



EXAMINING ALTERNATIVE LIVELIHOODS FOR IMPROVED RESILIENCE AND TRANSFORMATION IN AFAR

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FRIEDMAN SCHOOL OF NUTRITION SCIENCE AND POLICY
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EXECUTIVE SUMMARY

Introduction

The Afar Region in northeast Ethiopia has an arid and semi-arid climate with low rainfall. Traditional pastoral livelihoods have continued sustainably for generations using flexible adaptive responses to the region's climatic variability. Recently, however, multifaceted driving forces such as demographic and policy changes, more extreme climate events, market changes and other drivers have affected the capacity of the pastoral system to adapt. Over the past 50 years, the pastoralists in Afar have witnessed a gradual declining of their traditional livelihood system, with pastoral activities being replaced by alternative livelihoods in many areas. Very poor households in particular, who have lost their livestock to drought and other shocks, have moved out of pastoralism in search of alternative livelihoods. The objective of this study was to examine the main types of diversified and alternative livelihoods that have developed in the Afar Region pastoral areas over the past few decades, analyzing the drivers behind the changes. An additional objective was to look at the future options for diversified and alternative livelihoods and their implications for resilience.

Study approaches and methods

An action-oriented research process was employed using standard quantitative and qualitative research approaches. Primary and secondary data were collected and analyzed, and relevant policy and literature were reviewed. Central Statistical Authority (CSA) data for the sampled *woredas* were analyzed, while primary data collection methods included focus group discussions (FGDs), key informant interviews (KIIs), market assessments and physical observations. The research approaches and methods were peer reviewed by researchers from Feinstein International Center, Friedman School of Nutrition Science and Policy at Tufts University prior to roll-out. The research sites were purposely selected in consultation with regional livelihood and food security teams. From the 32 *woredas* in the Afar Region, 7 were selected after considering available resources and time for the research, diversity in livelihoods and agro-ecology. Two *kebeles* per *woreda* and two communities per *kebele* – 14 communities in total – were then selected. These selections were done in consultation with community leaders and other actors with knowledge about the area.

Findings of the study

The study established that the traditional pastoral system has evolved into three major livelihood pathways, depending on the wealth status of the household:

pastoralism with commercialization of livestock; keeping livestock along with income diversification; and lastly a path into non-livestock alternative livelihoods. Livestock keeping now tends to be associated with wealthier groups that own larger herds. The study also found that pastoral transformation processes and their driving forces are not the same in all communities but differ across communities. Three levels of drivers were identified, covering household, community and policy levels.

The study looked in particular at changing gender roles in livelihood diversification, and the role of women was found to have shifted with the evolution of the traditional system. With the emergence of crop production, women now play key roles in production and processing, although products are still controlled by men, and they predominate in the better-paid positions. Women are mainly hired as temporary or casual workers for relatively unskilled manual tasks and usually receive lower wages than men. Women have become engaged in small-scale trading activities due to lack of alternatives for becoming financially independent. The study established that women and youth both aspire to engage in alternative livelihoods, while men favor more conventional livelihoods. With respect to age, the oldest generation perceive pastoralism as the most rewarding livelihood strategy, while the youth are more interested in engaging in alternative livelihoods such as employment.

The findings from the study indicate that the main types of diversified and alternative livelihoods in the different *woredas* are: (i) livestock-based activities (fodder commercialization, livestock trade, livestock product value addition); (ii) small-scale irrigation farming; (iii) fishing; (iv) natural resource production and handicrafts; (v) small-scale/retail trade; and (vi) wage employment including mining, tourism and commercial farming. Many of these alternative livelihoods are carried out alongside pastoralism activities – contributing towards sustaining pastoralism rather than replacing it.

Future intervention strategies

In terms of future options for the support of alternative livelihoods in Afar, these include focusing on high value-added commodities and value chain development for those remaining in pastoralism, such as meat value enhancement through fattening, and milk or milk products value enhancement at production, collection and processing stages. For those becoming agro-pastoralists, there is a need for support for using irrigation for high-value cash crops and fodder crops, and integrating high-value livestock production with irrigation-based crops. For those

moving out of pastoralism and for women and youth in particular, emphasis should be on enhancement of life skills training, entrepreneurship development, appropriate education, vocational and skills training, as well as mechanisms for providing credit, stimulating savings and allowing investment. In addition, entry points for income generation, and innovative alternatives involving production of commodities or services, are required.

Inclusion of the youth and women in the overall economic and social development program for Afar is important through the introduction of affirmative action for women workers and entrepreneurs (jobs, training, credit, childcare, representation in decision-making processes and legal rights to own property). Support is also needed for private sector initiatives with a focus on promoting gender equality to encourage agro-industries to give women workers training and promote them to more skilled or managerial jobs. Women should also be encouraged to seize opportunities for education and training, and develop their experience and skills to improve future job prospects.

The use of sustainable approaches is needed in boosting production, managing natural resources, developing biodiversity and fostering social inclusion through the use of local knowledge to improve the natural, human, social, physical and financial capital of the Afar communities. Strong local participation and decision-making in sectors such as mining and commercial agriculture is needed. Human resource development policies need to consider local investment needs. Promotion of private investment in education, agriculture and tourism is needed, alongside the development of communication technology to create potential jobs, specifically for the youth.

I. BACKGROUND

The Afar Region: context and livelihoods

The Afar Region is located in northeast Ethiopia and shares international boundaries with Eritrea in the northeast and Djibouti in the east. It is characterized by an arid and semi-arid climate with low rainfall. It has a bimodal rainfall pattern with a mean annual rainfall of below 300 mm. The region has an estimated density of 14.6 people/km², which is the lowest in Ethiopia. An estimated 10 percent of the population in Afar Region requires emergency food assistance, and almost all *woredas* in the region are under the Productive Safety Net Programme (PSNP) (Joint Government and Humanitarian Partners' Document, 2012). See Figure 1 for a map of Afar Region.

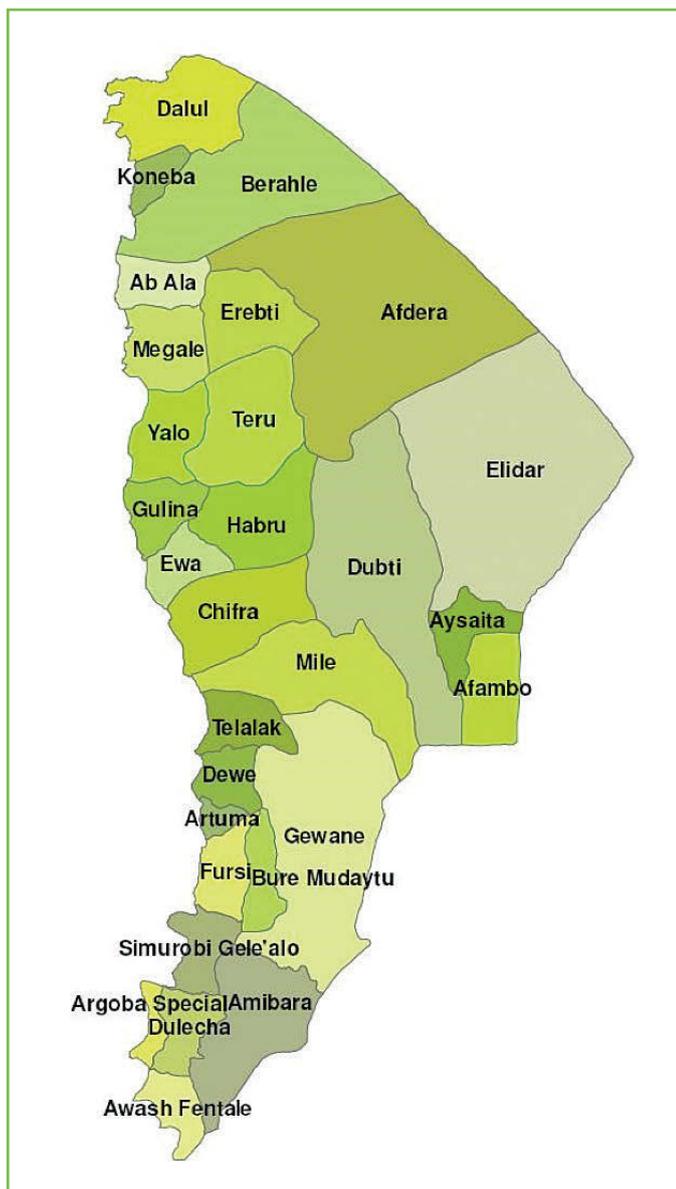


Figure 1. The woredas of Afar Region.

About 85 percent of the Afar population practice pastoralism (Afar Atlas, 2014). Pastoralists in all the areas covered in this study practice pastoralism, relying on livestock production as their main livelihood. All major species of livestock, including camel, cattle, sheep and goats, are kept. Livestock management practices are tradition based and depend on pastoralists' indigenous knowledge, but the productivity of livestock is generally poor overall and hampered by several prevailing factors. These include feed and water shortages, livestock disease prevalence and poor veterinary service delivery systems, poor infrastructure development, weak extension service systems, poor market development and marketing systems organization, lack of awareness, and poor pastoral capacity. Climate change, prolonged drought and a range of other complex factors, such as demography, government policies and ecological-related problems, have also increased vulnerability in the Afar Region in recent decades. The traditional pastoral livelihood path no longer supports the population, and Afar's pastoralists are being challenged to adopt alternative livelihood pathways in order to maintain their adaptive capacity and resilience to shocks and stresses.

The purpose of the study

The main objective of this study was to examine the alternative livelihoods that have evolved in the pastoral areas of Afar in the last five decades and the pathways now being followed. It aimed to examine how the alternative livelihoods options have evolved over time, identify important trends in the livelihood activities, the views of the pastoral community on their future livelihood pathways, and the implications in terms of resilience building and transformation.

The research was guided by the following research questions:

1. What are the main types of diversified and alternative livelihoods that have evolved in the Afar pastoral area, and what were the drivers of these changes?
2. How have options for diversification and alternative livelihoods changed over time and why, particularly during the last 50 years?
3. What are the factors that provide households with a wider choice of alternative options?
4. What are the implications in terms of the diversification and alternative livelihoods for

resilience building and transformation in the region?

5. What are the gender differentials in promoting alternative livelihoods?
 - a. What role can men and women play in pursuing alternative livelihoods?
 - b. What impact would the differences (if any) have on youth?
 - c. How best can alternative livelihoods be promoted and strengthened?

The study's approaches and methods

An action-oriented research process was employed using standard quantitative and qualitative research approaches. The methodologies included primary and secondary data collection and analysis. Secondary sources of information included a policy and literature review as well as CSA data from sample *woredas*, while primary data collection methods included focus group discussions (FGDs), key informant interviews (KIIs), market assessments, and physical observations. The research approaches and methods were peer reviewed by researchers from Feinstein

International Center, Friedman School of Nutrition Science and Policy at Tufts University prior to roll-out. A purposeful sampling technique was used in the research for the selection of sites, community groups, households and participants in different interviews and exercises. The combination of sampling strategies used included selection of information-rich individuals or cases. There was consideration made to balance sample size, expected level and depth of analysis, and the available time frame.

The total number of *woredas* in Afar Region is 32. After considering costs and timing, diversity in livelihood bases and agro-ecology, 7 sample *woredas* were purposefully selected.¹ Given that there are a number of *kebeles* per *woreda* in which several communities are residing, two different *kebeles* were then selected from each sample *woreda* after considering diversity in livelihood bases, community profiles, access to markets and agro-ecology. Finally, 2 communities were selected per *kebele*, making the total sample of 14 communities, as detailed in Table 1. Three households were then selected per *kebele* to provide case studies on selected alternative livelihoods. The selection process was done in consultation with community leaders and other actors with knowledge about the area. At the pre-assessment stage, detailed information about the sample *woredas* was gathered, and the necessary arrangements for the field work were made.

Table 1. Sampling and community-level data collection

Zone	Woredas	Number of <i>kebeles</i>	Number of HHs* interviewed	Number of FGDs conducted at <i>kebele</i> level		Number of KIIs conducted		
				No. of FGDs	No. of discussants	Region	Woreda	Kebele
Zone 1	Afambo ^(1a)	2	6	6	48	14	6	4
	Dupti ^(1b)	2	6	6	48		6	4
Zone 2	Berhale ^(2a)	2	6	6	48		6	4
Zone 3	Dulecha ^(3a)	2	6	6	48		6	4
	Amibara ^(3c)	2	6	6	48		6	4
	Gewane ^(3b)	2	6	6	48		6	4
Zone 4	Chifra ^(4a)	2	6	6	48		6	4
	7	14	42	42	336		42	28

*Households

¹ The *woredas* were (i) Dulecha, (ii) Gewane, (iii) Dubti, (iv) Amibara, (v) Afambo, (vi) Bahaleand, (vii) Chifra.

Table 2. Methodological approach – methods and tools

Approach and design	Data collection methods	Tools for data collection	Types of data collected	Data analysis
Qualitative research design	KIIs	Structured checklist	Written notes, sketches, tape recordings, photographs and videotapes	<ul style="list-style-type: none"> • Discussing findings from FGDs, KIIs with the community • Coding • Content and framework analysis • Narrative analysis • Discourse analysis • Non-parametric statistics
	FGDs	Structured checklist and semi-structured interview guide Audio and video records	Descriptive: the setting, actions and conversations; Reflective: records thoughts, ideas and concerns based on the observations and interviews	
	Participatory methods and tools			
	Formal and informal meetings			
Observation	Observation guides, recording sheets or checklist, schedule, and audio and video devices			

An in-depth livelihood and trend analysis was carried out in combination to identify the main types of diversified and alternative livelihoods that have evolved in Afar during the last 50 years and the drivers of the changes. In addition, subsector analysis and market and business observation were used to analyze the diversified and alternative livelihood paths identified. The gender analysis tool was used to assess the gender differentials in pursuing alternative livelihoods and impacts on women and youth. Identification of enterprises existing in the area was done at two levels, at the community level and at the market center that catered to the area. While observing local markets, products and services that went out and came in were recorded. Triangulation ensured that the evidence of people's alternative livelihoods, the status of local demand and the enterprises existing in the area could be determined in order to produce a list of all the livelihood alternatives.

The data analysis was a multi-stage process that occurred from the time of data collection to the compilation of this final report. Within each stage, the team members carried out their analysis. The data analysis involved discussing findings from FGDs and KIIs, and other participatory methods. Qualitative analysis was done by coding, developing themes, a systematic arrangement of FGD thematic questions into a matrix sheet, and summarizing each FGD and KII output by community and households. See Table 2 for a summary of the methodological approach methods and tools.

2. FINDINGS: THE EVOLUTION OF ALTERNATIVE LIVELIHOODS IN PASTORAL AREAS OF AFAR REGION

2.1 Perceptions on the evolution from traditional pastoralist livelihoods

The evolution of pastoral livelihoods over the past in 50 years was examined in each of the study areas. The informants described the agro-ecological potential of the Afar Region 50 years ago as being far higher, with constant availability of water and abundant grasslands that served as dry season pastures as well as drought retreats for pastoralists. The natural resource base sustained large cattle and camel herds, and the Afar considered themselves wealthy. An individual pastoralist would own more than a hundred livestock, and pastoralism was a prominent and glorious livelihood in Afar land. The respondents also frequently cited the past as a time of high consumption and low poverty incidence.

Down the historical timeline, the Afar pastoralists have witnessed a gradual decline of their traditional livelihood system. Fifty years ago, during the 1960–70s, several critical changes started to happen, with the disturbance of traditional mobility patterns and destabilization of the socio-ecological system. A significant portion of the pastoral community have now abandoned their traditional livestock production system, either fully or partially, due to drought and other shocks, and moved out of pastoralism in search of alternative livelihoods. The importance of non-pastoral based livelihoods is now replacing or supplementing earlier pastoral-based livelihoods. Pastoralists have adapted to non-pastoral livelihood strategies depending on the available options in particular areas. The most recent droughts of the 2000s demonstrated how the Afar pastoralists have now become extremely vulnerable, losing their traditional livelihood bases and lacking the capacity to recover.

Perceptions based on age

The details of the respondents' perceptions on the evolution of different livelihoods were captured based on age categories of older, middle, and younger generation. The older generation, whose age is above 55 years, had witnessed the successful years of pastoralism and perceived pastoralism as being the most rewarding livelihood strategy even today, if it is supported by policy and institutions. The middle generation is those between the ages of 35 and 55 years old. Most of these respondents have some formal education, unlike the older generation. They remember pastoralism during their childhoods and are interested in continuing with pastoralism while striving to adapt to other opportunities for wealth accumulation. Many were engaged in a mix of pastoralism and diversification, such as crop production, and had linkages with urban-market activities. The youngest generation,

between 20 and early 30s, have been exposed to numerous new opportunities not experienced by the older generations, such as higher education, use of technology such as computers and greater choices of career openings. In most of the study cases, the young group was targeting full-time jobs while working part-time in livestock rearing and trade.

Given the differences in experiences and perceptions, each generation tended to focus on different issues, although all of them reported the weakening of pastoralism in terms of accommodating the growing work force and providing livelihoods. In addition, many observed a rapid fall in clan spirit and family values, and *khat* addiction among young and middle-aged men. Despite their concerns, the respondents agreed that the youngest generation, born and raised in towns, was being offered more opportunities in terms of education, mobility and basic capabilities to adapt to the urban-market economy. The details of perceptions of respondents has been captured based on past, present and future trends. Diversification and dependence on alternative livelihoods has shown an increasing trend in all study cases.

Perceptions of the women

The details of the respondents' perceptions on the evolution of pastoral livelihoods was captured based on their gender as well as their age. The majority of respondents across all generations felt significant changes had occurred in gender roles and relations in the Afar Region in the last 50 years, with the older generation stating that educated women moving away from homes violated the tradition of the Afar family. Adaptations to the new market opportunities are having an influence on traditions of labor, status and social mobility. By transforming traditional occupations, the market is gradually creating new opportunities for women and youths in urban and peri-urban areas. For the younger generation, the newly instituted structures and practices are more appealing than the customs and traditions of their forefathers, with permanent and wage employment a more ideal livelihood than pastoralism. The middle generation, with less education, is increasingly engaging in unskilled labor and petty trade.

Women were reported to be steadily adapting to the dynamics of the market economy, becoming business entrepreneurs in some areas by producing for the market, and then purchasing food and non-food consumption items with their earnings. Their financial success has a broader impact, including education for their children, and use of modern health care and technologies. The women engaged in commercial activities have a dual aim of

making a small profit and producing for subsistence. With increasing urbanization and market opportunities increasing, occupations are changing, including the commoditization of labor, which was nonexistent a few decades ago. The Afar now imagine a new future for their children. Despite many structural constraints, more girls now have access to modern schooling and can better prepare themselves for employment prospects in the formal labor sector:

Five decades ago, the Afar were well-established and prosperous pastoralists, with a proper pride that no one was interested in leaving home and working as a wage laborer. Working for cash payment was thought to be disgraceful. In the past, as the economy was labor-intensive and efficient, the Afar did not allow their youngsters to leave their places of birth. Now, however, while ensuring the continuity of functional local values and institutions of past generations, women are in the process of gradually adapting to market opportunities. As primary agents of change in the region, they disseminate new ideals, values and expectations. The participation of women in the modern economy, especially in the employment sectors, is a recent phenomenon which creates strained relations in the household. The process of commercializing livestock and its products is part of a wider economic process in which women are turning pastoral assets and products into commodities (women FGD report, 2018).

2.2 Perceptions on how livelihoods are transforming

The majority of the respondents agreed that Afar society is transforming. The growth of non-pastoral livelihoods has been observed over the last few decades, mainly through trade, crop production and employment. Respondents viewed the growth of non-pastoral livelihoods as likely to continue in the future, along with the expansion of education.

Transformation through education

The majority of respondents wanted their children to be educated and strongly perceived education to be the only means for their children to obtain jobs. Men viewed education as useful for children to develop their life in general, whereas women saw education as a means of providing children with opportunities of getting better employment and helping the family. Education and subsequent employment was the most common desire of the youth but often followed a division within the family between children who are educated and those who look after livestock. The majority of households who owned larger numbers of livestock did not desire education for all of their children. See quotes below from community members.

Elderly man from Gewane: *“Nowadays we understand the benefits of education for the future of our children, our children need education and skills training to fit in the future demand of livelihoods. Even if they remain with livestock they need to be educated, the future livestock production requires knowledge and skills. Our children need to be literate to use different technology, which would help in improving the livestock production.”*

Elderly man from Barhale: *“Our children need education to help them to exploit opportunities of other alternative livelihoods in our area such as mining and tourism. We need our children to occupy the top jobs in the mining industries established in our area.”*

Elderly man from Dulecha: *“When I educate the children, opportunities are diversified. If the ones who go to school succeed with employment they will assist the others who are keeping the livestock. If the ones who take up livestock keeping succeed, they will be able to support those who went to school and were not successful.”*

A woman from Dubti woreda: *“I want the children to have a good education and get good jobs such as medical doctors, teachers and military officers, and to have a better life in urban areas rather than this that I live supporting the rest of the family. I believe that livestock keeping cannot support the next generation given population increase, environmental degradation and climate change. It is not like our forefathers’ time when there was abundant range resources, rainfall and low population. The alternative for the next generation is education.”*

The impact of livelihood transformations on gender

The changes from traditional pastoral production to diversification has impacted the roles men and women play at household level. In the past, pastoralist men not only managed the livestock by herding and watering but also controlled use and allocations, while women were responsible for managing the shoats and livestock products, and ensuring the feeding and welfare of the family. With the diversification of livelihoods evident among impoverished pastoral households, women are now required to contribute financially to the subsistence needs of their families.

Traditionally women’s work included: household chores (fetching water from wells, nurturing of children, preparation of home-building materials and dismantling/ installation whenever the household moved from place to place); milking of animals (except camels); searching for lost cattle; and preparation and marketing of dairy products. With the income from pastoralism now not enough to provide for all the household needs, many women now also participate in other livelihood activities such as farming, small-scale trade and wage labor to support the household needs.

There are contradictory views on the effects that the new roles of pastoral women have on their welfare. Most respondents agreed that participation in trade in town centers has benefited women, allowing them to access money that was previously controlled by men only. Income-generating activities are especially beneficial to widows and divorcees. Another positive effect is the opportunity for pastoral girls to enroll in school. However, the growing focus on the marketing of livestock and livestock products is blamed for the breakdown of traditional entitlements and obligations used to build social relations. For example, the sale of live animals to buy food has reduced the slaughter of animals for household consumption and the opportunity for building social relations through sharing. The new role of women has also increased their workloads considerably, adding new roles to their domestic one. In some cases, among households where women have better employment, they may employ other women at home to support their workload.

Livelihood transformation trends

Men and women respondents identified and ranked the evolving alternative livelihoods differently (see Figure 2). Men identified retail trade, high-value crop production and wage employment, while women identified small-scale trading and handicrafts. Both men and women identified high-value crops and wage employment as significant.

Recently, the growth of towns and peri-urban areas has become more evident in the Afar Region. The trend from rural pastoral into peri-urban and urban-commercial is quite visible, as is the decline in pastoral dependence, growing urban populations, adaptations to the urban way of life, and increasing levels of trade and wage employment. The Afar population now living in towns is also gradually increasing in number.

Employment opportunities in the new urban-market economy demand some level of modern education, for which the majority of the Afar, especially those above the age of 40, are unprepared. The proportion of the Afar employed in formal structures is increasing but is still lower relative to employment in formal structures in other parts of Ethiopia. Some men from the middle generation with no education are engaged as security guards and watchmen, while many women are participating in low-return activities. Afar women have avoided socially undesirable activities such as commercial sex work, becoming housemaids or selling alcoholic beverages for religious and cultural reasons. After receiving modern education, youths are increasingly living on wages and salaries from local agencies. They are viewed as role models by the community, and more parents are encouraged to let their children and younger relatives attend schools and enter into wage labor. This was almost nonexistent three decade ago.

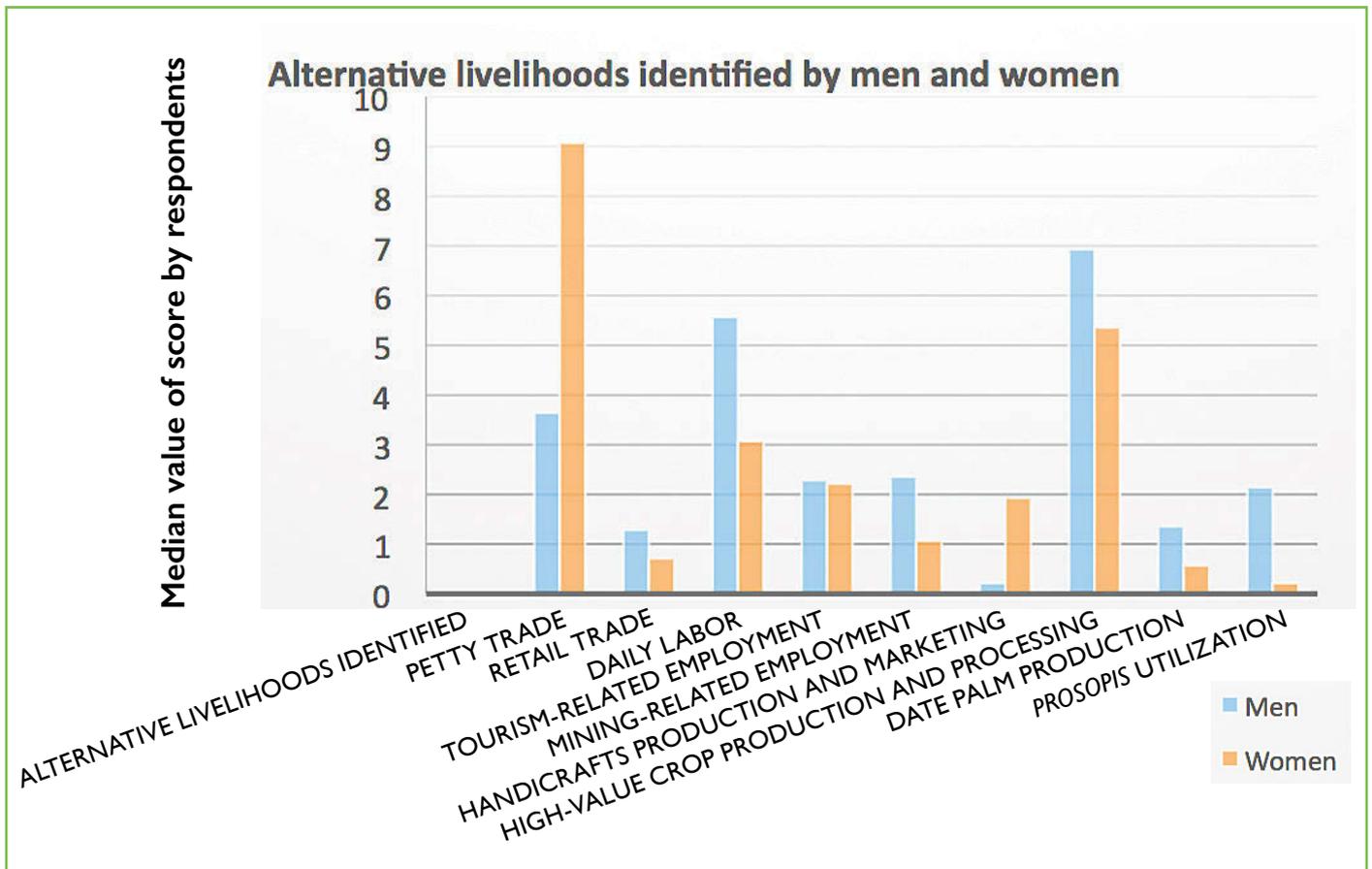


Figure 2. Alternative livelihoods identified by men and women.

With their growing participation in formal education, Afar women are increasingly joining the work force, and their dependence on men in urban centers is lower relative to women in rural villages. Within the household, especially in urban areas, women are empowered. When asked to establish who actually has control over finances, all agreed that the women themselves control the money that they obtain, which is in contrast to women in the other parts of Ethiopia. Many informants reported that they have full rights over assets produced by their labor, with the money raised used for medical, school and household expenses. As a result, more girls are being sent to school. Harmful traditional practices are also changing in the context of urban areas.

The growing public visibility of women and their improved financial position lead to greater bargaining power in the household and higher social status and networks. According to women informants, however, there are still stratifications as to what is “men’s work” and “women’s work” in the urban-market economy. High-return activities in government offices and the selling of camels are still reserved for men, while the women are pushed into low-return activities like selling palm dates, goats, crafts, stone mills and other pastoral products, whose prices and profit margins are low compared to commodities under the domain of the men. However, many of the informants strongly agreed that these gendered social functions are undergoing tremendous changes at the household level for those who are living in the urban and peri-urban areas.

In most livestock market centers, women appeared better prepared to adapt to the market situations than men in terms of taking up alternative income-generating options. Though the respondents were not willing to report the exact figures of their income, it was evident from their household purchases and assets in the home that in addition to basic items such as clothes and provisions, many households have newer appliances such as televisions, refrigerators and air conditioners. The majority of women were in small enterprises, however, and tended to follow

the same kinds of businesses – such as small shops and food huts – that require very little startup capital and which in turn saturate the markets. Although the women tend to have meager financial capital at their disposal, their enterprises are often more successful than those of the men.

2.3 Perceptions on future livelihood pathways

The pathways for livelihood diversification

Livelihood diversification within pastoralism often follows one of two paths, one within pastoralism and the other outside the pastoralist system. Diversification within pastoralism refers to adding value to existing activities and includes livestock fattening, and dairy and feed production. Diversification into non-pastoral livelihood activities includes trade, crop production and employment. It is often undertaken in order to meet consumption needs and reduce the risks from shocks caused by climatic fluctuations, animal diseases, market failures and insecurity.

The pathway into non-pastoral activities by pastoral communities is often the result of a decline in their livestock holdings. Pastoralists who have lost most of their herds might join safety net programs or migrate in search of wage employment in nearby areas. In regions where irrigation is available, their diversification might take the form of crop farming. Small-scale trading is often used as a means of then reinvesting in pastoral production by purchasing more livestock. There are, however, differences between the pathways taken by wealthy and poor households: wealthier pastoralists and medium-income families can diversify out of choice. For poor households, diversifying is due to necessity; they are forced to engage in other activities without adequate consideration of the long-term consequences. And with a smaller capital base, their alternatives to pastoralism tend to generate low incomes.



Women milking and women making handicrafts in Aysaita market.

Diversification strategies will vary based on the opportunities and resource bases available in a particular context. In remote areas, trade is not a primary option for diversification due to lack of infrastructure and access to markets. In areas where irrigation and market facilities are both available, horticulture farming can provide an important option for pastoral households. The diversification route followed will vary according to the household's demographic and socio-economic set-up, including the age and gender of the household head. In Afar, livestock production is frequently still practiced by households who diversify into formal employment. Livestock still plays an important role for those households that have diversified their portfolio of economic activities in order to increase their resilience to hazards.

Livelihood diversification while remaining pastoralists often occurs due to population growth (herd size insufficient to support the household), as part of integration into the market economy, and as a way of contributing to better pastoral food security and earning cash, thereby helping the household to preserve their livestock wealth. Households that diversify their livelihoods are better able to protect their livestock assets, with fewer animals having to be sold to meet the food needs of the family. Such diversification can help reinforce the pastoral livelihood so that it remains the major economic base, with the involvement in non-pastoral livelihood activities not necessarily undermining pastoral production.

Diversification does not always have positive effects on pastoral activities and the environment. For instance, the

expansion of cultivation in pastoral areas undermines the mobility that is essential for pastoral production. The loss of important grazing areas to cultivation may cause overexploitation of other pastures, leading to reduced feed available for livestock. The loss of pasture and competition over water sources also contribute to conflicts. Outmigration in search of wage employment and other opportunities lead to the loss of the labor that is necessary for pastoral production. Diversification and integration of pastoralism into the market economy can also lead to weakening of the social institutions for resource sharing.

The study participants were asked about the future of their livelihoods. Based on their responses, three categories of possible livelihood paths were identified. The first category of respondents viewed pastoralism as both a lifestyle and a livelihood with a goal of commercialization. The respondents in the second category viewed a future of practicing livestock production combined with diversified and alternative livelihoods, although individuals in this category also desired owning greater numbers of livestock in order to go back to pastoralism. The third group expressed their future desire to permanently drop pastoralism, adopt alternative livelihoods and settle in peri-urban areas permanently to pursue alternate livelihood activities. See Table 3 for a description of the categories.

The majority of the study participants belonged to category one and viewed pastoral livestock production as their preferred future livelihood strategy. It was clear that owning livestock was equated with being rich or well-off. Livestock acquisition was associated with herd building, i.e. many respondents talked of their livestock multiplying

Table 3. Description of livelihood categories

Category of respondents	Description of the livelihood
Category one	Those who pursue a purely pastoral livelihood and continue with pastoralism with bigger herd size and extensive mobility. Their goal is to commercialize.
Category two	Those individuals who aspire to own livestock while still maintaining diversified and alternative livelihood pathways, such as crop production, petty trade, wage employment and livestock value-addition activities. The goal of this livelihood is to restock and go back to pastoralism using the capital accumulated from alternative livelihoods.
Category three	Pursuing livestock value-addition activities and non-livestock-related alternate livelihood activities, which include livestock trade, retail and small-scale trade, and self-improvement and wage employment in other sectors such as tourism, mining, etc. The goal of this category is to reside in peri-urban and urban areas and permanently drop pastoralism. However, those in this category aim to maintain their social links to pastoralism.

and thereby increasing their capital assets. Interestingly, the desire for livestock also related to obtaining sufficient money to purchase additional animals in order to initiate a livestock trading business. This indicates the changing role of livestock for the Afar communities participating in the study. Livestock are now also being viewed as an economic means for generating capital to start an alternative activity through value addition, rather than livestock being owned just for wealth and status.

Although many women appeared keen to stay in peri-urban areas and pursue both livestock- and non-livestock-related activities, overall there was not a huge gender gap with regard to aspirations for the future. However, when age was disaggregated, unsurprisingly the desire to return to a pastoral livelihood was highest in the oldest age groups of the study sample, with the majority of the youth wishing to remain in urban areas while keeping their livestock in rural areas with relatives. Although many of the older participants wished to return to a pastoral livelihood, the majority did not desire for their children to do so. The majority of respondents, even if they did not see themselves pursuing pastoralism in the future, still had a desire for Afar to have livestock in the future.

2.4 Perceptions on the future prospects for pastoralism

The perceptions of the community regarding the prospects for pastoralism were examined and the mixed responses captured and categorized. The first category of response represents those whose views were that pastoralism can continue in the same way, while the other groups believe that it cannot continue the same way in the future (see Table 4). About 40 percent of the respondents in the case studies believe that in the future pastoralism cannot be the same as it was previously. Generally there was agreement that livestock keeping would continue, but not pastoralism, specifically where there is restricted mobility and the livestock numbers per head is low. For poor households, continuing to own livestock and pursuing livestock keeping in parallel with diversifying livelihoods would be a move away from their previous way of life. There were discussions about whether this qualifies as pastoralism, since it would not typically follow the pastoralist production system and way of life, such as mobility.

Drought was perceived by the majority of both men and women to be the primary threat to the future of pastoralism, although more men than women believed that recurring drought was the major factor in the decline. Interestingly, drought and livestock disease were the major concerns for men, while women focused upon education and the lowering of incomes from livestock. Positive views on the future of pastoralism related to having good livestock and good natural resource management in the

pastoral production system. Education was viewed as an alternative to pastoralism, and the general perception was that children who attended school would no longer be interested in keeping livestock. Education was generally perceived as having a positive rather than a negative impact, although many of the respondents recognized that not all children would be able to attend school. Some children would always be left behind, thereby offering a continuum for livestock keeping. Equally, education did not always represent a permanent separation from a pastoral lifestyle.

The perceptions of the community regarding the future of pastoralism give an indication of the strength of the beliefs regarding the sustainability of livestock-related livelihoods. The prominent responses on the positive future of livestock-related livelihoods included owning more livestock and initiating a livestock trade business. Negative perceptions were associated with motivation for livelihood diversification and a decreased investment in the livestock economy; for example, business-related livelihoods, education for the children, living in towns and self-improvement.

More detailed reasons offered for a positive or negative view on the future of pastoralism were identified from the study cases and are shown in Table 5. The reasons offered for positive perceptions on the future of pastoralism include educated people continuing to own animals, conducive environmental conditions, the desire and interest of community to stay in pastoralism, the comparative advantage of pastoralism over other alternatives in arid areas, and lack of viable alternatives in arid areas. In general, two types of positive respondents were noted: those who believed that external factors such as the environment would improve and those who felt factors such as education would not have a lasting impact on social norms and customs regarding pastoralism and livestock. Households that sent all of their children to school had a more negative view of the future of pastoralism, while those households who kept some children out of school, particularly to take care of livestock, had positive views on the future of pastoralism. The analysis as a whole confirmed an association between attitude towards education and perceived future of pastoralism, with education viewed as an alternative to the adverse conditions of pastoralism. Households with more negative or uncertain views of pastoralism are more likely to send all of their children to school, even at the expense of selling livestock or incurring labor shortages within the household.

Those individuals with a positive view on pastoralism associate livestock keeping with pride, respect, strength and wealth. Such motivating attributes, however, are also often overwhelmed by the uncertainty, risk and insecurity

Table 4. Community perceptions on the future of pastoralism according to four response categories

Category 1	Category 2	Category 3	Category 4
<ul style="list-style-type: none"> • Pastoralism to continue in the same way • Mobility should continue. It enables natural resource use efficiency. • It is the only productive alternative for arid environments with high level of variability. • Requires maintaining high number of livestock with commercialization 	<ul style="list-style-type: none"> • The future of pastoralism is under threat as practiced in the forefathers' way. It cannot be similar to the old one. • It has to adapt to the changing scenario in terms of demand for high productivity, climate change, restricted mobility and markets. 	<ul style="list-style-type: none"> • Livestock keeping would continue instead of pastoralism, specifically where there is restricted mobility and the tropical livestock unit (TLU) per head is low. • Livestock keeping could be practiced in combination with other alternative and diversified livelihoods. 	<ul style="list-style-type: none"> • Pastoralism is an old strategy, and people need to shift into other alternative livelihoods. • Poor households can continue to own livestock and pursue livestock keeping but not mobile pastoralism. • Households are diversifying livelihoods away from a previous way of life and adopting new ways of life.

Table 5. Reasons for positive or negative views on the future of pastoralism from case studies

Reasons for negative views	Reasons for positive views	Reasons for both positive and negative views
<ul style="list-style-type: none"> • Restricted mobility • Population increase, land use change • Climate change, conflict • Education access is viewed as an alternative to pastoralism, and the general perception was that children who attended school would no longer be interested in pastoralism. • Households that sent all of their children to school don't view a future for pastoralism. 	<ul style="list-style-type: none"> • Pastoral production system inherently has good livestock and natural resource management. • Its economic benefits are higher than any other alternative in harsh climatic conditions. • Comparative advantage in drylands with accumulated unique skill and knowledge • The institutional set-up embodied in the pastoral systems is highly adaptive to the environment. • Positive associations of pastoralism with the values, culture and identity of the people 	<ul style="list-style-type: none"> • Education was also perceived as having a positive rather than a negative impact. • Many of the positive respondents recognized that not all children would be able to attend school. • Therefore, some children would always be left behind thereby offering a continuum for livestock keeping. • Equally, education did not always represent a permanent separation from a pastoral lifestyle. • Educated pastoralist children pursuing urban-based livelihoods have interest in owning livestock back home and continuing clan linkages.

faced by many livestock keepers. Livestock were viewed as a means to an end and for some participants were viewed as a vehicle for escaping poverty as the easiest means of generating capital to initiate an alternate activity. Animals

are important for food and livelihood security. For the majority of study participants, livestock acquisition was viewed as a means of improving their present condition, with both economic and social implications.

Table 6 summarizes some of the different driving forces identified in the secondary literature as impacting livelihood transformations in Afar.

With regard to importance of pastoralism as sustainable livelihood path, an elder from Dulecha *woreda* has noted

that “Pastoralism is successful because moving animals from place to place in dry areas helps to exploit the scarce resources available here and there in drylands.” Similarly, an elder from Chifra has noted that “They will never have as many livestock as it used to be but we will still continue moving animals. If drought ends the pastoralist life will continue.”

Table 6. Driving forces for the changes

Household level	Community level	Policy/macro level
<ul style="list-style-type: none"> • Household wealth status • Ownership of various assets • Available options and access and control of opportunities • Access to information and relevant technology and resources • Perceptions and willingness • Knowledge and attitudes of the household • Ability to take risks • Social participation • External support including savings and credit, food and inputs • Social protection, social support networks 	<ul style="list-style-type: none"> • Community-level leadership and institutions (weakening of customary natural resource governance) • Loss of social capital (monetary profit conflicting with values like solidarity, cooperation, reciprocal arrangements and collective wealth) • Changing land tenure (the process of land commodification and monetization altered traditional common property regimes) • Climate change and variability • Acquisition of monetary profit, egalitarian “culture of sharing” • Settlement, demographic changes, urban-rural migration, conflict with neighboring community • Expansion of technology and commercialization • Access to services and infrastructure and access to market • Desire for education and employment opportunities 	<ul style="list-style-type: none"> • Inadequate investment in the drylands • Lengthy storyline on marginalization of the community in economic and social planning and indicating that the state ignored and still ignores pastoral interests • Distrust of governmental interventions due to the past experiences • Policies on land and natural resource management and expropriation of land • Policies on peace-building and security • Little influence over policy and decision-making processes by pastoralists • Climatic change policies



Goat keeping and watering in Dubti.

3. FINDINGS: ALTERNATIVE LIVELIHOODS AND ECONOMIC ACTIVITIES CURRENTLY FOUND IN AFAR AND THEIR IMPLICATIONS FOR RESILIENCE

The main alternative livelihoods that have evolved in Afar over the past four decades are discussed in detail in the following sub-sections, along with a consideration of their implications for resilience. The results from the surveys and case study results have been used to describe the potential for these alternative livelihoods to improve overall wellbeing for households with varying household resources.

The survey sought information regarding each household’s livelihood activities, including pastoralism and non-

pastoral activities. Respondents were asked to identify and rank their livelihood activities based on their overall importance to the household, their contribution to cash income and their utilization of household labor. The alternative livelihoods identified include crop production, trade and employment. The livestock-based livelihoods identified include fisheries, dairy, fodder production, and livestock marketing and fattening. Table 7 provides the score values of the alternative livelihoods identified by men and women respondents.

Table 7. Alternative livelihoods identified by men’s and women’s responses

Alternative livelihoods	Men		Women		
	Median	SD*	Median	SD	X2 value
Small-scale trade	3.64	3.08	9.07	3.56	6.14
Retail trade	1.29	0.83	0.71	0.73	4.14
Temporary employment	5.57	3.57	3.07	2.23	3.43
Handicraft production and marketing	2.29	6.85	2.21	6.87	12.00
Tourism employment	2.36	5.00	1.07	2.16	10.85
Mining employment	0.21	0.58	1.93	1.86	19.57
High-value crop production, marketing, and value addition	6.93	3.67	5.36	2.84	3.14
Date palm production	1.36	2.90	0.57	1.09	7.64
<i>Prosopis</i> utilization	2.14	3.23	0.21	0.00	5.64
Livestock related					
Fishery P & M	0.21	0.43	0.00		2.29
Livestock trade	7.21	4.00	3.29	2.37	6.5
Livestock fattening	5.79	2.67	3.93	2.27	2.71
Feed production and M	7.07	3.54	6.29	2.67	3.71
Beekeeping	1.07	0.73	0.07	0.27	6.07
Dairy production, processing, and marketing	0.86	1.51	3.50	1.83	12.42

*SD = standard deviation

3.1 Livestock-related alternative livelihood activities

Pastoralists in the study areas practice pastoralism, relying on livestock production as their main livelihood. All major species of livestock are kept in significant numbers, including camel, cattle, sheep and goats. Livestock sales are the principal source of cash income. According to FGDs, among the poor and medium-wealth class pastoralists, small ruminants, particularly goats, are the preferred species due to the recent enhancement of market-oriented livestock production systems, their fast economic returns, their tolerance to drought and harsh environments, and the relatively high and increasing market demand for goats, both for domestic and export markets. Non-traditional livestock species like fish, poultry and beekeeping are also emerging in some *woredas* (see Figure 3). The potential opportunities and risks in livestock-related livelihoods are discussed below.

Livestock trade and marketing

Livestock trading is the main economic activity that supports the livelihoods of pastoral communities in the study area. Livestock are traded through an integrated pathway from pastoral producers to final consumers.

When all actors are considered, the livestock trade creates a huge alternative livelihood opportunity. The livestock trade is practiced most widely by wealthier pastoralists through a chain of middlemen from local to regional markets. The profit margin is small for the small traders at local markets, but the medium/wealthy traders who purchase cattle and goats from local markets can sell them at higher prices in urban markets. The prices change seasonally, however. The better-off traders are those who are able to buy sufficient volumes of stock and hire vehicles to ferry them to the big markets.

The live animals supplied to market include cattle, sheep, goats and camels, passing through local and intermediate traders to export abattoirs and other traders. Pastoralists also supply live animals directly to neighboring farmers, mainly for draft power (oxen), transportation/packing, slaughtering, breeding and stock replacement. Other buyers are local butchers, hotels and other pastoralists looking for stock rebuilding and replacements. In live animal marketing, sheep and goats predominate, with women having the right to sell sheep and goats.

Most of the livestock marketing facilities in Afar have been constructed under different livestock development

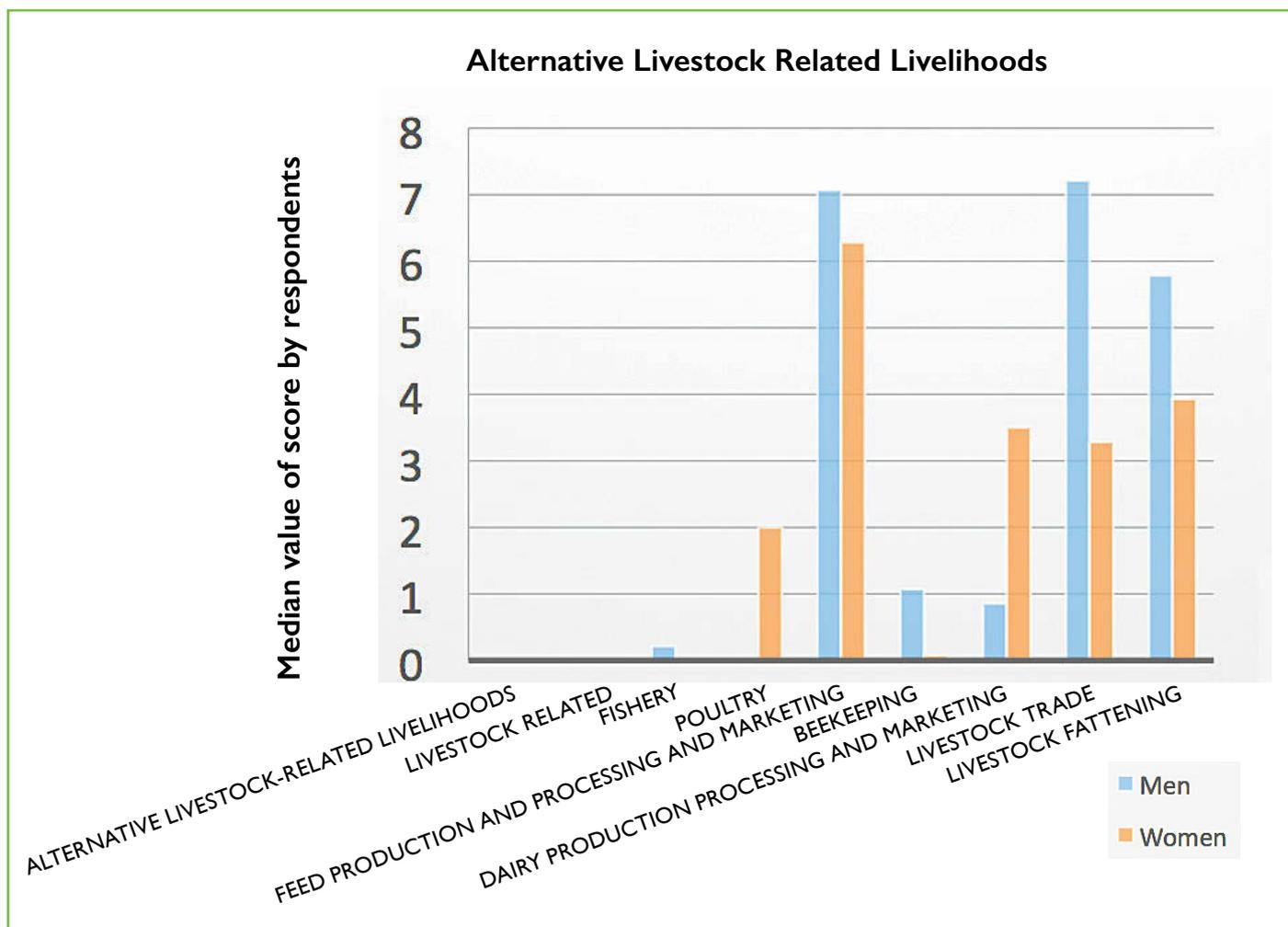


Figure 3. Livestock-based alternative livelihoods identified.

programs by government or non-government programs. The constructed markets have facilities like loading ramps, holding areas, veterinary inspection posts, and feed and water troughs. These integrated facilities help improve marketing transactions and maintain the condition of the animals until they reach other secondary or terminal markets. Both large and small livestock are transported to the primary markets from all directions by trekking. The large traders will then use trucks to transport small stock to terminal markets. Cattle and camels may be trekked to the secondary and terminal markets. In the wet season, animals gain more weight during trekking, but in the dry season the trekking routes may be without pasture. During bad years, losses from trekking can be expected to be higher but not necessarily always higher than when other modes of transportation are used.

Livestock marketing provides economic benefits to the entire local livelihood in creating direct alternative livelihood opportunities for all actors in the trade channels. In addition is its multiplier impact in creating indirect opportunities and alternative livelihoods. Every livestock marketing actor has his own role, with large numbers of market participants involved in livestock selling and buying. There are different groups of sellers and buyers who are linked at all levels of market chains. Providing the necessary inputs and services near major markets and along trekking routes, such as providing feed

and waiting grounds, by local pastoralists creates employment and alternative livelihoods. See Table 8 for a summary of livestock trading actors and their functions.

Fodder production and commercialization

Fodder commercialization can create significant employment opportunities through production, bulking, transportation and trading; and in the additional indirect jobs created following value addition to livestock production as a result of fattening and increased dairy production. In recent years, the demand for commercial feed has boomed due to the continuous reduction of grazing areas and the expansion of farming. Export demand for animal feeds has also been growing, with green feed being exported to Djibouti. The demand for fodder shows the enormous potential for irrigated forage commercialization and an opportunity for technology adoption and greater employment.

Pastoralists in the study area reported the recent growth in fodder production. The fodder products marketed in Afar include grown grasses and thinned maize or weeds collected from the farms. The mixed grass-weed bundles are cheaper than the fresh maize stover and other fodder bundles. The fodder is transported from farms to the town markets by donkey cart after being commissioned by the fodder traders, or fodder producers deliver their fodder directly to allocated market sites. Fodder transportation is

Table 8. Actors in livestock trading and their functions

Actor	Function
Local pastoralists or highlanders	<ul style="list-style-type: none"> • Sale of livestock and livestock products in the market
Small-scale traders	<ul style="list-style-type: none"> • Buy animals from producers in one market and sell them to another market in order to exploit price differentials between the two markets
Brokers	<ul style="list-style-type: none"> • Facilitate the bargaining between seller and buyer or other traders • Price is arrived at through the facilitation of the broker. • Facilitating exchange, brokers play the important role of guaranteeing that the livestock being traded is not stolen. • Add value to purchased animals through supplementary feeding and treatment for health problems
Agents of exporters	<ul style="list-style-type: none"> • Transfer animals on behalf of their clients from smaller markets to larger markets within the country or across borders based on an established rapport and trust
Exporters	<ul style="list-style-type: none"> • Traders who act as the final link in the chain between the local livestock marketing system and the importing country • They assemble livestock from different regions of Afar and transport them to Djibouti and arrange for their sale.

Source: Key informant interview, 2018

also becoming a livelihood activity, with the number of these transporters increasing.

Fodder commercialization has intensified over the past five years due to the increasing severity and frequency of drought, with pastoralists now seeking traded fodder as the main source of feed for their livestock. Many of the fodder producers preferred to grow *Chlorisgayana* (Rhodes grass) and *Sorghum sudanense* (Sudan grass) to other crops, as they require low input in terms of labor and can be harvested up to four times before replanting. Several producers reported that they prefer fodder production to other crops, as no inputs like pesticide and fertilizer are required, unlike vegetables and cereals. It was also reported that the growing of fodder allowed pastoralists non-grazing options for livestock feeding and signaled a slow shift towards the cut-and-carry feeding system as an adaptation to the effects of drought in the study area. Fodder production has also opened additional jobs along the value chain, especially for women. Women sell green fresh fodder bundles, which they buy at wholesale prices from the agro-pastoralists and sell to livestock keepers coming to the open markets.

Some pastoralists use the fodder they grow to feed their own livestock and sell the remainder to peri-urban livestock keepers as well as to other pastoral communities living farther away from the rivers, or to those with little access to the riverbanks. The increasing urban population, as consumers of milk and meat and as livestock keepers themselves, is generating an ever-greater demand for fodder. Mobile pastoralists are increasingly forced to use fodder to feed their cattle as rangeland pastures decline during drought. These communities are the ones who are

exerting the greatest demand on the fodder supply and are the ones targeted by the fodder producers, transporters and traders. Animals from all livestock keepers (agro-pastoral and peri-urban) are still taken out to rangeland pasture and fed on fodder. During the dry season, large numbers of cattle from remote areas are moved into the crop-growing areas in search of crop residues. Livestock traders at markets are also part of the fodder market, buying fodder – both fresh and dry hay – to feed their animals at the market. There is also growing demand for cheap fodder in the central highlands of Ethiopia by commercial dairy farmers and from feed lots around urban centers.

Irrigated fodder production has potential for income generation and livelihood diversification in terms of both green fodder and forage seed to households. Producers sell 85 percent of the fodder seeds and use the fodder itself to feed their livestock or sell it, therefore enjoying double benefits from fodder production. On-farm use of fodder enables livestock owners to keep more cattle and have higher off-take values (types and number of animals kept, milk production and weight at which the animals are disposed of) than other pastoralists. More effective utilization of the naturally available feed resources (natural pasture), which is sometimes of poor quality, by providing improved forage is a key step in value addition. Different supplementation strategies should be applied depending upon the type, accessibility and price of supplementary feeds. Fodder conservation practices, like hay making, improved forage cultivation and supplementary feeding, could enable a stable supply of feed throughout the year. See Table 9 for a summary of opportunities and risk factors in fodder commercialization.

Table 9. Opportunities and risk factors in fodder commercialization

Description	Opportunities	Risk factors
<ul style="list-style-type: none"> • Growing forage to feed own livestock on the riverbank and selling it is a recent phenomenon. • There is a growing trend of marketing fodder in local markets. • The fodder business has been intensified over the last five years due to increasing severity and frequency of drought, with pastoralists seeking traded fodder as one source of feed for their livestock. 	<ul style="list-style-type: none"> • Fodder commercialization creates direct employment in production, bulking, transportation and trading; and creates additional indirect jobs by allowing value addition to livestock production through fattening and dairy production, etc. along the value chain. • In recent years, the demand for commercial feed has boomed due to the continuous reduction of grazing area and expansion of farming. • Export demand for feed has also been growing, with green feed being exported to Djibouti. • Fodder production is preferred to other crops as it requires low input, both in terms of labor and capital (it can be harvested up to four times before replanting) and fertilizer/pesticide use. • There is growing demand for cheap fodder in the central highlands of Ethiopia by commercial dairy farmers and feed lots around urban centers. 	<ul style="list-style-type: none"> • Shortage of irrigation water • Shortage of seed supply • Transportation and storage problems • Scale of production at individual level may not match the feed demand.

Forage production in Afambo.

Adding value to livestock products

Cattle fattening, dairying, preserving hides and skins, and the establishment of small-scale processing and marketing are key alternative livestock-related livelihoods. Value addition through product and market development can be achieved with four different approaches. These include market penetration, promoting market development, stimulating product development and niche market development.

Market penetration – Market penetration is a strategy for improving the sales of an existing product within a market that the pastoralists already serve. The demand for meat and dairy products is growing with the rise of urban populations and rise in incomes. Market penetration is one of the main strategies to be pursued to increase the volume of sales. Working with familiar products reduces the time and cost of training in new skills. In addition, working with already existing buyers avoids looking for new buyers in unfamiliar environments. The popularity of this strategy also reflects the scope for improving the efficiency of existing chains for pastoralists' products. Many such chains have serious bottlenecks: marketplaces are nonexistent, inefficiently run or lack suitable facilities; milk collection is slow and unhygienic; pastoralists lack the services they need to produce and market their products. By identifying and overcoming these bottlenecks, it is possible to reduce costs, improve quality, increase sales and boost profits for the pastoralists as well as for others in the marketing chain.

Promoting market development – Market development is taking an existing product such as camel milk and finding new buyers for it. This strategy means taking a product that is being marketed locally and seeking buyers in the national market; for example, looking at the market for processed camel milk in supermarkets in big cities. A significant amount of market research may be necessary: identifying and contacting a new set of potential buyers, finding out their demands and convincing them to purchase the product. The product has to be of sufficient quality and available in suitable amounts to serve this market.

Stimulating product development – Product development takes place to develop new products to serve a market that already sells similar products. There is considerable potential; for example, in pasteurizing milk, chilling it and putting it into sealed containers to convert a product with a very short shelf-life (fresh, warm milk, sold from a bucket) into one that is safer and can be stored for longer. Making butter, cheese or yogurt and processing them raises the value of the product, reduces wastage and attracts greater income for producers through selling these products to an existing range of buyers.

Encouraging niche market development – Pastoralist marketing chains may be oriented towards two different types of market: mass or niche. A mass market is one where the identity and particular qualities of the product are not important. Niche markets are the opposite of mass markets. Here, the product stands out because of its particular qualities or features. Most pastoralists serve mass markets. Their milk is not distinguished in any way from products from other sources. Often they come in at the lower end of the quality and price range, and make low profits. But pastoralism also offers opportunities for niche marketing; for example, the animals are raised on grass with few or no external inputs. The milk has different qualities from that produced by stall-fed animals raised on concentrates. Pastoralists also produce unique products, such as camel milk, which is reputed to have medicinal benefits.

Milk trading

The channel for the milk market is direct and simple, and is one in which pastoralists sell their milk and milk products to the customer. Key actors involved in the milk market chain are the producer, trader and consumer, and all are dominated by women. Marketing is informal, with women selling their milk at the roadsides and in small local markets. Products include fresh camel, cow and goat milk and fermented camel milk. The only processed product currently found in the market is ghee. The price of milk varies based on the season, which determines the

supply. Camel milk fetches the highest price, both for producers and traders, and has the highest volume of turnover irrespective of the season. Low productivity, underdeveloped infrastructure (roads, transport and markets) and seasonality are impediments to the milk trade, especially in the absence of cooling facilities. Even if there is a potential of milk commercialization driven by the rise in urbanization, settlement and industrialization in the study area, the absence of commercialization and lack of an organized market chain inhibits the prospects.

The existence of powerful women in the milk production and marketing business, the milk processing culture that pastoralists have, the unmet demand for milk and milk products in the market, and the existence of relatively few actors are some of the key opportunities for enhancing the competitiveness of the milk value chain in the study area. It was noted that there is substantial milk production potential during the wet season in the study area. The pastoralists who are not able to access markets and urban centers tend to process their milk into butter. Out of the total volume of marketed milk, only 6–10 percent reaches the terminal market. The majority of milk is supplied to rural neighborhood markets.

Generally, because of low rural incomes and purchasing power, the prospects for a significant growth in the local milk market are limited in the near future. Other alternate markets could be expanded and developed by adding value along the chain despite the fact that there are many factors affecting the milk subsector in the study area; namely low milk productivity, low quality milk, poor organization of the chain, lack of support for business orientation and poor market infrastructure. The establishment of small-scale milk processing units, and collection and chilling centers, could help utilize the existing milk potential for the benefit of the Afar pastoralists. Engagement of private milk processing companies and cooperatives with improved level of productions needs to be promoted.

The current level of cow milk production, particularly during the dry season, is low. Lack of adequate pasture and animal feed are contributing factors. The women suggested that, by producing improved fodder on parts of their irrigated land, it would be possible to increase the milk productivity of their local cow breeds. The inputs needed are improved forage seed, irrigation land, milk collection and storage cans, a milk collection house, refrigeration, and training on fodder production and feeding of their cows. Fodder production and milk production can be done

individually, while marketing could be done through establishing a milk collection and marketing cooperative. The cooperative, once established, could also supply inputs to members to improve production and collection of milk and supply local markets on a daily basis. Contract marketing could be utilized between the cooperative and buyers in the town. The buyers usually are hotels, cafeterias and schools with feeding programs. See Table 10 for opportunities and risk factors in value addition for dairy products.

Livestock fattening

Livestock fattening was rated as a priority interest by a significant number of respondents during the study. FGD participants reported that livestock fattening can include all kinds of livestock. Not only oxen but also small ruminants can be fattened so as to secure more income from the sale of the fattened animal. According to the informants, the activities of livestock fattening do not just mean “beefing-up.” The main problems are with access to feed and water, with animals having to travel some distance for watering. Support, in terms of credit facilities as well as skills training, would mean communities having a greater interest and capacity to be engaged in fattening. The relative availability of feed and water, climatic conditions, the adaptation capacity of the livestock in the area and the types/species of livestock in the area are all considerations.

Goats in the study area are used for milk and meat production within traditional production systems. Goats are important for diversifying production, creating employment, increasing income, contributing to human nutrition (meat and milk) and improving resilience. Their fast growth/reproduction rates, high recovery rates after drought, as well as their ability to survive on varied vegetation explains the importance of goats among Afar pastoralists. See Table 11 for opportunities and risk factors in livestock fattening.



Women engaged in milk processing activities.



Women milk collection and trading cooperative members with milk collection and cooling refrigerator in Amibara.

Table 10. Opportunities and risk factors in value addition for dairy products

Description	Opportunities	Risk factors
<ul style="list-style-type: none"> • Milk plays a major role in food and nutrition security in the household and is controlled by women. • Traditionally, vending milk was a taboo in the community, and still the value of milk is more for household consumption than commercial purposes. • Milk commercialization is at a low stage, practiced in informal marketing along the roadsides and in small local markets. • Few small-scale milk processing units and collection and chilling centers exist. 	<ul style="list-style-type: none"> • It could involve women more than any other livestock product. • There is a potential of milk commercialization driven by the rise in urbanization, settlement and industrialization. • Milk processing is part of the culture of pastoralists. • The unmet demand for milk and milk products and the existence of relatively few actors enhance employment opportunities in the milk value chain. • Adding values along the chain could consequently benefit the producers in sharing profit margins. 	<ul style="list-style-type: none"> • Low milk productivity, poor quality milk, poorly organized value chain • The major milk production is in the rainy seasons (high seasonal variation in milk production). • Very low level of commercialization and lack of organized market chain • Lack of support for business orientation of milk production chain and poor market infrastructure such as collection points, cooling facilities, market stands, sheds, milk bars • Absence of linkages between market chain actors

Table 11. Opportunities and risk factors in livestock fattening

Description	Opportunities	Risk factors
<ul style="list-style-type: none"> • Livestock fattening is a recent activity related to the expansion of crops and settlements. • Small ruminant fattening is practiced to secure more income and savings. • Communities have an interest and capacity to be engaged in fattening where there is relative availability of feed and water. 	<ul style="list-style-type: none"> • Small ruminant fattening is creating an income opportunity for women in peri-urban areas and settlements. • There is a potential demand for goat meat driven by rises in urbanization, settlement and industrialization. • The huge demand for goat meat in both local and export markets • Fast growing and short cycle of return from small ruminants 	<ul style="list-style-type: none"> • Shortage of feed and water • The distance for watering animals • Lack of support for business orientation of pastoralists and poor market infrastructure • Lack of experience and skills training • Lack of marketing information and weak marketing



Women's engagement in goat fattening.

3.2 Small-scale agriculture using irrigation

There was agreement among all the FGDs in all the study *woredas* that crop-based livelihoods are gradually growing, often determined by the availability of irrigation. Most of the *woredas* are characterized by low rainfall, low soil fertility, and rocky and sandy land, except for the areas on the banks of river and streams. Crop-based livelihoods are a relatively recent occurrence in almost all of the study areas, except for Afambo where older traditional irrigated crop farming was practiced. The large-scale commercial farming on the banks of the Awash River has also been there for 50 years, since the establishment of the Awash Valley Authority (AVA) in the 1960s, but smallholding crop farming by pastoralists is a recent phenomenon. As

crop production has expanded in the study area, enormous socio-economic and land use changes have been witnessed by the respondents. The area of land under private holdings has increased due to poverty levels of pastoralists and also the promotion of crop production and settlement practices by the government. Currently, much of the rangeland that had been used for dry season grazing along major riverbanks has been transformed into crop production. The proportion of the contribution of crops to livelihoods varies and depends on the total livestock holdings at the time.

Land loss to large investors

Agriculture is visible in all the study areas as more land is put to crop production than ever before in the history of the region. The growth of crop production is driven mainly by the growth of private investment, increasing immigration from other regions and existing state farms. A large portion of Dubti and Dulecha *woredas* has now been incorporated into extensive sugar plantations after the completion of dams designed to provide them with irrigation. It is difficult to estimate what proportion of the land used for crop cultivation and for grazing was confiscated by the sugar plantations, but the FGD results indicate that the promises made to the community by the sugar plantations have not been fulfilled. People perceived no benefits from them and experienced only loss of land and blockages to mobility. The frustration of the local community needs addressing through a mechanism of genuine integration of the local community into such projects.

The dominant crop being cultivated by subsistence producers is maize, followed by horticultural crops including onion, tomato and forage. Commercial private investors mainly produce cotton and sesame at larger

scales. In dry seasons, crop residues are used as fodder for livestock. Maize and vegetables (mainly onion, tomato and pepper) are grown in sizeable plots along the Awash River and its tributaries. Rain-fed agriculture is also practiced in Dulecha on a very small proportion of the farms, although rainfall alone is not sufficient to sustain a full agricultural season. Land close to irrigation canals is highly valued due to the steady supply of water and relatively fertile soils.

Hand and oxen plowing is the predominant means of cultivation, although tractors are used in some places. Clearing land is the most labor-intensive task, made even more challenging due to *Prosopis juliflora*, an invasive and destructive weed. Harvesting of crops is done manually using simple tools of local origin, such as *Gejera* (a traditional tool used for harvesting), threshing sticks, sickles, etc. A considerable level of yield loss occurs in the different crops. Harvesting of some crops, for example maize, is done early or delayed, contributing to the low productivity of the crop. State farms and private investors follow the correct timing of harvesting compared to individual pastoralists who suffer from labor scarcity, but some crops such as cotton may stay too long in the field, and yield loss commonly occurs. For smallholder pastoralists, whose crop production is for immediate consumption, there is no crop storage, but instead harvested crops are transported for home consumption. With no proper storage of crops, yield loss occurs. State farms and private investors follow proper storage of crops, especially of cotton.

The average crop yields for the major crops being cultivated is indicated in Table 12. Improved maize is relatively productive, with a high yield reported in Gewane District (45 qtl/ha), followed by Amibara District (40 qtl/ha). The local maize variety also produced a good yield in Gewane

Table 12. Average yield of crops in irrigated areas

Type of crop	Gewane District Average yield (quintals (qtl)/ hectare (ha))		Amibara District Average yield (qtl/ha)		Research center Average yield (qtl/ha)
	Improved variety	Local variety	Improved variety	Local variety	Improved variety
Maize	45	40	40	30	70–85
Onion	110		137		250–350
Tomato	60		80		400–430
Pepper	15		16		15–20
Sesame	10				16
Cotton	25–30		25–30		38–50

Source: Key informant interviews and researcher records

District (40 qtl/ha). However, the yields of crops using improved varieties is still very low compared to the research station results. This is mainly due to shortages of water for irrigation; lack of services in rendering inputs such as pesticides, herbicides and insecticide; lack of improved crop varieties or improved farm implements; late supply of agricultural inputs when available; lack of integrated extension services or weak extension services in technical support; and low experience levels and awareness of pastoralists in crop production.

Fresh vegetable and fruit production

Vegetable cultivation with irrigation is a new and potentially profitable source of income in the study area. It is a capital-intensive but lucrative business that can be undertaken at commercial as well as smallholder levels. Vegetables create higher net incomes than cereal production and contribute to the overall growth of markets and agri-businesses in the local economy. Studies have shown that the agro-industrialization processes have been faster for non-traditional products such as fruits and vegetables, with export horticulture products providing opportunities for agricultural growth and creating agriculture-sector jobs. On average, they can provide twice the amount of employment per hectare of production compared to cereal crop production. The horticultural value chain is also longer and more complex than the cereal crop one, and as a result job opportunities are more abundant.

Women have benefitted the most from the increasing importance of horticulture, playing a much more significant role in horticultural crop production compared to staple crops. Since horticultural production is very labor intensive, landless laborers also benefit from the new employment opportunities created by horticultural crop production. Vegetables and fruits are also sustainable and affordable sources of micronutrients in diets and contribute to improved food security and nutritional value. Horticultural crops can contribute to environmental sustainability by producing more profit per unit of water used compared to most traditional crops and cropping systems.

The disadvantages are that poor households cannot afford commercial vegetable farming due to high capital costs and the labor-demanding activities that include land

preparation, planting and irrigation ridge-making. The cost of inputs such as chemical pesticide and improved seeds is also high. The vegetable market is monopolized by middlemen, traders and their agents in larger cities. Set prices can change after the crop is harvested, forcing producers to bargain and usually accept lower prices due to the risk of losing the market for the product. The perishable and biological nature of the vegetable production process, as well as marketing problems, makes vegetable productions too risky an investment for individual pastoralists. Price fluctuations, lack of guaranteed prices and unplanned planting patterns lead to heavy post-harvest losses of most vegetables. Lack of proper cold-storage facilities is also an important limitation in vegetable production. Institutional-related constraints include the lack of provision for improved production technologies including supply of relevant varieties, agronomic practices and improved product management techniques, market outlets, storage and processing facilities, credit facilities and farmers cooperatives, and a lack of coordination among producers to increase their bargaining power. Research looking at practical recommendations for agronomic practices and pre- and post-harvest management is lacking at smallholder levels.

The common vegetable crops grown in the study area were onion, pepper and tomato. Over a short period of time, onion and tomato crops have steadily increased, with 90 percent of the respondents in the FGD reporting production had increased for the last ten years. Different modalities of farming were identified including self-owned and two major types of lease systems offering a percentage share out of the net profit by the sharecropper (fixed-rental profit sharecropping and fixed-rent leasing system). Profit sharing approaches are an agreement between two parties, while the landlord approach is an agreement upon a certain fixed rent price over a hectare of land.

The average productivity for onion and tomato was reported as 103 and 70 quintals per hectare respectively. The estimated per hectare (ha) production cost on average is Ethiopian birr (ETB) 4 460 and 3 900 per ha for tomato and onion respectively. Producers also reported that the price they received for a kg of tomato was ETB 2 for tomatoes and on average ETB 5 for onion. An elementary calculation of average productivity is shown in Table 13.

Table 13. Net income from onion and tomato cultivation from one hectare of land in Amibara

Crop	Total production per ha	Price (ETB)/qt	Total	Total cost	Net income
Onion	103	500	51 500.00	4 460	47 040.00
Tomato	70	200	14 000.00	3 900	10 100.00

Source: FGD with elders, men and women



Crop production in Afambo area, maize crop in Afambo, maize grain harvested in Gewane.

3.3 Small-scale fishing

Small-scale fishing and fish marketing is making significant contributions to local economies through income and employment multiplier effects in the Afar Region. Fish is an important source of direct food security and can generate alternative livelihoods for thousands of people through incomes derived from harvesting, processing and trading. Small-scale fishing activities are taking place in several of the study areas, with access to fishery resources creating an estimated 5–8 percent of the total employment in the locality.

The Afar Region has about eight perennial rivers and numerous seasonal rivers that flow in different basins, in addition to six lakes: Asahle, Dalol, Afdera, Abe, Gemer and Yardi Lakes. There are no data available on the estimated fish resources, but according to the local community, and *woreda* and regional officers, Afar's lakes and the dams have huge potential as a fishery resource and alternative livelihood prospect. At present, however, there are very few commercializing activities, and the role of fishing in household livelihoods is still insignificant. The mode of fish production in the study areas is mainly through employing migrant fishermen to look after the fishing activities. The local fishery cooperative collects the income from sales, and the fishermen receive a wage based on the amount of fish caught and the sale price. The income is shared among the cooperative.

Substantial fish markets exist in Addis Ababa, major cities and also small towns (Gewane, Awash Sebat, Awash Arba) along the Addis-Djibouti road. At Lake Yardi, traders come to the production sites to buy the fish and transport it to Addis Ababa. A small portion is sold at local markets for restaurants in Gewane town. Overall, however, there is an inefficient marketing network, and poor transportation and preservation facilities.

Fish prices are determined by the demand and supply condition of fish. The buying and selling price of fish varies, with peak production occurring during Orthodox Christian fasting time when traders, fishers and cooperatives earn most of their income. In other seasons, the amount produced can fall to a minimum, and in some months fishing activity is completely stopped. The recent increase in fish production is attributed to the fishers' cooperative organized by the regional government and traders from Addis Ababa. The private sector has increased its demand for fish because of the relatively low price of high-quality tilapia and the proximity to Addis Ababa market.

The local fishery cooperative members recognize fishing as a useful alternative livelihood option. The annual per capita fish consumption in the country is estimated to have increased to 1 kg from 240 g, and the growing demand, especially during the fasting season (190 days a year), is driving traders in big cities to look for new sources of fish.

During fasting season, the supply is lower than the demand, and the price of fish rises significantly in Addis Ababa. (The price per kg increased to ETB 90–120 for processed fish during the fasting period of 2017).

The fishery potential of the rivers and lakes in the study area is not well exploited due to a number of constraints identified by key informants: lack of institutional and policy support; remote location; poor services; low skills and experience of local community; cultural barriers; limited infrastructure facilities and equipment (production, transport, processing and storage); unorganized marketing; lack of data on the fishery potential; absence of a plan for its development; and low levels of awareness at all levels of government and the community on the fishery sector. See Table 14 for the opportunities and risk factors of value addition in fisheries.

Prioritized interventions in promoting fisheries as alternative livelihood should include:

- Promoting entrepreneurship in fish trading and promoting fish consumption;
- Training in production, storing, processing and marketing of fish products;
- Diversifying fish products through processing and packaging;
- Capacity building through supply of tools and equipment for production, processing, storing and transporting products (supplying drying, cold chain and packaging facilities);
- Facilitation of fishery commercialization through value addition;
- Linking fishing with tourism by developing infrastructure on dam sides;
- Promoting fish marketing and consumption.

Table 14. Opportunities and risk factors of value addition in fisheries

Description	Opportunities	Risk factors
<ul style="list-style-type: none"> • There are very few fishery commercializing activities, and the role of fishery in household livelihood is insignificant. • The fish production and sale by the fish producers and traders has increased from time to time. 	<ul style="list-style-type: none"> • Fishery generates alternative livelihoods for thousands of people through generation of incomes derived from labor –wages during harvesting, processing and trading. • The region has about eight perennial rivers and numerous seasonal rivers in addition to six lakes. • Growing demand, especially during the fasting season, is attracting the big traders in the local towns and big cities. 	<ul style="list-style-type: none"> • There are no data available on the potential of fish resources. • Inefficient marketing network, poor transportation and preservation facilities • Lack of know-how and skills among the community



Fishing boat and fishing in Tendaho Dam.

3.4 Income from natural products

Prosopis wood enterprises

Studies have indicated that the mechanical and physical properties of *Prosopis juliflora* are acceptable for wood product making (Pasicznik, 2001). It is also reported that *Prosopis* is resistant to termites and fungi, but the wood is crooked, thorny and has a short trunk (Sirmah et al., 2008). The morphology of *Prosopis* growing in the Afar Region is a shrub type of woody plant that seldom exceeds 6 m in height, with thin average diameter ranging from 6–20 cm and with a number of stems. It is fast-growing, thorny, wide crowned and deep rooted, with zigzag branching. Studies suggest that management of *Prosopis* for commercial wood products could be a profitable business venture (Zewdie and Worku, 2009). The national *Prosopis* control strategy also considers utilization of *Prosopis* with management, and ultimately its eradication, with opportunities to use the *Prosopis* biomass as it is removed during rangeland rehabilitation activities. However, strict rules and regulations of use are required to prevent further spread of the plant, together with clear benefit-sharing agreements. In the past, the absence of a strong regulatory mechanism on the utilization of *Prosopis* for charcoal has created negative attitudes about the *Prosopis* control strategy. The strategy highlights converting it into value-added products (utilization and commercialization). The parts of the *Prosopis* plant that can be used include the stem/trunk, bark, branches, leaves, flower and pods.

Establishing wood-based enterprises that utilize *Prosopis* as their major raw material is a potential livelihood opportunity in Afar, with both economic and environmental benefits. Reducing *Prosopis* infestation creates employment opportunities for local communities

through applying labor-intensive methods of control and value addition. The use of *Prosopis* also reduces impacts on the indigenous flora and fauna. Businesses require labor and tools for harvesting, loading and transporting wood, with the yield dependent on the type of available equipment and labor. Suppliers can be organized community cooperatives or individuals. It is recommended that initial capital investment be made by local government to start the initial project phase on a fairly small scale. The local elders and *kebele* administrators support alleviating problems related to enforcing regulatory acts and proper conduct in balancing *Prosopis* control and generating economic benefit. Recommended practices should be followed in harvesting to inhibit regrowth with qualified professional employees trained in the safe, proper methods of stump burning. The study assessed the marketing opportunities for *Prosopis* wood products and found it to be quite promising. See Table 15 for opportunities and risk factors.

Date palm

The date palm (*Phoenix dactylifera* L.) is one of the oldest cultivated plants growing in desert and semi-desert areas. Its tolerance to harsh environmental conditions makes it an important adaptive crop in dry areas. Pastoralists have established date palms in areas around the Awsa delta and Afambo region of the banks of the Awash River. It is thought that the palm trees grew wild after seeds of eaten fruit were dropped by traders. Over time, pastoralists have introduced certain management practices, resulting in some level of cultivation (Daniel and Gulelat, 2012). The commercialization of date palms is a relatively recent phenomenon, with informants in the community suggesting it was started 40 years ago. Traditionally date palms were considered wild, and its utilization was

Table 15. Opportunities and risk factors of value addition through *Prosopis* utilization

Description	Opportunities	Risk factors
<ul style="list-style-type: none"> Plant has invaded huge areas of land and is still spreading (covering over 1.2 million ha) of the region. Majority of the community have negative attitude toward <i>Prosopis</i>. Disadvantages and costs of <i>Prosopis</i> for local livelihoods: rangeland health and biodiversity, reduced economic activities Eradication is favored by most. 	<ul style="list-style-type: none"> Studies indicated that the mechanical and physical properties of <i>Prosopis</i> are acceptable for wood product making. Utilization of <i>Prosopis</i> for commercial wood product purposes could be a profitable business venture. Utilization can bring both environmental and economic benefits by reducing <i>Prosopis</i> infestation and creating employment opportunities for local communities. 	<ul style="list-style-type: none"> Regulatory mechanism required to prevent further spread of the plant, together with clear benefit-sharing The negative attitude over utilization strategy for <i>Prosopis</i> control Lack of applying proper management practice (proper harvesting techniques and seasons) Lack of balance between eradication and utilization strategy



Date palm tree with ripened fruit in Amibara and women trading palm tree leaves used for handicrafts in Aysaita market.

communal, but after commercialization, pastoralists have started managing and owning them individually. An attempt to commercialize palm trees in Afar was started in the 1970s when new cultivars were introduced in addition to technical and material support to promote date marketing and export. There is now an attempt to promote date palm cultivation through the date palm improvement project.

Date palms have the potential to contribute to the economic, social and cultural aspects in the study areas. Despite its long maturity time, it is a multipurpose tree, providing primary and secondary products that diversify its importance for livelihoods. Date palm production generates opportunities for employment, income and food security and facilitates eco-restoration. There is currently a shortage of supply for date fruit when demand is at its peak during the month of Ramadan. It is rich in nutrients, containing 60–65 percent sugar, about 2.5 percent fiber, 2 percent protein, and less than 2 percent fat, minerals and vitamins. It also serves as livestock feed. In the local conditions, it can be stored for up to one year. It also serves as a dry season food source.

The amount of date palm fruit produced by households depends upon the number of the matured trees owned and the maturity stage of each plant. The women reported that the number of matured date palm trees owned by each household ranged from 20–25, with the average productivity of a matured date palm tree being about 34 kg per year, so an average of 782 kg of date palm fruits per year. With more than 80 percent of the production supplied to market and the price of 1 kg of date fruit being ETB 6–10 on average, a household can obtain ETB 7 430 per year from the sale of the date fruit. In addition to the income that comes directly from selling the fruit, the leaves are used to make and sell handicrafts and household items such as huts, beds, mats, fans, rugs, local cleaner, bread dishes and different types of containers.

Handicraft production and marketing

Taking advantage of the Addis-Djibouti highway, women in Gewane produce and supply handicraft products, mainly sleeping mats and traditional crafts, using natural materials. Handicrafts are a key activity for both men and women who do not have livestock. Household utensils, bracelets, Gile (a traditional knife), milking dishes, sandals and spoons are in the male domain, with the prices of such products higher on average than those produced by the women. The production and selling of baskets, brooms, goatskin storage bags, fans, milking vessels and sleeping mats are in the exclusive domain of women. Generally the crafts produced by women are cheaper than those produced by the men.

Women have organized themselves into small groups to collect raw materials and produce and market traditional crafts effectively. The production and marketing of handicrafts is valued because prices are relatively stable and raw materials, such as hides, goat skin, grasses, palm leaves, wood and rocks are found locally. The skills are easy to learn, and production technologies are simple. The Afar traditionally avoid competing with their peers in the production and marketing of handicrafts. The Afar community has always produced materials for their own use; for example, wedding gifts and gifts for guests. They did not give commercial importance to handicrafts in the past, but people now appreciate that they have commercial value, with good demand from guests and visiting tourists. The practice has increased the economic base of women, improved their decision-making power on resources, increased their exposure and developed their confidence. Handicrafts, especially leather work, carpets and rope-making, are reported to have a good prospect for promotion beyond local markets to within the region as well as outside the region, but training is needed to improve production techniques to attract wider markets.

Women also supply their products to the Afar Cultural and Tourism Bureau based on requests. The women are

organized by Cultural and Tourism Bureau, which promotes and sells their products at various market exhibitions and events at national and regional levels. The marketing strategies of the business need to be further expanded through exploring other options and developing a value chain for the products. Motivating other women in the major towns of the region to establish a cultural shop and link it with tourism would also help promote handicrafts and artistic products.

Production of leather goods – Women are traditionally engaged in the production of leather goods, including shoes, belts, sword holders and other items needed by local people. The majority of women have easy access to hides and skins, which they also use to make items for the tourist and local market. This has created an alternative opportunity for women to initiate a local leather processing and production business. Women can be trained in improved production techniques and technologies to improve the quality and quantity of the products. The materials need for starting the business are an office building, leather processing and sewing machines, and training in improved production technologies, market promotion and linkages.

3.5 Small-scale and retail trading

Small-scale trading

The survey and case studies indicated that small-scale trading is the fastest-growing alternative livelihood in the last three decades according to both men and women. In Afar pastoral areas, individuals with small amounts of capital sell pastoral and non-pastoral products and services across the informal sector as either the main or secondary livelihood activity of the household. Activities include: the sale of small livestock, milk, butter and meat; trading of drinks and foods (tea and coffee); all kinds of street trading, including manufactured goods (soap, matches, cigarettes, flour, pasta, cooking oil, clothes, etc.); and arts and crafts. The types and amount of goods sold depend on the wealth status of the households.

The peri-urban traders buy goods from retail shops and divide the items into small amounts so as to be affordable to poorer buyers. Trade is carried out in small shops, on the ground in the market, outside the market, on the street and in small standing stalls along roadsides. These mini-scale traders represent the fastest-growing segment of the labor market, attracting settled pastoralists, women and impoverished households. It reflects the prevailing social-economic realities of present-day Afar pastoralist areas. It can be argued that small-scale trading is a result of the failure of traditional livelihoods, unprecedented commercialization and increasingly settled lifestyles. This is further emphasized by the fact that the bulk of urban population comprises low-income households.

Vulnerability factors

The main reason for starting small-scale peri-urban trading is the loss of livestock assets. Other reasons include that it requires limited skills and creates more independence from husbands/families. In most cases, savings and loans from friends/relatives or selling assets are the most common sources of financing used to invest in trading. Most women stated that they are engaged in trade activities due to lack of alternatives and not as a rational choice. Discussion confirmed that death of the husband, or inability of the husband to provide sufficient household income, are motivating factors, as is having a social network.

Trading in the study area is impacted by several factors, including: limited market/low market price during the drought season; mobility; lack of cash/savings; lack of start-up capital; limited access to credit; limited number of livestock; inadequate skills; limited market information; lack of premises; social taboos; and the sharing culture limiting levels of savings. In addition, fear of tax from government and family responsibilities are key constraints. Informal credit arrangements are widespread in the area, whereas access to credit from formal institutions such as banks and microfinance services is not.

The pastoralists who have turned to small-scale trading also have to compete with experienced migrant traders. While pastoralist communities constitute the majority of the population, they control a small share of the trade, although their participation has increased in the last two decades. The trade of both wholesale and retail commodities, including cereals, liquors, spices, vegetables, cloth and other consumables is controlled by non-local traders. Outsiders own almost all of the shops and hotels in towns. And even the marketing of pastoral products such as cattle, goats and hides is often controlled by them. There is an emerging realization in the community about this, and women are now keen to engage in market activities and own shops, small restaurants and guest houses.

The tradition of sharing with their fellow clan members, and their commitment to the welfare of the clan members, has a considerable impact on traders' ability to save and on consequent business growth. Business owners and traders have to be very careful about sharing and the welfare of their clan members so as not to lose respect and cause discontent among relatives. Many of the informants preferred this integration of economic life with social ethics and norms, in which production, consumption, distribution and exchange are all considered within the scope of ethical regulations of the clan. But such Afar traditions interfere with and restrict the business success of Afar women.

Trading of small livestock, pastoral products and crops

Small-scale trading is also conducted by people who are still pastoralists, but as most pastoral produce is perishable and there is no access in Afar to modern packaging or storage facilities, pastoralists market their produce at weekly markets to supply the towns' populations. The production and marketing of pastoral products is also common along the Ethio-Djibouti highway. Nowadays, the majority of the Afar pastoralists use mobile phones for marketing, with the technology now internalized as part of their cultural rules of communication. Many pastoral commodities are light and durable, and transported easily on camelback when they move. The Afar camel can carry four quintals. While the ownership and management of camels, as well as the loading and unloading of freight, are conducted only by men, once the pastoral products are unloaded in the weekly markets, it is the duty of women to conduct the actual marketing, with assistance from their husbands or sons.

Most people in Afar do not use vehicles for transport. The common transport means are donkeys and camels. Better-off households use vehicles to transport their agricultural produce to markets, but poorer households sell their crops at local markets by borrowing pack animals from better-off relatives or clan members. The main crops sold are maize, tomatoes, onions and peppers. Some households sell to traders who come from Semera, Assayita, Logiya, Gewane and Awash to buy up local supplies and transport them by vehicles/trucks to urban market centers. A steady demand for goats and sheep is supported by the busy road traffic on the main road from Djibouti to Addis Ababa, which connects a series of major market towns. Goats are bought up by the many truck drivers who travel this route year-round, providing a constant source of demand in the major cities. Djibouti is the final destination for large livestock along this trade route. There is a significant informal/unofficial cross-border trade in live animals. According to the records, the volume of animals traded and exported via informal trading routes significantly exceeds the volume of animals exported through official channels.

Promoting small-scale trade

The promotion of a more effective small-scale traders' environment is crucial for the growth of businesses so that they can be a more reliable alternative livelihood activity in the study area. Local government does not have a clear plan or strategy to support the growth of informal businesses. The informants noted that there is insufficient support in terms of provision of market infrastructure, business formalization processes, capital accessibility, training, provision of services or facilitation of market linkages. Other needs include: building capacity of trade associations and creating economies of scale through joint procurement; production and marketing; facilitating access to microfinance, health care and business development services; special support for women to enter into trade; and

development of transportation infrastructure, including access to transport for poorer households and improved road networks that extend to sub-village level. There are a few commercial banks, but no formal microcredit agencies in the Afar Region, although there is now a new initiative to establish microfinance. The Afar businesswomen do not use bank loans because banks demand tangible collateral, as Islam prohibits charging of interest. Existing banks are located only in a few towns. There is a need to provide some degree of protection against shocks (and negative trends such as social welfare) in order to develop resilience against market failure and the ability to adapt enterprises to changes in demand.

Retail trade

Retail traders are individuals who purchase consumer goods, clothes and other daily requirements from wholesale shops and sell these items to consumers at retail prices. The profit margins are small, but the trade is as an important alternative livelihood. Retail trade is practiced only in peri-urban and urban centers. The study sites show varying capacity in retail trade business, which is higher in Gewane, Amibara and Dubti *woredas*. Retail trade is more prominent among the medium-wealthy and rich households, rather than among poorer households, as the main constraint is access to starting capital. Capital needed for retail trade is often generated by selling livestock. Retail trade is more stable than small-scale trading and is more commonly done by male-headed households.

In all the case studies, it was emphasized that there is a significant link between the small-scale trade, retail trade and livestock trade, with the businesses supporting livestock production by helping the household reduce the number of livestock having to be sold for subsistence needs. Retail businesses reduce reliance on the herds and allow them to grow in numbers, with the income also supporting livestock production by making purchase of veterinary drugs and other inputs possible. Trade improves during the wet seasons when livestock production is at its highest, while prolonged dry seasons or droughts reduce the purchasing power of customers significantly. Both retail and small-scale traders are vulnerable to failures in the livestock economy.

3.6 Wage labor/employment

Across the study area, the main source of employment and livelihoods is pastoral production. The case studies indicate that wage labor and employment did not exist in the pastoral societies 50 years ago, but in the last 2–3 decades levels of wage labor and employment as alternative livelihoods have grown rapidly. Growth is continuing due to urbanization, infrastructure expansion and market growth. Social mobility and education also play a role in driving the change. Wage labor involves skilled and unskilled temporary employment in all sectors, including

3. FINDINGS: ALTERNATIVE LIVELIHOODS AND ECONOMIC ACTIVITIES CURRENTLY FOUND IN AFAR AND THEIR IMPLICATIONS FOR RESILIENCE

agriculture, mining, manufacturing, construction, transportation and other services. There is limited skilled employment in the public and private sectors such as carpentry, repairs, masonry, brickmaking, steelworks and painting in construction and its subsidiary industries. Formal public and private sector jobs include office assistants, janitors, guards, drivers and farm supervisors in commercial farms and industries.

Wage labor takes place mostly outside the Afar community through seasonal or temporary migration to urban centers/ construction work sites or settlements. The community in Dulecha and Amibara *woredas* noted that the biggest existing opportunities are in commercial sugarcane, cotton and sesame farms. Other opportunities are at the big construction companies. Currently there are two major projects in progress: the road project from Awash to Debretrehan and the railway project connecting the northern town of Kombolcha to the port of Djibouti via Awash. Both projects cross Dulecha and Amibara *woredas*. Other sources of employment are in basic service infrastructure such as telecommunication and electricity supply, schools and health institutions, and irrigation canals.

Some people continue to work in the traditional salt mining areas, hiring out camels or acting as daily laborers. In addition, local agricultural labor provides important income for poorer households, making up about 20–25 percent of their annual cash in the reference year. Daily labor is found in road construction, and some men and boys also find work in the traditional gold mining activities. Remittances are another significant source of cash income for many households. Cash is sent several times a year by relatives working outside the area, often in Saudi Arabia, providing as much as a third of the cash

income of poorer households. Men, and especially the youth, also work as three-wheeler drivers, shop keepers and in loading/unloading in mining projects. The potential to link the commercial agricultural enterprises with the local production system is still an unexploited opportunity; for example, integrating fattening with the sugar industry. The demand for livestock and vegetable products is growing very rapidly with the expansion of towns and incoming population, and is an opportunity for wider employment creation as a paid worker or as a self-employed entrepreneur. More details on the opportunities in mining, tourism and commercial farming are given below.

Formal employment opportunities demand some degree of modern education, which the majority of the Afar, especially those above the age of 40, do not have. Prior to the commencement of modern livelihood activities such as mining, trade and commercial agriculture, government services were the only source of formal employment (health care, education and administrative services). In the past, there were high ethnic variations in the professional/ technical job occupation distributions. However, recently many of the offices are being staffed by young Afar professionals at *woreda*/regional level. They are role models for the young seeking to pursue a modern education and wage employment in towns. Men from the middle generation with no education are engaged as security guards or watchmen, while many women are cleaners, office attendants or in low-return activities in government and non-governmental organization (NGO) offices. There is growing participation of the younger Afar women in the formal professional work force, but formal employment levels in the study areas as a whole remain low for the majority of the Afar population. See Table 16 for a summary of opportunities and constraints in wage labor.

Table 16. Opportunities and constraints in wage labor

Description	Opportunities	Constraints
<ul style="list-style-type: none"> Unskilled temporary/ permanent employment in all non-pastoral/ agriculture sectors, including mining, manufacturing, construction, transportation and services Skilled employment in the public or private sectors Formal employment in the public and private sector in jobs such as office assistants, janitors, guards, drivers and farm supervisors in commercial farms and industries 	<ul style="list-style-type: none"> Expansion of commercial farms such as sugarcane, cotton and sesame farms have the potential to absorb more labor force in the area. Expansion of infrastructure and social service projects New highways crossing the areas Potential market linkages to large farms and commercial agricultural enterprises with food and industrial raw material supply 	<ul style="list-style-type: none"> Lack of skills or low level of skill and attitude Perception of pastoralists on employment Lack of confidence in pastoral workers from employee side Lack of year-round employment opportunities Poor wage rate Low female employment opportunities Travelling problems to other

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Description	Opportunities	Constraints
	<p>(livestock, animal fattening, cotton, sugar cane, vegetables)</p> <ul style="list-style-type: none"> • There are rapidly growing towns that are attracting many new investors. This could push the demand for livestock and vegetable products for wider employment opportunity as a paid worker or as a self-employed entrepreneur. • The expansion of industrial-level mining (salt and potash) • Expansion of the tourism industry and potential tourist attraction areas to be developed • Hotel industry development in relation to tourism and mining industrial development • The potential development of new port and transportation and logistics sector development • Expansion of trade due to investments and demands 	<p>locations for work</p> <ul style="list-style-type: none"> • Distressed seasonal migration, tenancy issues

The mining industry

The mining industry as a whole has large potential as a source of employment and alternative livelihoods. The Strategic Mining Sector Assessment study, conducted by the World Bank and other development partners, estimated that the large-scale mining opportunities in the area could create an estimated 4 300 to 8 000 skilled and unskilled jobs in construction and industrial minerals production (potash, salts from brines and rock salts) (World Bank, 2014). Other multiplier and indirect benefits include growth of small entrepreneurial businesses and growth of small towns, as well as benefits from the introduction of roads, electrical power from the national grid, telecommunication infrastructure and other services following the development of mining projects.

The traditional mining sector is already a source of employment supporting pastoral livelihood diversification, but this could grow to incorporate local middle-level enterprises/cooperatives with market linkages to the formal large-scale producers. Currently there is limited value addition in terms of improved quality and quantity, or enhanced supply chains. There is also weak participation and a low level of direct benefits to local pastoralists in

terms of direct employment or businesses in the formal mining sector. According to FGDs with the community, a few are employed as guards and in loading/unloading work. This has created dissatisfaction in terms of working conditions, payment and loss of ownership of Afar’s resources. Pastoralists would like more control and engagement in the mining industry and say there are many natural resources in Afar, like gold, which could attract investors, if social issues are addressed and infrastructural access is secured.

Salt mining

The major mineral deposits found in Afar include potash, sulphur, salt and construction materials.² According to studies, the rock salt deposits in the area are estimated at over one billion tons, which makes it the largest salt deposit in the country. A report from Ministry of Mines indicated that traditional miners currently mine only a small part of the rock salt deposit applying manual methods. The Ministry of Mines reported that it is preparing for the deposit to be further explored in terms of its reserve evaluation in order to make it ready for promotion for mining investors. Despite the existence of ample salt reserves, sufficient to meet national

² In addition, there is promising geothermal energy and hot springs. From the total geothermal energy capacity in the country, 54.29 percent is found in Afar Region.

requirements for a long period, Ethiopia continues to import common salt.

Afar's important salt deposits are not yet well developed commercially apart from the traditional artisanal mining. Recent developments in the area, however, including road construction, are encouraging vehicles to travel to the edge of the salt mining areas. The community is concerned that transportation of salt by vehicles will result in income loss from the services they have traditionally supplied to the industry (such as food, accommodation, camel and donkey caravans, etc.) for the villages situated along the routes. There is a risk that trucks will pass straight through Berhale without stopping. Maintaining the use of donkeys and camels for transport to and from the salt plains is also a means of maintaining control over the traditional salt industry by the Afar people and the Tigray transporters. Many Afar do not have the capital, experience or skills to use trucks to transport the salt. The use of camels in the salt industry also maintains tourist interest in the area as well as providing income for the local population in form of fees, trading, small shops and restaurants.

At present, the principal production of rock salt comes from the Assale salt plain. The hugely underdeveloped rock salt wealth represents an opportunity for alternative livelihoods. Investors are showing interest in the production of table salt from the area, and the government has a plan to introduce a mechanized small-scale industry with an iodine treatment plant to get rid of unwanted impurities. The other principal source of salt production is from Lake Afdera, located about 800 km from Addis Ababa. The area is 100–110 m below sea level and has a very inhospitable climate, reaching peak temperatures of about 50°C between May and August. Salt production proceeds by pumping out brine into man-made ponds and allowing the water to evaporate, leaving the salt for harvesting. Private investors are licensed for large-scale salt production from the Lake Afdera. Salt mining is thus a major trade and investment activity in the study area, with about 500 investors investing in salt production. These

investments create seasonal labor wage opportunities for daily workers coming from different parts of the country but few locals. Investors do pay significant amounts of money to landowners for the land where production of salt is underway.

Potash mining

According to local informants, economic deposits of potash ore in northern Afar have been known since the early twentieth century. Industrial-scale exploitation of the Danakil Depression's potash and salt deposits started in the early 1900s, when Italians from Eritrea established the Compagnia Mineraria Coloniale to extract potash and sulphur at Mount Dallol between 1916 and 1929 (Nesbitt, 1930). Potash mining at Dallol was restarted by the US-based Parsons Company in 1958–1968. It is reportedly one of the world's largest undeveloped potash resources and is approximately 100 km from the Eritrean port. There is interest by several foreign companies. The exploration work in the 1960s showed the presence of two ore bodies of potash beneath the Dallol plain, but activities have been inactive for a long time due to the border conflict with Eritrea.

Potash is an important raw material used for production of fertilizer in agriculture. Ethiopian agriculture depends on imports of fertilizer, indicating potash's potential contribution for import substitution. Feasibility studies indicate that potash mining in Afar would be a low-risk, world-class enterprise, with low operational costs. Total annual potash production of 5.35 million tons is currently planned, with significant scope for expansion. The Ethiopian Government's Growth and Transformation Plan intends to attract substantial foreign direct investment for the exploration and extraction of minerals.

The tourism industry

The Afar Region is endowed with unique geological wonders, attracting tourist from all over the world. Tourism resources include the Assale and Afdera Lakes, salt plains, traditional salt rock extraction, the colorful



Salt mining in Afdera.



Dallol salt plain.

magma and the Dallol sulfur springs. The Danakil Depression, which is the hottest and lowest place in the world, is also in the region. There is immense potential for growth in the tourism industry. The fact that 95 percent of the visitors in the region are foreigners confirms its global significance. The expansion of roads and other infrastructure is helping facilitate easy access, with two nearby airports (Semera and Mekele) providing other transport options. However, the standard of services such as restaurants, hotels, banking and other basic services required by visitors is not yet adequate. The provision of more services would be an opportunity for creating direct and indirect jobs for local pastoralists.

Peace and security is a prerequisite for the growth of tourism. Incidences of insecurity in the border areas have now decreased, and local youth groups are working as tourist guides in the study area. About 30 youth groups have been trained by the *woreda* tourism and cultural office, earning a daily rate from their work when tourists arrive. Although the number of tourists has increased in recent years, their earnings are still low. Other youth and women groups have also been organized as cleaners, for camel renting, or as security guards in Amedealla Tourist Center near Dallol. While pastoral households can earn income from tourism, the sums they make do not compare with their main income streams from livestock, crops and off-farm sources. The industry is dominated by tourist guides coming from Mekelle. The wider socio-economic benefits of the tourism sector could be important if owned and operated by the local community.

The tourism industry is now an important source of employment in Ethiopia, accounting for 3.8 percent of total employment and representing 985 500 jobs directly at national level. This is forecast to grow by 0.6 percent per annum over the next ten years. However, according to the FGDs and key informants in the study area, the contribution of the local tourism industry to local alternative livelihoods is currently insignificant. The income from the industry is collected mainly at federal and regional levels, with local people only earning income from tourists by renting houses and rooms, selling tea and coffee, and serving as guides and interpreters to the tourists as a supplement to their other income streams.

According to the Afar Bureau of Culture and Tourism, the sector lacks a clear strategy and integrated plan, and lacks proper destination development, management plans or operational guidelines. Apart from sightseeing at the main destinations, there is little diversity in the activities offered to tourists. The average stay in each destination is low, often less than 2–3 days. There is also a lack of proper understanding of the tourism market and tour operations in the region, and limited capacity of local authorities. The lack of quality tourism services/facilities and visitor management problems can be clearly observed. Low levels

of investment, high costs to start businesses and low levels of involvement of regional government are some of the outstanding issues. The information, communication, and technology (ICT) infrastructure is uncompetitive, with limited ATMs that accept international payments, poor Broadband Internet, and poor health and hygiene access. Other challenges are the low availability of qualified labor and lack of availability of specialized training.

Although the size of the tourism sector in Afar is relatively small, it is already causing significant negative environmental and social impacts (accumulation of solid waste, informal camping without minimum planning and infrastructure). Key informants at different levels also identified the following challenges:

- Most of the services and products were noted as being underdeveloped in quality and quantity;
- Lack of new service or product development initiatives;
- Lack of capacity or know-how about how to develop tourism service and products;
- Lack of destination development plan for both old and new destinations;
- Lack of site-based management plans and organization for both cultural and natural resources;
- Lack of legal protection and proper site designation;
- Uncoordinated and fragmented efforts, with absence of strong coordination among private-public partnerships and among private sector players, and low level of local leaders' involvement;
- There is lack of tourism marketing strategy to guide tourism marketing and promotional activities at regional level;
- Very low focus on the domestic market;
- Poor destination marketing through online channels;
- Weak efforts in networking, collaboration and partnership among the services providers in the tourism and travel marketing as well as hospitality companies.

Given that the tourism industry is largely service oriented, the role of human resources is vital. The key informants agreed that there is a general lack of competent manpower



Dallol colorful land.



Tourist visit to Dallol salt plain.

at all levels in the region. Training, business management and operations are not coordinated, with other challenges identified by key informants as:

- Training is lacking a strong industry experience focus;
- Communication barriers for those working in the industry due to lack of language skills, particularly in English and other international languages;

- Absence of motivation for private enterprises to join training institutions;
- Lack of adequately qualified manpower in the tourism offices, both at *woreda* and regional level;
- Lack of clear regional policy on manpower training and development for the tourism sector.

Table 17 summarizes opportunities and risk factors associated with the tourism industry.

Table 17. Opportunities and risk factors in the tourism industry

Description	Opportunities	Risk factors
<ul style="list-style-type: none"> • Poor traditional and informal sector and services, and products were underdeveloped in quality and quantity. • The sector is dominated by non-Afar. • Characterized by low capacity and know-how about how to develop tourism service and products • Tourism marketing and promotional activities low 	<ul style="list-style-type: none"> • Employment opportunities from the expansion of tourism-related services and products • The region has the tourism potential to absorb more labor force in the area. • Unique geological, ecological, archeological, anthropological and historical wonders attracting tourist from all over the world 	<ul style="list-style-type: none"> • Lack of strong experience in hospitality and tourism industry • Communication barrier challenges for those working in the industry • Absence of motivation for private enterprises • Lack of adequately qualified manpower in the tourism • Lack of clear regional policy on manpower training and development for the tourism sector • Lack of legal protection and proper site designation

Commercial farming

Despite its agricultural production constraints, the study area has considerable potential for exploitation through crop production. Existing farming practices are characterized by a traditional subsistence low input-low output system. There is irrigation potential in the area that could be exploited for commercial production from the perennial rivers, including the Awash, Mille, Kesem-Kebena, Awura, Gulina, Dewie, Borkena, Telalak Rivers and numerous seasonal rivers. There are already indications of enhanced productivity per unit area in the existing irrigated areas, although yields are not as high as expected. The reasons for this include: lack of know-how among the pastoralists; inadequate extension service coverage and lack of institutional support; absence of proper inputs (improved varieties, agrochemicals to control crop pests and diseases, lack of improved farm implements to properly prepare the land in a timely fashion, etc.); inadequate drainage practices on salt-affected soils; lack of credit facilities; and underdeveloped rural infrastructure.

To achieve good results and utilize the potential of the sector, irrigated agriculture will need to be fully supported and strengthened. The research extension linkage has to be made strong and capacity built at all stages. Diversification into commercial crops, including cotton, fruit and vegetable crops, cereals, rice, groundnut and sesame could be fostered. Enhanced production of these crops may encourage the establishment of agro-industries in the area to further benefit the people. The extent of commercial production of various crops depends on their scope and marketability, both for domestic consumption and export

purposes. Demonstration sites and training centers will need to be established to increase awareness of different crop production technologies, but this will require well-trained and fully equipped development agents. See Table 18 for opportunities and risk factors in commercial crop production.

Promotion of wage labor alternative livelihoods

Those in Afar undertaking waged labor have a lower proportion of access to livelihood assets or capital. Livestock holdings provide access to financial/physical assets that enable pastoralists to engage in other livelihood activities. Livestock and crop production are thus potentially more profitable than wage labor. The comparative advantage of wage labor is likely to increase in “bad seasons,” however. In general, the asset portfolio of households is better in the irrigated areas due to additional access to employment, particularly in the peak agricultural seasons. In the irrigated areas, the wage rate is also better than in the non-irrigated areas. The key factors identified as influencing the livelihoods of those undertaking wage labor are their socio-economic situation, ownership of assets and their gender.

Training support: The skill gaps for potential alternative livelihoods is a critical consideration for any livelihood interventions. The skill gaps can be categorized into technical, business and life skills. Technical training relates to the specific alternative livelihood activity, i.e. skills in production, processing and marketing of vegetables/fruits, fisheries, forage and other animal feeds, etc. In addition, trade and service provision skills are needed to enable

Table 18. Opportunities and risk factors in commercial crop production

Description	Opportunities	Risk factors
<ul style="list-style-type: none"> • High-value cultivation with irrigation is becoming a profitable source of income. • The land area under private holdings has increased. • Production has increased in the last ten years. • Different modalities of land ownership include self-owned and two major types of lease systems. • The growth of private investment, increasing the engagement of migrants in informal contracts with the local community 	<ul style="list-style-type: none"> • The enhanced production of high-value crops may encourage the establishment of agro-industries in the area and could benefit the people directly and indirectly by creating more jobs. • The demand for high value-added (HVA) products is rapidly growing, and pastoralists are diversifying into vegetable crop production. • Horticultural production is very labor intensive. Landless laborers could benefit from the new employment opportunities created. 	<ul style="list-style-type: none"> • Informal sharecropping and fixed-rent leasing system • Monopolized by middlemen and big traders • Lack of guaranteed prices and heavy post-harvest losses • Lack of storage facilities, lack of proper cool storage facilities • Input availability and lack of appropriate utilization • Lack of marketing information, credit facilities • High initial investment costs, forcing pastoralists to depend on sharecropping

engagement in the non-agricultural sector, such as driving, tour operations, trading, mining, etc. The pastoral communities also need support for changing their attitude on savings and credit, with the provision of resource mobilization skills. These skills are crucial for ensuring prospective businesses have start-up capital and effective financing. Life skills, including literacy and numeracy, are a basis for any business undertakings. Training interventions need to be designed and implemented based on the existing skills among those seeking alternative livelihoods. Activities could focus on building the capacity of technical and vocational education and training centers (TVETs) and other training centers, and be tailored to the opportunities available in the areas. The learning process could follow the participatory training and learning approach, enabling trainers to learn and improve their knowledge, change their attitudes and enhance their skills toward improved businesses.

Inputs and financial support: In pastoral areas, there is limited access to inputs like selected seed, feed, breeds of animals, and veterinary drugs and services, as well as other social service facilities for engaging in different alternative livelihoods. A key challenge that also hinders growth is the

inability of many businesses and individual aspiring entrepreneurs to access finance. Interventions to help businesses access finance are critical. Banks and microfinance institutions (MFIs) need to develop more innovative financial products and services to better serve the needs of businesses and individuals in pastoral areas. For example, there should be support in linking with smaller credit and savings groups such as village savings and loan associations (VSLAs) or rural savings and credit cooperatives (RuSaCCOs). Providing support in the form of input capital for revolving loans is also a priority.

Strengthening of market linkages: There are many opportunities in the Afar Region to ensure more consistent livestock and farming livelihoods by linking communities directly to larger enterprises that need their supply. Sharing opportunities with commercial farms and linking them together could be beneficial to both parties and create stronger economic ties in the region. In addition, it is important to support enterprises that are already employing local communities. Table 19 summarizes the types of training and skills required for the promotion of waged labor.

Table 19. Types of training and skills required

Category of skill	Specific skill required
Technical skills	Adoption of improved technologies, post-harvest processing options, value addition and value chain
Entrepreneurship skills	Opportunity-seeking and initiative. Persistence. Commitment. Demand for efficiency and quality. Taking calculated risks. Goal-setting. Information-seeking. Systematic planning and monitoring. Persuasion and networking. Leadership.
Business skills	Developing a business plan, preparing a market plan. Planning for risk and profitability. Mobilizing finance, purchasing inputs and materials. Producing safe products. Linking to markets (networking). Record-keeping, cash flow, credit and of savings management, contracts, using market information.
Communication skills	Communication skills and customer service. Negotiation skills.

4. CONCLUSION

This study has documented the driving forces behind the changes in livelihood patterns in the Afar Region over the past five decades, highlighting demographic and policy changes as well as climate, markets and other factors that are affecting the capacity of the pastoralist system. The study has also indicated that pastoral transformation processes and their driving forces are not the same in all communities. Two types of drivers were also noted, covering external and internal drivers.

A key aspect of this study is that its findings are predominantly based on the identification and understanding of the changes in Afar according to the perceptions of its community. While secondary literature informed the study (see Annex 1), its use of focus group discussions and extensive case studies provide an informed perspective and give its findings a unique grounding and resonance.

Based on the findings of the study, the current livelihood activities in Afar Region can be categorized into three major pathways that mainly depend on the wealth status of the households. These include pastoralism with commercialization, livestock with diversification, and non-livestock alternative livelihoods with strong links to the livestock system. Wealth status, gender and age are the overall factors that influence individual and household livelihood paths, although factors like access to infrastructure and facilities are also important in influencing the choice of livelihoods.

The wealthier households are most associated with pastoral production systems. The medium-wealthy households combine pastoral production with non-pastoral activities. The poor households are more engaged in non-pastoral activities. The findings indicate that pastoralism continues to be the dominant source of wealth in Afar. Even though the series of focus group discussions showed that the oldest generation (whose age is above 55 years old) perceived themselves as being wealthier in the past, they still see pastoralism as being the most rewarding livelihood strategy. The study also indicated that the youth are more interested in alternative livelihoods such as employment.

In terms of gender, women have traditionally played an important role in livestock production through selling milk and butter, herding, and by milking of goats and sheep, with the men having control over large livestock resources such as cattle and camel. However, with the emerging of alternative livelihoods, the role of women is changing. Women now play a major role in crop production, even if crop production as a whole is controlled by men. It is also common to see women hired

as temporary or casual workers, although men predominate in better-paid positions. Many women are now engaged in the emerging small-scale trading activities due to lack of alternatives or the desire to become financially independent. Women tend to be involved in trade outside the formal frameworks and practices due to their limited capital or experience.

The study provides clear evidence to conclude that the diversified and alternative livelihoods in Afar Region are rapidly evolving. They are identified as: (i) livestock-based activities (fodder commercialization, livestock trade, livestock product value addition); (ii) small-scale irrigation farming; (iii) fishing; (iv) natural resource production and handicrafts; (v) small-scale/retail trade; and (vi) wage employment, including from mining, tourism and commercial farming. Details on how these livelihoods are executed and the opportunities and risks that pastoralists face in diversifying into them have been provided by the study. From the findings, the following conclusions were made with respect to the research questions. The main livestock-based diversified livelihood activities identified include livestock trade with its multiplier effects and livestock value addition through processing and marketing. The crop-based alternative livelihoods identified comprise irrigated fodder production and forage seed businesses, and crop cultivation with irrigation in response to the growth of markets, agri-businesses and export.

The alternative livelihoods that now exist are new to the traditional pastoral system and therefore require new assets, such as skills, knowledge, attitude change as well as other resources and facilities. These new skills, knowledge and attitude are not yet sufficiently available. Key areas of need for promoting and strengthening alternative livelihoods include: more appropriate education; vocational and skills training; and mechanisms for providing credit, stimulating savings and allowing investment. The entry points for income generation, innovative alternatives and production of commodities or services are also not in place.

While large-scale corporate investments in the region are growing and continue to grow, they are capital intensive and offer few prospects for generating major labor opportunities among the pastoralist community. Inclusion of the youth and women in overall economic and social development programs is insufficiently implemented. There is also no strong local participation in the control and decision-making for interventions or private investment in sectors such as mining and commercial agriculture. Integrating the pastoral community in investment development through genuine and transparent negotiation

with the community and stakeholders at all levels is sadly lacking.

From this study, it can also be concluded that the conventional resilience programs are focusing on supporting traditional livelihoods. They mainly focus on continuing crop and livestock production, with little in terms of value addition or diversification. There is a lack of emphasis given to supporting and promoting alternative livelihoods. The Disaster Risk Management programs include interventions addressing risks related to food security, such as livestock and crop diseases, supporting voluntary resettlement programs for mobile pastoralists, and plans to switch to settled farming. The promotion of alternative and diversified livelihoods is not yet mainstreamed as a key strategic option for resilience building and transformation in the region.

The perceptions of the Afar community on the transformations within their livelihoods, as identified through this study, provide useful insights for all stakeholders with an interest in the Afar Region. The importance of livestock continuing to underpin the livelihood transformations is a critical finding. It is also clear that the opportunities for development that are emerging, for example in agricultural commercialization, mining and tourism, are not yet integrated with local priorities. The value of pastoralism is that it is structurally suited to the dryland environment of Afar, as the elders in this study have testified. Encouraging risk taking and maximizing the options available for the livestock-based community should be the foundation of future resilience-building efforts.

5 RECOMMENDATIONS AND WAY FORWARD

- Livestock and livestock products in pastoral systems are the key to wealth and livelihood security. Therefore interventions to support resilience and transformation need to focus on investing in the livestock sector with an emphasis on: livestock productivity; developing marketing systems; improving the livestock health system; and promoting participatory natural resource management and appropriate range management techniques and strategies that are site-specific to the local ecological, social and economic factors.
- There should be a shift in attitude on the transformation in pastoralism. Programs for modernizing livestock production in the pastoral system need genuine investment in the pastoral system context, such as investing in modernizing the mobility of livestock, improving road and communication infrastructure, and ensuring effective drought management and capacity building.
- Establish coordination mechanisms for development actors to have shared on the understanding of the “livelihood goals” of pastoralists and pastoralism.
- Strongly integrate alternative livelihood interventions in resilience programming.
- Resilience interventions in pastoralist communities need to focus on supporting the emerging alternative livelihood activities.
- Encourage support to alternative livelihood options available as the foundation for resilience-building efforts.
- Alternative livelihood-strengthening program activities should be a key strategy for enhancing pastoralist resilience.
- Support to local value chain development (LVCD) can enhance the benefit of pastoralists and participation in alternative livelihoods.
- Support is also needed for private sector initiatives, with a focus on promoting gender equality to encourage agro-industries to give women workers training and promote them to more skilled or managerial jobs.
- Women should also be encouraged to seize opportunities for education and training, and develop their experience and skills to improve future job prospects.
- Focus on commodities in the women’s domain, such as milk and goat/sheep fattening, to give them an advantage.
- Exploit potential irrigation resources by replacing or alternating low-value cereals in rotation with one or more high-value cash crops or fodder crops.
- Integrate high-value livestock production with irrigation-based high-value crops.
- Non-livestock-based interventions should focus on those pastoralists who are leaving the system because of calamities and who are seeking alternative livelihood options. To this effect, emphasis should be given to enhancement of life skills training and entrepreneurship development in non-pastoral livelihoods.
- Promote business enterprise growth through development of skills and knowledge (technical, entrepreneurial and managerial). Gender-sensitive approaches need to be followed in training and livelihood choices.
- Introduce vibrant entrepreneur training programs, fitting in with the pastoral context and providing special support schemes to pastoral areas.
- Improve financial services such as credit and savings by promoting the expansion of microfinance institutions, banks and RuSaCCOs.
- Fill the critical skill gaps of the pastoral community to enable pastoralists to fit into the available local employment opportunities, including trade and service provision skills to enable engagement in service sectors such as tourism and mining. The skills building should emphasize technical training related to the potential alternative livelihood activity. Furthermore, life skills, including literacy and numeracy, are a basis for active involvement in any business undertaking, with a focus on market-oriented training and specific industry experience.
- To meet the rising demand for training in skill development, activities can focus on building the capacity of TVETs (technical vocational skill training centers) and other training centers to offer

courses for aspiring entrepreneurs.

- Train pastoralists themselves to provide the services, and adapt services (e.g. curricula) to make them relevant to the needs of pastoralists.
- Include the youth and women in overall economic and social development programs.
- Facilitate the development of new activities through skills upgrading and diversification, with the new job demands met through ad hoc training programs.
- Enhance the national tourism marketing strategy to better guide the country's tourism market and promote proper branding, effective positioning and promotional activities by using modern working knowledge of the tourism market.
- Large farm developments need to be evaluated in terms of job creation and the quantity of land they capture with regard to the future needs of smallholder development. In addition, due to the importance of motorization and chemicals in their production systems, these farms rely excessively on fossil fuels and will need to radically adapt in order to deal with sustainability issues.
- Promote the use of more ecologically sustainable approaches for boosting production, managing natural resources, developing biodiversity, and fostering social inclusion and use of local knowledge, thereby improving the natural, human, social, physical and financial capital of rural communities.
- Ensure strong local participation, control and decision-making in interventions such as private sector investment in mining and commercial agriculture. Integrate the pastoral community in investment development through genuine and transparent negotiation.
- Human resource development policies need to consider the local investment needs. The local people need to be trained in consideration of the local resources and opportunities available. The youth need to be trained in tourism and mining sector professions.
- Promote private investment in education, agriculture, hotels and tourism and strengthen partnerships with community organizations.
- Invest in growing opportunities related to the development of ICTs and other services and trades. This creates potential jobs for the youth graduating from technical colleges and universities.
- Promote policy change and institutional support for skills development, motivation, attitude change and local participation.
- Enhance public investments and more conducive market and institutional environments.
- Reducing risks is the major obstacle to community investment and diversification into more productive and efficient farming systems. Promoting a better market environment is crucial, particularly in terms of avoiding price distortions through market regulation, the consolidation of land rights, and adequate provision of public goods in health, education and infrastructure. Improvements to road networks, communication infrastructure and trade, and the implementation of social protection (particularly health care) are major issues in rural areas.
- Promote pastoralist organizations as a powerful mechanism for increasing bargaining power and offsetting the limitations of small size and production capacity, and to help capture economies of scale in sourcing inputs.
- Marketing outputs and transforming products – and progressively implementing payments for the adoption of more environmentally-friendly practices – are ways to simultaneously deal with changing climatic and environmental conditions while also diversifying activities and production.
- Focus on elements of sensitivity and compatibility to the local needs, priorities and aspirations of the target community in promoting alternative livelihoods.
- The potential local knowledge, resources and capacities should be considered in promoting alternative livelihoods.
- Address attitudinal and cultural factors along with expanding alternative livelihood opportunities.
- Promote policy change and institutional support for skills development, motivation, attitude change and local participation in prompting alternative livelihoods.

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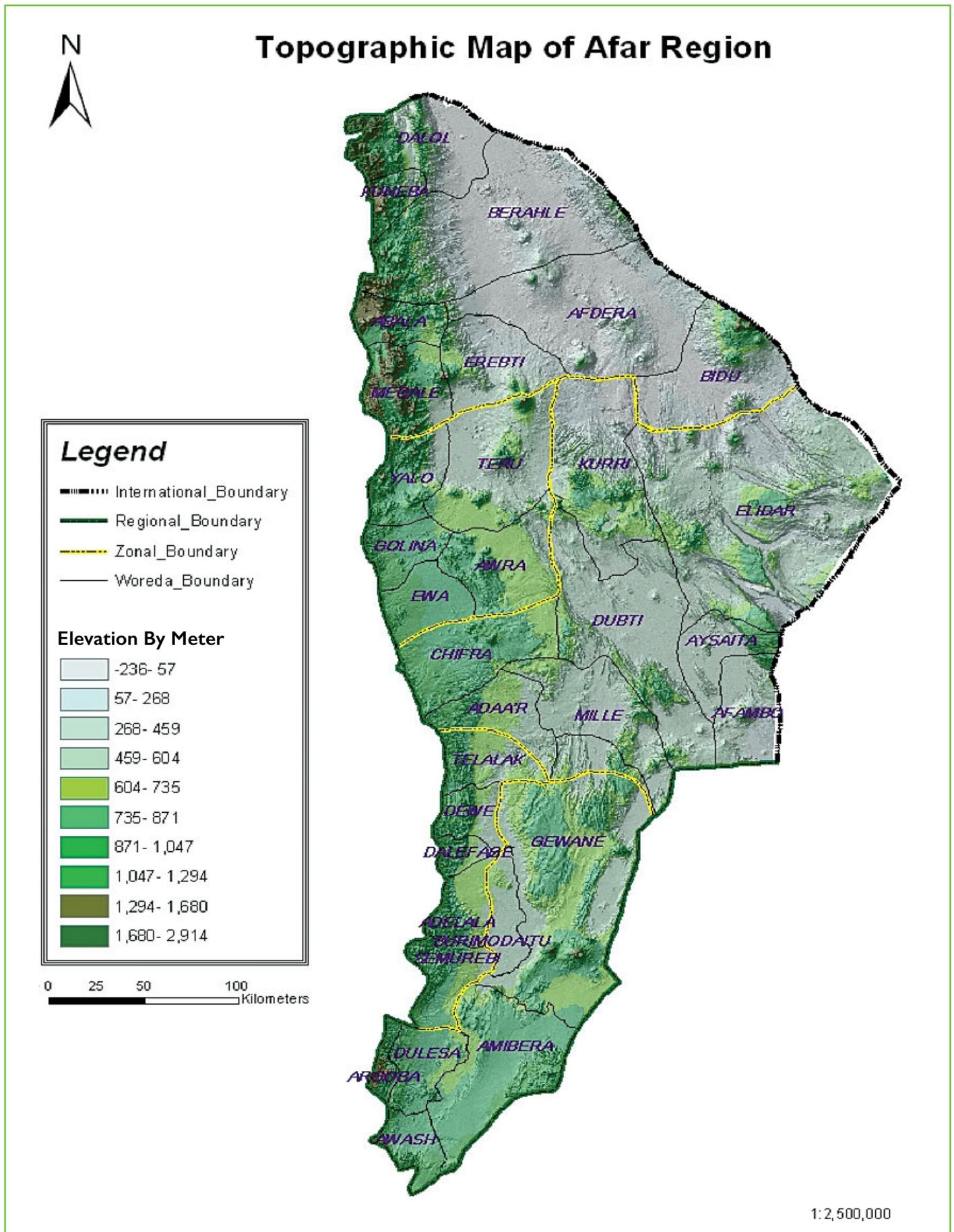
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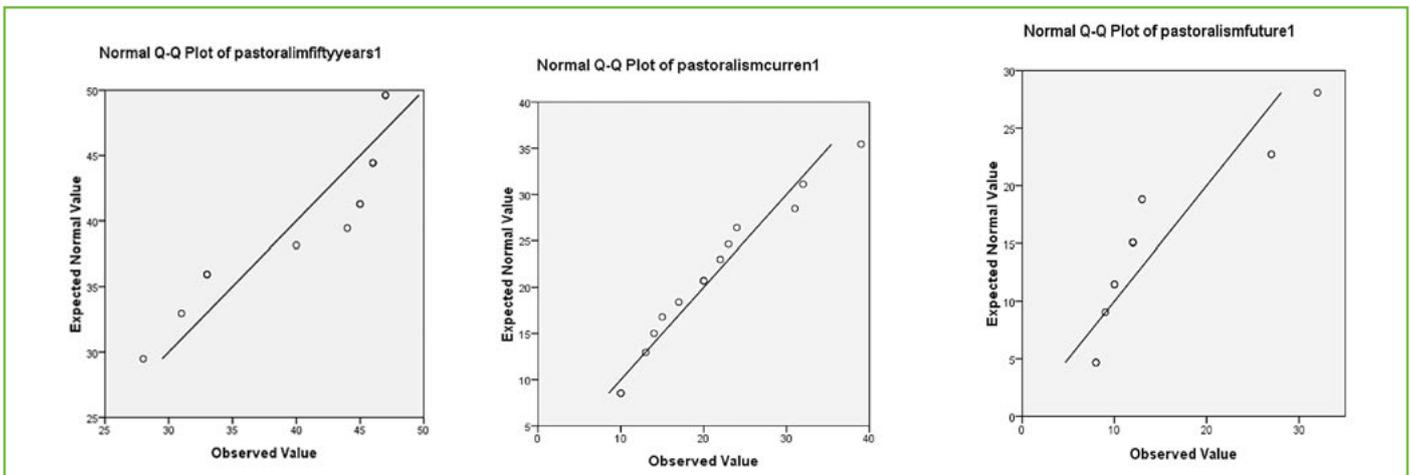
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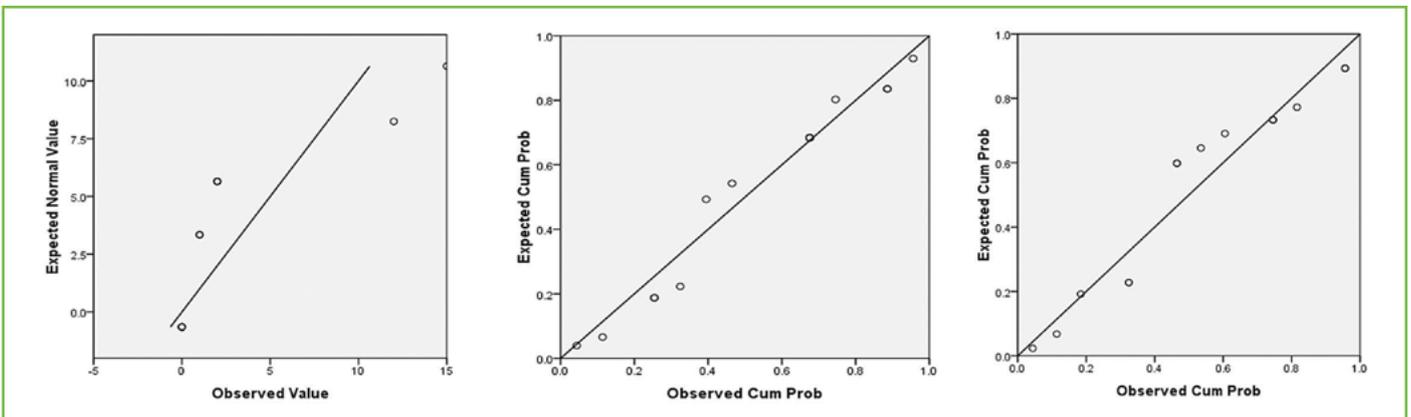
ANNEX 2. TOPOGRAPHIC MAP OF AFAR REGION



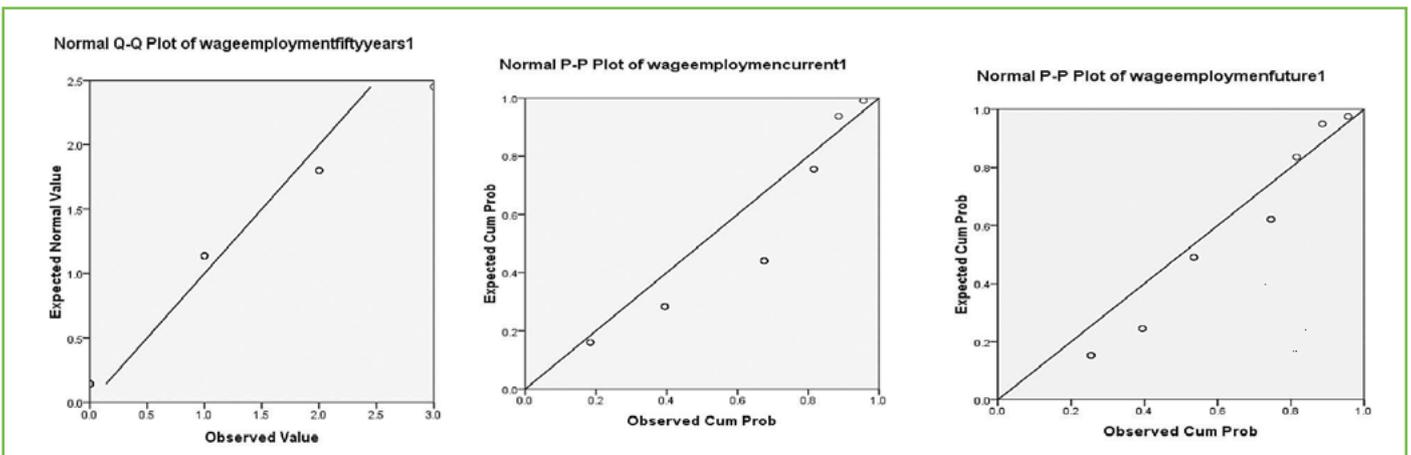
ANNEX 3. GROWTH TRENDS BASED ON STUDY DATA



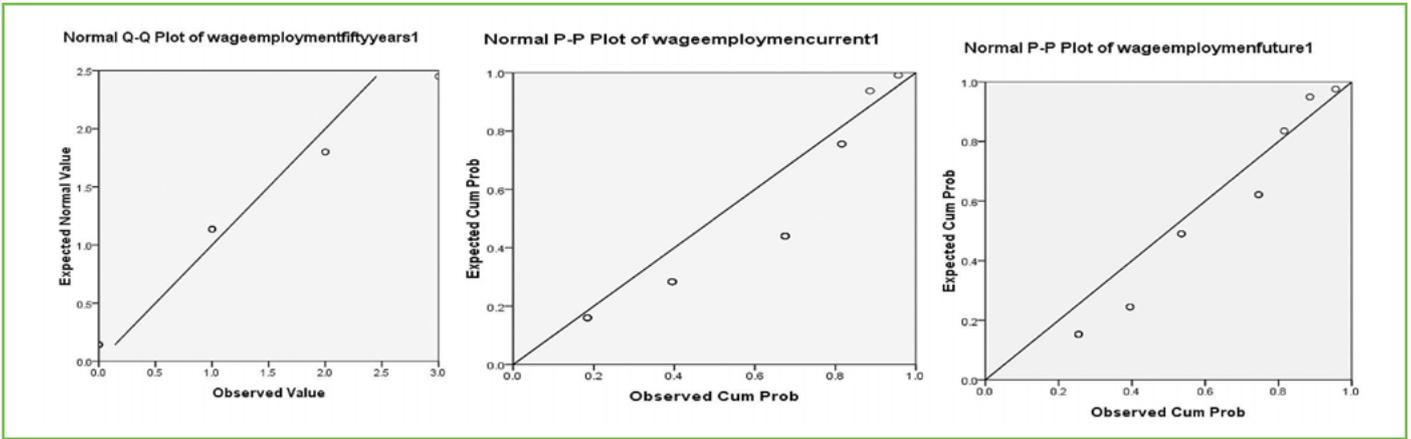
Pastoralism over 50 years, current and future trends



Growth of crop production over 50 years, current and prospective trends



The growth of petty trade in 50 years



Growth of wage labor and employment in last 50 years, current and future

