a serious problem for pastoralists residing in the drier and remotest parts of the Woredas. For instance participants in the women focus group discussion in Hidelu pastoral Keble mentioned that in the dry season they have to wake up around 4 a.m. at night and return back home around mid-day. This takes them more than 8 hours.

Photo 5:- Women in Hidelu Kebele fetching water from Awra River

Photo (Girum, 2013)

Increase in flash flood

Another source of livelihood hazard as perceived by the members of the community in Awra and Ewa Woredas is the increase in flash floods and the ever increasing loss of farm land associated with it along the major perennial rivers (Awra and Ewa Rivers). Informants from Hida and Badoli-1 Kebeles emphasized that the impact of flash floods has increased over the past 10 years as it keeps on creating broken lands on the pasture land and the small scale farming plots that back onto the river bank loose land annually due to the yearly expansion of both Ewa and Awra perennial river banks. Many of the households that are practicing crop production next to the river banks of Awra and Ewa are exposed to the forceful nature of the flood during the months of June till August. The irrigation canals used by Hidda Keblele to water crops must be extended yearly due to the damage created during the main rainy season.

Photo 6:- Large size of pasture lands are being taken away in various Kebeles

Photo (Girum 2013)

Photo 7:- Important browsing trees are falling down along the seasonal rivers

Photo (Girum, 2013)

Poor coverage of vegetation due to overgrazing and drought create favorable environment for the wind and the rain to become heavy as there is nothing to calm the speed. Generally, the flood hazard was the combined result of the geographical locations of the study areas, runoff from highland and intensive torrential rainfall condition.

Photo 8:- Farm lands backing on the rivers are taken away and browsing trees exposed

Photo (Girum, 2013)

Focus group discussion participants from Hidelu Kebele also mentioned that the impact of flash flood is so much so that it is creating deep gorges along the many seasonal streams that are crisscrossing the Kebele. According to the informants there are more than 10 seasonal streams in Hidelu kebele that used to flood the pasture land and were important for the revival of vegetation. However, due to the increase in flash flood these streams are threatening the rangeland and a huge portion of grass land is being taken every year.

Generally speaking, informants from the two study Woredas share a common perspective that the combined effects of severe drought and an increase in the expansion of invasive plants such as *Parthinium* and *Acacia Nubica* have threated their livelihood. This is currently manifested as many grass and tree species are either completely disappeared or on decline. The following table summarizes the type of grass and tree species that have declined from the localities of the study areas.

Table 4:- Some of the important grass and tree species that are in decline

Tree species	Scientific name	Grass species	Scientific name
Adayto	*Salvadora persica*	Sitahboita	Not known
Eaebito	*Acacia tortillis*	Issisu	*Cymbopogon*
Hedayto	*Grewia ferruginea*	Hoyta	*Aristida adoenesis*
Kaselto	*Acacia nilotica*	Melif	*Andropogon greenwayii*
Sasakto	Not known	Yemarugta	
Gersa	*Dobera glabra*	Mussa	*Echninochloa colonum*
Subula	*Ficus sycomorus*	Deanikto	Not known
		Durfu	*Chrysopogon plumulosus*

Source: - FGDs (2013)

4.3 Changes in Customary Mechanisms of Resource Management

The changes in natural resource use in Afar territory have had negative implications for the pastoral mode of production and culminated in resource use conflict (Ali, 1994: 2). These changes have contributed considerably to the vulnerability of the Afar to drought and famine and the resultant human and livestock losses. In the great famine of 1973/74 alone, the Afar have lost a fourth of their livestock. A third of their population is believed to have perished. Drought frequently affects Afar land and occurs every few years (Helland 1980). Land use and tenure system play a pivotal role in shaping livelihoods. Resource tenure also determines the viability and sustainability of rural production systems. For example, nomadic pastoralism is viable in a situation where a communal form of land ownership prevails, while crop cultivation requires a more privatized or individualized type of land use system as it entails a more sedentary form of life.

Traditionally rangelands are owned collectively by a clan. The primary residents of a particular territory locally called the *Wammoo* are the ones who have got the collective right over a particular territory (*faagee*) (Hundie and Padmanbhan 2008). A clan's territory are marked traditionally by physical features such as mountains and rivers. Within a particular clan territories families or group of households form their settlement areas locally called *Metaro. Metaro* is the smallest unit of territorial organization in the study areas. According to the key informants, in earlier times the *Wammoo* had the power to allow-in or exclude other clans from its territory following decisions by clan leaders (*Kedo Aba*), elders (*Mekban*) and wise men.

Following the *wammoo* are those outside clans who, despite not holding a primary claim over the land, have the right to utilize the land for purposes such as passage or access to resources. This is known as *isso*, use under restrictions. *Isso* is conducted and allowed so long as secondary clans adhere to the stipulated rules and regulations, such as time restrictions (Flintan et al 2008). When forming a new settlement within the territory of one's clan no permission is needed neither those from neighboring clans are not prohibited from moving in and establishing a *metaro*, but must first seek the *wammo*'s permission.

Desso is the traditional method of rangeland management. It is implemented to ensure that sufficient fodder remains in a clan's rangelands, done to safeguard fodder quantities so that its inhabitants are not required to relocate to find additional grazing stock. *Desso* consists of restricting access to an area designated by the community, with entry forbidden for a specified period.

Even though the Afar has an elaborated customary institutional arrangements for the management of scarce natural resources, the effective implementation of these institutions has been jeopardized due to the changes in both physical environment as well as the general loss of key grazing sites which are results of inappropriate policies. It is well know that pastoralism as a system functions best when the three pillars of the system i.e. natural resources, people (family and institutions) and assets (livestock) are in place.

However, as it has been discussed in the previous sections. the land use pattern in the study area has exhibited a significant change over time that seriously affected the foundational philosophy of pastoralism which is based on individual ownership of livestock in communal land, that in turn enabled pastoralists to move in the different ecological sub zones in different seasons and guaranteeing an optimum use of the temporally and spatially variable resources. For instance, concerning the decline of the practice of *Desso* a key informant from Badoli-1 Kebele mentioned that: - 'we can no more put the practice of *Desso* in place because everyone needs everyone else-we are interdependent and when a particular group comes, they can get in and graze their livestock. We also do the same when we are in their place. The drought has caused these. We cannot restrict access to others without knowing for sure what tomorrow holds for us'. Such kind of expressions were prevalent throughout the study sites emphasizing that without the natural resource base to be managed, it is increasingly difficult for them to efficiently practices resource management.

Beside the frequent drought and the concomitant decline of pasture resources mentioned above, the gradual erosion of the traditional way of managing natural resources is also attributed to the introduction of a new mode of property arrangement that comes together with the practice of cultivation in the area.

Recently, the Afar are losing confidence in their traditional pastoral production system. It has become increasingly difficult for them to solely follow old adjustment techniques as a result of persistent ecological hazards and a decline in the resource base. Accordingly, they are incorporating various strategies into their pastoral way of life such as the practice of wage labor and crop cultivation.

It is often the case that Afar with agricultural plots invite peasants from the neighboring Amhara regions for sharecropping. The Amhara farmer prepares, ploughs and undertakes the sowing. The produce is then shared. These kind of cultivation practices are introducing new arrangements surrounding land. In the following section we discuss some of the recent changes in livelihood activities.

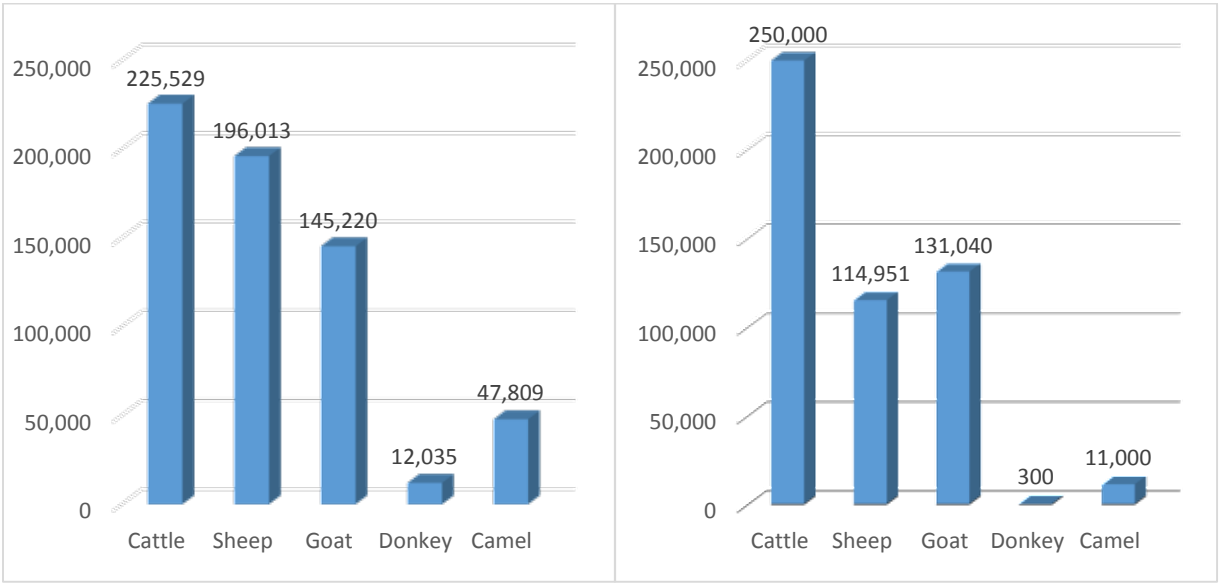
5. Livelihood Strategies: Diversification and Constraints

Generally speaking, the physical environmental in the study Woredas is suitable to sustain a pastoral way of life. The main livestock species raised are goats, sheep and camel. Households mainly depend on livestock sales as the main source of income, which they use to purchase food and non-food items. While cattle used to be the dominant livestock type kept, the number tends to decrease over the years. In recent years, farming is also gaining momentum in the study areas along the perennial rivers of Awra and Ewa.

5.1 Extensive Livestock Rearing

Like other woredas in zone 4, livestock production is the main livelihood base of the two woredas. Livestock holding is also a sign of wealth in the study community. The major types of livestock kept by the community of Ewa and Awra woredas are cattle, sheep, goats and camels. Ownership of livestock is estimated to be very high. The people also grow crops like sorghum, maize and vegetables and fruits. In terms of cattle population, for example, Ewa Woreda stands second in Zone 4 next to Chifra. Based on the data obtained from the regional economic development and finance Bureau (2009), the following graph summarizes the number of the different livestock species in Ewa and Awura Woredas.

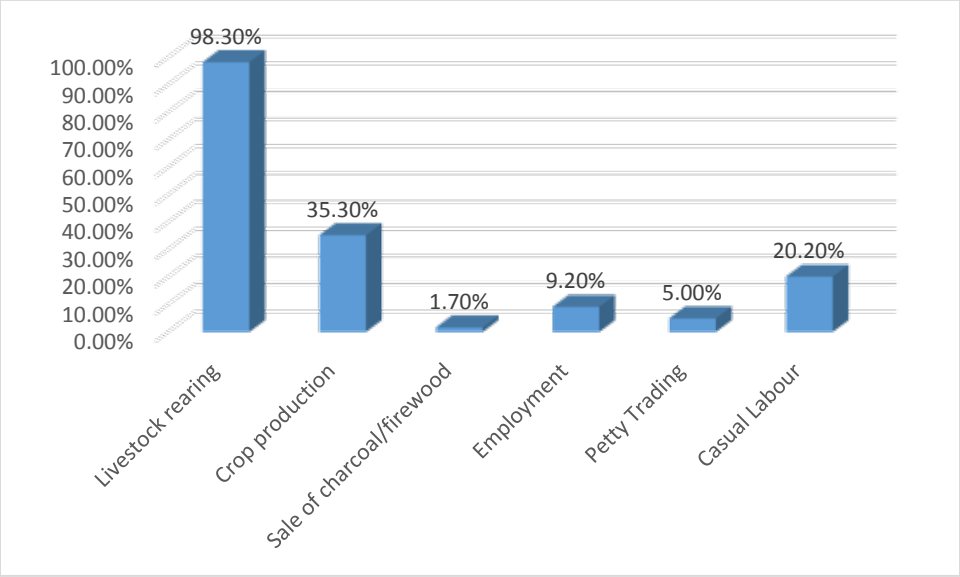
Figure 5:-Livestock population in Ewa and Awra Woredas respectively (2009)



The relative distribution of livestock in the Woredas depends on their anatomical, physical and behavioural adaptation to different climatic zones. In parts of the district, in the escarpment and around the perennial rivers where the grazing resource is relatively better, cattle and sheep are the dominant types of livestock. In the drier part of the district camels and goats make the prominent parts of the herd composition with mainly camels in the extreme arid areas. An extensive livestock production system has been the predominant livelihood system, which provides subsistence for pastoral households. It supplies food for household consumption (milk, meat, butter, hides and skins). Live animals are also used in transactions such as barter, and sources of cash from the market.

In general, the communities in Awra and Ewa are engaged in subsistence livestock production not only for its economic value but also for the social and cultural values as well as the services it renders to kinship groups and the Afar society. Pastoral values are the dominant feature of their social and cultural life. Therefore, among the pastoral Afar, livestock is the most important economic factor influencing all other socio-political and cultural activities. In addition they are used as a store of value and means of exchange, and as basis of enforcing social ties.

Figure 6:- Source of livelihood activities in Awra and Ewa Woreda

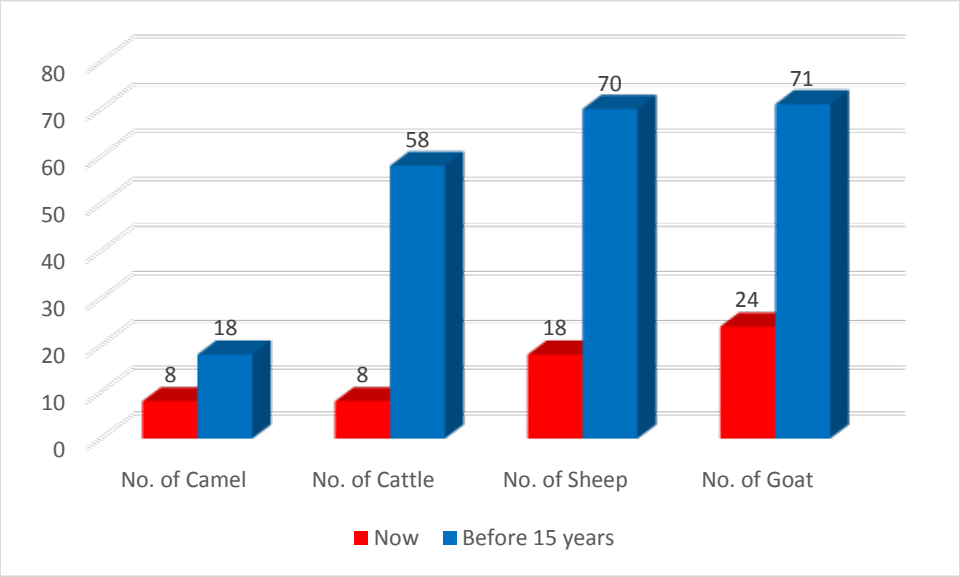


Source: Household Survey (2014)

Trends in livestock herd dynamics

Herd dynamics show changes that occur within the flock over a particular period. We have compared the difference in livestock holding in the study year 2013/2014 with that of 15 years before. This is so because during the qualitative study informants were repeatedly mentioned that their herd size has drastically reduced with the frequent and severe drought within the last 15 sears. The herd dynamics graph below provides a detailed sequential pattern of herd growth for different species and reasons for herd changes in the baseline year. Cattle holding in the study areas have declined from an average holding of 58 before 15 years to 8 in 2013/2014 due to a combination of factors. Generally speaking there is a decline of livestock holding in the study areas across the four species. The recurrent drought in the study area compounded with livestock disease is the major reason for the decline of livestock number.

Figure 7:- Average Number of Livestock holding at household level in Awra and Ewa Woredas



Source: Household survey (2014)

Informants in the different villages emphasized on the combined effect of drought and disease as a major reason for the sharp decline of their livestock holding. They also mentioned the difficulty of restocking their livestock base by buying from the market. Abdu Walalo, an informant from Laydeee locality of Hidelu kebele mentioned that:

> *I only keep cattle and shoats. I do not have camels that would better fit the situation now. The price for buying a single camel is too high. So, after I lost the few camels that I had, I no more keep camels. Even with the cattle it is difficult because of the lack of pasture land. The distance between the water source (i.e Awra river) and the pastur land is far apart. We are always looking after a new pature. Lack of pasture is a serious problem for us.*

Livelihood Changes and Wealth Dynamics

In trying to capture wealth disparity, we attempted to collectively define different wealth categories with study participants and proportionally assign members of the community into each category. While this process was fascinating and informative it revealed that among the Afar community in the study areas poverty concepts are as subjective, dynamic, multidimensional and difficult to measure as in other contexts. One of the key challenges was in trying to actually define *'the poor'* and in determining what poverty measure to use in order to quantify this group. In the development literature a number of broad and narrow definitions of poverty have been used and these are partly determined by different ideologies, worldviews and academic disciplines.

Robert Chambers (2006:3), for example, argues that perceptions of the meaning of poverty depend on "who asks the question, how it is understood and who responds." To illustrate the range and diversity of poverty concepts, Chambers (2006: 3-4) identifies four different clusters of meanings around poverty: income poverty, material lack or want, capability deprivation and multi-dimensional poverty. He also proposes a fifth

cluster, 'multiplicity of meanings,' or the different definitions and dimensions of poverty based on the views of the poor themselves. This fifth cluster is probably the most useful way in which to conceptualize poverty and inequality in the study areas.

Characterization of wealth

In many ways, it was easier to identify characteristics of the wealthy or better-off people in the community partly because the majority of study participants considered themselves poor[3]. As in most pastoral and agro-pastoral communities, livestock are considered the primary determinant of wealth and there was common agreement that those with cattle, plough oxen or medium to large herds of small ruminants were considered relatively well to do. The majority of study sites visited were in pastoral and agro-pastoral areas where livestock, particularly cattle, camel and small ruminants were considered important wealth indicators.

In the crop producing villages, though livestock holding is the major indicator of wealth status, additional criteria were also put forward as a sign of wealth. In Hida Kebele, for example, the wealthy were considered those who made enough income from crop sales to send their children to schools (as far as Logia and Semera) and could afford to save up to 20,000 Birr in a Bank.

Based on these indicators, the results show that between 13-15 % of the study population belongs to the better-off category, 29-33 % to the middle and 53-57% to the poor category. In Hidelu Kebele, the participants in wealth ranking put the livestock ownership of individuals in comparison of 'in the past (before 15 years)' and 'as of now'. The following table summarizes the wealth ranking result from Hidelu Kebele.

Table 5:- Livestock holding and wealth status of Afar pastoralists in Hidelu Kebele

In the past			
Wealth Category	**Cattle**	**Camel**	**Shoats**
Better-off	700-800	300-400	1000
Medium	250-400	150-200	500-600
Poor	50-100	Less than or equal to 50	Less than or equal to 100
Presently			
Better-off	30-40	20-30	300
Medium	10	15	100
Poor	-	-	40-50

Source: Key informant interview and wealth ranking in Hidelu Kebele (2013)

[3] Some household heads in the pastoral Kebeles for instance has lost more than 80 livestock during the 2004 drought. The combination of this and other consecutive droughts and the decline in pasture land affected the reproduction of the livestock.

In the pastoralist and agro-pastoralist Kebeles of the study areas disparities in wealth are largely linked to livestock holdings. Among the Afar livestock are not only representative of wealth and status but have been described as part and parcel of a pastoral way of life. The importance of livestock cannot be overestimated – and not just in terms of financial capital. In other words, the values, identities and social fabrics that define these communities revolve around their livestock.

In the study sites of the two Woredas it has been mentioned by the participants that a pastoral way of life is becoming a very difficult task as the combined push and pull factors that are mentioned in the previous sections have constricted activities related with livestock rearing. Among the widely mentioned sources of constraints that have negatively affecting the pastoral way of life among the study community are:- decline in the quality of pasture land, gully erosion, the increase in invasive species, disruption of rainy seasons, and decline both in duration and intensity of rainfall.

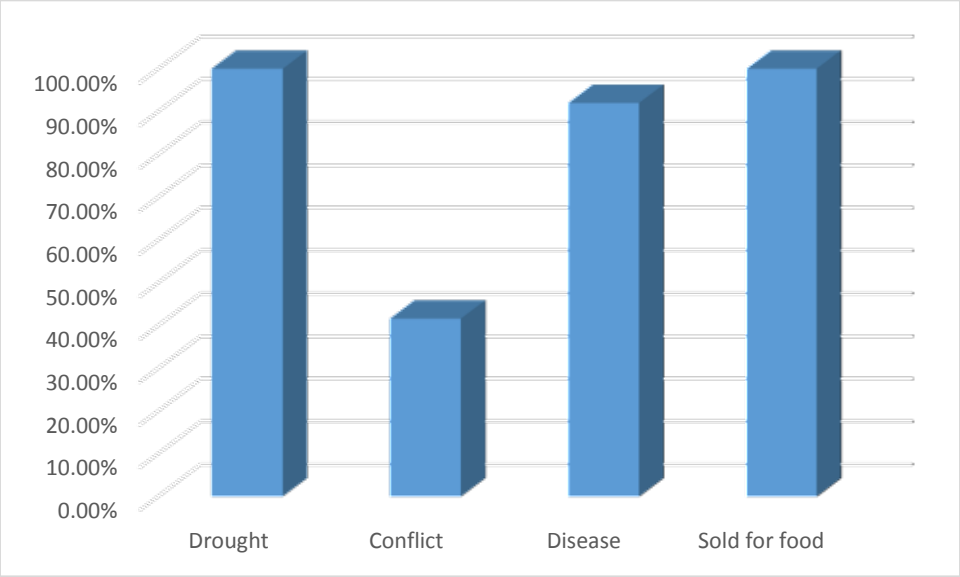
However, despite a general downward spiral in the rangeland condition that seriously hampered livestock rearing in the study sites, the specific impact that this general situation has depends on the type and mix of livestock that the Afar households own. For instance, those pastoral households who are keeping mainly cattle are seriously impacted by the lack of adequate pasture near their homesteads. Due to this, the benefits that they used to get from their cattle both as a source of abundant milk and butter have declined. Informants from Badoli-1 Kebele emphasized this situation in the following manner:-

> *We do not see our cattle even for few days in a year. They are always in a move. When there is rain, all the cattle owned by members of this locality come here and they finish whatever is green in the area within one week. So, there is no chance for the grass to revive. Because of this we are not that much benefiting from the cattle as we used to. These days our own cattle become guests!*

Due to the recurrent drought and dwindling rangeland condition, the Afar pastoralists' livestock holding in general has declined. Accordingly, their current holding of asset in the form of livestock is by far lower than what they remember some twelve years before. The participants in the wealth ranking exercise have mentioned in particular the great impact of the 2004/2005 drought when there was no rain for on and a half year. They mentioned that during this drought there were camel and cattle carcasses all over the plain till Awra River and the pungent smell was really disturbing.

In general, in every study site visited, participants reported a considerable decline of livestock in recent years resulting in what in their perspective could be described as the '*impoverishment*' of the majority of households in their communities. As such, they now more or less consider everyone to be poor. This may be part of a broader trend for pastoralists in the Greater Horn of Africa whereby commercialization, amongst other factors, is driving poorer herders out of livestock based livelihoods production and increasingly larger herds are being concentrated in the hands of fewer wealthy pastoralists (Catley and Aklilu 2013). In the household survey, respondents mentioned the combined effects of drought, disease and conflict and the frequent sale of livestock to supply their household with food items as the major factors behind the relatively smaller livestock holding of pastoralists in the study areas.

Figure 8:- Reasons for the decline of livestock number in the study areas



Source: Household Survey (2014)

Among the Afar pastoralists in the study communities other factors such as loss of access to key grazing areas, frequent drought and livestock disease have played an important role in accelerating this process. Nonetheless the outcome is that many communities have lost most or all of their livestock. From the perspective of income-poverty, the loss of livestock represents a direct loss of income through the sale of livestock and livestock products. However, frequently resonating expressions by informants in the study areas like 'we are nothing without our livestock'; 'we are no more paying Zakat with cattle' 'No one is looking after the other—everyone is covering his own eyes when the dust storm comes' show that the loss of livestock goes beyond the narrow income based conception of poverty to broad multi-dimensional poverty.

Mobility and traditional rangeland management

An important element of livestock rearing in Afar pastoral community is livestock mobility and the organization surrounding it. Traditionally in many pastoral and agro-pastoral communities the land tenure system is communal or clan-based. Individual members of the community or clan do not own it but they are entitled to use it with strict observance of well-defined customary rules. Communal ownership of land conforms in particular to the pastoral production system, and consequently, pastoral communities have developed efficient land use and management system over many generations. The right of pastoralists to use their grazing lands has no time limit. Even though men have entitled more power in resource control women pastoralists also have rights with men to access and use grazing lands. However the gradually weakening of the traditional land use and administration system has resulted in uncontrolled grazing that in turn brought about land degradation.

The Afar pastoralists have been exercising well-planned and targeted seasonal movements between wet and dry seasonal grazing sites through the leadership and guidance of traditional institutions known as

Feimata Aba. The key informants and participants of the focus group discussions in the study areas mentioned the following factors as the major reasons for the exercise of livestock movement.

Reasons for the practice of livestock mobility in Awra and Ewa Woredas (mainly in the past)
In search of better grazing, water, salt licks
To conserve grazing for the dry season
In search of available good quality fodder
To guard against parasites and pests
To allow overgrazed areas time to recover

Source: - Key informant interviews (in Awra and Ewa)

According to the key informants, the migration of the Households usually takes place in the months between January and September in search of pasture and water. The primary destinations for almost all pastoralists are the Kebeles found within their Woredas or adjacent Woredas of Teru, Golina and Chifra. Ewa is also a wet season mobility destination site for pastoralists coming from Asayta and Afambo areas. This movement across clan boundaries is authorized by the traditional leadership after they forecast rainfall for the second time. The key informants further elaborated that there are three types of grazing resource areas that they used to utilize depending on the location of their settlement areas. The three forage resource areas are:- the dry season grazing and browsing areas within a day's herding distance from their permanent camps; the much more extensive wet season forage resource areas up to 100 kilometers from the camps, and the emergency pasture resource areas used only in years of severe pasture shortage (see the map below). These areas are mainly located outside of the territory of Afar regional state (Chefa and Borkena valleys, for instance).

Contrary to common misunderstandings that consider mobility of pastoralists as haphazard, the mobility of livestock in the study areas is based on systematic and justified patterns of seasonal movement locally known as *Guuroo*. In this type of mobility, herders usually move between permanent camps locally known as *Maataro* and temporary camps known as *Guub*. In the study area, this regular type of mobility is largely short-distance in nature (not more than 40-80 kilometers) and occurs mainly within kebeles in Ewa woreda;

During and just after the rainy season majority of pastoralists from Hida, Ali-Bari Mesgid, Lekura, and Lekuma kebeles in Awra Woreda migrate for grazing on the vast plain field (*Hayukali*) adjacent to the main gravel road in Hidda Kebele. On the other hand, pastoralist in the remotest Kebeles such as Hidelu exercise their mobility between Awra River and the grazing areas located within their Kebeles. Participants in the FGDs in Hidelu kebele also mentioned important grazing areas that they use such as *Hafelu* and *Begereba* grazing site.

According to the informants, the pastoralists, for instance, from Badoli-1 keble move to grazing areas within their vicinity locally known as *Alikareta*, *Asmekena* and *Dulo*. They migrate further to the *Horongo* grazing area located in Fialu kebele of Ewa Woreda. The mobility increases further as the season gets drier. When

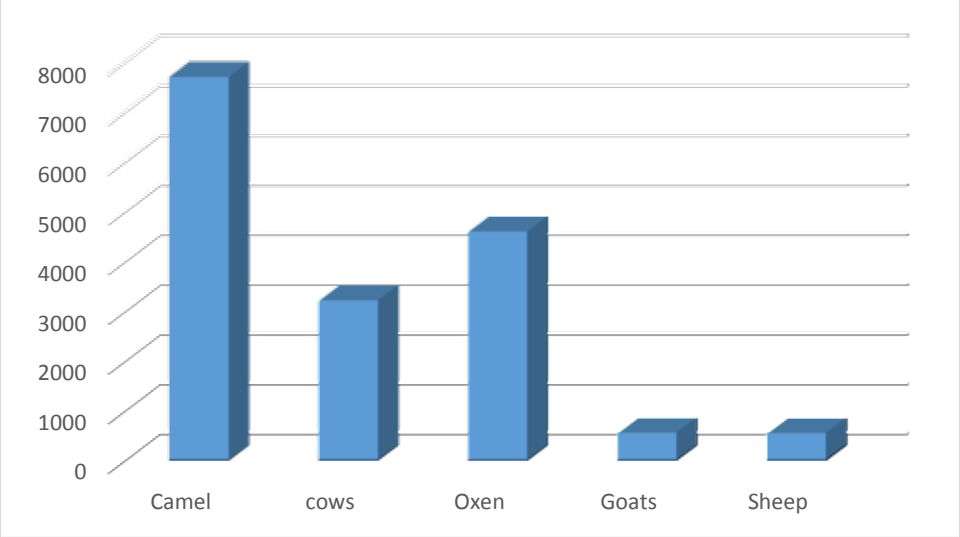
grasses get depleted the migration of livestock in Awra Woreda shift towards the frontier hills of Amhara highlands.

During the focus group discussions it has been confirmed that livestock mobility is also guided by resource and risk assessment missions both of the migratory routes and destinations. Mobility helps the pastoral households to take the fullest advantage of rainfall and avoid the risks associated with staying within a confined area. However, cross border mobility into other regions is in most cases not peaceful and leads to conflicts with other groups.

Livestock marketing

Another important element related with a pastoral way of life is market infrastructure. Participants from both Awra and Ewa Woredas has indicated the lack of well-developed livestock market facility at least in one of the woredas. Located in a remote area, with poor roads and other physical infrastructure, transportation costs in the two study Woredas are high and trade disruptions are common. The main source of income for all wealth groups is the sale of livestock in markets. Therefore, a decline in livestock price and an increase in the price of cereals increase livelihood stresses and food insecurity. These problems trigger distress coping mechanisms such as unsustainable asset shedding for subsistence.

Figure 9:- Average price of different livestock species as of March 2014

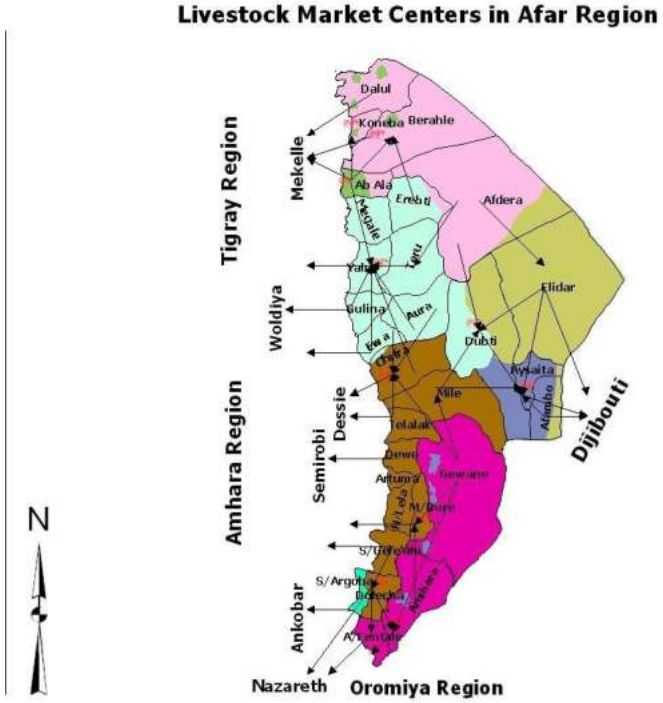


Source: Household Survey (2014)

During the focus group discussions and key informant interviews it has been mentioned that access to markets is generally poor due to lack of and poor quality roads, lack of transportation, lack of information about markets, and the long distances to major markets. As a result, the selling price of livestock tends to be low and the purchase price of goods tends to be high. The main market is located for pastoralists from Awra Woreda is either Chiffra or at Yalo, a Woreda town, and is a major livestock market. There are also important markets outside the zone such as in Chifra, as well as markets in neighboring districts in Amhara (in Hara) and Tigray. Poor access to economic opportunities results in the population of the study areas facing low

livestock prices and higher food prices, which frequently results in poor terms of trade. These affect all wealth groups, but more so the poorer households who sell their livestock at low prices and buy food stuffs from village markets at higher prices. Many households in the study area cannot afford the transportation costs associated with the sale of livestock in distant main markets. The following map shows livestock market centers in the region.

Figure 10:- Livestock market centers in Afar region



Source: BFED, Regional Atlas (2009)

Challenges to livestock rearing

Policies and Development Strategies

As briefly mentioned in section 3 of this report, perhaps the biggest constraint to livestock production among the Afar is the negative misperceptions towards pastoralists and the misguided narratives, policies and development strategies that follow. Pastoralism has been described as having suffered more from biased language and narratives than any other livelihoods system (Little 2013). The African Union Policy Framework on Pastoralism points to the continued misappropriation of pastoral rangelands, particularly in riverine areas valued for dry season grazing, in favor of sedentary crop production, commercial agriculture, irrigation, wildlife conservation and so on (AU 2010). The justification for these *'land grabs'* is based on arguments dating back to colonial times that have since been discredited, but also a failure to recognize the complexity and sophistication of transhumance livestock production, or the economic contributions of pastoralism (AU 2010). In more recent times, however, such actions are often perpetuated by corrupt and powerful interests motivated by greed (Little 2013).

Criticism of development policies and strategies towards pastoralists in Ethiopia is not new although it seems to be largely ignored. Commenting on the sedentarist bias of development policies and the associated negative impacts on pastoral way of life, Getachew (2001) stated that "[T]he results of such policies have been resource scarcity, resource conflicts, herd loss and to drive pastoralists to poverty and dependency on food aid, and settlement in and around towns, rather than to improve their lives as pastoralists." (Getachew 2001: 117)

Behnke and Kerven (2013a, b) describe the real problem in Afar as being the misguided policies of successive governments since the imperial times, pursuing with almost obsessive zeal to settle pastoralists and introduce agriculture to Afar. Perhaps to some extent these policies have at last been successful in forcing people into sedentary agricultural production at the expense of livestock production, hence the proposed argument that it is structural biases and the associated policies towards pastoralism that represent the biggest challenge to livestock production in Afar regional state.

Lack of water

The lack of water, particularly during the dry season, also has an impact on animal health and production. This is further exacerbated by the distance that livestock travel between their watering points and the grazing areas. Even though the herders find a good grazing site bringing their livestock to the rivers is very arduous and make the animals weak.

Livestock Disease

The study findings suggest that disease related mortality represents one of the biggest challenge to livestock production if one ignores the other contributing factors. Livestock disease has always been a challenge to livestock production and in the study areas this is compounded by the lack of animal health services and veterinary drugs. Interestingly, even though people claim to have lost most of their livestock, participants consistently prioritized improved animal health and veterinary interventions including the supply of veterinary drugs over other types of assistance. The most common livestock diseases in the study areas are Bovine Pasturellosis in cattle, Sheep and goat pox as well as Camel pox. External parasites such as ticks and lice also affect the livestock and livelihood of the people.

Lack of access to livestock market

Despite the potential of the livestock sector to be the driving force of local economic growth, there is no well-developed livestock market centers in the two woredas. The two major livestock markets in Zone 4 are both outside of Awra and Ewa Woredas. For instance, the Yalo livestock market that is held on every Tuesday is some 60 km from Hidelu Kebele in Awra Woreda.

5.2 Crop Cultivation as Diversification

The practice of crop production is not totally new to the study areas. Key informants have mentioned that crop production has been practiced in Ewa and Awra woredas despite the risky environment in the 1960s and 1970s as a diversification strategy. In recent times, pastoralists have intensified the practice of vegetable and cereal production on enclosed land. There are many reasons why crop cultivation has been taken up by pastoralists. First among them is that the frequency and intensity of drought has increased in recent years and many pastoralists have lost their livestock. This has forced poor pastoralists to supplement their income and food for their daily subsistence. The loss of livestock assets due to pasture and water shortages, livestock disease compounded the effects of severe drought. For instance, informants from Hida Kebele have mentioned that their involvement in crop farming particularly increased after the 2004 drought (locally termed as *Arakakis*). Crop production is generally looked upon as a means of income diversification and a source of grain for household consumption. Poor pastoralists who own a small number of animals complement livestock keeping with crop production rather than leaving livestock altogether. The main crops cultivated are maize and sorghum. Onion, mango, banana, papaya are also cultivated in Badoli-1 and Hida kebeles. Crop bi-products are used as livestock fodder, which fills part of the gap caused by diminishing pasturelands.

Photo 9:- Bi-products and grasses growing in the farms are used as feed resources for small animals

Photo Girum (2013)

Small scale irrigation

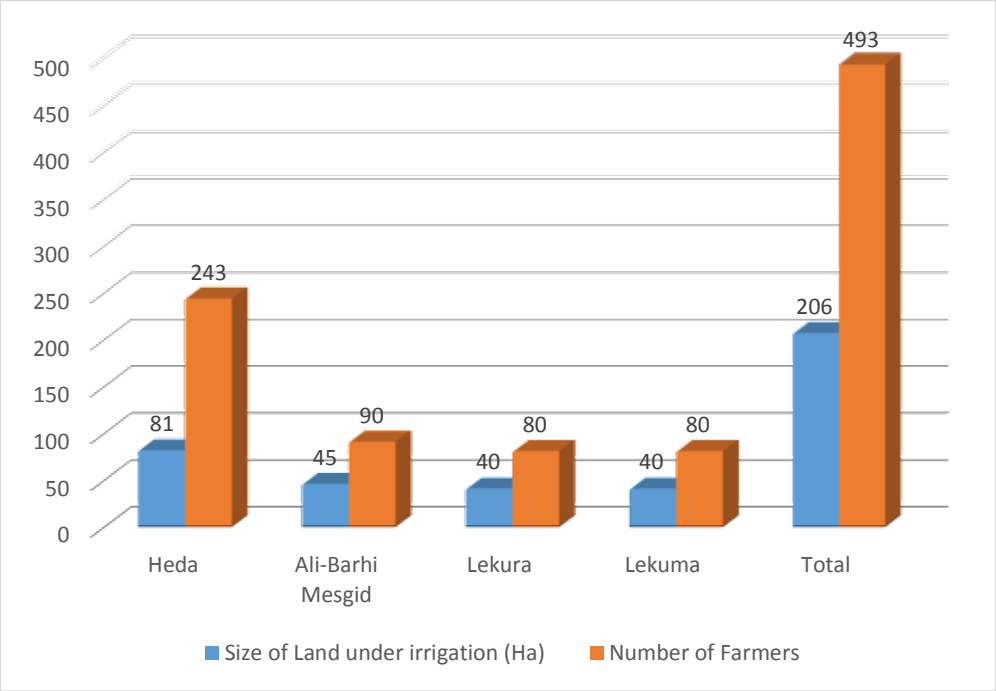
Small-scale irrigation development has helped some pastoralists to achieve food security at household level through diversifying food and income sources.

In the two study sites, particularly in Hidda and Badoli-1 Kebeles, it has been observed that some pastoralists have diversified from relying entirely upon their livestock to putting areas under cultivation. There are two main techniques for growing crops in the study areas:

i. Irrigation: - mainly river-fed and machine pumped
ii. Dryland cropping:- planting cereal crops with the hope that expected rain will produce enough harvest

The production of crops, both staple and cash, is gaining momentum with the introduction of irrigation schemes by organizations such as Support for sustainable Development (SSD). In Awra Woreda, farming is practiced in Hidda, Ali-Bari Mesgid, Lekura and Lekuma Kebeles (see the table below). The production of crops using irrigation in Hedda Kebele has started with the diversion of Awra River some ten-twelve years ago by SSD. The following graph shows the irrigated areas in the Kebeles. To-date, the SSD project has developed 360 ha of irrigated land benefiting 2,290 households in the two irrigation and rural development projects (SSD 2010).

Figure 11:- Land under irrigated cultivation in Awra Woreda



Source: Awra woreda Agriculture office (2010)

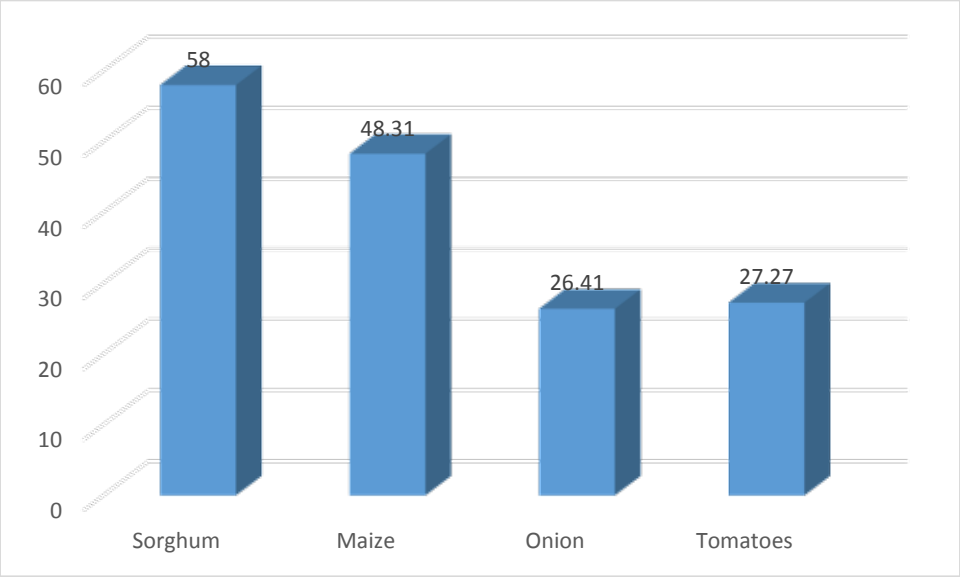
With the introduction of irrigated farming, the Afar pastoralists along the Awra and Ewa Rivers experienced major challenges in their lifestyles. According to the informants, achieving household food security has been the principal benefit. Furthermore, the provision of farming tools and food-for-work played a pivotal role for sustainably maintaining the irrigation infrastructure.

In normal times the food security of the pastoralists is based on a combination of livestock production and grain purchase. This traditional economy has been transformed by the use of irrigation.

According to the informants in Hida Kebele, the maize and sorghum yield in quintals ranges from 30 to 15 depending on the size of the land and to what extent one has taken care of his own farm during the seedling time. Irrigation has allowed cultivators to produce more than a household can consume. The following graph shows the mean harvest[4] for the four common crops produced in the last harvesting season in Hida and Badoli-1 Kebeles.

[4] The mean harvest is counted in sack and 1 sack= 50kg

Figure 12:- Average amount of harvest in Hidda and Badoli-1 Kebeles



Source: Household Survey (2014)

Though there was some form of resistance by some members of the community to accept farming as a livelihood practice, now a days farming is considered as a savior of their livelihood as it opens for them a whole lot of opportunities such as increase in dietary variety, increased income, better access to social services, increased access to fodder for their animals The major crops produced in the agro pastoral communities include sorghum and maize. In the words of one of our Key informant from Badoli-1 Kebele:-

> *I was the laziest. I have never imagined being a farmer. I used to sleep and eat whatever my wife cook. When SSD came, I was the one who used to disturb and always tell them that I cannot be a laborer…The first time when the SSD people asked me if they give me a chance to plant Mango trees. Then I told them to try me. Then, they gave me seven seedlings. After that I started to closely watch the seedling and with the help of extension workers from SSD I manage to grow all the seven. After that I planted my own additional five seedlings. If our forefathers had started this, we would have had nice houses and cars. But still we have hope and our children will continue in our footsteps and have a better life. I am going to teach my children how to become a good farmer not to become a pastoralist (Mehamed Deto Ali, Badoli-1: Nov 12, 2013).*

However, crop cultivation is not without challenges and constraints. The pastoralists in the study sites also mentioned challenges associated with crop production such as lack of oxen, pests and wild animals, and erosion.

Table 6:-The practice of farming and its challenges in the two study sites

Kebele	Cultivated land	Sources of water	Major produce	Major challenges
Badoli-1	Around 40 hectare	Ewa river	Mango, Banana, Papaya, Onion	Lack of oxen; lack of adequate farm land; erosion
Hedda	Around 80 hectare	Awra river	Maize, Sorghum; Pepper; Sesame	Erosion

Source: FGDs (2013)

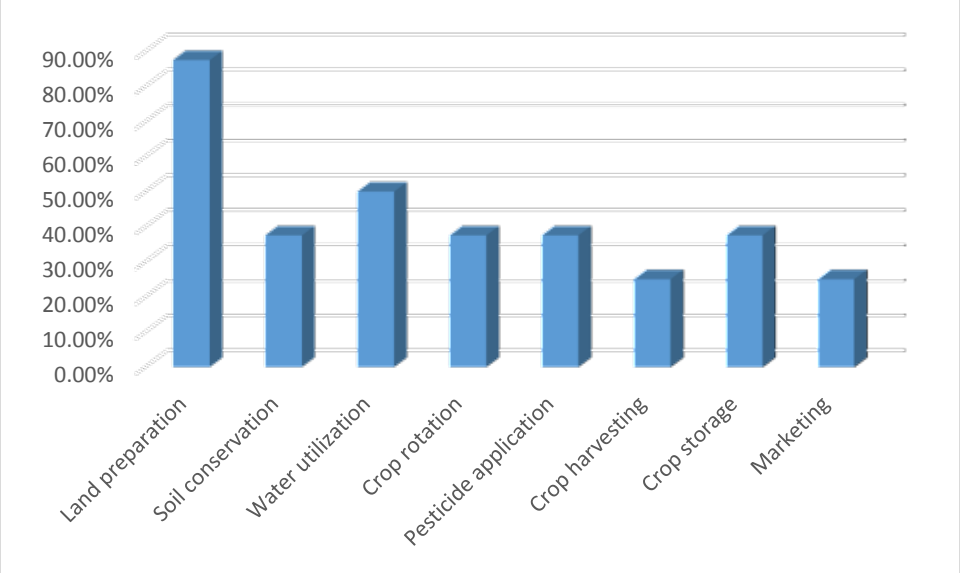
Particularly the lack of experience has been mentioned as one of the reasons that the Afar households in the study area engage in various forms of social arrangements with their neighboring groups to practice farming. For instance, it has been found out that the agro-pastoralists in Hida Kebele rely on the assistance of the highlanders who come from the Amhara region. According to the key informants, out of those who practice crop production, the majority of them use crop sharing mechanism with highlanders while very few Afar households practice crop production by themselves.

Photo 10:- Sorghum harvest in Hida Kebele

Photo: Girum, 2014

Farmland in the area is owned communally or individually whereas water is communally managed. During the field work and through interviews with individual farmers in Hida Kebele it has been noticed that with the arrival of the irrigation new arrangements of managing land and water were also introduced for the smooth operation of farming activities. The common form of arrangement is the one in which the Afar pastoralist who owns the land gives the land to a skilled farmer from the neighboring Amhara region who will contribute in terms of his labor in preparing the land till the end of the harvest. The Afar land owner also provides all the necessary farm inputs. Then in the end they share equal of the produce after they deduct the costs incurred during the planting season. The information obtained through the qualitative data collection techniques indicated that new forms of institutional arrangements were introduced to the project area to manage land and water related issues.

Figure 13:- Types of extension advice received by crop cultivator in Hida and Badoli-1 kebeles



Source: Household Survey (2014)

Improved grass varieties such as Rhodes grass are grown including leguminous plants such as lablab. In this regards SSD is giving a support for the local pastoralists in terms of introducing grass and tree species that could be used as fodder for the livestock. The marketing of vegetables, especially onions and tomatoes has not been easy as damage occurs during transport to the market.

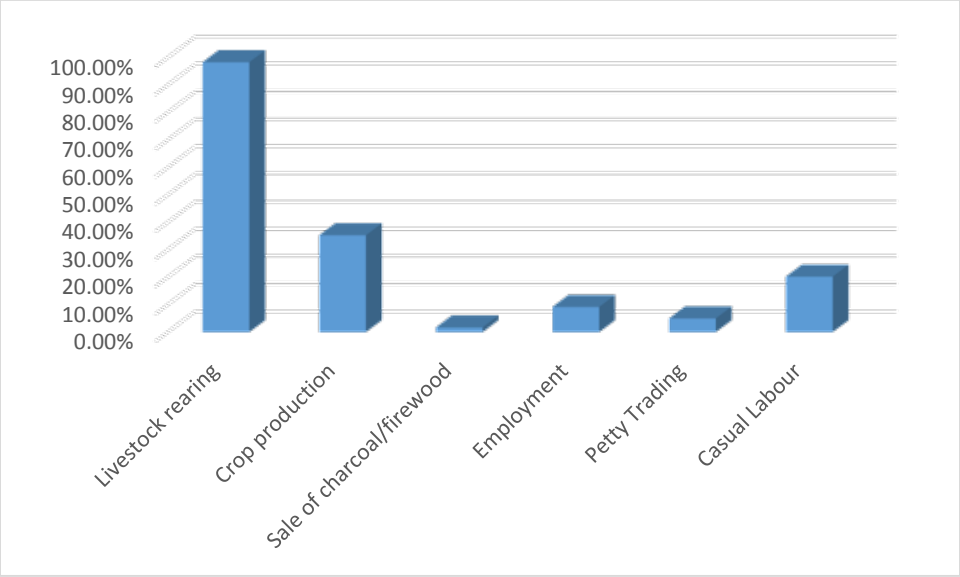
Photo 11:- Seedling site in Ali-Barhi Mesgid (Awra)

Photo (Girum, 2014)

Particularly in Hida Kebele it has been observed that there is a significant transition in terms of their livelihood since the beginning of the irrigation project. Community members in this Kebele are in one way or another engaged in both livestock rearing and crop farming. Furthermore, there is an increased move from extensive livestock rearing to farming and appreciation of a sedentary way of life. This has been due to adapting irrigation farming, and the challenge that they are facing by following the pastoral way of life which has been seriously affected by various factors. In general, the residents of Hida Kebele are largely dependent on farming with the introduction of irrigation. Besides, overtime camel is taking centre stage in the social and economic life of the people. The participants in the focus group discussion mentioned that people these days pay their social obligations like zakat and blood money with camel. Cattle are no more a status symbol. Respondents emphasized that 'the time for cattle is gone with the green grass' and they argued that cattle are like flowers unless you put them in a very cozy environment they wilt thus the situation now in Hida Kebele with the extinction of important grass species such as *Issisu, Durfu,* and *Musa* raising cattle is almost impossible.

However, despite the introduction of crop cultivation and the associated benefits that it has brought for the community, one has to be careful not to generalize that farming is the way out and helps the community to be resilient. As a manifestation of time tested social, economic and environmental adaptation, a pastoral way of life based on the rearing of different livestock species is still central to the livelihood of the community. The following graph based on a multiple response household survey from the four study Kebels shows that livestock rearing is still the dominant livelihood activity performed by the people.

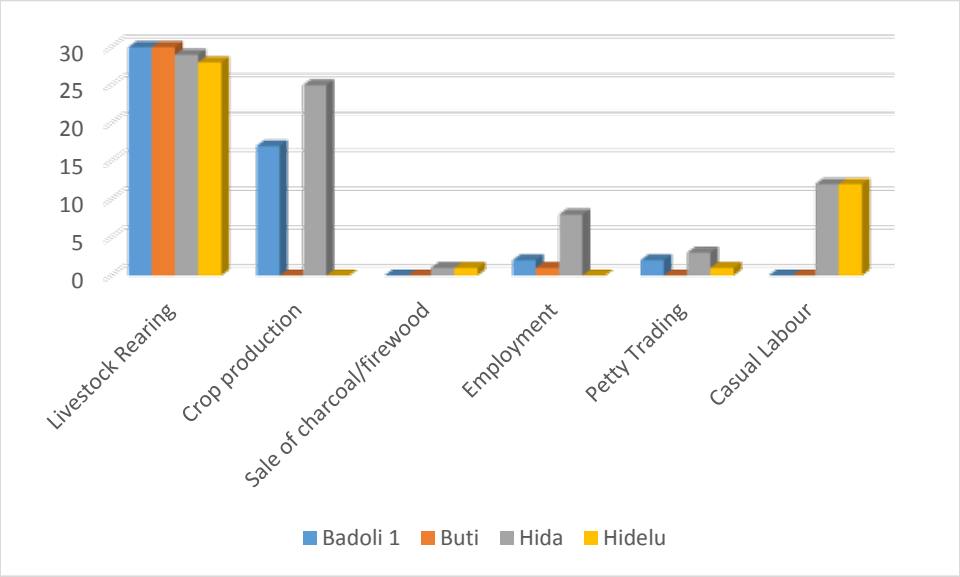
Figure 14:- Major sources of livelihood activities in the study sites



Source: Household Survey (2014)

As it is shown in the graph below, livestock production is still continues to be the source of cash income for the households in the study area. Furthermore, it is the dominant livelihood activity pursued by the inhabitants of the villagers though the combination of human and non-human sources of vulnerability is testing the limit of a pastoral way of life. The following graph from the household survey shows the major livelihood activities by villages in the two Woredas.

Figure 15:- Major sources of livelihood activity within the study Kebeles

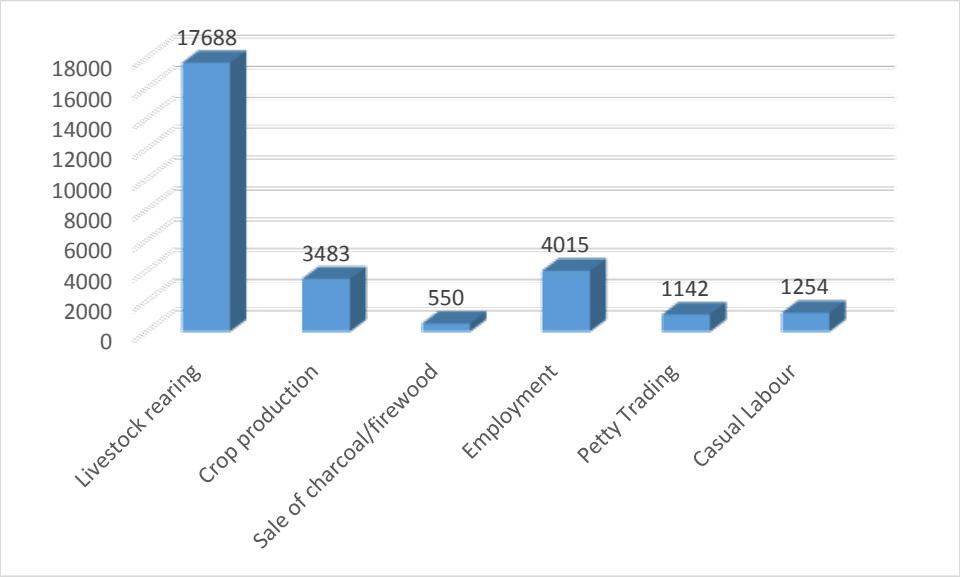


Source: Household Survey (2014)

Farming produces such as cash crops are also gaining momentum in the crop producing areas of the two study sites. The majority of our informants stated that the production of cash crops has helped them to generate their own income that helps them cover various expenses.

In the baseline study year, the main income source for households came from livestock sales. As it shown in the graph below, an average income of 17,688, 3,483, 4,015, and 1,142 was generated from livestock, crop production, employment, petty trading and casual labor respectively. However, one should bear in mind that almost all households in the pastoral Kebeles of Hidelu and Buti generate their income from sale of livestock whereas crop production supplements the sale of livestock in Hida and Badoli-1 Kebeles.

Figure 16:- Annual mean income generated from various activities



Source: Household Survey (2014)

During the interview and focus group discussion we have found out that individual farmers have managed to generate from 1,700 Birr up to 17,000 per harvest season depending on the type of cash crop that they planted in their respective field. An agro-pastoralist from Badoli-1 Kebele has mentioned the following:-

> *I am telling about myself. For instance, I have managed to get 1,700 Birr from the sale of Banana and 2,800 Birr from the sale of Mango. I have a hope that we will build a nice house for my children and I am sure that with good support I can buy a car. People call us as far as Mekele town and tell us that they will come here and collect our produce…there is hope. Another example is an elder here among us who bought a donkey driven cart and shoats with the income that he got from the farming. He has also a saving in the bank.*

However, the lack of farming skill by the Afar pastoralists compounded by shortage of extension workers who can provide technical assistance is affecting the level of engagement of pastoralists in farming activities.

In summary, the new settled village life of the community has opened doors for a number of other developments such as transport, health and power facilities. People from the neighboring Amhara region now frequently visit Afar villages to trade and to look for work on the farms. Moreover today, the Afar themselves are also engaged in petty trade including mini-shops, restAwrants and grain mills.

Challenges to Crop cultivation

The problem of flooding: Farmland erosion

Flash flood represents by far the biggest threat to crop production and participants across all study areas mentioned between two to three flash floods in the past ten years resulting in huge destruction of their farm land and harvest failure. Informants from both Hidda Kebele, Awra Woreda and 1st Batoli Kebele, Ewa Woreda, mentioned that they are losing their farm land annually due to the yearly expansion of both Ewa and Awra perennial river banks. Furthermore, flash flood is also constraining optimal crop production with the destruction of irrigation canals and erosion control infrastructures in Hida and Badoli-1 Kebeles.

Crop Pests

Participants also mentioned a variety of crop pests, including grasshoppers, birds and rats. Wild animals (mainly wild hogs and porcupines) were also blamed for crop losses. Across the crop producing villages, there was little evidence of farmers using herbicides or pesticides although there was considerable demand for these products.

Lack of farm inputs

Similarly, the lack of plow oxen was frequently mentioned as a limiting factor in expanding crop production. The availability, reliability and cost of tillage services were also mentioned as limiting factors although there were discrepancies across the study areas in terms of availability and demand (or at least the capacity to pay for these services). In a number of study areas, participants suggested that tillage services were only for the rich, and in part this may have been based on past experiences where tillage support interventions had been poorly targeted and implemented, and participants strongly alluded to elements of corruption associated with these interventions.

The shortage of both seeds and other farm inputs was also frequently mentioned as a constraint to crop production. In some cases this had to do with availability, particularly of short-term cereal varieties. But in general there appears to be a shortage of quality seeds and planting material in many areas. Similarly, the lack of plough oxen was frequently mentioned as a limiting factor in expanding crop production. This was attributed to the loss of livestock holdings in recent years. However, the informants also mentioned that in this regard the people who come from the highlands and settle in their villages are teaching them the techniques of castrating the bulls and preparing them for ploughing purpose. The use of fertilizers, pesticides or herbicides was rarely mentioned in any of the study areas except as a potential solution to improve crop production. The use of animal by-products or composting for fertilizer did not appear to be common either.

Gender-based roles, activities and domination

Broadly speaking, gender-based differences and domination is common among the Afar community. This is manifested in several spheres of the social life in the community and how men and women are related in terms of asset ownership, division of labor and assignment of activities.

Women are seen as less confident in taking decisions and it is believed that they always need the guidance of their husbands. This deep-seated attitude towards women precludes them from a full exercise on their own life[5] and manage resources. Our observations from the field clearly show that women are culturally assigned to perform mainly household chores such as food preparation, making houses (*arri*), collecting firewood, milking cows, fetching water from far places, and looking after children, whereas men are responsible for all outdoor tasks such as livestock herding and watering. Though gender-based roles helps to put the community intact it pushes the women out of public spheres in general.

Photo 12:- Some activities performed by only women in the study sites

Photo (Girum, 2013)

The tradition of mutual supports

One important asset type among the afar pastoralists which is the crucial aspect of their resilience in an unpredictable environment is their social capital. It is an important element of their pastoral livelihood activity as the ecology in which they live compel individuals to be interdependent through arrangements of reciprocity. The unpredictability of the natural environment somehow forces them to devise mechanism of mutual support that could be used as a coping strategy in times of crises. At a community level when the perception of supporting each other is strong, it can be seen as a good sign of how resilient that particular community is.

Sharing and reciprocity

The practice of mutual support is still common in the study areas of the pastoralist community. According to the key informants, the traditional mutual support system of the Afar pastoral community which is practiced

[5] During the field research, for instance, we have repeatedly heard from the women that it is not in their interest to have several children but they find it difficult even to raise the idea with their own husbands.

through clan based social organization is locally known as *Hatota*. Mutual co-operation is part of traditional way of life of the society. Mutual support and sharing is considered as the basis of livelihood in the study areas. The mutual support is practiced at different levels starting from the nucleus family (*Ko budda*), household level (*Inik budda*), village (*Ganda Budda*), which consists of different households tracing descent from the same clan and the local community.

Mutual support among the Afar people is facilitated through organizational structure and leadership. Each clan has a *Kedo Aba* (the clan representative) and *Dala Aba* (the lineage leader) with overall prescribed powers and functions to perform. The poor are entitled to get clan assistance mostly in kind. Orphans are put under the care of close relatives. According to the Afar elders, there is no beggar in their community including in the urban centers.

Sharing of food and clothes to support each other during normal, drought and hazardous situations among the family members and community level is common and still practiced. Milking animals can be given to people who cannot feed their families. This is called *Hantisa*. The support depends on the willingness of the owner and the relationships of the two parties. The animals belonging to the local community members are usually seen as a kind of social fund that other members can call upon when in need. This kind of gift is not only among related people but friends can assist one another. Another mutual assistance practiced at a clan level in the study community is called *Idbonta*. Through this arrangement clan members who are in a relatively better position help their destitute members.

Despite the strong mutual support that exists among the pastoralists, during the field visit many informants are critical of the existence of such and iterated that due to the intensity of problems that they are facing over the years they think that the mutual support is being eroded. This concern has come out several times during the focus group discussions and interviews. An informants from Hidelu Kebel mentioned the following:-

> *Due to the severe problem that we are facing there is no more idea of social support. In these days we are coming to the point of saying that "when the dust storm raises, everyone covers his or her own eyes—not somebody else's". In the past Afar used to support not only an Afar but a stranger who visited us. We have never felt tired to give milk when someone visited us. But now, look I haven't even asked my wife to bring you something from the house because there is nothing to share (Hidelu, Nov. 2013).*

However, the culture of using resources alone is rare and sharing is still common. Grazing areas, water points and other natural resources are communally owned and used by the different clans of the Afar society as a whole. The system accommodates all people through resource sharing. During mobility, transport facilities are very much needed. For this reason, those who have camel or other pack animals assist those who do not have. Livestock herding may also benefit from the support system (often from extended family relations) if the family or the household faces labor shortage. Funeral arrangements, marriage festivals, looking for lost animals, etc. are performed at clan level as part of the mutual support system.

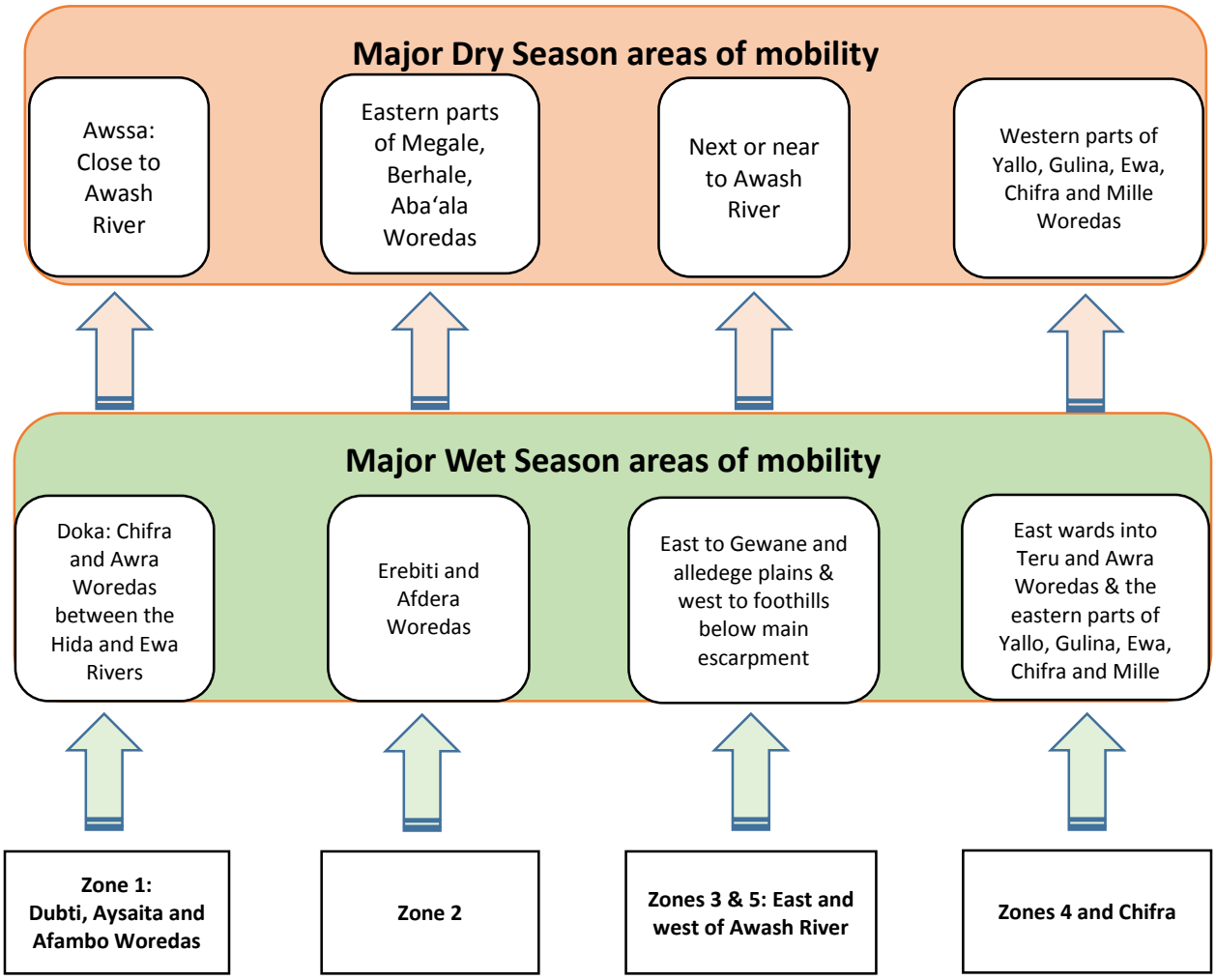
The same goes true for those households who have engaged in farming activities. In this study, we have found out that the farming households are also absorbing the pressure of food shortage on their relatives who are residing in the same village. Informants emphasized that had it not been for their mutual support mechanism, some community members like widows and elders would not have survived the hardship. They support such kind of community members because they see it as their moral obligation. Contrary to this view, some see the interdependence and reliance as a problem as they will also be in the same level till the next harvest is collected. In addition to the traditional way of mutual support, the people in the study Woredas are also organized into cooperatives in order to serve a particular interest by pulling resources together. For instance, there are 7 cooperatives in Ewa Woreda—Milagis integrated, Milagis saving and credit, Metaro saving and credit, Dof Ole livestock marketing, Mahedif integrated, Angelale integrated and Ayrole guda livestock marketing. In Hida kebele there is one women cooperative established by PCDP. However, the lack of commitment by members, lack of proper follow up, lack of trainings in financial management and related topics are hindering the effectiveness of cooperative in the study areas.

5.3 Coping strategies in times of stresses: Long distance Migration and dependence on external assistance

Coping strategies generally are part and parcel of vulnerability reduction strategies of communities and they should not be seen as 'surprise' responses. Rather, these are strategies that do not, most of the time, confirm with the established set of the community norms. The onset of drought often triggers various reactions intended to cope with the effects of drought and potential famine. During the field research we have captured how households and communities respond to severe drought. The coping strategies that the pastoralists use in times of stress include increase in distance of migration, asset disposal, feeding small and weak animals using tree branches, buying animal feed and dependence on food aid.

Long Distance Migration: Mobility is part and parcel of a pastoral way of life and is crucial to make efficient use of scarce and far apart resources. However, stress time mobility is different from the normal time and regular seasonal mobility between the wet and dry season grazing areas. The normal time mobility is usually exercised within the vicinity of the woredas and happens usually within a radius of not more than 50 km. Unlike the normal time mobility, migration during periods of severe drought takes long distances both within and outside of the region. According to the informants, the long distance migration as a coping strategy involves several risks such as conflict with other groups over scarce resources, robbery and above all the herders suffer from hunger and hardships.

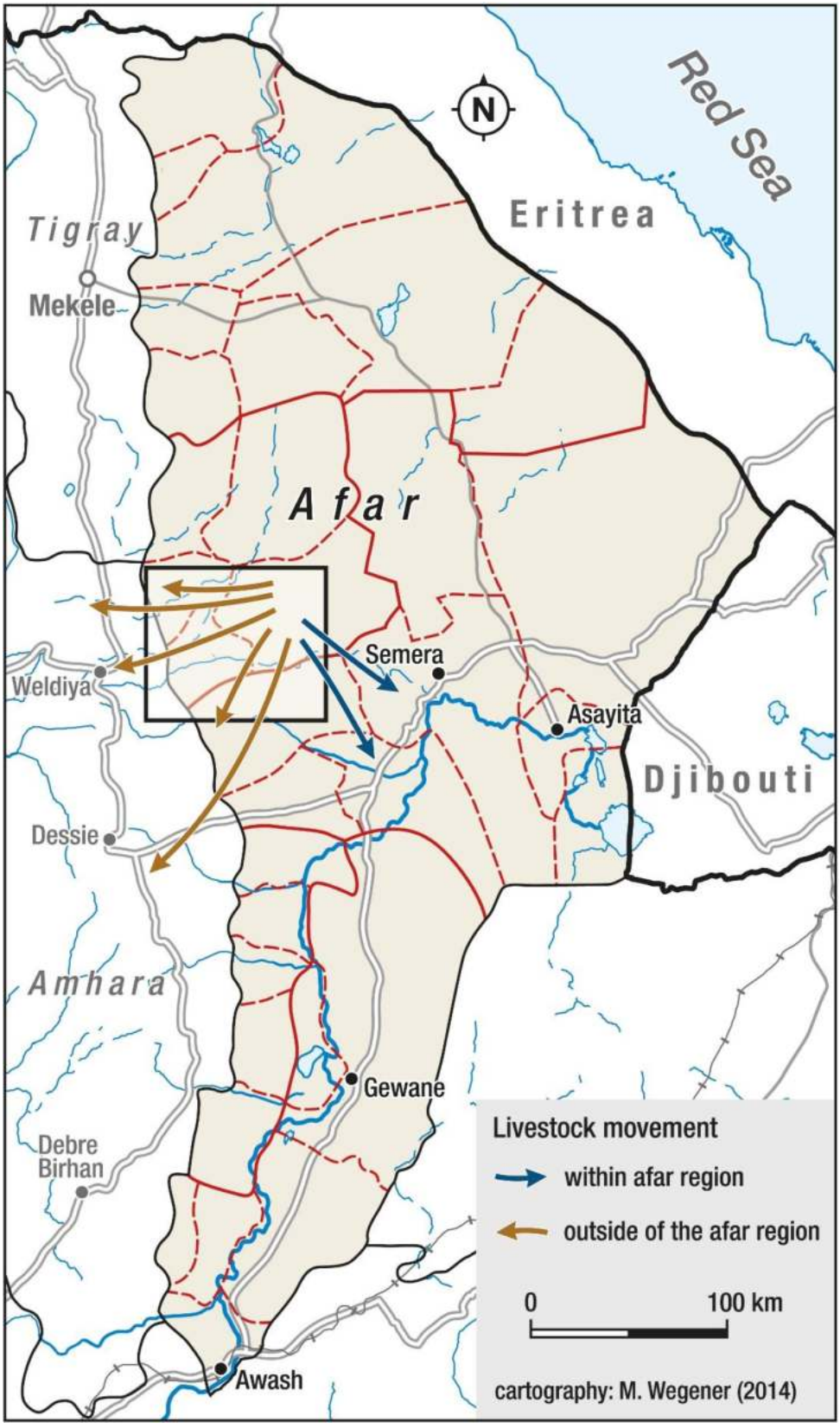
Figure 17:- Some of the major wet and dry season mobility patterns in Afar region



Source: compiled based on FGDs, secondary materials

Participants in the focus group discussions from both Woredas mentioned drought season important long distance migration destinations that are outside of the region and into Amhara region. During the focus group discussions it came out that during drought herders will move from their normal grazing areas to places where pasture and water are supposed to be available. Among the bordering area to Amhara region where the Afar take their livestock for grazing include *Gura Worke*, *Zobil*, Y*eju* and *Hara (*all along the borders Amhara national regional state*)* and Borkena valley located in Oromiya special zone (see the map below for the general drought time mobility directions taken by the pastoralists from Awra and Ewa Woredas).

Figure 18:- General mobility directions for pastoralists from Awra and Ewa Woredas within and outside of Afar region



The bordering area of Amhara region where the Awra pastoralists take their livestock is called *Gura'a*. This area serves as a sort of buffer zone between the Afars and semi-pastoral Amharas. The semi-pastoralists in Amhara region also use this area for grazing when the Afars are somewhere else. However, access to grazing their livestock in the neighboring highlands is not always open due to conflicts and camel robbery along the way. During severe drought, the Afar pastoralists used to go as far away as Cheffa Valley but as of recently they cannot go there because it is now privately owned. Instead they go as far as Aysaiita and Afambo areas. Soddoma grazing area in the direction of Chifra/Mille is also the place where the Afars avoid due to resource based conflict with their Oromo neighbors. Pastoralists practice such kind of long distance migrations as a mechanism of livestock dispersal with the hope of escaping drought. While the reasons why pastoralist men migrate with the livestock during difficult times to the neighboring Amhara region may be in the best interest of the household such as to dissipate pressure on limited household resources; the absence of men increases pressure on the women, who are forced by circumstances to take on additional responsibilities for all household members.

Table 7:- Migration routes/destinations of different livestock species from Ewa Woreda

Migration routes for Camels	**Migration routes for Cattle**	**Migration routes to shots**
Areas close to Amhara highlands -Haro -Hora -Close to Doro Gibir -Close to Woldia -Gura'a Worke -In Mille Woreda (a forest area called Geldid)	-Fialu (within Ewa Woreda) -Bagaraba plain (sometimes)- in Awra Woreda -Kalo (Awsa) -Aysaiita -Dubti -Dat Bahari -Afambo	Sheep and goats don't travel beyond the specific localities/villages

Based on key informant interview

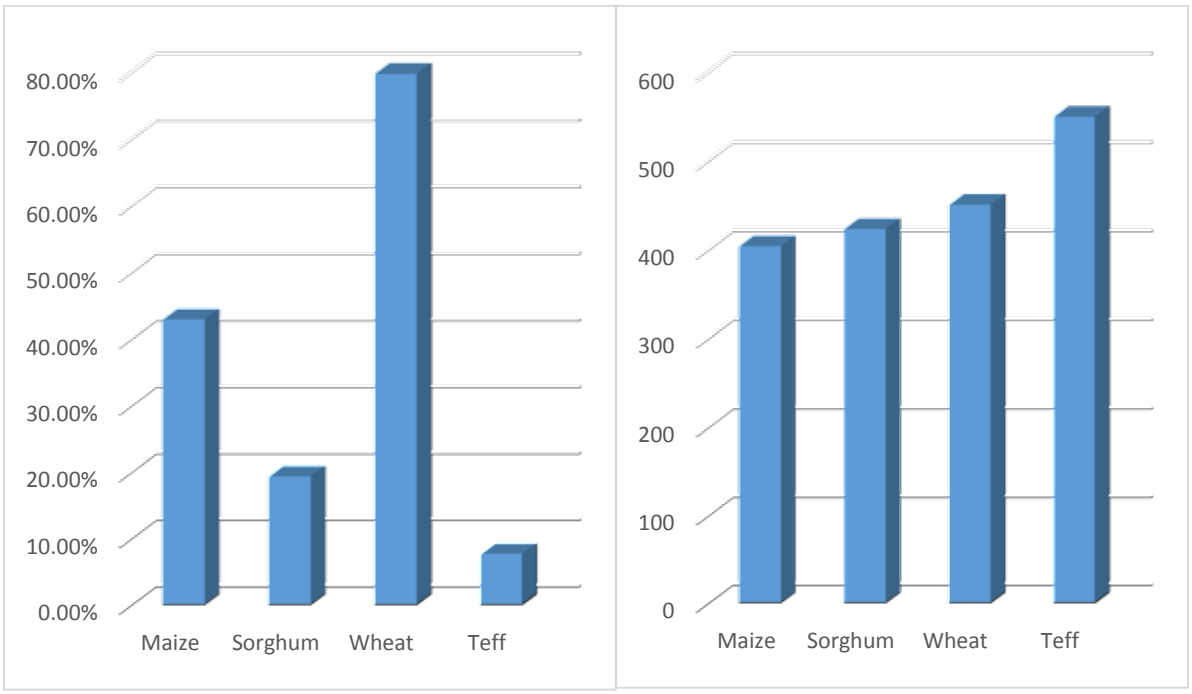
Another coping strategy that the pastoralists use is the purchase of animal feed. They mentioned that in order to help sustain the life of their cattle they buy the animal feed locally called *Furushka* from the neighboring highlanders and transport it all the way to their villages. *Furushka* is the mix of the leftovers of various cereals such as wheat and maize. And it is a common livestock feed that agriculturalists use to fatten their livestock. They buy feed by selling some of their livestock in order to save their lactating cows. A pastoralist from Badoli-1 summarized this desperate action in the following manner:- you know these days the cattle are also eating what the human beings are eating they are surviving on our blood because there is no enough grass for them to graze on. Pastoralists also try to collect grasses from some hilly sides and also cut the braches of drought resists trees to feed their animals. For instance the drought year that is locally known as *Godimali* is associated with the cutting of trees to sustain the life of their livestock.

Furthermore, in the case of drought and disease outbreak all the community members increase the number of animals that they sale at a very low prices in order to reduce the risk of losing the animals and to cover the cost of food purchases that are often high during drought times. However, these options are not equally

available for all households in the study sites as the poor households do not have the sufficient number of livestock to sale and buy food.

Contrary to livestock being the major livelihood activity, Households in the study Kebeles mainly depend on market purchase for food. The main food sources for households are imported cereals, including sorghum and maize, which are traded locally, and food aid. However, due to the introduction of small scale irrigation in Hida and Badoli-1 Kebeles, households also consume their own produce and rely on the market when there is a production deficit. The market also provides the households in the study area with the possibility of supplying them with different dietary options. As shown in the graph below, average prices for the major cereal crops ranges between 800 and 1200 during the survey time and the pastoralists in the study area use their small ruminants as a source of cash to diversify their source of food and nutrition at a household level.

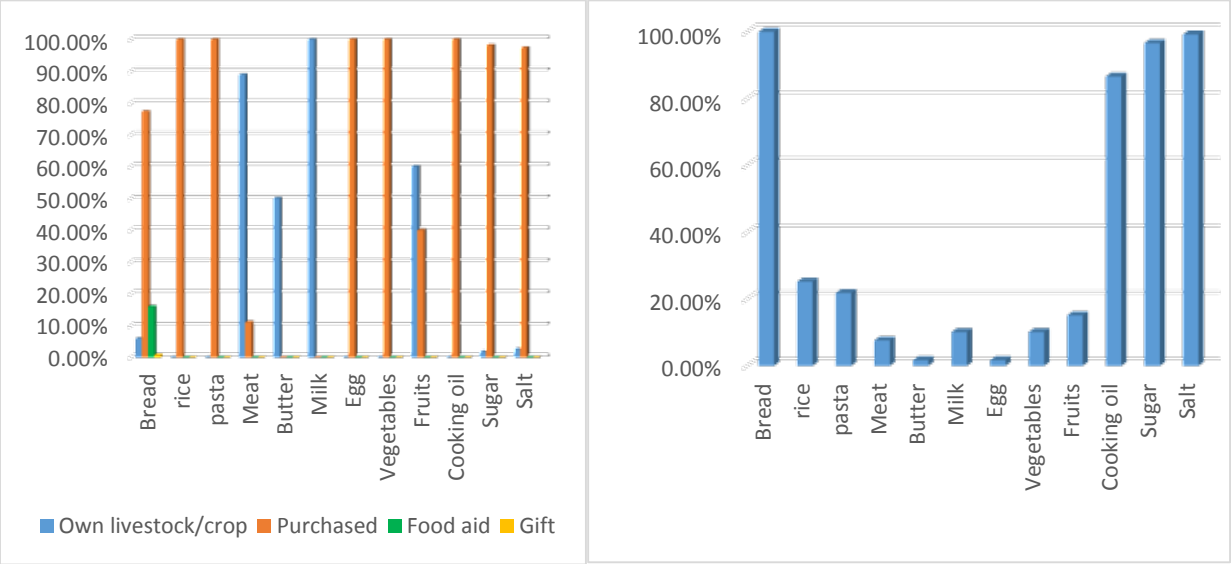
Figure 19:- Major sources of staple food and respective average price per sack



Source: Household Survey (2014)

As it is shown in the graph below, staple cereals are supplemented by non-staple foods such as sugar and oil, which they always rely on the market for their supply. Consumption of livestock products is low for most households in the study area.

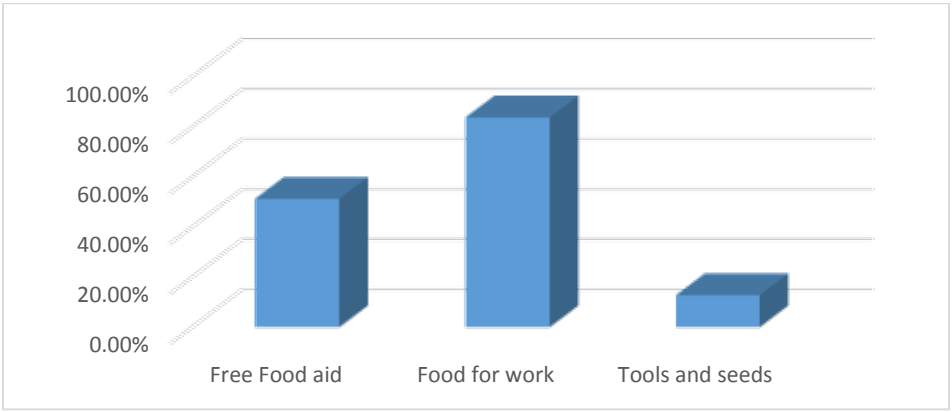
Figure 20:- Food items consumed by households and their sources (in one week)



Source: Household Survey (2014)

Generally, all households receive food aid equally regardless of their vulnerability levels because of a general belief that everyone is needy[6]. The majority of the households in the study area have received formal assistance from government or aid agencies in one or another form. This increases the dependency syndrome that in turn impairs the smooth functioning of other development projects in the area. The survey result shows that in the study area 98.3% of the households have received formal assistance in the past 12 months either in the form of food aid, food for work or tools and seeds in the farming community.

Figure 21:- Recipients of formal assistance in the study area



Source: Household Survey (2014)

[6] In Ewa Woreda, for example, there are 7661 people who are direct recipients of food aid and 7655 people who are under the public work program. Similarly, in Awra Woreda out of the 35,755 population 11,272 people are under the safety net program receiving direct food aid and participating in food-for-work program.

6. Conclusion and Recommendations

As it has been shown in this report, the livelihood of the study communities in the two Woredas are dynamic and households are pursuing different livelihood activities in an attempt to build their resilience. Accordingly, households are intensifying activities such as crop cultivation by taking advantage of specific environmental niches and support from outside agencies. However, as it has been shown in this report, livestock rearing continues to be the mainstay of the livelihood of the entire community. Any development activity that intends to improve the resilience of the community therefore should take into account the services and infrastructures that could enhance the effectiveness of the sector particularly the management of natural resources i.e. water sources & pasture land, Veterinary services and market. However, due to the combined social and ecological factors that influenced the livelihood strategies of pastoralists, the extensive livestock production system alone might not ensure food security of the pastoralist communities in the study sites. Accordingly, it is important to build on existing small scale crop production and piloting on the possibility of linking or delinking it with livestock rearing. In addition it is necessary to expand labor intensive development activities such as rural road construction that can employ rural communities to create employment opportunity that enables them earn additional income and improve infrastructure of the area.

The findings also pinpoint a number of challenges to production activities as well as some of the potential resources and opportunities in the study area. From these findings, a number of areas of intervention have been proposed and many of these are in line with activities indicated in the program's technical proposal. However, these should not be seen as rigid but rather as contextual guidance to inform programming and intervention. The practicality of these or any type of intervention will have to be carefully reviewed with communities during the process of implementation. Some interventions will be suitable in some areas and not in others. Similarly, some people will have the capacity and resources to take advantage of some interventions and others will not.

The main constraints to economic development include a lack of basic infrastructure and services such as roads, water and market centers. The major constraints to production activities include drought, rain-failure, flood (erosion), pest infestation and animal disease. The lack of inputs and services also undermines production and marketing and in many ways these can be attributed to the economic and political marginalization of the region. Drought along with misguided development policies and interventions has and will continue to hamper the region's economic potential. The Afar pastoral communities in the study area needs major investments in infrastructure and basic services such as health, education, credit, roads, water and electricity. It also needs a long-term and pro-pastoralist development strategy designed to take advantage of existing resources, capacities, opportunities and trends. Some of the constraints to production (such as rain-failure) will never be addressed and may even become more pronounced over time. Nonetheless, many of the constraints that have been identified can be addressed within the program framework.

Although from a development perspective some of these constraints are challenging, so too are some of the opportunities. The study area has a wide range of natural resources and assets that can be utilized for commercial purposes, support livelihoods and build a vibrant local economy.

At present, the livestock sector represents the greatest economic potential for the region and intervention in the region should prioritize and focus on developing this sector above others. Demand for meat and livestock products along with an increasingly and relatively untapped domestic and export market will continue to fuel the growth of this sector for the foreseeable future. The region is reasonably much better suited to livestock than crops and the Afar are experts in livestock production. However, over the years and through the loss of key grazing areas and the associated decline of livestock, this knowledge is being wasted and perhaps to some extent it is even being lost.

The active promotion of crop production at the expense of transhumant livestock production threatens this resource. The GIZ program can play a critical role in promoting and developing this sector through animal health service delivery, restocking and range land rehabilitation, thereby ensuring that this resource is efficiently utilized for the benefit of the local economy and people. This being said, an increasing number of people will continue to exit the pastoral livelihoods system and the creation of alternative jobs and livelihood opportunities for these people represents an enormous challenge for any development intervention in the study areas.

Crop cultivation will continue to provide jobs and livelihoods for people, although flood, drought and pest infestation will continue to limit the potential of this sector. However, improvements in input supply and extension services will be needed to improve crop production. There is also some potential for the promotion of certain cash crops, particularly along the perennial Rivers of Awra and Ewa.

However, cultivation of crops should only be encouraged in places where it has a demonstrated relative benefit over animal production or as a positively linked activity to livestock production in agro-pastoral areas. There may also be possibilities for the production of fodder crops in some localities.

The exercise of building resilient livelihoods and finding out the best possible combination of these does not happen in a vacuum i.e. the right to access to land and the associated crucial means of production (resources) need to be prioritized. In other words, any progress towards building the capacity of pastoralists to improve their resilience depends on the political commitment of local, regional and federal governments. Although significant policy and practical advances have been made in recognizing and strengthening the livelihoods of pastoralists, the continued under emphasis on access to grazing rights hinders the long term sustainability of the pastoral way of life. In this regard there is a need to initiate policy dialogues to push for pastoral grazing land rights in order to build their resilience on a long term basis. In more specific terms this study forwards the following recommendations based on the snap-shot research conducted in the two Woredas:-

- ⇒ Follow a holistic approach of intervention that considers the three related components of pastoralism i.e. natural resources, people and assets (mainly livestock) in order to bring sustainable development in the area;

⇒ Invest in basic infrastructure and services such as roads, water and market centers that will be crucial for the pastoralists to benefit from growing demand for livestock;

⇒ Consult and seriously consider local institutions (mainly customary) and local knowledge in the process of designing and implementing the management of natural resources with a long-term vision;

⇒ Initiate and push for evidence-based policy formulation on the issue of pastoralists' access to grazing land;

⇒ Search for synergistic combination of crop cultivation and livestock rearing at a local-scale and consult the locals on the possibilities of linking/delinking these activities based on pastoralists' own initiative of experimenting with new livelihood pathways

⇒ Invest in alternative livelihood options for those pastoralists who will leave the system. Investments in training and the transfer of skills will also ease the pressure on natural resource base.

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Appendix 1:

Table 1:- Location of Water wells in Awra Woreda

no	*Site name*	*kebele*	*Location*			*Well Type*	*Date of Cnstruction*
			x	y	z		
1	Debel	Debel	627519	1331305	824	deep	1999 E.C
2	Hida	Hida	607473	1319003	950	Deep	
3	Leakora	Leakora	612883	1321114	901	deep	2000 E.C
4	Deraitu 1	Deraitu	616709	1334181	841	deep	2000 E.C
5	Deraitu 2	Deraitu	616156	1334115	841	deep	
6	Deraitu 3	Deraitu	616522	1333267	848	deep	
7	Hayukeli	Hayukeli	616390	1328727	861	Shallow	2000 E.C
8	Leakuma	Leakuma	612649	1326699	882	Shallow	1997 E.C
9	Aliberimesgid	Segento & aliberimesgid	611530	1322904	902	Shallow	
10	Hida (agbiledale)	Hida	608593	1318047	936	Shallow	
11	Harsimeridora	Deraitu	610166	1329282	883	Shallow	1998 E.C
12	Hidelu 1	Hidelu	629696	1339582	807	Shallow	2000 E.C
13	Hidelu 2	Hidelu	631539	1345046	761	Shallow	1997 E.C
14	Rukudi	Finto & Asale	642922	1335055	765	Shallow	1997 E.C
15	Dema' gerseru	Finto & Asale	638458	1333380	800	Shallow	2000 E.C

Source: ANRS Hydrology and Water Resources Technical Report, 2011

Fig. 1: The ten Kebele Administrations of Ewa Woreda and their respective population

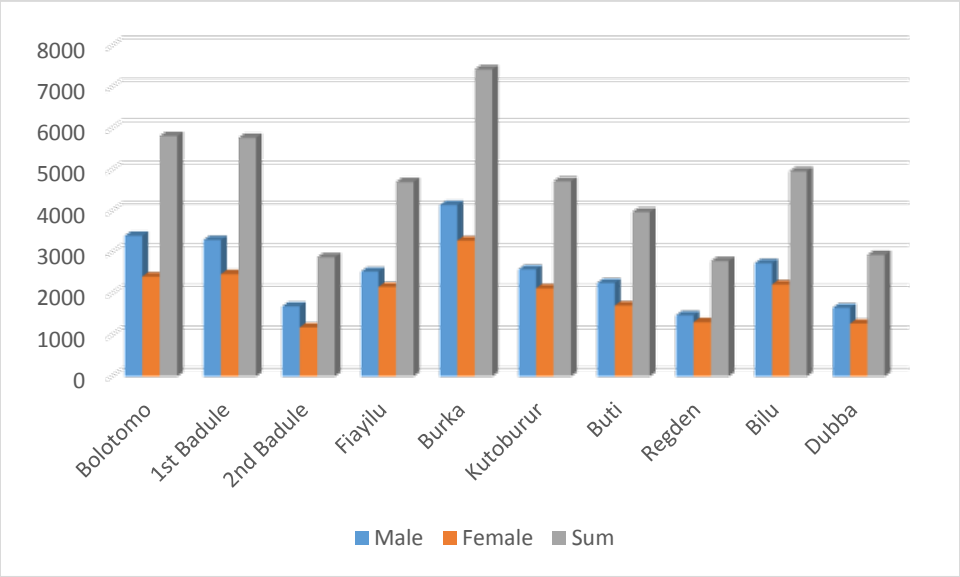

Fig. 2: The ten Kebele Administrations of Awra Woreda and their respective population

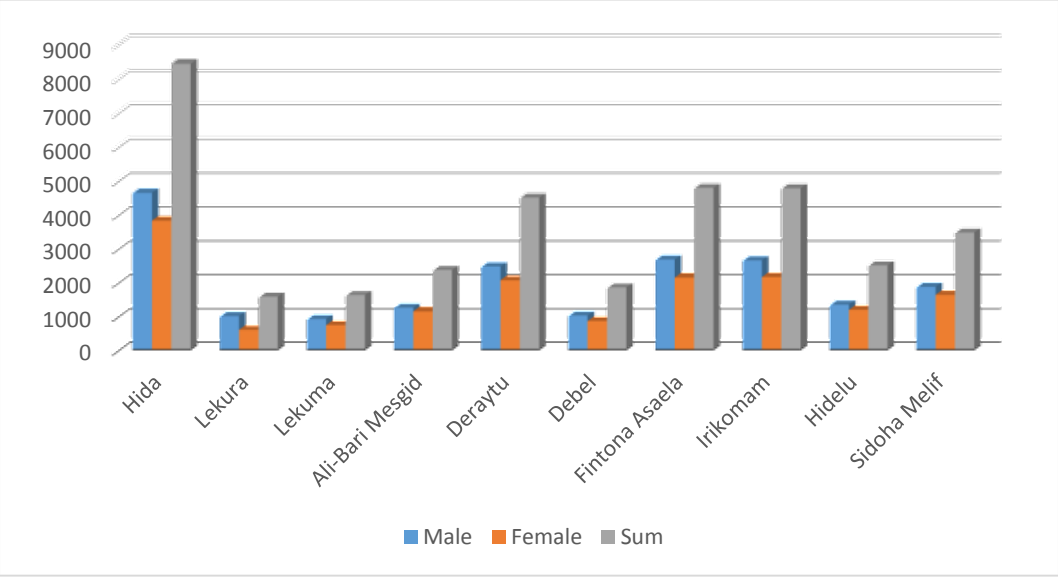

Table 2:- The predominant clans living in Awra Woreda[7]

Nr.	Kebele	Dominant clans	Dominant Livelihood Practices
1	Hida	Haysanto	Pastoralist & Crop production
2	Deraytu	Nassar/Hadarmo	Small town (Woreda center)
3	Heddelu	Alaayto k Goharto	Pastoralists
4	Debel	Asa abakari	Pastoralists
5	Finto/As ela	Hadarmo	Pastoralists
6	Lekora	Walwalu/Hamadi Sirat	Pastoralists and crop production
7	Lekuma	Maandita	Pastoralists and crop production
8	Urikomam	Molite k Barhito	Pastoralists
9	Ali Barih Mesgid	Haysanto	Pastoralists and crop production
10	Sidooha Malif	Nassar k Barhito	Pastoralists

Source: Key informant interview and FGDs, October 2013

Table 3:- The predominant clans living in Ewa Woreda

Nr.	Kebele	Dominant clans	Dominant Livelihood Practices
1	Bolotomo (Alele Subla)	Naser ke Aghini	Pastoralist & Crop production
2	Buti	Naser ke Aghini	Pastoralists
3	Bilu	Harso	Pastoralists
4	First Badoli	Kiiuk Henkeba	Pastoralist & Crop production
5	Second Badoli	Und golik maado	Pastoralist & Crop production
6	Duba	Arabta	Pastoralists
7	Regeden	Arabta	Pastoralist & Crop production
8	Fialo	Kiiuk Henkeba	Pastoralists
9	Kofo Burur	Arabta ke Bosalik Bedoytamela	Pastoralist & Crop production
10	Burka	Afkiek Maad k Kiiuk Henkeba	Pastoralists

Source: Key informant interview and FGDs, October 2013

[7] Besides the dominant clans resided in each Kebele the following clans are also living in the Woreda:- Araf, Hamadi Siraf, Dida Mela, Arrak/Hadarmo and Uluto. A clan called Maesera also resides in Burka kebele.