ETHIOPIA:
THE PATH TO SELF-RESILIENCY

Volume II: Regional Specific Findings

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Acronyms

ACSI	Amhara Credit Service Institution
APDA	Afar Pastoral Development Association
ATJK	Adami Tulu Jido Kombolcha woreda
BoARD	Bureau of Agriculture and Rural Development
CANGO	Canadian Nongovernmental Organizations (in Ethiopia)
CARE	Cooperative for Assistance and Relief Everywhere (NGO)
CBO	Community Based Organization
CCF	Christian Children's Fund
CSA	Central Statistical Agency
DA	Development Agent
FGD	Focus Group Discussion
FFS	Federal Food Security
FSC	Food Security Coalition
FSCDP	Food Security Coalition Development Plan
FSCO	Food Security Coordinating Office
FSO	Food Security Office
FSP	Food Security Program
FSTF	Food Security Task Force
FTC	Farming Training Center
GO	Government office
GoE	Government of Ethiopia
HIV/AIDS	Human immunodeficiency virus / Acquired immunodeficiency syndrome
HH	Household
IFPRI	International Food Policy Research Institute
IPM	Integrated Pest Management
KA	Kebele Administration
KFSTF	Kebele Food Security Task Force
LWF	Lutheran World Federation
NGO	Nongovernmental organization
OFSP	Other Food Security Programs
ORDA	Organization for the Rehabilitation and Development of Amhara
PA	Peasant Association/ Area *or* Pastoral Association
PCA	Principal Component Analysis
PCDP	Pastoral Community Development Project
PIM	Project Implementation Manual (PSNP)
PSNP	Productive Safety Net Program
REST	Relief Society of Tigray
SC-UK	Save the Children-United Kingdom
SNNPR	Southern Nations, Nationalities and People's Region
SPSS	Statistical Package for the Social Sciences
SWC	Soil and water conservation
TANGO	Technical Assistance to Nongovernmental Organizations
TB	Tuberculosis

VCT	Voluntary counseling and testing
WEO	Woreda Education Office
WFSTF	Woreda Food Security Task Force
WHO	Woreda Health Office
WPRDO	Woreda Pastoral and Rural Development Office

Glossary of Terms

Afoosha	Traditional community self-help groups that organize social functions
Belg	Short rainy season, March-May
Birr	Ethiopian unit of currency (1 birr = .1 US dollars)
Chaka	Local alcoholic drink
Debo	Traditional labor sharing
Deyr	Short rains falling between October and December
Ertiban	Community self-help group
Gomen	Cabbage
Guza	Groups that provide community agricultural labor
Haray	Collective economic assistance from relatives (especially from mother's line)
Hato/ hatota	A form of assistance aimed at replacing the loss of assets
Gu	Rains falling from April to June, coinciding with the planting season
Idir/Kire	Traditional, member-supported funeral association
Iqub/Ikub	Traditional rotating credit and savings association
Jigie	Traditional labor sharing association
Karan	Rains between August and September
Kebele	Small locality or village
Kiremt	Long rainy season
Kurkufa	Staple foods
Maroo	Small, structured farmers' groups that support agriculture production
Meher	Intense rains, July-September
Mora	Common assembly platform
Striga	Parasitic weeds that affect cereal crops (witchweed)
Tabia	Sub-district
Woreda	District
Zakat	As practiced in the Afar context, similar to idir in the highlands

1. Livelihoods and Self-Resiliency in Tigray

Tigray is the northernmost region in Ethiopia. It is bordered by Eritrea in the north and Sudan to the west. Within Ethiopia, the Amhara Region lies to the south and the Afar Region to the east. Tigray covers an area of approximately 80,000 square kilometers with a total population of approximately 4 million 75 percent of which live in rural areas. The region is divided into five administrative zones (Western, North Western, Central, Eastern and Southern), 34 rural woredas (districts), 12 urban woredas and 660 tabias (sub-districts). The regional capital is Mekelle. This analysis of vulnerability and resilience in Tigray is based on the findings of qualitative and quantitative research carried out in Enderta and Raya Zebo woredas.

1.1 Livelihood Context

The greater part of the region consists of mountain plateaus ranging between 1,500-2,300 meters above see level. Based on the variations in altitude, Tigray consists of three distinct geographic regions: the central highland, the western lowland, and the eastern desert plain. Lowlands in the west of the region are relatively fertile compared to higher elevations, but are also more prone to outbreaks of malaria. As a region, Tigray is characterized by a sparse and highly uneven distribution of seasonal rainfall, and by the frequent occurrence of drought. Average rainfall is highest in central and southwestern Tigray (1000 mm per year) and lowest in the eastern part of the region (450 mm per year). Most of the rainfall falls during the "Meher" season from June to September (it is most intense during July and August). In some parts of Tigray, there is short rainy season called "Belg" which falls during the months of March, April and May.[1]

Like most regions of Ethiopia, Tigray is largely dependent on agriculture. The majority of populations living in the densely populated highland areas are sedentary agriculturalists practicing crop cultivation for household subsistence supplemented by animal husbandry. Nonetheless, agricultural production and productivity has remained very low mainly due to small landholdings (average 0.5 ha. per household), the use of traditional farming systems, land degradation and low soil fertility; recurrent drought; prevalence of pests, etc. As a result, household agricultural production is often unable to sustain families for more than 3-4 months per year. Meanwhile, opportunities for diversification of income generating activities also remains extremely low.

1.2 Diversified Peri-Urban Livelihood System

a. Livelihood Strategies

The diversified peri-urban livelihood system in Tigray is primarily based on mixed farming. Individuals and households within this system also benefit from proximity to urban centers that enables them to engage in small-scale trade and selling of daily labor.

[1] Hagos, F., Pender, J., and Gebreselassie, N. (1999)

Poor households who do not have the capacity (labor, oxen for draft power) to cultivate their plots either enter into sharecropping arrangements or simply rent out their land. The poor also engage in daily labor activities mostly on construction sites in towns or on the agricultural land of better off farmers. Some poor households cultivate crops using irrigation; others engage in small petty trade (e.g. selling kollo, spices, vetch for shirro, brewing talla- local beer, spices, knitting cultivation-kufkafo).

Livelihood strategies of the better-off households typically involve crop and livestock production on their own land as well as on rented land. Their livelihood strategies are characterized by a relatively high degree of income diversification, i.e. they engage in several different income-generating activities such as selling dairy products, vegetables or spices; owning camels and salt trading. A small number of better off households no longer rely on agriculture as sole means of livelihood, choosing instead to pursue trading activities such as running bars, buying manufactured products, owning flourmills and small shops.

b. Access to Resources and Assets

Human capital: The communities within this livelihood system have some access to health, education, water, electricity (except Wa'akel) and flourmills. Health facilities provide child delivery services, diagnose individual medical cases, offer medical treatment and conduct laboratory testing (including voluntary counseling and testing, VCT). Meanwhile, all school age children within these communities have access to education. Drinking water is available from different sources including hand-dug wells with hand pumps, deep wells with electric pumps and/or natural springs.

Despite the availability of health and education services, several factors limit effective utilization of such services by households. For instance, many health and education facilities in the area do not have necessary equipment or adequately skilled professionals. There is little opportunity for non-formal adult education (except some religious teachings) and the capacity to send children to higher level education is limited due to the wealth status of household.

Physical capital: Merimiti and Wa'akel are located directly on the tarmac road connecting Mekelle with Addis Ababa, making accessibility easy, whereas access to Mekeyah is more difficult. The communities within the diversified peri-urban livelihood system have access to irrigation in different forms, though coverage, intensity and number of water users varies from place to place. River diversion, flood diversion, use of pumps and micro-dams are the predominant modes of irrigation. Some of the irrigation infrastructure within the region has been constructed through the PSNP or a combination of PSNP and community input. In each of the communities a decrease in water volume, attributed to low seasonal rainfall and silt deposition, was reported as a significant problem.

Each of the communities within this livelihood system has access to Farmer's Training Centers (FTC) constructed by PSNP. However, most of them are underutilized despite the presence of assigned Development Agents. Similarly, these communities have access

to market centers within and nearby small and big towns due to their suitable location. These market centers are the sole suppliers of high value vegetables and fruits.

Financial capital: Households have access to credit through Dedibit Credit and Saving Institution. However, poorer households are generally reluctant to take credit, as they fear they may not be able to repay loans. Alternatively, better off households are more comfortable taking credit, owing to their greater ability to repay loans.

Natural capital: Communities within the diversified peri-urban livelihood system (Mekeyah, Merimiti, Wa'akel) are located within an area characterized as 'mid-highlands' and 'foothills' where the topography is either flat or undulating. The area is largely devoid of natural vegetation cover (especially those situated at mid-highland) and exhibits high rainfall variability which negatively affects crop production. Communities in the foothills rely on spate irrigation (flood harvesting) maintained during a bi-modal rain season – the short season belg (February and April) and the longer, more intense meher (June - September).

Households land ownership falls into one of three different categories (fertile, middle and poor). Many/most households acquired their land holdings through government land distribution programs carried out in 1983. People born after that date who do not have access to land inherited from family members may make a written request to the tabia to acquire land. Typically, the tabia will provide land when and if it becomes available from deceased household heads with no legal inheritor. The other alternative for accessing land is to share a family plot or rent land from households who lack the required labor and/or productive assets (oxen, seed, tools, etc.).

c. Risks, Constraints, Risk Management and Coping Strategies

Crop failure due to rain irregularity or drought, erosion, water logging, pest infestation and lack of livestock feed were the major risks cited by households in the diversified peri-urban livelihood system. Illnesses and infections such as amoebic dysentery, malaria, skin disease, goiter, cough, diarrhea, HIV/AIDS and hibet were also cited as significant health risks.

A shortage of land, absence of fallowing, limited use of appropriate technologies, high cost of fertilizer and seeds, as well as a shortage of labor and improved breed livestock were also identified as common constraints. Respondents also cited a range of market-related constraints including a lack of timely information, price fluctuation and the inability to acquire fertilizer for irrigated crop production on credit. It was also mentioned that the lack of a consistent and clean water supply and silt deposition in micro-dams are also constraints which frequently reduce household productivity.

Households within the diversified peri-urban livelihood system reported a wide range of coping strategies employed in response to shock. The most commonly reported coping strategies were borrowing money, reducing both the quantity and quality of meals, relying on wild fruits and vegetables, selling livestock and reducing expenditures on other household goods such as clothing. Other coping strategies mentioned include the

mixing of cactus in livestock feed, replacing high yielding long cycle sorghum and teff with low yielding short season varieties, labor migration, increased production of cash crops and participation in PSNP and/or daily labor.

1.3 Highland Cereal Crop Producing Livelihood System

a. Livelihood Strategies

Most of the households in this livelihood system rely on the production of rain fed cereal crops (barley, wheat, vetch, teff, flax), daily labor activities and participation in the PSNP. Households that engage in daily labor activities do so primarily through male household members traveling to Mekelle to find work. Poor households, often do not have the capacity (labor, oxen for draft power) to cultivate their plots themselves. They either enter into sharecropping arrangements with better off households or simply rent out their land. A small number of the better off households are involved in the salt trade, either by renting their donkeys to others or by directly engaging in trading themselves. Within this livelihood system, there are no major differences between the livelihood strategies pursued by the better off and the poor households. In general, households within the highland cereal crop producing livelihood systems can be characterized as achieving a very low level of economic wellbeing and maintaining a relatively high dependence on external support.

b. Access to Resources and Assets

Human capital: Access to education within the community is limited up to 2nd grade. Those who can afford to send their children to the tabia center or the capital while children of poor households typically dropout after completing the available grades.

There is no available health service within the area. As a result, those suffering from common ailments such as malaria, goiter, or TB often walk up to 2 hours to obtain necessary medication. Meanwhile, personal sanitation has increased following the introduction of pit latrines and awareness raising campaigns supported by health extension agents.

Physical capital: There is no crop irrigation infrastructure within the community, despite one government attempt to construct a river diversion channel several years ago. The community has access to water from hand-dug wells fitted with hand pumps. However, it often takes 1-2 hrs for women to fetch water due to long queues. There is a very rudimentary dry weather road in the community but there is no public telecommunication infrastructure, electricity, or local market. Given the lack of adequate infrastructure, individuals are typically required to travel long distances to obtain needed services.

Financial capital: Community members do have access to credit through Dedebit Saving and Credit. Repayment schedules vary from 1-3 years depending on the amount of cash borrowed. Recently, Dedebit has been collecting 9% interest on loans. Farmer's cooperatives and ikubs also serve as financial institutions in providing credit for fertilizers and seeds. However, despite access to credit, many Dedebit borrowers have

found themselves worse off than before they borrowed cash primarily because the cash is used to meet consumption shortfalls. Some household heads have been jailed while others have migrated due to an inability to repay loans.

Natural capital: The highland cereal crop producing livelihood system is situated close to the regional capital of Mekelle in a high altitude plain dissected by gorges. It is highly drought prone with low average annual rainfall. The area has faced persistent drought since 1983. A large portion of the land is significantly degraded with minimal vegetative cover, and very few trees or other plants such as shrubs. Households within the area are highly vulnerable to drought, which, in the past has resulted in severe food insecurity and dependence on the PSNP for survival.

Political capital: While there is a high degree of gender equity in terms of access to land, the youth within this livelihood system generally have no land.

c. Risks, Constraints, Risk Management and Coping Strategies

Drought, crop failure, pest infestation, disease, and livestock death due to inadequate veterinary services and animal feed were defined as the most prominent risks within the community. The most significant constraint within the community continues to be the lack of clean drinking water for both humans and livestock.

The most common constraints contributing to reductions in household productivity within this community are a failure to repay credit, shortage of appropriate farming technologies specific to the area, shortage of land, absence of fallowing, land degradation and erosion.

During times of food stress, households typically employ a range of coping strategies. The responses most commonly cited include reducing the quantity and quality of meals, eating wild fruit and vegetables, feeding cattle with chopped cactus leaves, and selling oxen or other livestock. Withdrawing children from school, migrating for labor and participating in the PSNP are other coping mechanisms employed within the community.

1.4 Lowland Mixed Cereal Crop and Livestock Producing Livelihood System

a. Livelihood Strategies

Most households within this livelihood system pursue a strategy of mixed farming (crop and livestock production). The better off are predominantly agro-pastoralists who settled across large expanses of flat lowland. Larger landholdings allow such households to achieve relatively high agricultural production and maintain large numbers of livestock given sufficient rainfall. Poor households in the area are also engaged in mixed farming but their production and herd size are relatively small. Many poor households also engage in daily labor for hire and participate in the PSNP. Poor households headed by women often rent out their land or are involved in sharecropping. Many such households also collect firewood, provide hairdressing services, make traditional baskets and sell cactus.

b. Access to Resources and Assets

Human capital: Communities within the area have access to education, health, and water. Most of the primary education and health facilities are within close proximity to

households. A small number of hand pumps and deep wells with motorized pumps serve as the primary sources for clean water within the community.

Social capital: Community members remark that the area is characterized by a number of different language groups, including Tigrigna, Amharic and Oromoffa and both Christian and Muslim populations that live together harmoniously.

Physical capital: Community members report sufficient access to wireless telephone, and road networks (though not all-weather). Despite a clear and persistent need for irrigation infrastructure, however, there are no such schemes within the community or surrounding areas.

Natural capital: The lowland mixed cereal crop and livestock producing livelihood system is situated in the mid-highlands and lowlands with a topography that tends to be flat or undulating. Most of the agricultural fields are in flat valley bottoms while residential areas tend to be located on the sides of the small hills. The area is dry and largely devoid of vegetation. Prior to the 1997 drought, the area had been a major source of food to northern Ethiopia. During that time, the area's abundant grain and livestock production was attributed to adequate rainfall, large landholdings, and good soil fertility. The drought and subsequent famine that occurred in 1997 cost many human lives and devastated livestock, marking a turning point in the history of the area. Many of those who survived the famine migrated to other areas. The households who remain in the area continue to face shortages in rainfall as well as the many problems it poses to their agricultural livelihoods.

c. Risks, Constraints, Risk Management and Coping Strategies

Recurrent drought, flood, strong winds, animal disease, pest infestation, shortage of livestock feed, and predators such as Hyena and monkeys were cited as the most significant risks within the lowland mixed cereal crop and livestock producing livelihood system in Tigray. Malaria, TB, HIV/AIDS, and meningitis were identified as the most significant health risks within the community.

The primary constraint to household productivity in this livelihood system has been the lack of attention to harvesting surface and ground water. Most respondents attribute this shortcoming as the primary reason that previous attempts to promote large-scale agricultural development in the lowlands have failed.

In times of economic hardship and/or food shortages, households often respond by replacing high yielding long cycle sorghum and teff varieties with low yielding short season varieties, selling livestock, reducing the number and quality of family meals, and borrowing grain from better off households. Other coping strategies include selling firewood, making traditional baskets, hairdressing and migrating with livestock in search of feed. Some households also reported that family members also migrate to Humera during sesame harvesting and Afdera in the Afar region to work on salt collection sites.

1.5 Seasonality, Vulnerability and Risk Mitigation

The analysis of seasonality, vulnerability, and risk mitigation considers the timing of risk, program interventions to manage risk, bottlenecks that constrain the achievement of livelihood security, and households' ability to mitigate risk before, during and after it occurs. With this in mind, the three livelihood systems identified within the Tigray region exhibit similar characteristics regarding seasonality, vulnerability and the mitigation of risk.

Food shortages occur from February to September while peak agricultural activity (land preparation, sowing, harvesting, threshing) takes place between March-June and October-December. PSNP activities are implemented between February and May, which, to some extent conflicts with agricultural activities carried out during the same period. PSNP implementation is also problematic in that transfers take place too late to allow households to adequately cope with food shortages.

Malaria is particularly common during the months of September, October, January and May, which are also peak agricultural months. As such, the onset of malaria tends to have a consistent and significant affect on agricultural labor productivity. Pest infestation is most prevalent during July-October and May–June.

1.6 Household Vulnerability Analysis

This section begins by presenting key descriptive statistics that reflect the relative vulnerability to livelihood insecurity among households in Enderta and Raya Azebo woredas (Appendix A). It then presents the results of the household vulnerability analysis disaggregated by woreda. Principal component analysis was employed using an array of asset variables to extract the components that explain the co-variations of the underlying variables. The component that explains the highest variation is used in the cluster analysis to create the vulnerability categories.

Mean household size in Enderta is 5.3 while the mean household size in Raya Zebo is 5.1. Households dependency ratios in both of the sample *woredas* in Tigray were found to be extremely high. In Enderta the ratio is 1.2, meaning there are 120 persons in the dependent ages for every 100 persons in the working ages while in Raya Zebo the dependency ratio is 1.3.

In Enderta approximately one quarter of household heads are women while in Raya Zebo 20.1 percent of households are headed by women. Approximately 75 percent of the household heads in Enderta never attended any school while 15.3 percent left school before completing primary education. In Raya Zebo 79.6 percent of household heads never attended school while 15.9 percent left school before completing primary education.

Approximately 65 percent of the households in Enderta drink either borehole or tap water while 24.3 percent of the households drink from springs. 9.7 percent of households use dug wells, ponds, streams, or or river water sources. In Raya Zebo, 68.7 percent of households use borehole or tap water, 16 percent of households depend on springs to

meet drinking water needs while 15.3 percent use unsafe water sources. More than 80 percent of households (81.9% in Enderta and 89.6% in Raya Zebo) do not take any measure to purify drinking water.

Results suggest an alarming sanitation situation in survey *woredas* in Tigray. Approximately 78.5 percent households in Enderta and 57.6 percent of households in Raya Zebo do not have any latrine. Only 16.7 percent of households in Enderta and 41 percent of households in Raya Zebo have pit latrine.

Approximately 60 percent of households in Enderta and and 94.4 percent of households in Raya Zebo believes Malaria is a problem in the area. The common measures to prevent from malaria were identified by households to include "draining stored water" (45.8% in Enderta and 42.4% in Raya Zebo) and "using bed nets" (23.6% in Enderta and 47.2 percent in Raya Zebo).

Findings from the household vulnerability analysis suggest that approximately 94 percent of the households in Enderta can be classified as vulnerable, while 70 percent of the households in Raya Zebo are found to be vulnerable (Figure 3). Since the number of observations in non-vulnerable households in Enderta is too small, Enderta is dropped from the analysis.

Figure 1: Distribution of Households in Raya Zebo (Tigray)

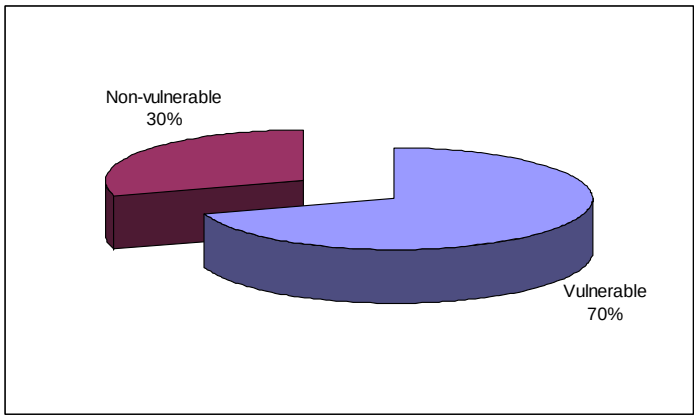
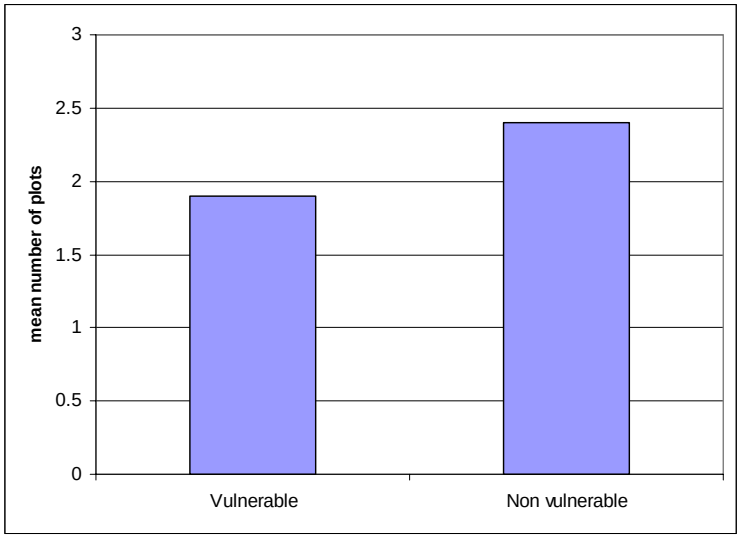


Figure 4 shows that vulnerable households in Raya Zebo own less plots or parcels of land compared to the non-vulnerable households.

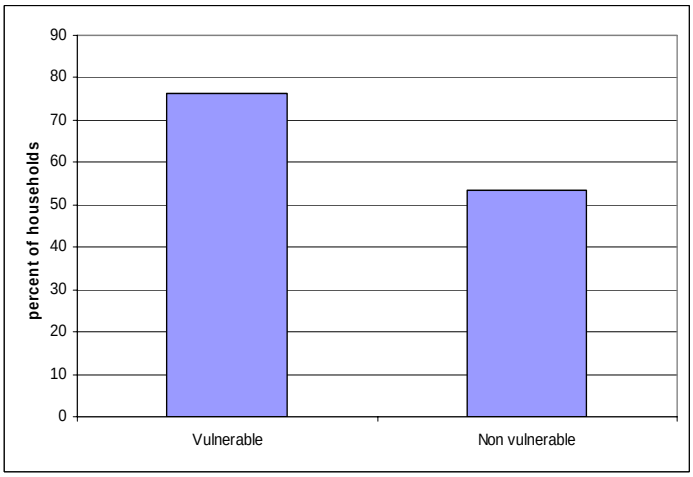
Figure 2: **Number of Plots/Parcels of Land Owned by Vulnerable Group in Raya Zebo (Tigray)**



The vulnerable households own on average 1.9 plots (median: 2.0) while non-vulnerable households own 2.4 plots (median: 2.0). T-test results suggest that the difference in mean number of plots/ parcels between the vulnerable and non vulnerable households in Raya Zebo is significant at one percent level ($p<0.001$).

The mean area of land owned by vulnerable households in Raya Zebo is 1.4 hectares while non-vulnerable households own 2.5 hectares of land. The difference in land areas between the vulnerable and non vulnerable households is significant ($p<0.001$).

Figure 3: Proportion of Households Engaged Only in Cereal Production in Raya Zebo (Tigray)



Results presented in Figure 5 shows that a greater proportion of vulnerable households exclusively produce cereals compared to non vulnerable households in Raya Zebo.

Approximately 76 percent of vulnerable households in Raya Zebo exclusively cultivate cereal crops while 52.5 percent of non vulnerable households do the same.

Figure 4: Proportion of Households Selling Livestock in

The results confirm that a significantly larger proportion of vulnerable households sell livestock in Raya Zebo compared to non-vulnerable households. Approximately 44 percent of vulnerable households sell livestock while 27.9 percent of non vulnerable households sell livestock (Figure 6).

Raya Zebo (Tigray)

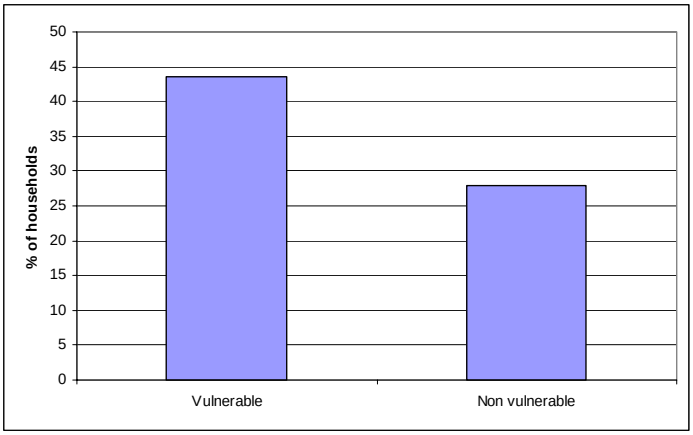
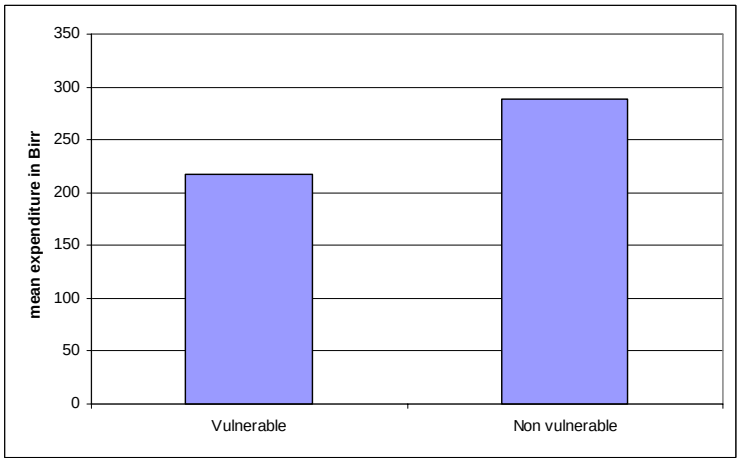


Figure 5: Mean Monthly Household Expenditure in Raya Zebo (Tigray)



Expenditure is a proxy to income. Information on expenditure was collected from the households to estimate income.

Estimated monthly expenditure of vulnerable households in Raya Zebo is 217.3 birr while the estimated monthly expenditure of non – vulnerable households in the same woreda is 288.3 birr (Figure 7). However 50 percent of the vulnerable households in Raya Zebo spend 192.8 birr or less per month while 50 percent of the non-vulnerable households in the same woreda spends 270.0 birr or more per month.

Figure 8 presents the results of estimated value of assets by vulnerable groups. As one would expect, non-vulnerable households own higher value assets compared to its counterpart vulnerable households ($p<0.001$).

Estimated mean value of assets own by vulnerable households in Raya Zebo is 303.3 birr while non vulnerable households own 448.6 birr.

Figure 6: Mean Household Asset Value in Raya Zebo (Tigray)

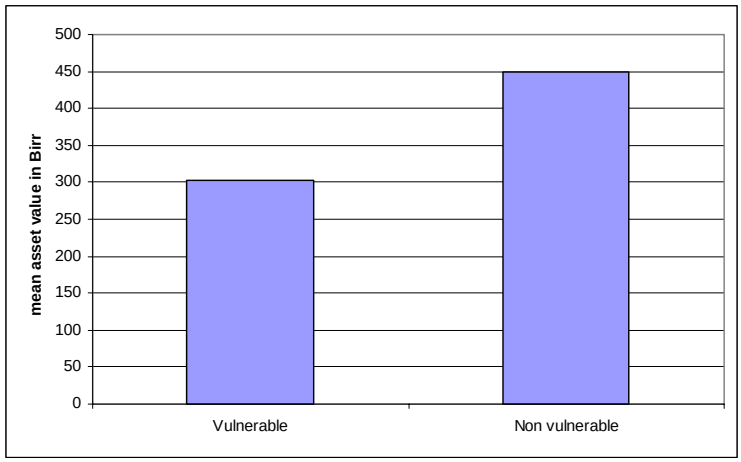
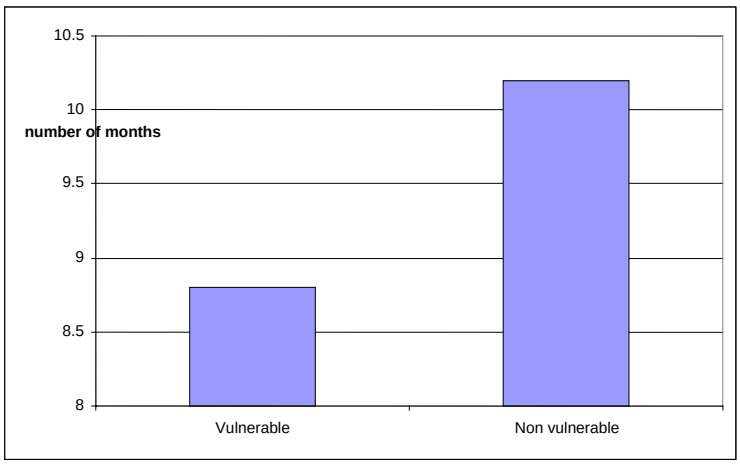


Figure 7: Mean Number of Food Adequate Months per Year in Raya Zebo (Tigray)



In Raya Zebo, the mean number of food adequate months as reported by vulnerable households is 8.8 while the mean number of food adequate months for the non-vulnerable households is 10.2 (Figure 9). A difference, though not large, is statistically significant ($p<0.001$). However the difference in median number of food adequate months between vulnerable and non-vulnerable households is large (8 months as opposed to 12 months respectively).

1.7 Household Resilience

As was the case in other regions involved in the study, household resilience for each of the livelihood systems in Tigray was assessed with respect to seven key factors. These were: household capacity or ability to diversify income within and outside of agriculture, openness to change (adoption of new technologies or skills), propensity to save, strategic social capital, focus on human capital-education, contingency fund/resource allocation for long term risk management, and shared vision and responsibility between spouses.

Within the *diversified peri-urban livelihood system*, a number of key factors were found to contribute to household resiliency. Chief among these factors is the ability to strategically use limited resources and the willingness to expose oneself to some degree of risk as a means of gradually accumulating livelihood assets over an extended period of time. Both of these traits are exemplified in the case study below (Box 1).

Other households within the *diversified peri-urban livelihood system*, including some headed by women, have enhanced their livelihood security by resorting to high value cash crops such as chat, coffee, papaya and orange trees and vegetables. Some resilient households within this livelihood system were able to improve their situation by obtaining credit with which to apply a particular skill (masonry, pottery/clay making, carpentry) while others strategically invested financial resources obtained through remittances of family members.

Box 1: Case Study – Household Resilience in Tigray

"I was a daily laborer (obtaining 8 birr per day) in this community before 1994/95. Then I started doing carpentry and masonry work which helped me to obtain a better income. The same year, an extension package program was initiated in this community. I was very much interested in participating in the bee production training. I registered for it; took credit; and managed to purchase six modern beehives. My relatives were disappointed by my initiative because they felt I would face problems in paying back the loan. In contrast to their expectations, I managed to produce 115 kg honey the same year and sold it 25 birr per kilo since I had skilled training in honey production. I disclosed my success to the community in public about the money I earned from honey production. Again my relatives opposed me because it was unusual to publicly disclose what one has earned. I ignored them and continued doing my job, managing to produce 300 kg of honey and sold it for 32 birr per kilo. With the money I bought a water pump in 1996 and started irrigation on land I had rented. Again, the community was not happy, due to their assumption that the motor would reduce the water supplied through their traditional irrigation system. I continued doing my job with dedication even working on holidays and weekends since irrigation requires continuous labor input starting from land preparation up to harvesting. This time opposition to my initiative became more severe. They purged me from serving the church as a Deacon. They stoned my water pump and cut the hose. All these bad things didn't discourage me. Rather I felt the spite for motivation to continue my job strongly working day and night.

In 1997 when I bought the second water pump, I organized a group of youth farmers (fifteen) to work with me in the field. Among them, six were working with me on the basis of profit sharing and the remaining as daily laborers (13 birr per day). At the end of the production year those who shared the profit bought their own water pump. They are now among the more successful individuals in the community. A dozen more people have also bought water pumps and intensified irrigation and transformed their livelihood. This was the time the general public within the community changed their mindset and started to follow my path of development. The church also reversed its decision to allow me to resume my service in the church. I have now the skill to repair my own water pumps and provide free service to others. I obtained the skill by trial and error and through experience I have become a good mechanic of these motors. In 1998 I bought the third diesel engine water pump to expand and intensify production."

Within the *lowland mixed cereal crop and livestock producing livelihood system*, a more narrow range of factors was found to contribute to household resilience. First among these is a willingness to pursue innovative approaches to mobilizing local resources and skills. One example of this is offered by Asefa Abreha who helped to organize 80 farmers in 1995 to construct a flood diversion structure (Box 2).

Box 2: Case Study – Household Resilience in Tigray

"I was the initiator of this project idea. First, I went to the zone capital in Maychew to apply for technical and professional support from Bureau of Agriculture and Rural Development (BoARD). They accepted my application and sent technical personnel to supervise installation of gabion structures. I paid 800 birr from my pocket for transporting the gabion as well as per-diems for the technical experts. Thanks to them, they did a very good job in collaboration with the locally organized flood spate irrigation users. The same year there was adequate rain. Subsequently we managed to use the spate irrigation and produced a very good harvest. Participating farmers realized a minimum of 20 quintals of sorghum while others achieved as much as 100 quintals. For us, this was a miracle because we then knew we could make a difference if we employ appropriate technology in the area."

Resilient households within this livelihood system also avoid misusing resources acquired during surplus harvests and often establish contingency funds for managing future risk. Such actions have allowed them to avoid having to purchase foodstuffs or become dependent on external support during periods of food shortage.

No households within the *highland crop producing livelihood system* were found to be particularly resilient. This is due in large part to the area's poor natural resource base and high level of dependency on external support. In fact, the study has determined that household resiliency within this livelihood system may only be promoted by a significant investment in water management and the rehabilitation of area's natural resources.

1.8 Community Resilience

As part of this study, community resilience was assessed according to four central factors: their attitude towards collaboration, cooperation and change, relationships between formal and informal institutions at the local, regional and national levels; the degree of collective decision-making within the community, and the management of both local (internal) and external resources.

Diversified Peri-Urban Livelihood System

The livelihood strategies of communities within the *diversified peri-urban livelihood system* are based on mixed farming, producing and selling of high value agricultural products and selling of both skilled and unskilled labor. Livelihood security within these communities is supported in part by linkages with small and large urban settlements in the surrounding area. As a result, these communities enjoy greater access to irrigation technology and have exhibited positive trends in terms of diversification and intensification of livelihood strategies. While the majority of households within the area remain food insecure due to a limited natural resource base and a general lack of OFSP interventions, intensification and modernization of existing irrigation schemes and agricultural markets has the potential to significantly contribute to community resilience.

As is the case in other livelihood systems, the most important and trustworthy informal institutions within these communities are the Equb and Idir. Alternatively, the value of government institutions such as health and education facilities and the Bureau of Agriculture and Rural Development (BoARD) is determined according to their perceived contribution toward the betterment of the community. For instance, the community members generally value education as they believe it to be the best means of achieving transformative change within and outside of the agricultural sector. Nonetheless, the contribution of education to community resiliency is hampered by the generally low quality of educational facilities, high dropout rates, and limited job opportunities after school completion. Newly established farmer's cooperatives and irrigation user's cooperatives have been viewed as potentially valuable institutions if strengthened and supported (technically and financially) by the government. As seen by the community, an important role of such institutions is to advocate for protection from price fluctuation and to promote more effective utilization of available water resources. Within the community it is generally perceived that the extension package program implemented for years has brought about successes primarily for better off households. With the exception of the Relief Society of Tigray (REST), the limited involvement of NGOs in implementing OFSPs has also hampered efforts to enhance community resiliency through sustainable development programs.

In the past, community members have collaborated to manage risk by mobilizing resources (cash or in kind) to provide for the needy. For instance, during serious food stress the community has provided relief aid or irtiban (free handouts in kind or cash). Neighbors and relatives have also organized free labor in a form of wofera (work gangs) for the purpose of weeding and harvesting during specific periods of the agricultural season. Community collaboration with external institutions, particularly among the poor, was described by respondents as inadequate. The lack of community participation in the extension credit program was attributed to both the inflexibility of loan packages and repayments as well as the lack of integration with OFSPs (e.g., provision of livestock in the absence of feed, promotion of dairy production without sufficient consumers, provision of beehives in the absence of bees).

At the same time, it was reported that community participation in development, social and political issues is increasing. Decision making within households has also improved over the years. Increasingly, husbands and wives cooperate and help each other in making important household decisions. As a result, women are now able to more actively participate in decision making and engage in employment outside their home owing to growing degree of freedom they have. However, while women are increasingly engaged in economic activities, there remains a gender difference in terms of wages, particularly with respect to agricultural wages and other daily labor activities.

Diversified Cereal Crop Producing Livelihood System

The livelihood context of *highland cereal crop producing livelihood system* is characterized by low potential high-risk environment due to the poor natural resource base (degradation) and problem of sustainable use of it. The overall production and productivity and the level of food insecurity of the people, therefore, have not been improved for so long. The major risk factors for this chronic vulnerability are the

recurrent drought, absence of irrigation schemes, and inaccessibility of public services such as road, market, health, water, etc. The community, therefore, requires huge investment to do big water harvesting structures.

As is the case in other areas, the most important traditional institutions in communities within the *highland cereal crop producing livelihood system* are *Equb* and *Idir*. Most of the participants of Equb are from better off households. However, a wider range of the general public participates in Idir, which serves the community during various ceremonies and festivities. In these traditional institutions, it is the elders that retain the most decision making power. However, in women's associations, those who are literate tend to have the greatest influence and decision making power. Nonetheless, community-based social support networks become more ineffective during severe drought as individualistic attitudes overwhelm communal thinking.

Community members also regularly obtain credit and cash transfers from Dedebit and the PSNP respectively. The impact of these programs towards improving household food security and community resiliency was reported to be insignificant, as the programs are not responsive, flexible and properly integrated with OFSPs. For instance, the vaccination for livestock has aggravated the problem of animal health, as there is no feed to allow them to recover. Community respondents also felt that NGOs that have been operating within the area for a shorter period of time have themselves not contributed much towards achieving the effective and sustainable use of available resources.

Formerly, communities within the *lowland mixed cereal crop and livestock producing livelihood system* achieved a relatively high standard of living due to large land holding, fertile soil, adequate rainfall and abundant livestock. However, since the onset of a severe drought in 1977, livelihood security within this system has been increasingly tenuous. Extension programs implemented since that time have done little to bring about changes in the lives and livelihood security of the community. In response, community members have been obtaining credit from Dedibit and other CBOs (women and youth associations, farmer's cooperative.) However, the availability of credit has not significantly contributed to community resilience as evinced by the continued inability to repay loans, a factor which adversely affects the prospects for future implementation of micro financing within the community.

The most important traditional institutions within the *lowland mixed cereal crop and livestock producing livelihood system* are the Idir, Equb, the women's association, farmers and youth association, and spate irrigation association. Formal institutions cited as being important to community resiliency included the BoARD, as well as health and education facilities. Dedibit is the sole financial institution operating within the area, and has provided credit to community members since 1995.

The community has demonstrated the capacity for collaboration and coordination in order to manage risk. Evidence of this is offered by the previous construction of a flood diversion structure using gabions which resulted in a good harvest in the year it was installed. Nonetheless, the structure is no longer functioning due to the lack of technical

capacity to repair and maintain it after damaging floods. The community has also collaborated during times of food stress to contribute cash and in-kind resources to needy households, as well as provide labor for agricultural activities such as weeding and harvesting. However, as is the case in other areas of Tigray, community support systems are said to be eroding due to growing food and livelihood insecurity.

The level of community participation in political, economic and social affairs was reported to have improved in the last 10 years. Respondents claimed that women and poor households now participate in all affairs without discrimination. Muslim women who have been badly oppressed are now active participants in all sectors of society. Women have greater decision-making power within their households and girls enrolment rates have increased over recent decades.

1.9 Graduation and Resiliency Criteria

Many Ethiopian households seek to transition (‘graduate’) from chronic food insecurity by benefiting from the combination of PSNP, OFSPs and other development interventions. Households might also achieve a degree of resiliency by virtue of managing or resisting prevailing shocks by using their own capacity and resources. This section of the study analyzes the proposals of different communities in each of the livelihood systems identified in Tigray for improving government/NGOs/donor graduation thresholds. Communities within each of the livelihood systems developed recommendations for graduation thresholds for the PSNP, OFSPs as well as thresholds for attainment of household resiliency. The criteria are provided below in Tables 1, 2, and 3.

Table 1: Recommended Graduation and Resiliency Criteria for Diversified Peri-Urban Livelihood System - Tigray

	Household Income	Consumption	Household Assets	Intangible factors
PSNP graduation				
	- 6 birr/day from PSNP - 10 -15 birr/day from unskilled labor - 10/day from petty trade	- meet 6-9 months of HH food requirements from own production - 2-3 meals per day (including vegetables)	- 1 ox - 1 cow - 5 goats (or 5 sheep) - 5-9 chicken > 6 quintals harvest per year	
OFSP graduation				
	- 2,000-5,000 birr/year income from multiple sources (vegetable, fruit, dairy, honey, seedlings) - 50-100 birr/day gross sales from small business - 25 birr/day from skilled labor	- meet 12 months of food requirements from own production - 3 meals per day including vegetables, and occasionally meet, eggs and dairy	- 2-3 cows - 2-4 oxen - 5-6 goats - 3 sheep - 1 donkey - 1 mule (or horse) - 1 camel - 1 horse cart	- HH able to invest credit (from *ikub*) on IGAs rather than using it to fill food gap
Household Resilience				
	- 5,000-10,000 birr/year income from multiple sources (vegetables, fruit, dairy, honey, seedlings) - 400-500 birr/day sales from small business, rental income, etc.	- HH able to meet 12 months of food requirements from own production - all members eat 3 meals/day including meat and vegetables	> 6 oxen > 4 cows - 10 beehives - 2-4 camels - 3 water pumps - own house in small or big town	- adaptive capacity in response to shocks - capacity and willingness to save, implement new practices - capacity to support school attendance for children - ability to hire labor during peak agricultural seasons - collective decision making within HH

Table 2: Recommended Graduation and Resiliency Criteria for Highland Cereal Crop Producing Livelihood System - Tigray

	Household Income	Consumption	Household Assets	Intangible factors
PSNP graduation				
	- 6 birr/day from PSNP - 10 -15 birr/day from unskilled labor	- meet 6-9 months of HH food requirements from own production - 2 meals per day (vegetables when available)	- 1 ox - 1 cow - 2 goats - 5-9 chicken > 4 quintals harvest per year	
OFSP graduation				
	- 1,000-2,000 birr/year income from multiple sources (vegetable, fruit, salt, honey) - 25 birr/day from sale of skilled labor	- meet 12 months of food requirements from own production - all members eat 3 meals/day including *injera* with *shero* (or flax, salt, tomato)	- 2 cows - 1 ox - 3 goats - 5-6 chicken - 1 donkey - 1 mule (or horse) - 1 camel - harvest >6 quintals/ year	

As mentioned previously, the study in Tigray did not identify households within the *highland crop producing livelihood system* which were particularly resilient. As such, respondents were unable to suggest specific criteria for achieving resiliency. Ultimately, the study determined that household and community resiliency within this livelihood system may only be promoted by a substantial investment in the rehabilitation of area's natural resources.

Table 3: Recommended Graduation and Resiliency Criteria for Lowland Mixed Cereal Crop and Livestock Producing Livelihood System - Tigray

	Household Income	Consumption	Household Assets	Intangible factors
PSNP graduation				
	- 6 birr/day from PSNP	- meet 6-9 months of HH food requirements from own production - 2-3 meals per day	- 2 oxen - 2 cows - 3-4 goats - 4-5 sheep - 5-9 chicken - 1 donkey > 8 quintals harvest per year	
OFSP graduation				
	- 2,000-3,000 birr/year income from multiple sources (livestock and cereals)	- meet 12 months of food requirements from own production - all members eat 3 meals per day	- 2 cows - 2 oxen - 5 goats (or sheep) - 1-2 donkeys - 1-2 camels - harvest >10 quintals/ year	
Household Resilience				
	- 5,000-10,000 birr/year income from multiple sources (cereal and livestock) - 400-500 birr/day sales from small business, rental income, etc.	- HH able to meet 12 months of food requirements from own production - all members eat 3 meals/day including meat and vegetables	> 6 oxen > 4 cows - 2-4 camels - own house in small or big town	- adaptive capacity in response to shocks - capacity and willingness to save, implement new practices - capacity to support school attendance for children - ability to hire labor during peak agricultural seasons - collective decision making within HH

1.10 Program Linkages and Layering

In Tigray, REST has collaborated with kebele administrations and community associations such as women's groups, credit and savings associations, traditional healers, farmers' and youth associations, and idir in implementing complementary community development strategies. For instance, community mobilization programs organized by both kebele administrations and community groups have provided an entry point for REST to introduce flood diversion structures. Typically, the kebele/kushet administration assumes the lead role in making decisions that affect the overall development and security of a particular area.

Respondents in Tigray also suggested that participation of the community in political, social and economic issues is increasing and that women's status within the community

has improved to include equal legal access to land. Nonetheless, some felt that the effectiveness of traditional social support mechanisms due to severe drought and an increase in individualistic attitudes among community members.

Dedibit Savings and Credit Institution is the only financial institution operating within the community and some poor households complained that the repayment system is inflexible and generally unaffordable. Meanwhile, Muslim households are excluded from current financial mechanisms due to the prohibition against taking credit with interest.

1.11 Recommendations

Each community involved in the study offered their own recommendations for strengthening household and community resiliency. Respondents were asked to offer their own perspectives on improving the planning, targeting and coordination of PSNP and OFSP interventions at the community level, as well as identify their priorities for livelihood-appropriate interventions to complement existing GOE development efforts. Although there was a degree of variation between recommendations for each of the livelihood systems identified within Tigray, in general, they can be summarized as follows:

- In addition to PSNP, other interventions should be focused on creating non-farm employment and income-generating opportunities, particularly for landless youth;
- Government investment (including but not limited to PSNP) should prioritize the construction and maintenance of rural roads, flood diversion structures (micro-dams, gabions), health and education facilities and the extraction of available ground water for both irrigation and household consumption;
- PSNP wage rate should be increased, paid in-kind, and transferred in a timely manner;
- Vulnerable households throughout Tigray would benefit from a greater awareness of, and access to, credit insurance schemes; and
- Government at the regional, woreda and kebele levels should support the establishment of farmers cooperatives throughout the region to improve market linkages and protect against price fluctuations.

2. Livelihoods and Self-Resiliency in Amhara

The Amhara Region is divided into eleven administrative zones and 113 woredas. It is located within the central and northwestern area of Ethiopia and surrounds Lake Tana, the headwaters of the Blue Nile. Elevation within the region ranges from 7,000 to 10,000 feet above sea level. The region has an estimated population of 19 million individuals, 89 percent of whom live in rural areas. In Amhara, the study was based on assessment of the predominant livelihood systems in Habru and Zikuala woredas.

2.1 Livelihood Context

As is the case throughout Ethiopia, agriculture is the dominant livelihood strategy in Amhara, employing over 90 percent of the population and accounting for 56 percent of regional GDP. Major crops grown in the region include wheat, corn, sorghum, barley, chickpeas and teff. Recently, farmers have diversified agricultural production by using small-scale irrigation to produce fruits and vegetables. Due to the scarcity of rain and access to ground water, the vast majority of farmers harvest crops solely for household subsistence.

52 of Amhara's 113 woredas have been deemed chronically food insecure as a result of being particularly prone drought. Each of these woredas is currently participating in the PSNP. Between 1995 and 1997, over 53,000 households participated in the voluntarily resettled into five woredas. It was reported that over 80 percent of these households have since become self-sufficient due to significant increases in their agricultural productivity. While land redistribution has reportedly created "socially equitable outcomes", in some cases, fear of further land redistribution has created a disincentive to proper resource management and longer-term investments in production. At the same time previous studies have shown that destitute households are often unable to access available services due to a lack of affordability. For instance, a lack of viable off-farm employment activities in Amhara may prevent a families from being able to pay clinic fees, further affecting their ability to farm effectively and/or earn off-farm incomes (Sharp et al. 2003).

2.2 Diversified Peri-Urban Livelihood System

a. Livelihood Strategies

Communities within this livelihood system are located in the foothills of area mountain ranges. Lower elevations are dedicated to farming while houses are situated at higher elevations in the hills. While soil fertility tends to be relatively good, erratic rainfall and lack of flood diversion structures often leads to considerable soil loss during the rainy season. The majority of households within this livelihood system pursue a livelihood strategy characterized as 'mixed farming'. The primary rain-fed crops produced in this livelihood system include teff, maize, sorghum, chickpea, and lentils. Households with access to irrigation also produce onion, guava, tomato, cabbage, potato, pepper, maize, sugar cane, coffee, and fruits such as banana, orange, avocado, and mango. Pepper used to be a dominant crop within this livelihood system but is no longer common due to

changes in seasonal rainfall patterns and increases in pest infestation. Average landholding size has also decreased in recent years as a result of population pressure. A large proportion of local youth are landless, contributing to an increasing trend of labor migration to Humera, the Sudan, and Saudi Arabia.

b. Access to Resources and Assets

Human capital: Local children do have access to schools, though many respondents claimed that school building lack adequate furniture and educational materials (textbooks, etc.). Similarly, communities have access to health services through rural health posts, though the quality of service provided is generally low.

Social capital: The majority of households in these communities are Muslim and continue to participate in a range of traditional social institutions such as kire/idir, ikub, and ertiban. Together, these social institutions provide support for households following the death of one of its members, mutual savings and credit opportunities, as well as sharing of labor for needy households (female-headed, elderly, disabled). The participation of women in development interventions and social activities has improved over the past 10 years.

Physical capital: There are market centers within villages and nearby towns (Mersa, Wergessa, Dule, Golbo and Girana) and all communities within this livelihood system have access to potable water, though the distance varies for all users. Rural roads have also been constructed through PSNP and other FFW activities in an effort to connect villages and small towns to larger urban areas.

Financial capital: Ertiban is an important community financial support mechanism in which local funds are used to help families upon the death of livestock or other property loss. The traditional savings institution, ikub, functions like a lottery system with the money allocated on a weekly basis for the purchase of oxen or small ruminants.

Natural capital: The kebele administration manages the resources of common hillside areas which are used as a source of forest products and grasses by all households, regardless of gender and/or wealth category. Rainfall is erratic with uneven distribution. Although soil is relatively fertile and conducive to cultivating a variety of crops, large perennial and seasonal rivers result in significant soil erosion.

Better-off farmers in the diversified peri-urban livelihood system typically own one to two oxen, a cow, a camel, as well as a number of sheep and/or chicken. Poor households on the other hand typically do not own any livestock and depend on selling labor, trading consumer goods, renting land, and receiving remittances from family members in urban areas.

Political capital: Women who have attended school have greater opportunities to participate in political and administrative activities.

c. Risks, Constraints, Risk Management and Coping Strategies

In addition to the longstanding risks posed by drought and flood, communities within this livelihood system are increasingly threatened by livestock disease and crop pest infestation. Due to a lack of off-farm income generating opportunities, households remain highly dependent on pursuing agricultural livelihoods, despite continued degradation of their natural resource base. A lack of animal feed and grazing land, the high cost of agricultural inputs and traditional mono-cropping systems also represent significant constraints for households within this livelihood system.

While the participation of women in development interventions and social institutions was reported to have improved over the last several years, there is still a significant degree of gender inequity in local communities. Meanwhile, a general lack of adequate health services is exacerbated by common illnesses such as malaria, typhoid, TB, and elephantiasis.

The coping strategies that individual households employ in order to manage these constraints is generally determined by their relative economic well-being. Better-off households may change their crop production from late-maturing sorghum varieties to shorter-maturing varieties or shifting from cereal crop production to higher value crops such as fruit and/or vegetables. They may also rent land from households who are unable to farm it or reduce the size of their livestock holdings. Alternatively, during food shortages poorer households often resort to collecting and selling wood and grass, reducing the size and frequency of meals, selling available household labor, and borrowing money for the purchase of food.

2.3 Lowland Mixed Cereal Crop and Livestock Livelihood System

Lowland mixed cropping and livelihood production was found to be a major livelihood system in both Habru and Zikuala woredas. While the strategies pursued and risks faced by households were similar under this system in both woredas important differences are identified below.

a. Livelihood Strategies

This livelihood system can be characterized as high potential – high risk, based on livelihood strategies involving a mix of livestock and crop production. While household continue to produce sorghum, barely, wheat, teff, sesame, and chickpea, and some vegetables, agricultural productivity has declined in recent years due to the continual degradation of natural resources. In addition to rearing livestock such as oxen, cows, camels, goats and donkeys, households support themselves through seasonal labor migration, obtaining remittances from family members in urban areas within and outside the country, and engaging in small-scale petty trading.

b. Access to Resources and Assets

Human capital: Local children also have access to formal and informal schools (there are eight Islamic schools within the area) and a rural health post.

Social capital: Similar to other communities in the region, households have access to longstanding social institutions such as kire and jigie. Kire are community-based associations that support households following the death of one its members. Similarly, jigie are community-based work groups that typically help needy households perform important, labor intensive activities such as plowing, harvesting, threshing and construction of houses.

Physical capital: Community members have access to the woreda agricultural office, farmers' training center and local feeder roads connecting to markets in nearby villages and small towns.

Financial capital: Meanwhile, community members also have access to the Amhara Credit Service Institution (ACSI), though few people take advantage of the service due to Muslim prohibitions against taking credit on interest.

Natural capital: This livelihood system is located within a dry, lowland environment bordering the Afar Region. On average, each household in Harbu woreda owns in 0.75 hectares of wojed (fertile) land and 0.5 hectares of behera (less fertile) land which they acquired through the government land distribution program in 1983. Natural resources in hillside areas are collectively managed and shared by the entire community. Those households who own livestock use these areas for grazing while those without livestock often collect grass and/or fuel wood to sell. Ponds, springs and rivers serve as the most important sources of water in the area. While every household in the community enjoys equal access to these water sources, they are not well protected and may contribute to common diseases such as malaria and diarrhea.

Political capital: The kebeles administration has close contact with the kebele agricultural office, characterized by collaboration in the selection of PSNP participant households and the distribution of hillside land to individuals. The kebele administration also collaborates with ORDA for selection of participant households and works with ACSI to organize farmers in need of credit. Women are well-recognized in the community. They are encouraged to participate in development activities and exercise their rights in agricultural operations, domestic matters and other economic issues.

c. Risks, Constraints, Risk Management and Coping Strategies

Recurrent drought, land degradation, deforestation, and erosion of hillsides are among the most pervasive threats to the sustainability of this livelihood system. Respondents in Zikuala woreda also reported that inadequate veterinary services, poor roads, and limited access to markets were also major constraints faced by households in this livelihood system. The presence of malaria, TB, animal disease and crop infestation also present significant constraints to households pursuing mixed crop and livestock production in both Habru and Zikuala woredas.

In response to these risks, households typically employ a range of different coping strategies. The most common include slaughtering, selling or relocating livestock to other areas when seasonal drought is anticipated, reducing the quantity and quality of meals,

changing agricultural crops to more drought resistant and fast-maturing varieties, and engaging in seasonal labor migration in search of off-farm employment. It was reported that a substantial number of food insecure households in Zukwala woreda rely on the PSNP and other food security programs to meet their basic needs.

2.4 Livestock Dominant Livelihood System

a. Livelihood Strategies

As its name suggests, livestock production is the primary strategy pursued under this livelihood system. This system is located in relatively dry lowlands that are subject to recurrent drought. Population density within the area is relatively low and individual households tend to have large land holdings. Poorer households without livestock produce crops including sorghum, wheat, barley and beans and sometimes engage in beekeeping or selling labor. However, the primary household livelihood strategy of rearing of cattle and shoats is no longer capable of ensuring sufficient, reliable income, as evidenced by the long-standing provision of relief food assistance throughout the area.

Due to frequent moisture stress, crop producing households in the area typically do not use inorganic fertilizer. Rather, they use green manure to maintain soil fertility and suppress the growth of weeds such as striga. As a result of the increasing dependence on manure for farming purposes, those households that own livestock, and have access to consistent supplies of manure, typically achieve a considerably higher level of agricultural productivity.

b. Access to Resources and Assets

Human capital: The community does have access to a health services in the nearby town of Tsiska, though the walk to the clinic may require as much as two hours for remote households. There is low educational attainment in the area, although PSNP has provided opportunities for school renovations and extension of educational services.

Natural capital: As the case in other areas, the size of land holdings, soil fertility, and the amount of vegetative cover largely determines the livelihood strategies of individual households in this livelihood system. Generally, there are no significant differences between the poor and the better-off in terms of access to water as all household rely on ponds, wells and the Tsiska River as there primary sources. Similarly, all households depend on natural areas for grazing land and forest resources (fuel wood), though these are being continually depleted from a combination of drought and overuse. Although the woreda administration has supported efforts to regenerate natural resources through plantation of tree seedlings, the survival rate was reported to be “extremely discouraging” by rural households.

c. Risks, Constraints, Risk Management and Coping Strategies

Households engaged in livestock production, including beekeeping, are primarily constrained by drought, lack of adequate pasture, livestock disease and limited access to markets. Alternatively, moisture stress, declining soil fertility, lack of storage facilities,

weeds (striga) and household labor shortages constitute the greatest risks for those involved in crop production. Meanwhile, large family sizes, low levels of educational attainment and limited off-farm employment opportunities add to the constraints faced by nearly all households in the area. As is the case in other areas, those with sufficient assets (livestock, landholdings) may sell animals or change crop production in order to cope with temporary food shortages. Alternatively, poor households that lack such productive assets are often forced to reduce the quantity and quality of household meals, send their children to tend the animals of better-off households, or migrate to Humera or other urban areas in search of temporary employment.

2.5 Seasonality, Vulnerability and Risk Mitigation

Food shortages in the Amhara region are common over a seven-month period between May and October. This coincides with price increases in agricultural commodities which typically occur between April and September. Meanwhile, agricultural activity typically peaks during planting times (March-June) and again during harvest (October-December).

Since its inception, the period of PSNP implementation in Habru woreda has lasted from February to May, which to some extent coincides with the first agricultural season. In Zikuala woreda PSNP implementation typically takes place between March and August. In both cases, PSNP transfers on the other hand have often been delivered late, and therefore, have not alleviated food shortages of helped beneficiary households cope with price increases to the extent intended.

Malaria is most prevalent in Habru woreda during the months of April and November and reaches its peak in Zikuala between the months of July and September. Given that these are also important times in the agricultural calendar, the disease tends to have a profoundly negative affect on household labor productivity. Pest infestation of crops is common between July and October and livestock disease often reaches is peak between January and April.

In order to respond to these seasonal factors, respondents in Amhara (as elsewhere in the country) advocated for the community's right to choose the optimal time for PSNP implementation and transfer payments. They also suggest that the most feasible solution to controlling malaria would be to resume chemical spraying and providing an adequate number of mosquito nets. They tend to view agricultural extension agents as having primary responsibility for controlling pest infestations and livestock disease.

2.6 Household Vulnerability Analysis

This section begins by presenting key descriptive statistics that reflect the relative vulnerability to livelihood insecurity among households in Habru and Ziquala woredas (Appendix A). It then presents the results of the household vulnerability analysis disaggregated by woreda. Principal component analysis was employed using an array of asset variables to extract the components that explain the co-variations of the underlying

variables. The component that explains the highest variation is used in the cluster analysis to create the vulnerability categories.

Mean household size in Habru and Ziquala is 5.0. Dependency ratios in both of the sample *woredas* in Amhara region were relatively high, ranging from 0.9 in Habru to 1.2 in Raya Zebo.

Approximately 17 percent of households in Habru are headed by women while in Ziquala only 3.5 percent of household heads are women. More than 85 percent (86.9) of the household heads in Habru never attended any school while 9.3 percent left the school before completing primary education. In Ziquala 92.5 percent of household heads never attended any school while 5.5 percent of the household heads left school before even completing primary education.

In Habru only 21.5 percent of households use borehole or tap water for drinking, 39.6 percent of households use spring water and 38.9 percent of households drink water from ponds, streams, dug wells or rivers. Approximately one third of the sample households in Ziquala (35.7%) depend on borehole or tap water to meet their potable water need while 21 percent of households use spring water and 43.3 percent of households use ponds, streams, dug wells or river water for drinking. Approximately 97 percent of the households do not take any measure to purify drinking water.

More than 70 percent of the households in Habru (72.9%) and 85.4 percent of households in Ziquala do not have any latrine while only 20.1 percent of households in Habru and 14.6 percent of households in Ziquala have pit latrine.

Approximately 76 percent of households in Habiru and 95.1 percent of households in Ziquala believes malaria is a problem. The common measures to prevent from malaria as identified by the households include “using bed nets” (63.9% in Habru and 47.9% in Ziquala) and “draining stored water” (21.5% in Habru and 25.0% in Ziquala).

The household vulnerability analysis found that approximately 94 percent of the households in Habru is appeared to be vulnerable while 86 percent of the households in Ziquala found to be vulnerable (Figure 8). Since the number of observation in non-vulnerable households in Habru is too small, Habru is dropped from the analysis.

Figure 8: Distribution of Households in Ziquala (Amhara)

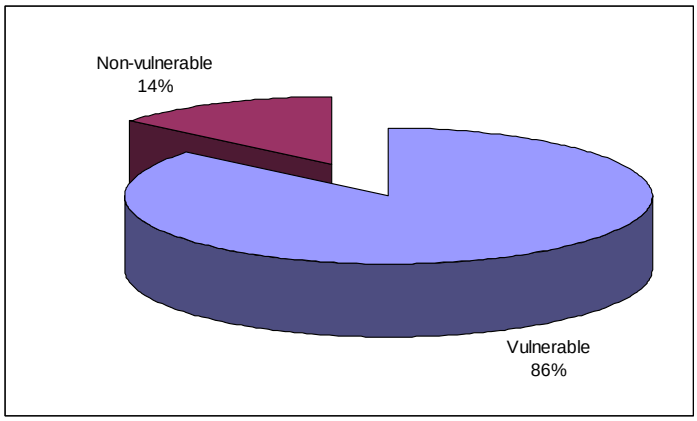
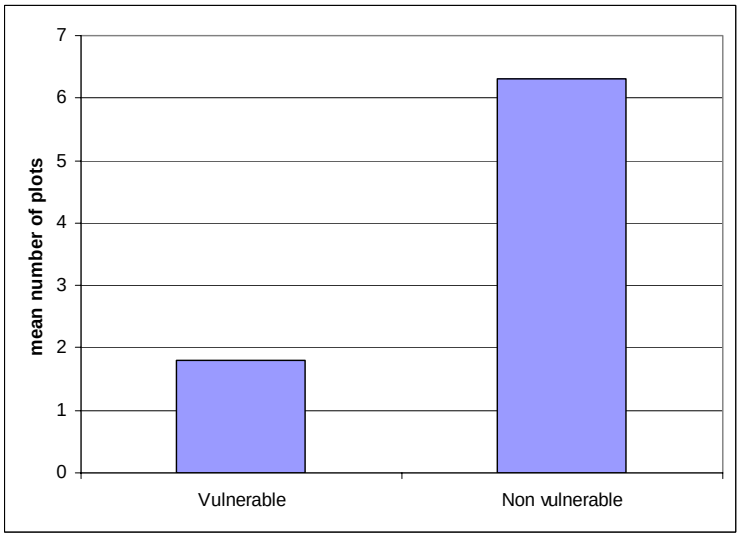


Figure 9 shows that vulnerable households in Ziquala own less plots or parcels compared to non-vulnerable households.

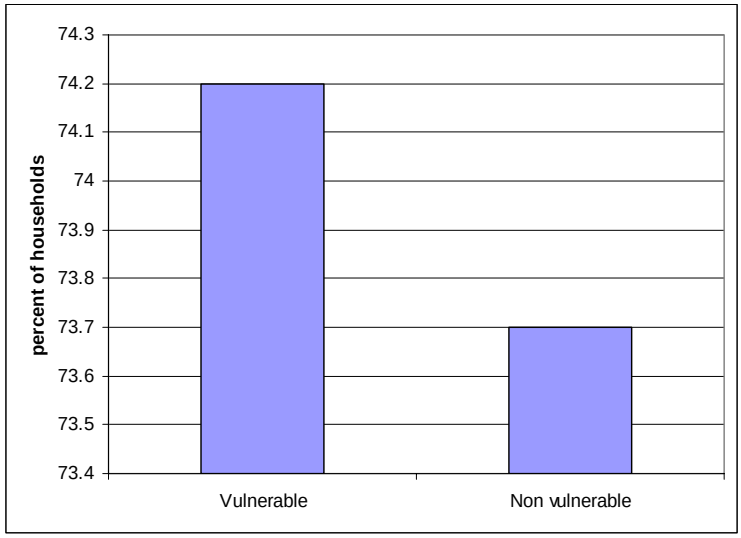
Figure 9: Number of Plots/Parcels of Land Owned or Operated by Vulnerability Group in (Ziquala) Amhara



Vulnerable households own an average of 1.8 plots while the non-vulnerable households own 6.3 plots. The area of land is also significantly different ($p<0.001$) between vulnerable and non-vulnerable households. The mean area of land own by vulnerable households is 1.9 hectares while non-vulnerable households own 2.6 hectares of lands.

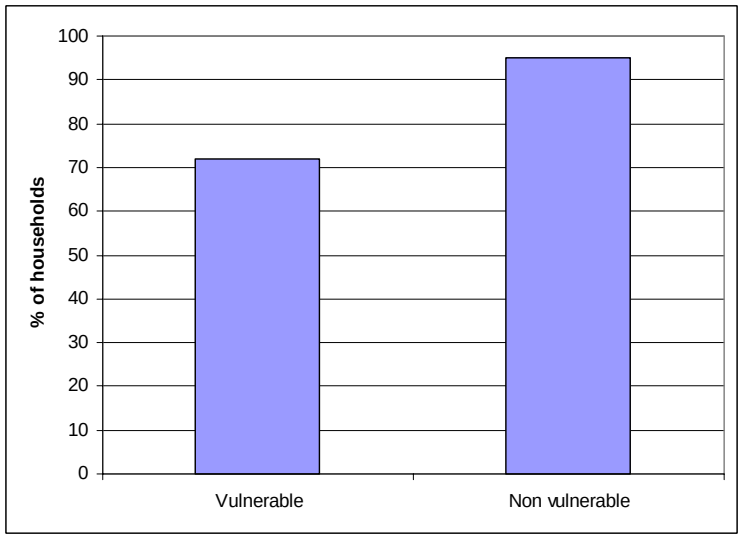
Results presented in Figure 10 shows that 74.2 percent of the vulnerable households and 73.7 percent of non vulnerable households in Ziquala exclusively cultivate cereal. As reported by the qualitative study, Ziquala is a drought prone area and classified as high risk and low potential agricultural zone.

Figure 10: Proportion of Households Engaged Only in Cereal Production in (Ziquala) Amhara



Approximately 72 percent of vulnerable households in Ziquala sell livestock while 95 percent of non-vulnerable households sell livestock (Figure 11). T-test results rejects the hypothesis of equality of means ($p<0.001$) suggesting that a significantly larger proportion of non vulnerable households sell livestock compared to vulnerable households.

Figure 11: Proportion of Households selling Livestock in Ziquala (Amhara)



Expenditure is a proxy to income. Information on expenditure was collected from households to estimate income. Figure 12 suggests that monthly expenditure of non-vulnerable households in Ziquala is higher than the monthly expenditure of vulnerable households.

Estimated monthly expenditure of vulnerable households in Ziquala is 156.4 birr while the estimated monthly expenditure of non – vulnerable households in the same woreda is 174.7 birr. Of the vulnerable households, 50 percent spend 143 birr or less per month while 50 percent of the non-vulnerable households in the same woreda spend 157 birr or more per month.

Figure 12: Mean Monthly Household Expenditure in Ziquala (Amhara)

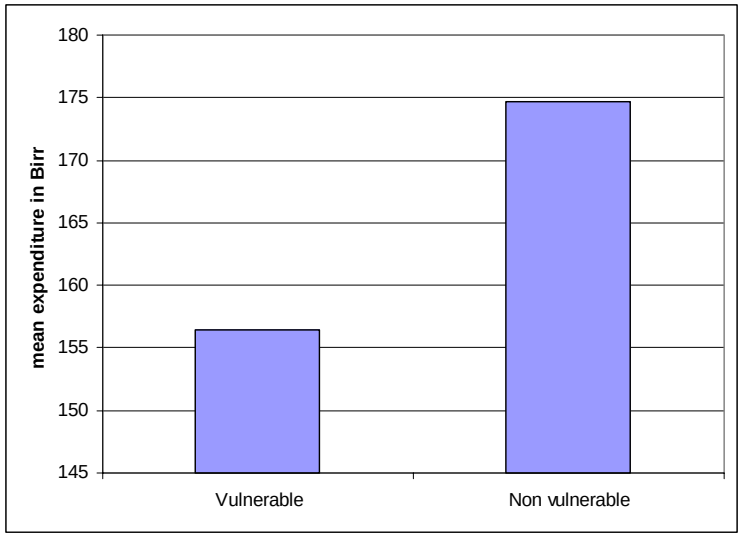


Figure 13 presents the results of estimated value of assets by vulnerable groups. Estimated mean values of assets own by vulnerable households in Ziquala is 191.9 birr while non vulnerable households own asset worth of 325.3 birr. T-test results confirm that the estimated mean asset value for vulnerable households is significantly different than the mean asset value for non-vulnerable households ($p<0.07$).

Figure 13: Mean Household Asset Value in Ziquala (Amhara)

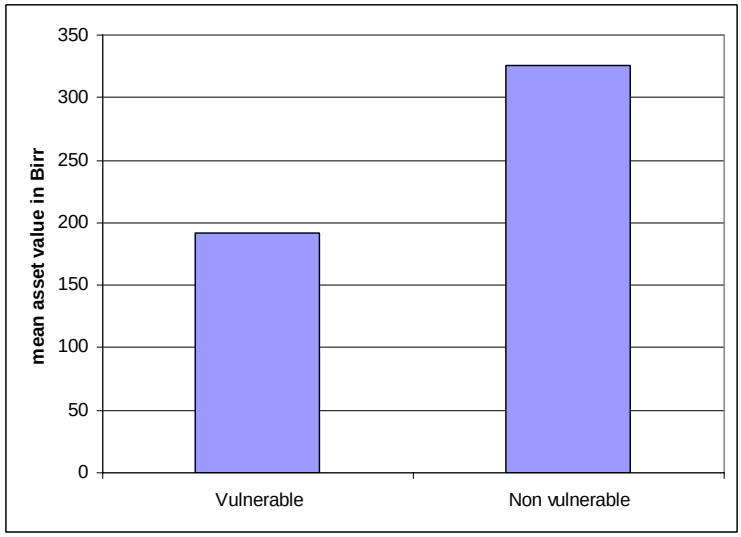
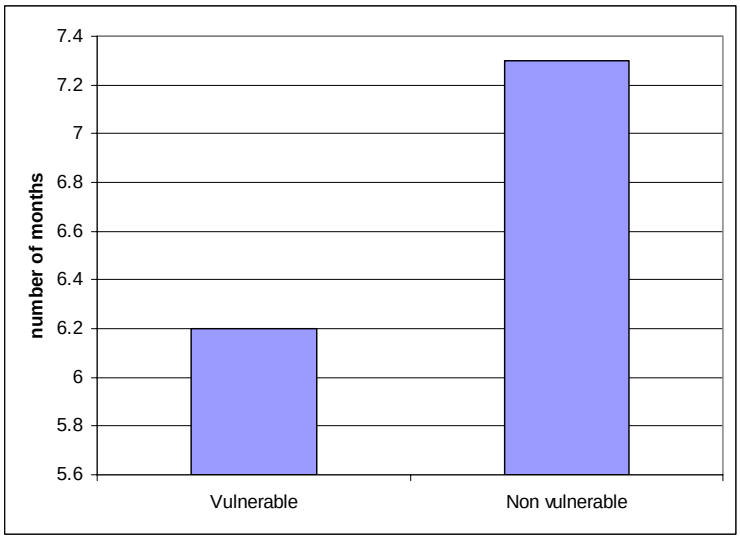


Figure 14: Mean Number of Food Adequate Months per Year in Ziquala (Amhara)



Vulnerable households in Ziquala reported to have 6.2 months of adequate food in a year compared to 7.3 months of adequate food for non-vulnerable households (Figure 14). The T-test rejects the difference in number of food adequate months between vulnerable and non-vulnerable households in Ziquala ($p<0.07$).

2.7 Household Resilience

Respondents in Habru woreda suggested that many of the younger households in the *peri-urban livelihood system* display certain characteristics of resilience due to their willingness to pursue income earning strategies outside of agriculture and their relative capacity to save. One example of household resilience in Habru was offered by Goshu Yimer (Box 3).

Box 3: Case Study – Household Resilience in Habru Woreda

"I found agriculture is labor and time intensive and mainly depends on factors beyond my control. I, therefore, convinced myself to resort to rural trading and now earn an income more easily. I bought an additional camel and started to provide transportation service for the community. When my financial capacity strengthened, I started lending money for the needy; especially for those who want to send their daughters or sons to Saudi Arabia. For example, by lending, 2,000 birr I can earn 4,000 birr in three to six months. This continued until very recently out of which I got lucrative profit. The community designs binding credit agreements. So far, nobody has defaulted since the cultural law regarding borrowing money is very strict and has its own enforcement measures such as marginalization. Currently I have enough money and have a plan to put it in the bank".

In eight years time, Goshu managed to implement varied activities such as rearing and selling of goats, buying a donkey and a camel to transport grain and stalk from the fields to homes. He has also rented in rain fed and irrigated land and provided credit (with interest) to local households. From these combined activities, Goshu has earned good money and has contributed significantly towards the transformation of his livelihood.

Meanwhile, respondents in Zikuala woreda also identified several important characteristics resilient households in the area. They include small family size, a willingness to face risks when investing in livelihood assets, participatory decision making within the household, as well as an appreciation for the value of education in achieving livelihood security. In addition to identifying 'enablers' of household resilience, respondents in Zikuala also listed some of the more common 'inhibitors' of household resilience. These include the weak involvement of women in household decision making, high interest rates discouraging households from accessing credit, large family size, poor natural resource management, and a high level of dependence on external assistance.

2.8 Community Resilience

Communities within Habru woreda cited a number of institutions that directly contribute to community resilience. Among these are the rural health posts, school facilities and the Bureau of Agriculture. Respondents also suggested that the kebele office of agriculture has collaborated with the PSNP, Organization for Rehabilitation and Development of Amhara (ORDA) and ACSI to target individual households in need of external assistance. Respondents in Habru also suggested that community resilience has also improved with the greater recognition of the rights of women, citing the nika system under which divorced women are now entitled to an equal share of household assets as men. While access to credit may contribute to the resilience of individual households, at the community-level, many felt it was underutilized due to the restrictions on charging interest under the Muslim faith. An additional detriment to community resilience in Habru woreda is the ongoing tension and occasional armed conflict between pastoralists along the Amhara/Afar border.

Traditional institutions such as kire/idire and jigie were also said to contribute to the resilience of communities in Habru woreda. Community elders and religious leaders tend to have especially strong decision making power in these traditional institutions, and sometimes exercise greater authority than the kebele administration, particularly in matters involving conflict with Afar communities.

In Zikuala woreda, individuals felt that community resilience was enhanced as a result of access to community development and service organizations such as those listed above for Habru. However, they explained that in general, community resilience in the area was declining, as were people's aspirations, capacity for leadership and collective decision making. According to some, future generations in the woreda are likely to face "catastrophic human and social risks" unless appropriate action is taken by external organizations to improve the livelihood security of vulnerable households.

2.9 Graduation Criteria

Communities within each of the livelihood systems identified in the Amhara Region developed the following recommendations for graduation thresholds for the PSNP, OFSPs as well as thresholds for attainment of household resiliency. Specific criteria are provided below in Tables 4, 5 and 6.

Table 4: Recommended Graduation and Resiliency Criteria for Diversified Peri-Urban Livelihood System - Amhara

	Household Income	Consumption	Household Assets	Intangible factors
PSNP graduation				
	- 6 birr/day from PSNP - 10-15 birr/day from daily unskilled labor - 7-10 birr from small-scale petty trade	- Must meet 6-9 months of HH food requirements from own production - All HH members eat 2-3 meals/day (vegetables if available)	- 1 ox - 1 cow - 5 goats (or sheep) - 5-9 chickens > 6 quintals harvest per year	
OFSP graduation				
	- 2,000-3,000 birr/year income form multiple sources (vegetable and fruits, dairy products, seedlings) - 50-100 birr/day gross sales from small business - 25 birr/day skilled labor	- Must meet 12 months food requirement from own production - All HH members eat 3 meals/day (including vegetables and meat, occasionally eggs and dairy products)	-2-3 cows - 2-4 oxen - 5-6 goats - 3 sheep -1 donkey - 1 mule (or horse) - 1 camel - 1 horse cart	
Household Resilience				
	- 5,000-10,000 birr/year income generation from multiple sources (vegetables and fruit, dairy products, honey, seedlings) - 400-500 birr/day income from small business	- able to meet 12 months of HH food requirements from own production (w/o government support) - All HH members eat 3 meals/day (including meat and vegetables)	> 6 oxen > 4 cows - 10 beehives - 2-4 camels - 3 water pumps - 1 flourmill - own a house in small or big town	- Open to change and able to adapt to new livelihood strategies - Diversified sources of income (outside of agriculture) - Shared HH decision making - Able to resort to rural trading - Access to start-up capital (from extended family)

Table 5: Recommended Graduation and Resiliency Criteria for Lowland Mixed Cereal Crop and Livestock Production Livelihood System - Amhara

	Household Income	Consumption	Household Assets	Intangible factors
PSNP graduation				
	- 6 birr/day from PSNP	- Must meet 6-9 months of HH food requirements from own production - All HH members eat 2-3 meals/ day	- 2 oxen - 2 cows - 3-4 goats - 4-5 sheep - 5-9 chicken - 1 donkey > 8 quintals harvest/ year	
OFSP graduation				
	- 2,000-3,000 birr/ year income generation from multiple sources (livestock and cereals)	- Must meet 12 months of HH food requirements from own production - All HH members eat 3 meals/ day	- 2 cows > 2 oxen > 5 goats (or sheep) - 1-2 donkeys - 1-2 camels > 10 quintals harvest/ year	
Household Resilience				
	- 5,000-10,000 birr/ year income generation from multiple sources (cereal and livestock)	- Must meet 12 months of HH food requirement from own production (w/o government support) - All HH members eat 3 meals/ day (including meat)	> 6 oxen > 4 cows - 2-4 camels - own a house in a small or big town	- Open to change and able to adapt to new livelihood strategies - Diversified sources of income (outside of agriculture) - Shared HH decision making - Able to resort to rural trading - Access to start-up capital (from extended family)

Table 6: Recommended Graduation and Resiliency Criteria for Livestock Dominant Livelihood System - Amhara

	Household Income	Consumption	Household Assets	Intangible factors
PSNP graduation				
	- 500 birr/year from income generating activities, sale of labor	- Able to meet 6-9 months HH food requirements from own production	- 1-2 oxen - 1 cow - 4 goats - 7 beehives - 10 chicken - 5 quintals harvest/ year	- limit unnecessary expenses - demonstrate responsible resource management - willing to save - healthy family members
OFSP graduation				
	- 2,500 birr cash-on-hand to manage unforeseen shocks	- Able to meet 12 months of food requirements from own production - All HH members eat 3 meals/ day	- 2 oxen - 2 cows - 15 goats - 2 donkeys - 20 beehives - 10 chicken - 8 quintals harvest/ year	

2.10 Program Linkages and Layering

Respondents in Amhara were able to identify few examples of effective linkages between multiple government and non-government stakeholders at the woreda and kebele levels. This may be attributed in part to a common reluctance on the part of development actors to identify critical gaps in provision of assistance and/or services. The most important community institutions are kebele health, education and administrative offices, the Organization for the Rehabilitation and Development of Amhara (ORDA), Amhara Credit Service Institution (ACSI), irrigation associations, kire, maheber and senbete, iqub and farmers cooperatives.

In Habru woreda, respondents did identify the ORDA project "Reducing Dependency and Increasing Resilience" as an example of effective collaboration. Both regional and woreda level government officials were involved in reviewing the project proposal in an effort to ensure that the project was adequately incorporated in to the woreda development plan. Similarly, woreda and kebele level food security task force members and Development Agents (DAs) received technical training prior to their involvement in project activities. It was stated that community members have actively participated in the targeting of this micro-enterprise and agricultural development project, and that kebele food security task force representatives have worked closely with ORDA technical staff and BoARD extension agents in implementing project activities. The kebele food security task force is also responsible for managing project funds and conducts regular meetings

with both woreda level sector representatives and project beneficiaries. It was also reported that kebele food security task force representatives and DAs work closely with ORDA extension agents to conduct regular project monitoring.

In Zikuala woreda, respondents pointed toward the integrated pest management (IPM) project initiated by Save the Children-UK (SC-UK) as a positive example of collaboration between government, non-government and community stakeholders. Prior to phasing out of the project, SC-UK had established good relations with the woreda food security task force and other sector offices who would be involved in overseeing its implementation. SC-UK and woreda officials also worked closely together to increase awareness of the project among community members while helping to build their capacity to utilize new technologies and pest management practices. The sustainability has also reportedly been enhanced by the fact that the technology is low cost and replicable. Respondents also reported that that those who first adopted the new strategies have taken the lead in helping others to do the same.

2.11 Recommendations

Each community involved in the study offered their own recommendations for strengthening household and community resiliency. Respondents were asked to offer their own perspectives on improving the planning, targeting and coordination of PSNP and OFSP interventions at the community level, as well as identify their priorities for livelihood-appropriate interventions to complement existing GOE development efforts. Although there was a degree of variation between recommendations for each of the livelihood systems identified within Amhara, in general, they can be summarized as follows:

- As was the case in other regions participating in the study, respondents in Amhara felt that the wage rate for PSNP work should be increased and underscored the importance of making transfer payments in a timely fashion. Current delays in PSNP transfers only serve to increase household vulnerability during times of seasonal food shortages and market price increases.
- Respondents in both Habru and Zikuala woredas both stressed the importance of human capital development and recommended that future interventions focus on the establishment of non-formal and adult education facilities that would support an increase in diverse, off-farm employment opportunities.
- Respondents in Habru woreda recommended that government ministries and non-government development organizations encourage households to reduce livestock holdings and increase planting of short-season crop varieties in order to sustain household production during times of moisture stress.
- In Habru, PSNP and other food security interventions should support the development of spate irrigation and flood diversion to help farmers best manage erratic rainfall. Likewise, an increase in the number of wells would provide households with more reliable sources and protect them from the threat of water-borne disease.

- Communities would like to see an increase in affordable access to fertilizer and credit in order to boost agricultural productivity. The interest free credit service initiated by ORDA (revolving system which supplies small ruminants to poor households, offspring given to other beneficiary households) was cited as an example that should be widely replicated, particularly in the Muslim community where interest-bearing credit is strictly prohibited.
- Health facilities throughout the region are in need of improvement, as are efforts to control the spread of malaria through chemical spraying and distribution of mosquito nets. Respondents in Zikuala woreda also suggested that family planning services should be scaled up in order to facilitate greater food security among poor households.
- Given the importance of livestock production in Zikuala province, respondents there felt that it was critical to expand investment in improved animal husbandry techniques and veterinary services.
- Market access would be greatly improved by promoting seasonal roads to all-weather roads.
- Improved access to modern, safe, and affordable storage facilities would help poor farming households avoid wastage and better cope with seasonal food shortages and price fluctuations.

3. Livelihoods and Self-Resiliency in Oromiya

3.1 Livelihood Context

The largest of the nine regional states of Ethiopia, Oromiya varies significantly from highland to lowland agro-ecology across the center to the east, west and south of the country. Approximately 25 million people live in the region, overwhelmingly in the rural areas (88%).

Sedentary crop farming as well as pastoralism and different variations of agro-pastoralism are important major livelihood strategies in the region. Most Oromiya households rely on rain-fed agriculture as their dominant livelihood strategy. The land is estimated to be 31 percent arable, 24 percent pasture, 19 percent forest and 26 percent degraded. Nearly seventy percent of the total arable land is under cultivation.

A quarter of the woredas in the region chronically suffer food shortages due to poor agricultural production and productivity resulting from frequent moisture stress and irregular rains. Approximately 1.2 million people residing in 8 zones and 54 Ana (woredas) were classified as chronically food insecure in 2004. In response, a substantial portion of the population in several Oromiya woredas has received relief food assistance for several years, including the PSNP. By 2007, the number PSNP coverage had increased to nearly 1.4 million participants in nine zones and 69 woredas.[2]

The livelihoods context, including livelihood strategies adopted by households, differs substantially in the two Oromiya woredas, Grawa and Adami Tulu, visited by the assessment team. Livelihood systems are quite diverse in Grawa, characterized by substantial agro-ecological variation and varied asset bases. The livelihood systems found in Adami Tulu Jido Kombolcha (ATJK) woreda are far more homogeneous.

In the two researched woredas, the team identified four livelihood systems:

- Crop dominant;
- Livestock dominant,
- Cash crop dominant; and
- Mixed.

Each livelihood system includes different combination of other livelihood strategies. For example, the households in the cash crop-dominant village of Mojoo Sadee of Grawa also rely on livestock, food crops, petty trading, and daily wage labor to comprise their livelihood portfolio. Different resource and asset endowments, spatial variations in socio-economic development, and agro-ecological variations necessitate varied livelihood strategies among villages in the same locality or kebele. The three researched villages of Grawa represent three livelihood systems whereas those of ATJK symbolize two systems.

[2] Physical and Socio-Economic profile of 180 districts of Oromiya Region, March 2000, Finfinne. The Regional Government of Oromiya Statistical Abstract, 4th edition, June, 2004.

3.2 Food Crop Dominant Livelihood System

Households living in food crop-dominant Oromiya areas derive their principal source of livelihood from food cereal production, especially sorghum and maize, but also depend on daily wage labor, petty trading, and a certain level of chat production. Food crop production includes the long cycle crops, maize and sorghum, but also short cycle crops such as wheat, barley and beans. In addition to the main rains, Ganna, the small rain belg contributes significantly to land preparation, long and short cycle crop cultivation, water point replenishment, and pasture regeneration. Only better-off households own substantial numbers of livestock in the densely populated highlands and midlands of Ejersa Tobotaa PA in Grawa, which typifies this livelihood system.

Important characteristics of Ejersa Toboota include:

- Mainly highland with some midland agro-ecology;
- Diminutive landholdings;
- Bimodal rainfall pattern;
- Low or no access to irrigation facilities;
- High population density;
- Limited or no grazing lands;
- High weed infestation;
- Few opportunities for livelihoods diversification;
- Low or poor development assistance; and
- Over-reliance on rain-fed agriculture.

a. Livelihood Strategies

Although food crop production is the most important livelihood strategy, accounting for more than 55 percent of household income, most households require other reliable income sources. Because Ejersa Toboota is relatively close to the woreda town of Grawa, poor and middle class households depend on daily wage labor for an important source of income.

Relatively well-off and most middle groups are able to utilize inorganic fertilizer, rent-in land, recruit daily wage labor and have better access to information than lower groups. Farmers are increasingly using organic fertilizer – compost and manure. Women have form a ‘group of seven’ (afooshuumaa), who have allocated certain days per week to transport manure and compost from their villages to farm fields very early in the morning. The intention is to abandon artificial fertilizer, which is expensive and frequently unavailable.

Table 7 summarizes the major, intermediate and minor contributors to household livelihoods.

Table 7: Livelihood Strategies Pursued by Wealth Category

Sn	Wealth category	Livelihood strategy
1	Well-off *(Irra Qabaataa)* (10%)	Food crop production
		Livestock production
		Fattening
		Trading
2	Medium *(Qabaata)* (35%)	Food crop production
		Fattening
		Daily wage labor
3	Poor *(Hyeesaa)* (40%)	Food crop production
		Fattening (share in-ox or cow)
		Daily wage labor
		Selling forest products
4	The poorest among the poor *(Ka hiyeesaa gadii)* (15%)	Some crop production
		Cheap labor selling
		Begging

Source: Compiled from KFSTF and FGD results by the research team

Livestock production constitutes an important livelihood strategy for better-off households; poorer households typically posses no more than two to three heads of livestock and usually engage in fattening, which has a long history in Hararghe. Households buy an ox for use during the cultivation season and then fed for few months to be sold for a profit. That ox can then be replaced by a smaller ox prior to the next season. Households also fatten other animals such as goats and sheep.

Livelihood groups: The thirteen villages within the kebele have diverse combinations of strategies contributing to their livelihoods, depending on the land area, soil fertility, agro-ecology, type of crops and vegetation cover. The community grouped the 13 villages into three zones based on the significance of livelihood sources (Table 8). Villages relatively close to the town of Grawa are more involved in wage labor activities.

Table 8: Ejersa Toboota Livelihood Groups

Zone	Villages	Cereals	Daily wage	Chat	Livestock	Others
One	Haruco; Bule; Golee; Biftu	40%	30%	5%	15%	10%
Two	Goro Qelo; Gollo; Kucho; Huree; Dhanqa	45%	15%	20%	15%	5%
Three	Dhega Bela; Ali Qersa; Kereyu	35%	20%	30%	10%	5%

Source: Compiled from KFSTF and FGD results by the research team

b. Access to Resources and Assets

Human Capital: Poor households regard their health is the principal asset through which they meet their livelihood objectives. Communities access health services in Grawa, although they must negotiate a sloppy road. The major health threats are diarrhea and transporting women in labor to Grawa; some villagers require more than three hours walk to Grawa. Although health services have improved in recent years, awareness of the risks of HIV/AIDS is poor. Hygiene and sanitation practices remain poor as well: Households virtually never boil water before drinking. Few households have latrines, particularly in Grawa, where more than nine out of every ten household is without a toilet facility of any kind. In contrast, over half of the sampled Adami Tulu households own their own pit latrine.

Children, particularly girls, are increasingly attending schools, and teaching quality is improving, according to households in the three communities visited by the assessment team. Changes in the education sector however are occurring very slowly. Over three-quarters of Grawa individuals and 56 percent of Adami Tulu residents have never attended school. Programs promoting adult education and skills are nonexistent. Although communities in this livelihood area are relatively close to the woreda town, few people can pursue skilled labor opportunities.

Natural Capital: Access to water is problematic for many villagers, who depend on unprotected springs and ponds exposed to contamination as the most important sources of water. Five out of thirteen villages suffer water shortages and require a two-hour walk to access water from the other villages. Households in the other eight communities have equal access to and responsibility to efficiently use water points within the village vicinity. Households living near Grawa town can access public taps but only those able to afford the cost can access the water taps. Almost two-thirds of Grawa households (64%) access their water from springs and another one-quarter of households continue to collect their water from ponds, rivers or dams. Adami Tulu households on the other hand tend to access their water from a borehole or pipe.

Other natural assets include grazing lands and a few remaining forest areas on the hills in some villages. Households are dependent on environmental resources for firewood and waste disposal. The lack of development programs is an important reason for the lack of conservation measures and increasing deforestation. Communities have also failed to establish local arrangements to manage communal resources in a sustainable way or to protect and allow for the regeneration of environmental resources. Population growth and high population density are adding pressure on natural resources. Poor environmental management impacts agricultural production. Farmland soils, which are severely fragmented, are increasingly eroding.

Physical Capital: Most roads are seasonal, very rough and have not been maintained for years. One community was forced to undertake road improvements to allow the research team access into the kebele. The only health facilities are in Grawa. The PA has two schools.

Financial or Economic Capital: Lacking any access to formal credit or informal credit institutions, Ejersa Tobotaa households are deeply dependent on informal private lenders, particularly Grawa moneylenders. Rural households do not trust and therefore shun the bank in Grawa.

Social Capital: Social networks remain strong and important. Traditional *Afoosha* groups are active in bringing the community together for social functions such as funeral services; the *afoosha* however has yet to apply group dynamics toward development initiatives. Although religious institutions are elders remain important for marriage and other ceremonies, their conflict resolution role is gradually declining.

Community decision making and resource management appears to be weakening in Ejersa Tobotaa communities, in part a result of high expectations for external assistance. The kebele is not included under PSNP. Some community residents believe that if they work hard on conservation activities and roads, the government and NGOs will never provide assistance.

c. Risks, Constraints, Risk Management and Coping Strategies

Depending on livelihood strategies, households of different wealth categories are vulnerable to different types of risks and constraints. Table 9 outlines several risks and constraints facing different types of households involved in various livelihoods strategies.

Households in the highland areas are constrained by limited opportunities to diversify their livelihood sources as well as low educational attainment. Unplanned population growth and continuing high population density, declining land holdings, soil erosion and environmental degradation are challenging the crop sector. Rainfall is highly variable and irregular; farmers now expect a drought every two to three years[3]. Farmers complain of poor extension and development services. Small landholdings confront livestock sub-sector development.

[3] Drought is a temporary or protracted period of deficient precipitation/ moisture impacting on pasture availability and crop loss. A short-term absence in moisture during critical crop growth stage could result in huge losses.

Table 9: Livelihood Risks and Constraints in Crop Dominant System

Sn	Livelihood Sources	Risks factors
1	Crop production *(mainly better-off and middle)*	Production risks (weeds, declining soil fertility, moisture stress during crop growth, consumption while on field, and theft)
		Poor storage system resulting in losses from spillage and pest damage
		Late & unorganized harvest of major crops
		Market risks – low price
		Impassible roads due to poor conditions and poor maintenance
		Increasingly degraded natural environment
		Diseases such as malaria and diarrhea, affecting agricultural labor
		Labor shortage faced by some households (elderly and female-headed households)
2	Daily wage labor	Poor own farm management
		Significant reduced payments after job completion
		Harassment, exploitation, and mistreatment
		HIV/AIDS, malaria and other diseases resulting in illness & the inability to work
		Theft
3	Petty trading *(all categories depending on the activity type)*	Lack of opportunity
		Lack of access to credit for investment
		Lack of experience resulting in loss
4	Consumption *(all households, but mainly the poor)*	Women are the last to access food (Fewer than ten percent of women eat with their husbands)
		Sorghum makes more than 85% of food baskets
		Vulnerable are exposed to nutritional stress
5	Livestock production & livestock fattening (*better off & middle households*)	Livestock diseases
		Poor veterinary services
		Livestock theft
		Lack of grazing land

Risk Management and Coping Strategies: Households' capacities to respond to risks and shocks vary based on the type of the risk or the severity of the shock, the context, knowledge and experience, and their asset base. The poor lack key productive assets and are constrained by lack of access to credit. They seek wage labor opportunities and send family members, including children, to localities such as Grawa in search of work. Better-off households are able to manage risk by diversifying crop production and engaging in off-farm petty trading. In addition to annual crops, they plant permanent crops such as chat, which requires labor for weeding and harvesting during peak cultivation periods. Better-off households can rent-in land in from female headed households or those without traction power. In addition, their livestock, particularly

small ruminants, are in reserve if the need arises for additional income to cope with seasonal or transitory shocks.

3.3 Cash Crop Dominant Livelihood System

Households living in Mojo Sadee kebele of Grawa, which represents a cash crop-dominant livelihood system, earn more than half of their livelihoods from the cultivation of major cash crops, including chat, coffee, and irrigated vegetables. Such cash crops are cultivated in midlands or lowlands, where population density is relatively low. The major characteristics of this livelihood system in Grawa include:

- Lower population density compared to the crop-dominant system;
- Poor access roads;
- Poor access to major markets because of poor roads and distance;
- Relatively large landholdings per household;
- Availability of grazing lands and forest areas;
- Irrigation potential;
- Lowland but also midland agro-ecology:

a. Livelihood Strategies

The typical livelihoods portfolio of different wealth groups are summarized in Table 10.

Table 10: Livelihood Ptrategies Pursued by Wealth Category

	Wealth category	Livelihood strategy
	Well-off *(Irra Wayaa)* (20%)	Cash crop production
		Food crop production
		Livestock production
		Fattening
	Medium *(Wayyaa)* (35%)	Cash crop production
		Food crop production
		Livestock production
		Fattening
		Daily wage labor
	Poor *(Hyeesaa)* (30%)	Food crop production
		Fattening
		Daily wage labor
		Sell of forest products
	The poorest among the poor (*(Miskiina/ hiyeesaa gadii)*(15%)	Some crop production
		Cheap sale of labor
		Begging

Source: Compiled from KFSTF and FGD results by the research team

Although cash crops or high valued crops provide over half of the income for households in these communities, households also engage in daily wage labor, petty trading, and livestock production. The gains from the major cash crops grown in Mojo Sadee, which include chat, coffee, haricot beans, tobacco, fruits and vegetables, provide some farmers with relatively lucrative profits when yields are high and market outlets favorable. In addition to cash crop production, livestock production is also important for households classified as better off. The lower status households usually engage in fattening of ox and small ruminants rather than a large number of livestock production.

Livelihoods groups: Villages within the kebele pursue diverse combinations of livelihood strategies. Communities classified the eighteen villages in Mojoo Sadee into three zones, which is presented in Table 11.

Table 11: Mojoo Sadee Livelihoods Areas

Zone	Villages	Cash crops	Cereals	Livestock	Others
One (5 villages)	Weraboo; Iddo; Halolee; Kitro; Usman	50%	25%	10%	15%
Two (7 villages)	Qabee; Kito; Mumed; Musa; Sunquroo; Goree; Urunji	60%	20%	15%	5%
Three (6 villages)	Bora; Adula; Ciree; Solee; Taree; kabirra	35%	25%	20%	20%

Source: Compiled from KFSTF and FGD results by the research team

Households living in Zone 2 cultivate cash crops using rain-fed as well as irrigation systems, giving them wider coverage areas and higher productivity. Whereas. In contrast, Zone 1 villages do not have irrigable fields.

b. Access to Resources and Assets

Human Capital: Community interest and investment in education has increased in recent years. Sixty to seventy percent of children now attend school and the local primary school is over-enrolled to the extent that classrooms support up to 125 children. The community has invested in school class construction and other school improvements. Although the enrolment of girls has increased, most girls drop out by the time their primary school experience would be over. Adult education or skill-building programs are non-existent.

Although two health extension workers have recently been assigned to the kebele, health services remain inaccessible for many households; the closest health clinic is in Grawa, requiring a three to four hour walk just to reach public transport. Hygiene and sanitation practices however are improving.

Natural Capital: Most households remain dependent on unclean water from springs, ponds and rivers. Six out of 18 villages suffer water shortages and must access water from other villages, requiring two hours or more of travel time. Communities share their water points with other villages, but the water points are rarely clean and protected, reflecting a management problem.

Grazing lands and forest areas are in decline. Conservation practices are promoted through the PSNP, but communities are not taking additional initiatives to protect natural land resources. Most households remain dependent on environmental resources for firewood and waste disposal. Landholdings are fragmented on farmlands characterized by rocky soils and eroding soil fertility

Physical Capital: Roads are maintained and hillsides protected under the PSNP and NGOs programs, although roads remain seasonal and very rough and rocky. Only one or two trucks arrive at the kebele every two days. Communal initiatives have resulted some school construction, maintenance and classrooms extension.

Financial Capital: Households are unable to access formal microfinance institutions, although the Federal Fund provides some credit to PSNP users. Filling the breach, self-help savings groups have become important non-formal institutions serving some poor households.

c. Risks, Constraints, Risk Management and Coping Strategies

Households engaged in cash crop production are constrained by the extremely poor condition of roads, which limit the potential for market interactions and producer profits. The poor condition of roads may also be a factor explaining the poor quality of extension services as well as poor outlets for marketed products. Few livestock owners ever see a veterinary technician. Although the natural environment is becoming degraded, communities have failed to organize to adopt initiatives to preserve their environment. Dependence on food assistance programs designed in part to pay people to adopt conservation practices may play a role. Livelihood risks faced by households are summarized in Table 12.

Better-off households have diversified their livelihoods portfolio to become involved in a variety of strategies, minimizing the impact of hazards or shocks. Chat growers are able to judge the best time to transport their product to Eastern Hararghe localities whenever hazards may affect crop production. Poor households on the other hand rely on labor migration to areas outside their kebele as the major coping strategy during periods of stress and shocks.

Table 12: Risks to Livelihoods in Cash Crop-Dominant System

Livelihood Sources	**Risks factors**
Cash crop production (coffee, chat, fruits)	Pest and disease attack or hailstorm attack
	Fall in market price or demand
	Political insecurity affecting demand
	Theft of cash crops on the farm
	Moisture stress or untimely rains
Daily wage labor *(mainly poor and some middle)*	Lack of opportunity
	Low payment rate
	Theft
	Health risks – diarrhea and maternal health risks associated with pregnancy and delivery
	Work burden on women
Food Crop production *(mainly better-off and middle)*	Production constraints (weeds, declining soil fertility)
	Poor Storage system resulting in losses from spillage or pest damage
	Late arrival of agricultural inputs
	Market risks – low price
Petty trading *(all categories depending on the activity type)*	Too many people involved in same type of trade
	Lack of experience
Livestock production	Declining grazing lands
	Livestock diseases

3.4 Cash Crop Dominant Livelihood System

Common to the agro-ecological midland and wet lowland areas of Mada Jaalalaa of Grawa and Hurufaa Lolee of Adami Tulu Jido Kombolcha woreda, mixed livelihood systems constitute a proportional package or combination of various household livelihood strategies, including food crop production, cash crop production, livestock, daily wage labor and petty trading.

a. Livelihood Strategies

Contributors to the mixed livelihood system are summarized in Table 13. Food crops include maize and sorghum and cash crops include haricot beans and some vegetables in irrigated areas. Livestock includes shoats, cattle and donkeys. Wage labor is generally pursued within the kebele, the nearest towns and as well in the recently burgeoning floriculture industry adjacent to ATJK. Wealth category differences are most obvious in terms of the number and quality of animals and the size and quality of landholdings.

Table 13: Mixed Livelihood Strategies Pursued by Wealth Category

Wealth category	Livelihood strategy
Better-offs *(Wayaa)* (15%)	Food crop production
	Livestock production
	Cash crops
	Trading
Medium *(Giiduu Galeesa)* (40%)	Food crop production
	Cash crops
	Livestock production
	Trading
	Daily wage labor
Poor *(Hyeesaa)* (40%)	Food crop production
	Cash crops
	Daily wage labor
	Sale of firewood
	Sale of grasses
	Petty trading
The poorest among the poor *(Ka hiyeesaara gadii)* (5%)	Cheap sale of labor
	Begging

Source: Compiled from KFSTF and FGD results by the research team

The Hurufa Lolee kebele categorized the five villages into three sub-zones based on the contribution of food crops, cash crops and livestock production, presented as Table 14. Haricot beans are important sources of cash for many farmers in most villages. Households are able to draw on sand resource sites for construction purposes in some villages.

Table 14: Livelihoods Sub-zones in Hurufa Lolee Kebele

Zone	Villages	Haricot beans	Maize	Livestock	Others
One	Langanno	45%	20%	25%	10%
Two	Genna; Qurquura	30%	40%	30%	-
Three	Goba Lamii; Tumphee	20%	35%	35%	10%

Source: Compiled from KFSTF and FGD results by the research team

Residents and Kebele Food Security Task Forces (KFSTFs) of Mada Jaalaa kebele of Grawa woreda categorized sixteen villages into three sub-zones of livelihood strategies, presented in Table 15. Zone one is well known for an even combination of cash crops and livestock and good forest potential, whereas farming households living in zone two produce cash crop, more cereals, and fewer livestock.

Table 15: Livelihood Strategies in Mada Jaalalaa Kebele

Activity	Zone 1 *(7 villages)* Nuya, Boru, Galmo, Iddo, Maalaqa, Amed, Husien	Zone 2 (5 villages) Wariyo, Gorro, Nunnu, Erc, Gooloo	Zone 3 (4 villages) Fardaa, Eree, Umer, Billi
Chat/ coffee	30%	40%	20%
Livestock	30%	15%	20%
Cereals	20 %	30%	40 %
Sweet potato	7%	5%	10%
Others (DL,PT)	13%	10%	10%

b. Access to Resources and Assets

Human Capital: Although health services are reportedly not improving, access to health clinics has helped lead to the decline of prevalent diseases such as malaria, assisted by improved awareness and mosquito nets distribution. Sanitation practices remain poor; few households own or use sanitation facilities.

School enrolment has increased as communities increasingly value education. One farmer noted that "if a cow were literate, it won't remain tied to a stick in a place the whole day." Poor community members however complained that the expenses required for supplies and uniforms compel many households to prematurely withdraw their children from school.

The availability of labor is substantially higher in ATJK, where polygamous marriages contribute to population growth, than in Grawa.

Social Capital: The traditional afoshaa structure, which organizes self-help group dynamics and brings households and communities together for social functions, is strong in Grawa but much weaker in Adami Tulu. Religious events continue to bring people together in both woredas. Another structure known as maroo brings men together as work groups assisting one another on farmlands early in the morning. The maroo can potentially be harnessed to organize community members to participate together in community development initiatives. Women have formed savings and investment groups in some Grawa communities, strengthening women's capacity to guide their own development and promoting a more consultative household decision-making environment. Savings groups are far weaker in Adami Tulu.

Natural Capital: Adami Tulu households are blessed by better land fertility, larger landholdings, and consequently better livelihood security than one finds in Grawa, where nevertheless, farmers are able to cultivate the important cash crops of coffee and chat.

Households tend to keep more livestock in Adami Tulu, where grazing lands are more plentiful. Although forest and grazing areas remain relatively abundant, population growth due to polygamous marriage is putting pressure on environmental resources.

Physical Capital: Roads are far superior in Adami Tulu, where villages are well connected and marketing opportunities more easily accessible, than in Grawa, where roads remain seasonal and very rough, despite the prominence of cash crop production.

Financial Capital: Income earning opportunities are gradually improving, although rural community residents mentioned the need for training in business management and skilled labor. Grawa households continue to participate in petty trading and livestock fattening activities with the assistance of savings groups and the Federal Food Security Fund. Adami Tulu poor households participate in local beer making and food grain retail trade while better-off households trade in livestock. Small towns in both woredas are growing economically, providing rural households with opportunities to participate in semi-skilled labor such as house construction and invest in off-farm activities such as and small shops.

c. Risks, Constraints, Risk Management and Coping Strategies

The mixed livelihood system shares risks similar to those outlined above in the discussion of other livelihood systems (see Table 16). Households involved in mixed livelihoods however are in a better position because their ability to diversify livelihood strategies and plant a wider range of crops to manage or avert risks. The cultivation of permanent crops enables farmers to more efficiently utilize labor resources. Many mixed crop farming households are also accessing irrigation for production, increasing yields, profits, and labor opportunities. On the other hand, poorer households are constrained by increasing population pressures, low employment opportunities, increasing landlessness, and small landholdings.

Better-off households are able to manage risks through their involvement in a diversified range of activities, reducing their vulnerability and building capability. Such households rent-in land from others, trade in livestock, and produce cash crops for the market as well as food crops. The poor rely mainly on their labor and the ongoing food based programs.

Table 16: Constraints & Risks to Livelihoods in the Mixed System

Livelihood Sources	Risks factors
Production risks	Production constraints, including pests and weeds
	Reduction in yields resulting from soil erosion
	Late arrival of agricultural inputs
	Poor extension services
	Poor storage quality
	Moisture stress or untimely rains
Daily & migrant wage labor *(mainly poor and some middle)*	Low employment opportunity
	Low payment rate
	Health risks
	Late or poor own farm management due to competing labor demands
	Work burden on women
Market risks	Low employment opportunities
	Poor timing of market opportunities
	Unfair market functions, discouraging producers
	Low prices
	Poor roads
	Lack of experience or skills
Livestock production	Declining grazing lands
	Livestock diseases

3.5 Seasonality, Vulnerability and Risk Mitigation

As noted above, households throughout the two Oromiya woredas but particularly in Grawa must cope with severe food shortage gaps ranging from three to six months during a normal year. Poor households of all livelihood systems but particularly of the crop dominant system suffer food shortages for several months every year. Seasonality risks include the following:

- Climate risks: during critical crop growth stages in August (flowering stage), September (grain filling stage), October/ November (maturity stage for most crops)
- Food shortage months extend from April through September for up to six months, depending on the capacity and income earning opportunities of the household, reducing the frequency and amount of food consumed within the household.
- PSNP was originally designed to mitigate the food insecurity of these gap months through timely food and cash transfers. Late payments however are defeating the purpose of the program, largely a result of implementation delays. Late payments force participating households into debt, compelling poor households in particular to engage in severe coping strategies including selling productive assets.
- Peak agricultural season and PSNP public work activities occasionally clash and compete for the labor force, which negatively affects farm management, reducing labor availability for crop production activities.

- Market risks are affecting purchasing powers from May through August.
- The OFSP and FFS programs frequently delay credit programs and non-participatory packages, compelling farming households to receive packages at inappropriate times of the year. For example, credit provisioning delays have resulted in livestock purchases during periods of the year when livestock prices are at their highest. Delays in the credit program can therefore result in increased indebtedness, clearly defeating the purpose of the program.
- Seasonal farming and public works activities are adding to the double and triple labor burden of women.

Some community-based initiatives are arising in response to seasonal bottlenecks. In Grawa for example, some community saving groups are actively encouraging household investment as well as discussing other issues such as family planning, HIV/AIDS and other health and hygiene practices. Groups are formed based on the interest of individuals and their economic status. Poor households are beginning to access credit for investment in small income generating activities, mitigating seasonal risks, building capability and gradually reducing vulnerability.

3.6 Household Vulnerability Analysis

This section presents the results of household vulnerability analysis by Adami Tulu woreda of Oromiya. Principal component analysis is employed using an array of asset variables to extract the components that explain the co-variations of the underlying variables. The component that explains the highest variation is used in cluster analysis to create the vulnerable categories. Approximately 66 percent of the households in Adami Tulu are classified as vulnerable (Figure 15) while all 146 households in Girawa are classified as vulnerable. Girawa is dropped from further analysis as there are no non-vulnerable households in the sample.

Figure 15: Distribution of Households in Adami Tulu (Oromiya)

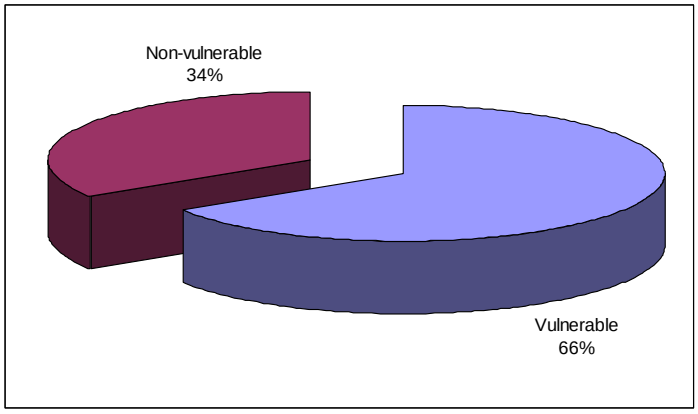
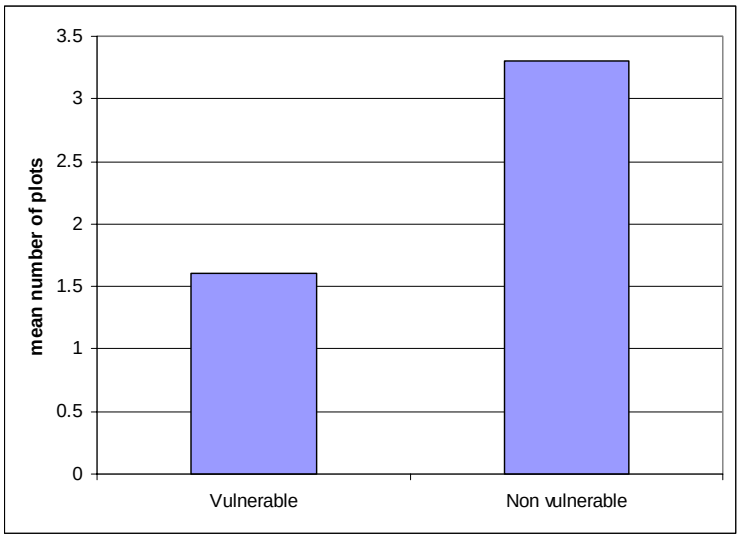


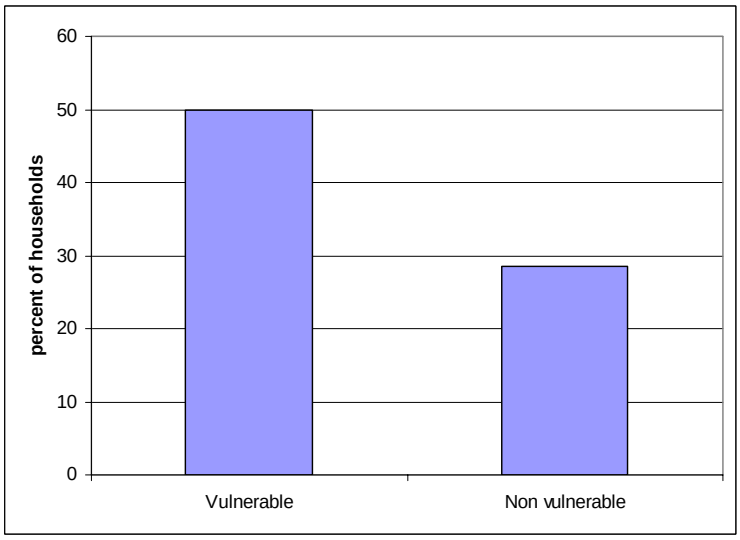
Figure 16 shows that the vulnerable households in Adami Tulu own less number of plots or parcels compared to the non vulnerable households.

Figure 16: Number of Plots/Parcels of Land Owned by Vulnerable Group in Adami Tulu (Oromiya)



Vulnerable households own an average of 1.6 plots while the non-vulnerable households own 3.3 plots. Moreover, non-vulnerable households own larger area of land compared to vulnerable households (2.9 hectares as opposed to 1.5 hectares). T-tests reject the hypotheses of equality of means confirming non-vulnerable households own a greater number of plots and also larger area of lands ($p<0.001$).

Figure 17: Proportion of Households Engaged Only in Cereal Production in Adami Tulu (Oromiya)



Results presented in Figure 17 shows that 50 percent of the vulnerable households in Adami Tulu exclusively cultivate cereal while 28.6 percent of non-vulnerable households do the same. The difference in mean is significant at one percent level.

As Figure 18 shows, approximately 56 percent of vulnerable households in Adami Tulu sell livestock while 44.9 percent of non-vulnerable households do the same. The T-test fails to reject the hypothesis of equality of means.

Figure 18: Proportion of Households Selling Livestock in Adami Tulu (Oromiya)

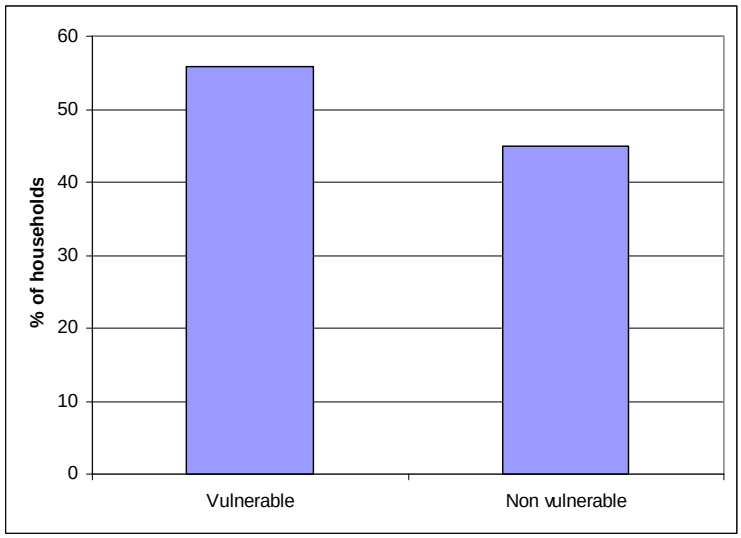
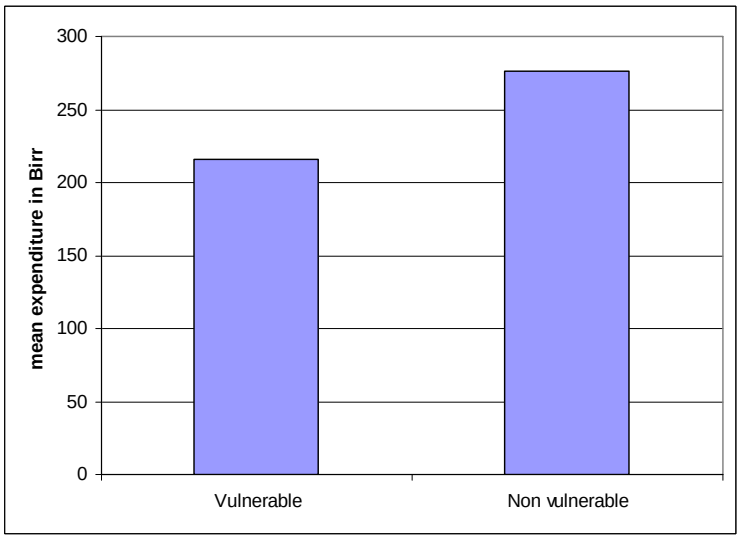


Figure 19: Mean Monthly Household Expenditure in Adami Tulu (Oromiya)



Expenditure is a proxy to income. Information on expenditure was collected from households to estimate income. Figure 19 suggests that monthly expenditure of non-vulnerable households in Adami Tulu is higher than the monthly expenditure of vulnerable households.

Estimated monthly expenditure of vulnerable households in Adami Tulu is 215.6 birr while the estimated monthly expenditure of non – vulnerable households in the same woreda is 276.5 birr. 50 percent of vulnerable households spend 179.6 birr or less per month while 50 percent of the non-vulnerable households in the same woreda spend 260.6 birr or more per month. T-test results rejects the hypothesis of equality of means confirming that non-vulnerable households spend more than the vulnerable households.

Figure 20 presents the results of estimated value of assets by vulnerable groups. Estimated mean value of assets own by vulnerable households in Adami Tulu is 95.8 birr while non vulnerable households own asset worth of 145.6 birr. T-test results confirms that the estimated mean asset value for vulnerable households is different than the mean asset value for non-vulnerable households ($p<0.001$).

Figure 20: Mean Household Asset Value in Adami Tulu (Oromiya)

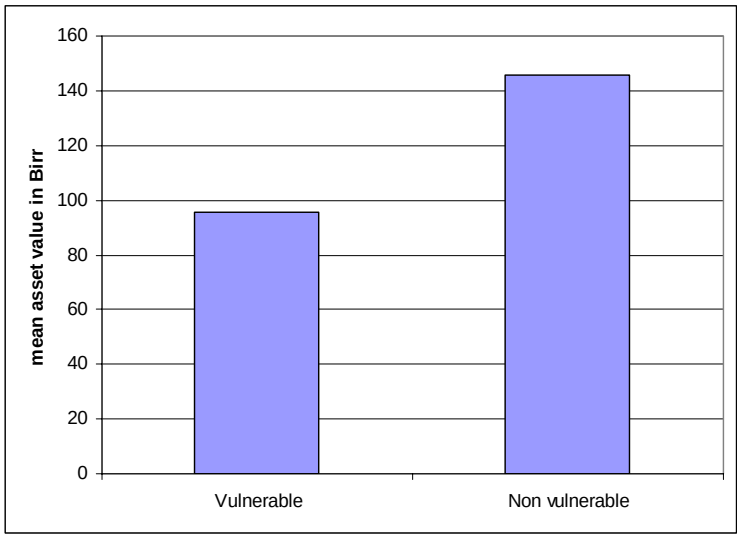
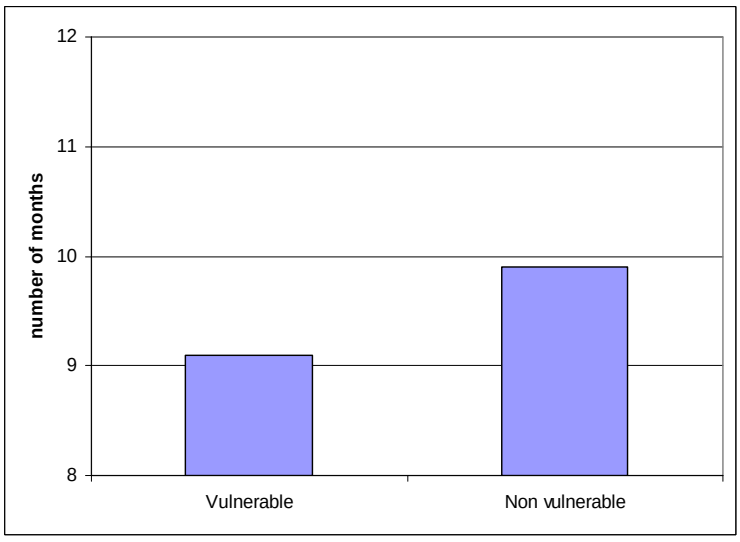


Figure 21: Mean Number of Food Adequate Months per Year in Adami Tulu (Oromiya)



Vulnerable households in Adami Tulu reported to have 9.1 months of adequate food in a year compared to 9.9 months of adequate food for non-vulnerable households (Figure 21). T-test rejects the hypothesis of equality of means suggesting that the mean number of food adequate months between the two groups is different.

3.7 Household Resilience

The discussion of household resiliency created interesting discussions within Oromiya communities as they attempted to define common indicators and attributes of self-resiliency. In the end, the community and individual discussions yielded several strands

of attributes defining the ways that resilient households have successfully managed risk, coped with shocks, learned from such experiences, and adapted to changing circumstances, strengthening their livelihood security to become resilient households.

Attributes of Self-resilient households:

- **Strategic use of social capital:** Resilient households actively participate in productive initiatives and frequently eschew some social gatherings that they may regard as non-productive and time consuming, such as chewing chat in groups.
- **Small family size and monogamy:** Most of the households identified as resilient have small family sizes of less than seven members. Resilient households understand the future potential of sending their children to schools in towns, which demands resource inputs. They prefer to minimize the number of their children to enable investment in education for all of their children.
- **Propensity to save:** Most resilient households have learned to save. One household head said, '*although exposure to urban markets is good to earn income, unless you are careful it takes back whatever you earned'*. Another household head, who was classified as the poorest among the poor seven years ago, now has good livestock holdings, annual yields, a shop in Dogu town of Grawa, and considers himself self-resilient, but he has never purchased a tape recorder, which he termed '*Hoori hoorii nyaatuu,'* an asset that devours assets. In the absence of electricity, tape recorder batteries are extremely expensive and erode savings. But, he said, *'households who are way below my level possess tape recorders while their living is miserable'*.
- **Asset possession:** Resilient households tend to own a relatively large and diverse number of productive assets, including cattle, oxen, and poultry.
- **Investment in productive assets:** Most resilient households discussed focusing their initial investments, on the journey from poverty to resiliency, on productive assets such as cows, female goats, or cash crops rather than on unproductive assets such as clothing and housing.
- **Household decision making:** Participatory household decision-making is one of the key characteristics of self-resilient households, who express unusual reciprocal spousal trust and respect, relatively equal household roles and responsibilities, and in making decisions about their livelihood strategies.
- **Diversified income sources:** Resilient household livelihood strategies range from on-farm crop and livestock production to off-farm income-earning activities.
- **Exposure to other geographic areas:** Almost all Oromiya resilient households have spent some time in urban or other rural areas. Several households expressed their belief that such exposure has injected something to encourage them work hard and improve their livelihoods. Most resilient households expressed an interest to establish enterprises in urban centers.

Household Self-resiliency Enablers

What are some key enabling conditions for household self-resiliency?

- **Social assets:** The rise of community-based saving groups in several Grawa communities has extended investment opportunities to poor households. Successful savings groups have gone on to promote community development initiatives. Poor households have been able to initially use cash savings to invest in small productive assets such as female goats and sheep. Savings groups can promote a savings culture.
- **Education**: Boys' and girls' school enrolment rates are substantially increasing in both woredas in recent years. Households now recognize education as a long-term investment in their future livelihoods and resilience.
- **Model Individuals:** Resiliency is a function of several intrinsic as well as structure factors. Self-described resilient households discussed the importance of mentoring relationships or close friendships hard-working and successful individuals from whom they learned.
- **Health:** Resilient participants in this study invariably mentioned good health as a necessary prerequisite to build assets and consider investment strategies.

Household Self-resiliency inhibitors

What are some key enabling conditions for household self-resiliency?

- **Family size**: Very large households tend to have a larger dependency ratio, affecting potential household gains.
- **Poor health**: Chronic illness within the household is a substantial bottleneck to self-resiliency, preventing households lacking labor and needing care-giving resource inputs from investing productively in their future. One Madaa Jaalalaa female household head discussed her husbands' bedridden sickness for more than ten years as a major inhibitor to their livelihood security. Her household progressed after he passed away. She thanked Allaah and said, *'I am healthy for my children, and my hard work and strength is manifested to all my neighbors, who have classified my household as one of the few better-off households just eight years later.'*
- **Institutions:** Weak markets and poor market information systems inhibit households from experimenting with new crop types or varieties or diversifying into potential enterprises.
- **Failure to protect communal assets**: Poor community coordination and poor awareness inhibits community members from adequately protecting and investing on communal lands. Environmental degradation decreases resource access.
- **Household resource management:** Men who head households can make poor decisions about resource use within the household, failing to save or invest in the future and engaging in irresponsible behavior such as spending income on chat or alcohol.

3.8 Community Resilience

The assessment team applied the following four lenses with which to analyze and rank communities' collective ability to successfully respond and adapt to adversity and change, including shocks and hazards:

- ***People****'s* beliefs, attitudes, cooperative behavior, participation in community development, and openness to change;
- ***Social Organizations*** and their roles and functions within the community;
- ***Resource utilization***, including internal and external resources; and
- ***Community Processes*** of decision making, planning, participation, inclusion and exclusion.

a. Community Resilience in a Food Crop-Dominant Livelihood Context

Recurrent shocks and disasters have acted to loosen community cohesion and connectedness across all livelihood systems, but have appeared to particularly affect food-crop dominant communities, where individualism has overtaken communal initiatives. High population density, fragmented landholdings, limited livelihood diversity opportunities, and low support from development institutions and sector offices have collectively gradually weakened communal actions. Food-crop dominant communities therefore appear less resilient than communities of other livelihood contexts.

- ***People*** continue to actively participate in social functions, such as weddings and funerals. Households support disabled families and those unable to look after themselves. Attitudes toward education are positive; one community contributed over eighty percent of the budget toward school construction. Family sizes tend to be relatively large. Livestock skills are fairly limited to rain-fed agricultural production on land characterized by poor soil conservation. Households are relatively less connected than elsewhere.
- ***Social institutions and organizations*** tend to lack coordination, although groups of seven to eight women in one community have organized themselves to collectively allocate the time to transport and apply manure and compost to each others' fields. Communities have failed to organize around common development issues.
- ***Community decision-making*** processes remain dependent, in a non-participatory way, on the Kebele Administration (KA), which acts as the ultimate decision-making body. The KA appears to stifle communal decision-making and active community participation. Some schools have apparently attempted to promote common actions but lack community support. Women and the youth have virtually no opportunities to participate in meaningful community discussions. The traditional afooshas are weak institutions in this context.
- ***Resource utilization***: Although one community has mobilized on school, extension and DA issues, sector office extension services are quite weak. Future

resilience is challenged by poor school attendance and some rising health issues, notably HIV/AIDS.

b. Community Resiliency in a Cash Crop-Dominant Livelihood Context

Cash crop-dominant livelihood communities enjoy natural asset endowments contributing to enhanced economic capacity derived primarily through the cultivation of irrigated and high value crops. Household cohesiveness within the community appears to be relatively strong. Of the three types of livelihood systems analyzed by the assessment team, cash crop-dominant communities appear to have stronger community resilience than food crop-dominant communities but less community resilience than mixed livelihood systems. Improved community resilience would require strategic investments in communal resource management, women's participation and leadership, and the creation of additional income generating opportunities.

- ***People*** continue to participate in significant social ceremonies. Elders actively participate in marriage functions and conflict resolution, but decisions about development are left to KA leaders. Community members are encouraged by participation in school construction and maintenance.
- Some ***social organizations*** are burgeoning. Self-help savings and asset creation groups are becoming potentially important socio-economic development agents. Guza groups form labor groups to work together on each other's farms. Communities are interested in learning about maroos, which systematically work together on each other's farms. Afooshas serve community funeral ceremonies but have no support to participate in decisions about the development of or initiatives within the community. Women complained to the assessment team that extension agents are always men who work with men, limiting women's involvement in development activities.
- The KA remains the ultimate ***decision-making*** body; few community members are involved in discussions or decisions about development issues. Savings group participants fear attempts by the KA to intervene in self-help activities, which would invariably retract from participatory development activities. The savings groups have accorded women the opportunity to demonstrate their leadership; women reported a more egalitarian household decision-making process. NGO targeting activities have allowed for a more participatory deliberation process. The poorest households however have remained outside the participatory process.
- ***Resource development*** has improved through the implementation of development activities, including irrigated water utilization for crop production, chat marketing, and some soil and water conservation activities, which are nevertheless limited to public works participants. PSNP, FSP, CARE, and government extension complementarity is good, and yet most community residents have a low sense of communal resource ownership. Access to markets and health and veterinary services remains limited.

c. Community Resiliency in a Mixed Livelihood Context

Improving community social cohesiveness, buffeted by irrigation and cash crop potential as well as CARE program activities influencing human and social capital have allowed mixed livelihood communities of Grawa to strengthen community resiliency, despite the challenges of rainfall irregularities and high population pressure.

- ***People*** remain socially connected to ceremonies and functions and elders continue to play an important conflict resolution role in the community. Participation in development activities is limited to targeted and limited NGO and PSNP program activities.
- The strongest and most effective local ***social organizations*** include self-help savings groups, which promote economic asset-building. The guza, providing agricultural labor activities and the maroos – small groups of ten to fifteen farmers working together in structured groups to support agriculture production group dynamics – are active and effective. CARE is also promoting an expanded role for the afoosha in community participatory development beyond the traditional ceremonial role, although this has been a very slow process.
- The KA remains the ultimate ***decision-making*** body within these communities. Residents have yet to actively participate in decisions about communal resources. As mentioned above, savings group participants fear KA attempts to intervene in their activities. Women's savings groups have been so successful that men are forming savings groups of their own or are joining established groups, which have given women increasing assertiveness within and outside of the household.
- The PSNP, FFS, and CARE are promoting external ***resource utilization***. Interventions and targeting decisions flow through the KFSTF. Mixed livelihood communities have access to a relatively rich assortment of internal resources supported by irrigation through water harvesting techniques, relatively large landholdings, soil and water conservation activities on hilly areas involving PSNP participants, and the cultivation of high value crops such as chat and coffee. Community residents however continue to have a low sense of communal resource ownership.

3.9 Graduation Criteria

The assessment team considered several levels of graduation and several possible criteria that could be used within various livelihood settings to determine thresholds for graduating households from program interventions:

1. from PSNP,
2. to food security through OFSP, and
3. to household self-resilience

The criteria used to determine graduation thresholds may be:

- Household income-based;
- Consumption-based related to the length of time a household could feed itself;
- Asset-based, in terms of productive assets owned; and/or

- Other intangible factors.

Tables 17 and 18 consider graduation options within the Grawa and Adami Tulu settings.

Table 17: Recommended Graduation and Resiliency Criteria for Grawa Woreda

	Household Income	Consumption	Household Assets	Intangible factors
PSNP graduation				
	- 6 birr/day from PSNP - 10 -15 birr/day from unskilled labor or petty trade	- meet 6-9 months of HH food requirements from own production	- 1 ox - 1 cow - 2 goats (or 4 sheep) - 3 chickens	
OFSP graduation				
	6000 birr/year income from multiple sources including - crop yield - 7 quintals-1400 birr - cash crop-500 birr - livestock-3600 birr - 500 birr/day from labor or IGA	- meet 12 months of food requirements from own production	- 2 cows - 1 ox - 4 goats - 1 donkey - 5 chickens > 4 quintals harvest per year	
Household Resilience				
	- 14,000 birr/year income from multiple sources ♦ Livestock-8200 birr ♦ Food crops-1600 birr ♦ Cash crops – 3000 birr - 2000 birr cash on hand to manage unforeseen shocks	- HH able to meet 12 months of food requirements from own production - all members eat 3 meals/day including meat and vegetables	> 2 oxen > 3 cows > 7 goats > 2 donkeys > 10 chickens	- adaptive capacity in response to shocks - capacity and willingness to save - demonstrate responsible resource management - ability to invest in productive assets - collective participatory decision making within HH

Table 18: Recommended Graduation and Resiliency Criteria for Adami Tulu Woreda

	Household Income	Consumption	Household Assets	Intangible factors
PSNP graduation				
	- 6 birr/day from PSNP - 10 -15 birr/day from unskilled labor or petty trade	- meet 6-9 months of HH food requirements from own production	- 1 ox - 1 cow - 2 goats - 5 chickens	
OFSP graduation				
	6300 birr/year income from multiple sources including - crop yield – 8-10 quintals-1200-1700 birr - livestock-4800-5200 birr	- meet 12 months of food requirements from own production	- 1 cow - 1 ox - 5 goats - 1 donkey + 1 cart - 10 chickens - 8-10 quintals harvest per year	
Household Resilience				
	- 16,000 birr/year income from multiple sources ♦ Livestock-8300 birr ♦ Crops-2250 birr - 3000 birr from petty trade or semi-skilled labor - 2000 birr cash on hand to manage unforeseen shocks	- HH able to meet 12 months of food requirements from own production - all members eat 3 meals/day including meat and vegetables	> 2 oxen > 2 cows > 3 goats > 3 donkeys + cart > 10 chickens	- adaptive capacity in response to shocks - capacity and willingness to save - demonstrate responsible resource management - ability to invest in productive assets - collective participatory decision making within HH

Several key issues relating to graduation should be addressed prior to implementation of any of these recommendations:

- The concept of graduation needs to be clearly understood at all levels.
- An efficient and effective monitoring system should be designed in order to objectively track progress and decide who graduates
- What are the requisite conditions that protect graduates from slipping back?
- A decision should be made about how and at what level to standardize benchmarks (woreda, kebele, community or region).

Box 4: The Parable of Shiek Ibrahim

The following parable was expounded by Shiek Ibrahim, a very creative person who rose from poverty to head a self-resilient household from one of the Grawa kebeles.

"A man punched into submission was lying on the ground for years, fed and cared for by others in order to survive. Despite the assistance rendered to him, his situation deteriorated over several years. Finally, someone approached him told him that he could only get better by having the will to stand by himself. After noting his interest, the person reached out his hand and assisted him to stand on three feet, with a stick. Then he was assisted to walk slowly and was closely supported in case of collapse. Thanks to Allah, he was fortunate. He started to gain momentum, threw away his stick and finally started to run."

Learning from the parable:

1. Food security conditions had been worsening.
2. There must be 'will' to see progress.
3. The arm has to reach the household condition
4. PSNP assists households to stand and credit for appropriate activities to walk.
5. Close monitoring is necessary to support the journey.
6. People can be self-reliant

3.10 Program Linkages and Layering

In, Oromiya, government and NGO programs are frequently implemented in isolation from one another, reducing the potential for effective complementarities and program efficiencies. However, coordination between the woreda administration, FSTF and other sectoral offices was reported to be encouraging. The sectoral offices within sample woredas reported that they are usually informed of annual budget allocations in a timely fashion.

Having worked closely with woreda sector offices in Grawa, Bedeno, and Kurfa Chelle, CARE Ethiopia and the sector offices instituted a forum to improve program linkages and layering in selected Oromiya woredas. Every six months, woreda GO sector and administrative office representatives meet with regional CARE representatives from four to six days in a *'panel monitoring'* exercise design to:

- Present accomplishments, successes, and implementation challenges;
- Conduct discussions about studies and reports and revise reports;
- Undertake field trips to representative sites to talk to community participants;
- Reflect on key issues that arise from field observations; and
- Discuss and agree on a six-month plan.

Panel monitoring has:

- Improved transparency among implementers and coordinating bodies;

- Improved relations between the GOE and participating NGO;
- Enabled development actors to analyze their project activities within the rubric of comprehensive woreda development plans;
- Delineated or established duties and responsibilities of sector offices and NGOs;
- Enabled cross-fertilization of ideas and learning among three participating woredas;
- Promoted the idea of a coordinated program approach to sustainable livelihoods rather than limiting discussion of specific project issues; and
- Strengthened resource sharing and coordination through initiatives, such as the fifteen-day workshop on integrated watershed management, which was jointly paid by the government and CARE Ethiopia.

3.11 Recommendations

Human capital

- Adult education could be promoted in key areas that affect the wellbeing of individuals, families and communities. Farmers Training Centers could be expanded to promote various social, economic, cultural and governance issues. .
- Access to health care remains problematic for many rural households. Strengthening health services and extension messages would contribute toward community resilience.
- Promote fora for relatively resilient households to share their experiences with the larger community, using some form of positive deviance.

Physical capital

- Sustained investment in animal husbandry and veterinary service is essential toward improving the outcome and productivity of investments by the poor. Although credit funds, including Federal Food Security, World Bank, and NGOs are promoting livestock purchases, livestock extension messages and veterinary services have not kept up and are extremely poor.
- Promoting seasonal roads to all weather roads will assist easier access to markets and other services. Poor roads and difficult market access currently plague Grawa and other woreda farming households, even those producing cash crops for the market.

Economic capital

- Introduction of simple (safe and affordable) but modern storage facility will enable to protect the poor not to sell their produce during harvest and minimizes loss.
- Savings groups have allowed women to invest and strengthen their household livelihoods opportunities as well as building up social and human capital. The savings groups have been shown to be important in building up community resilience. Intensified investment in micro-savings and related social groups has proven to be an effective livelihoods strategy. Training in business management, resource management, and investment strategies would enhance this strategy.
- Poor farmers markets and market information systems are constraints plaguing farming households in Oromiya. An integrated rural programming approach must include improved market information strategy that would complement road improvements.

Natural capital

- Design a mechanism that makes all community members responsible for the conservation and maintenance of the natural environment. The current trend is that conservation management is tied to PSNP participation, which eliminates community responsibility. Conservation management programming needs to create awareness and promote true community ownership of natural resource management. For example, schools and health institutions can play important roles in seeding plantation activities. A holistic conservation approach would also protect private farmlands together with communal lands by using catchments.

Political capital

- Women are demonstrating their leadership capacity in the vibrant community saving groups in Grawa. CARE and woreda sector offices have put a lot of effort to make the system sustainable. This has to be encouraged and more investment may be required in building their human capital. This approach should promote participatory household decision-making, which has been shown to be a common attribute of self-resilient households in the researched areas.
- Related to the last point, development planning and implementation decisions are currently solely the providence of kebele administration and agriculture offices. All programming approaches should incorporate modalities to promote community group participation and decisions that affect their livelihoods.

Graduation

In order to promote sustainable graduation and prevent sliding back,

- Establish ‘graduates networks’ encouraging graduates to share experiences and form self-help groups, which in turn could promote enhanced savings and investments, which we have seen, are visible attributes of household resiliency.

- Graduation thresholds should be based on livelihood variations within the community.
- Food security programs monitoring systems should include substantial community based components which could track success case studies as well as failures to extract lessons. Monitoring in general is frequently not accorded sufficient resources and support despite its potential to identify weaknesses and strengths for program learning, sharing and amending.

4. Livelihoods and Self-Resiliency in SNNPR

The Southern Nations, Nationalities and People's Region (SNNPR) is located in the southwestern area of Ethiopia. It is bordered by Kenya to the south, Sudan to the southwest, the Gambella region to the northwest and the Oromiya region to the north and east. While SNNPR comprises only 10 percent of the total area of the country, it is home to approximately 14.5 million people (20% of the total population). Accordingly, SNNPR is one of the most populous regions of the country an average population density of 131 persons per square kilometer. Over 90 percent of the population within SNNPR resides in rural areas. This analysis of vulnerability and resilience in SNNPR is based on the findings of qualitative and quantitative research carried out in Dirashe and Selti Zuria woredas.

Overall, SNNPR is not as food insecure as other regions to the north and east. Despite erratic rainfall in some areas, the type of sever drought that leads to complete devastation of a year's crop production and/or kills off great numbers of livestock has not had as big an impact in SNNPR as it has in some other regions. This is due to the fact that SNNPR's relatively abundant bimodal rainfall pattern has allowed households to diversify food and cash crops as well as intensive livestock production, both of which make livelihood strategies less risky than those pursued in regions with a single rainy season and high dependence on staple cereal crops. SNNPR's climatic conditions also help to lessen the impact of the annual 'hungry season' and decrease the risk posed by food market price fluctuations. Nonetheless, increasing population pressure in the region has led many poor, rural households to rely on small plots, a constraint that leaves very little production margin to withstand shocks (FEWSNET 2006).

Recent livelihoods profiles conducted in the SNNPR identified *enset* as the most characteristic agricultural product of the region. Cereals production is common and is dominant in relatively high- or low-altitude arable areas, together with smaller amounts of pulses and oilseeds. The varied ecologies of SNNPR also offer greater or lesser degrees of potential for important cash-crops, of which coffee is most common (FEWSNET 2006).

4.1 Livelihood Context

SNNPR is an ethnically and linguistically diverse region (56 ethnic groups, 4 major language families – Cushetic, Omotic, Nilo-Sahara and Semitic). The area in which this livelihood system is situated also exhibits very diverse agro-ecological conditions ranging from hot, arid and semi-arid climates to tropical humid conditions in lower regions. Typically, rainfall occurs during two distinct seasons (belg – short rainy season, and kiremt – longer rains and growing season) although recently, precipitation patterns have been increasingly erratic. SNNPR is generally characterized by highly dissected, rugged highlands in the northern and central areas of the region and undulating lowlands in the south. There are numerous river basins in the region which present the potential for the generation of hydropower, irrigation development and fisheries.

Agriculture is the predominant economic activity in the region. Sedentary farming is practiced in the highlands and livestock herding (pastoralism) mixed with spate/flood

farming is a common livelihood strategy in marginal lowland areas. Major crops produced in the region include maize, sorghum, teff, coffee, potato, wheat, barley, pulses, fruits and vegetables. The region contributes 40-45 percent of the coffee traded in the central coffee market with an average annual production of 70,031 tons.

There are approximately 15 international and 70 local NGOs currently operating in SNNPR, primarily in the areas of integrated food and livelihood security programming, public health and education services, water and natural resource development, infrastructure and social affairs. Individual communities in the region are also supported by clan elders, religious leaders and traditional community associations such as idir, ikub, debo. Collaboration between government agencies and NGOs operating within the region was reported to be encouraging. Nonetheless, the general consensus among government and non-governmental organizations operating in the region is that the capacity to adequately support local livelihoods is currently inadequate, particularly in light of the demand posed by large numbers of chronically food-insecure households.

A range of factors contribute to widespread food and livelihood security throughout the region. Primary causes include a rapidly growing population, shortages of land, drought and depletion of natural resources, lack of critical infrastructure, and limited market access, and minimal opportunities for off-farm employment. As of 2004, 85 of the 1033 woredas in the region were determined to be chronically food insecure. 79 of these chronically food insecure woredas are currently participating in the PSNP. 69 of the 79 woredas currently participating in the PSNP are also beneficiaries of integrated household packages of OFSPs.

4.2 Lowland Cereal Livelihood System

a. Livelihood Strategies

The lowland cereal livelihood system in Dirashe special woreda is supported by a relatively high amount of rainfall during the belg and meher seasons, particularly when compared to the drought-prone lowlands elsewhere in the region. The majority of the population is involved in production of cereal crops such as maize, sorghum, teff, haricot beans and chick peas. During good harvest years, a significant amount of maize and sorghum is sold for household income. In good years, farmers with adequate land are able to produce 20-30 quintals of surplus cereal. Surpluses are either sold or stored, although traditional methods of grain storage are subject to losses from spoilage and/or pests.

In addition to crop production, a significant portion of the population is also engaged in collecting and selling grass and firewood, as well as seasonal labor migration. Local wage labor and traditional labor sharing (debo) are also common sources of household income. The sale of chaka, a local alcoholic drink is also common. In general, sources of wage labor and other income generating activities within this livelihood system are minimal as a result of poor rural-urban linkages and distance from market centers.

b. Access to Resources and Assets

Human capital: Nearly all villages within the *lowland cereal livelihood system* have access to 1st and 2nd cycle primary schools (grades 1-8). However, in some cases, school buildings are inadequately furnished or are lacking in educational materials. Both literacy and average level of educational attainment tend to be relatively low throughout the area. Among the sample population within this livelihood system, only 40 percent of male adults are literate, dropping to 20 percent for adult females. Enrolment of school-age girls is similarly low, but showing signs of improvement.

While each of the communities surveyed reported having at least one health post, individuals requiring significant medical treatment are typically required to travel long distances (2-3 hours) to access Gidole rural hospital. This is due to the fact that health posts tend to lack adequate health workers, laboratories, essential equipment and medication. Malaria remains the most common and significant health problem encountered by households in this livelihood system. It tends to have a significant impact on household labor, food production and income, particularly during the early agricultural season (April-June).

Social capital: Respondents cited a high degree of community cohesiveness which allows most households to openly and actively participate in communal issues. All Dirashe villages have a common assembly platform (mora) in which solutions to community and household issues are discussed in a public forum. Qualitative research also found that village social structures typically include a representative group of clan elders and leaders, idir, ikub, debo as well as women's savings and credit associations. Clan leaders and elders were reported to have considerable influence in decision-making processes and community matters including the targeting of and graduation from PSNP projects.

Physical capital: The introduction of wireless telephone service in each of the kebeles in Dirashe has substantially improved communication. Meanwhile each of the communities within this livelihood system has access to domestic water supplies, either through boreholes and motorized pumps or streams and springs. Generally, markets are not centrally located and people to travel long distances to access markets, usually on foot. Although the main roads to Konso-South Omo that cross the livelihood area create some market access, road infrastructure is limited. The distance of the livelihood zone from the regional capital and larger towns as well as the unreliable supply of grain preclude visitation of traders.

Financial capital: The main reasons households in the area assume borrow money is for the purchase of food, weddings, emergency medical expenses and educational fees. Farmers rely on ikub savings as an emergency source of cash to pay for these expenses, and to cover debt payments. Alternatively, idirs serve various functions within the community ranging from coverage of health care costs, to funeral expenses and the provision of cash for mourning households. None of the households within this livelihood system have access to formal sources of credit at the village level, including banks,

micro-finance or credit institutions. The most common sources of loans in all kebeles are relatives and/or friends who are better off.

Natural capital: Compared with more the more drought prone pastoral lowlands, this livelihood system receives relatively higher levels of rainfall. Although the population is sparse, land use in cultivated areas is intense and deforestation, particularly through burning, is a common problem. Continuous cultivation on small landholdings (0.5-1.0 ha/household) has resulted in a decline of soil fertility. Consequently, many farmers have begun cultivating in lowland zones, on lands previous used for grazing. With high rates of malaria and livestock diseases in these areas, however, farmers tend to return home from lowland fields each night.

Political capital: Although wealthy households maintain the greatest influence in communities and women have limited opportunities to engage in some organizations, focus group participants indicate that their communities are relatively democratic. Household heads, youth and women may participate in all organizations excluding the Elders' groups. These groups in turn, dominate local decision making processes and socio-political organizations, including the selection of PSNP beneficiaries.

c. Risks, Constraints, Risk Management and Coping Strategies

Despite relatively high rainfall, precipitation patterns in the area tend to be erratic, causing severe moisture stress during the belg and meher seasons. Drought used to be periodic in this area, but respondents claimed that it has become fairly regular over the last six years, occurring every other year. Lat onset and/or early cessation of rains during either growing season, (belg or meher) causes crops to become desiccated in the field and creates favorable conditions for pest infestation. Food shortages during the months of March-June often forces farming households to borrow, sell assets, and/or withdraw children from school in order to meet food needs. During food shortages, households also increase consumption of enset (purchased), shiferaw, sweet potatoes and cassava to meet food production deficits. One drawback to reliance on food reserves is that they can easily be exhausted by recurrent drought. This is particularly true for enset which is a slow maturing crop that takes four to five years to reach maturity.

Despite relatively low population density, land use within the area has led to consistent over-cultivation and depletion of soils. In response, many households have shifted toward lowland farming using hand tools (zero tillage) and land previously reserved as pasture. The adverse side of this response is that lowland areas within this livelihood system have high rates of malaria and livestock disease. Meanwhile, households continue to spread crop waste (maize/sorghum stalks) and construct stone barriers in fields in an effort to combat soil infertility and erosion.

Recurrent droughts and disease have contributed to continued depletion of livestock numbers in this part of Dirashe. Cattle-raising is restricted primarily to the mid-highland part of the area encompassing this livelihood system. Households that do own livestock have adapted to these constraints by investing in goats and sheep due to the fact that they are more resistant to disease and drought, and require less feed than cattle. The cost of

livestock medication and veterinary services is a major constraint for households within this livelihood system, especially given their low level of income.

Although communities within this livelihood system are connected by a rudimentary road network, markets are often not centrally located or accessible to rural households. Given its distance from the regional capital of Awasa, and the fact that the supply of grain from the area is unreliable, few external traders visit communities within this livelihood system.

4.3 Cash – Enset – Cash Crop Livelihood System

a. Livelihood Strategies

Cereal crop production is the predominant livelihood strategy in the highlands and mid-highlands in Dirashe special woreda. The main crops are maize, sorghum, wheat, barley and vegetables. Farmers tend to cultivate a wide variety of crops in an effort to minimize the risks associated with any one crop. Degraded soils negatively affect the agricultural productivity of communities within this livelihood system. The relatively low agricultural yields within this livelihood system are also partly the result of small landholdings. The majority of households within this livelihood system have less than one hectare on which to grow household food and/or cash crops. Households with access to sufficient land may elect to grow enset, an important cash crop within the region.

In recent years, the cultivation of chat has also increased as a means of supplementing household income and diversifying crop production. A community market cooperative has reportedly created an enabling environment for a large number of farming households, and established extra income earning opportunities in the immediate area through activities such as chat collection, packing and loading. In some cases, these sources of income have enabled poor households to avoid severe food shortages and accumulate productive assets.

Livestock rearing is also an important strategy within the highland and mid-highland areas of the livelihood system. It is a major source of income for middle income and better off households. Livestock producing households sell smaller animals in village markets and typically trade cattle at a weekly market in Gidole. Little land is available for grazing in the highland and mid-highland areas. Livestock owning households typically take animals to lowland areas to graze, exposing themselves to a greater risk of malaria and their animals to the risk of livestock disease.

Another important source of income for poor households within this livelihood system is the sale of agricultural labor. In bad farming years, there is also a significant amount of seasonal labor migration to other parts of Dirashe woreda. Cash income is also earned in some households through the preparation and sale of chaka (a local alcoholic drink) as well as the sale of firewood and forage.

b. Access to Resources and Assets

Human capital: Nearly all of the communities within this livelihood system have access to 1st and 2nd cycle primary schools (grades 1-8). Nonetheless, respondents explained that

many of the schools are lacking basic furniture and educational materials. They did report however, that school enrolment rates have increased as a result of recent government efforts in the education sector. Adult literacy among communities in this livelihood system is extremely low, as it is elsewhere in Dirashe woreda.

Each of the communities within the area have access to a health post, though most lack adequate health workers, laboratories, essential equipment and medication. The nearest hospital is Gidole rural hospital, 2-5 hours from the communities. Though malaria is a significant problem due to lowland farming and grazing, it is less prevalent than in this livelihood system than in surrounding areas. Chronic malnutrition, particularly among children remains a significant problem throughout the area.

Social capital: Qualitative findings suggest that community cohesiveness and cooperation to reduce risks, access services, and provide information is strong. In general, the community places a substantial amount of trust in community elders and social organizations such as ikub, idir, debo, and community savings/credit groups. There are no formal credit/micro-finance institutions operating in any of the kebeles within this livelihood system.

Physical capital: While each of the kebeles has access to wireless telephone service, most have limited access to household drinking water through unprotected springs and streams. As a result of the lack of road infrastructure in the area, households have limited access to markets and development opportunities. This is especially true for highland and mid-highland kebeles within this livelihood system where terrain is steep and roads are passable only during the dry season. The lack of transportation infrastructure also results in poor rural-urban linkages for communities in the area.

Financial capital: Traditional savings groups such as ikube and idir are used widely throughout the livelihood zone to create assets, promote investment, and meet emergency cash needs such as debt repayment, weddings, and education fees. There are no formal financial institutions that provide services in the area. Thus, households rely on better off family and friends as informal lenders.

Natural capital: The area has relatively favorable environmental resources, including forest cover, wildlife and biodiversity, and a number of springs and intermittent streams. In areas of dense population settlement and cultivation, soil erosion and deforestation are problematic.

Political capital: The communities have a common assembly platform (mora) in which to discuss communal and household issues and in an open forum. Respondents reported however, that women are underrepresented in elders' groups and that better off households tend to have undue influence on community affairs. As in other communities, elders' groups within this livelihood system are perceived to have a significant influence on community decision making, particularly with regard to beneficiary targeting and graduation under the PSNP.

c. Risks, Constraints, Risk Management and Coping Strategies

Drought was cited as the predominant periodic risk faced by households within this livelihood system. The relatively high population density of settlements has also significantly contributed to land fragmentation, agricultural intensification, deforestation and erosion. Traditionally, farmers spread mulch and green manure through agricultural fields in an effort to compensate for declines in soil fertility. They also construct flood diversion channels, roadside gullies, and bunds across agricultural fields in order to minimize damage caused by excessive runoff during the rainy season. Although land holdings are relatively small, the location of communities in areas of good forest cover provides a range of resources not available in other parts of the Dirashe woreda.

The shortage of land also affects the production of drought resistant crops such as enset and other root crops. As a result, it is primarily middle income and better off households that are able to grow such crops, thereby protecting themselves against the risk of drought. During food shortages, highland farming households may exchange enset to lowlanders in return for cereal goods. The area has good potential to increase the existing and adapt new variety of enset production and some root crops, which are drought resistant. Respondents felt that households able to produce 300-400 enset plants would not be exposed to periodic food shortages. Despite the potential for enset production, locally, the crop has been severely affected by plant disease. Currently, the plant disease is becoming a major source of apprehension for enset producers and consumers in local markets. Household crops within this livelihood system are also damaged by wild animals such as warthogs, monkeys, porcupines and apes.

Poor road infrastructure was reported to be the greatest constraint to market access and longer-term development of communities within this livelihood system. The lack of access to markets also results in minimal opportunity for farming households to export local produce. If local households had better access to markets, they would likely produce and sell more enset, barley and wheat as these crops have a higher cash value than other cereal crops. This may in turn enable poor households to purchase greater amounts of staples during food shortages.

During severe food shortages, households typically respond by reducing the number and quality of meals, withdrawing children from school in order to collect fuel wood and/or animal forage for sale. The reduction of non-essential household expenditures is also a common coping strategy. Over the longer-term, households in the area often attempt to reduce their exposure to risk by planting short maturing and/or drought resistant crops such as enset, cabbage, barley, haricot bean and potatoes.

4.4 Mid-highland Enset – Cereal and Chat Livelihood System

a. Livelihood Strategies

Rainfed agriculture is the primary livelihood strategy in the mid-highland woredas of Asano, Walaya Sidist, and Bozie Sabola. Climatic conditions support the production of a wide variety of crops including the primary cereal crops of millet, maize, and teff, as well

as barley, pulses, potatoes and vegetables. Production depends primarily on keremt rains in June and August, with belg rainfall critical for the cultivation of long cycle crops. Enset is an important drought-resistant food crop commonly grown in this zone, the consumption of which increases during times of food shortages.

Chat is the primary cash crop and the most important source of income for middle and better-off households. Chat processing and packaging also provides income for a number of households, particularly poor families. In addition, the cultivation of coffee for consumption and sale contributes to household livelihoods.

Livestock production complements crop production and the sale of cattle and oxen is a predominant source of income for middle and better-off households in particular. Poor households tend to rear poultry and small ruminants. Livestock production is limited by insufficient grazing land and lack of feed.

Overall, cash incomes remain low in this livelihood zone, despite the prevalence of chat cash crop production. Many families depend on remittances from family members, commonly young men and women (14-20 years) who migrate to urban areas of Addis Ababa, Dire Dawa, major towns in SNNPR, and abroad. Migrants tend to leave for an entire year, engaging in wide range of activities namely small-scale trading, shop keeping, domestic labor, and construction. Reportedly, it is becoming increasingly difficult for migrant workers to secure employment in urban areas. Other sources of cash income for poor households include the sale of firewood and handicraft production and sale. Middle and better-off households, particularly those in close proximity to the main road, generate income through the sale of tea, soft drinks and chat.

b. Access to Resources and Assets

Human capital: All of the qualitative sample communities in this livelihood system have functioning 1st and 2nd cycle primary schools (grades 1-8) and schools are well supplied with educational materials. Although school enrolment rates are relatively high, girls' enrolment rates are lower than the rate for boys. Traditionally, girls have been denied educational opportunities. Similarly, women have been restricted from the public domain. Qualitative findings suggest that these trends have changed to encourage greater participation of girls and women in school as well as other aspects of community life. Adult literacy rates remain extremely low in these communities, hovering around 50 percent for men and less than 20 percent for women, according to qualitative data.

In terms of health care access, rural health posts in the area lack health workers, medical equipment, and medicine. Primary care services are provided primarily by extension workers operating out of a newly opened locally constructed health post. Community members also rely on health centers and hospitals in the towns of Kebet and Butajira. Major health problems in the area include typhoid and diarrhea. Although malaria is not endemic to the Silitie highlands, villagers who work as lowland farmers contract the illness. Malnutrition persists, primarily for children under five during food shortages. With regard to environmental health, community members report use of pit latrines and waste disposal pits.

Social capital: Qualitative discussions highlight the prevalence of social support networks throughout the area. In addition to a strong sense of mutual support and interconnectedness among community members, there are a number of well functioning social institutions that provide access to services and information, mitigate conflicts, provide emergency assistance, and mobilize community labor (e.g., public works, labor organizations such as Debo and Wonfel for mutual agricultural assistance). Community members exhibit positive attitudes towards business and trade. Women's savings and credit groups, for example, support savings and asset creation among community members.

Physical capital: The cereal and chat livelihood system benefits from relatively efficient transportation services, access to market centers, and strong urban-rural linkages. Wireless telephone is widely available throughout the zone, although communities routinely experience problems with service provision. Most households access sufficient supplies through markets in woreda centers and rarely need to travel to larger markets for local agricultural products. Although the new Addis-Warabe asphalt road has increased trade between Addis Ababa and this livelihood zone, community members indicate that the greatest constraint to market access and local development is road infrastructure.

The primary drinking water sources for communities in the zone are seasonal streams and springs. During the dry season, however, households rely on small ponds known to cause water borne illnesses. Both humans and livestock use the same sources of drinking water.

Financial capital: Community members from all wealth groups participate in traditional savings groups (e.g., ikube, idir) to finance productive investments, as well as to pay for events such as weddings, funerals, and public festivities. Families also rely on local savings groups to repay debt, cover school fees and health care expenses, and to provide emergency sources of cash. Poor households commonly incur debt to meet basic food needs.

CHF international as well as the household income improvement package are the only micro-finance and credit institutions in the area. Formal credit through banks is available to only few better off households. The most common sources of informal loans are friends and relatives.

Natural capital: Deforestation for firewood and soil erosion from intensive cultivation has severe and negative impacts on natural resources in the area. Community and household eucalyptus wood lots as well as conservation of indigenous trees at religious sites help to prevent excessive deforestation. Highly fragmented landholdings contribute to natural resource constraints. Landholding size differs greatly across wealth categories. Poor households have less than 0.5 ha, while better off households have approximately three times the landholding of poor families. Water is an extremely scarce resource during the dry season when most streams cease to flow.

Political capital: Village elders nominated by community members and religious leaders are extremely influential in the area and these groups are strongly connected to kebele administrative units. Women are excluded from elders' groups. Gender issues are adjudicated largely through religious rules and institutions.

c. Risks, Constraints, Risk Management and Coping Strategies

Periodic drought is the primary risk households in the zone face. Late onset or early cessation of rains aggravate conditions of food and livelihood insecurity, which are particularly severe from April to August. Families cope with insufficient rainfall and hunger by augmenting consumption of potatoes and enset. During periods of food shortage, households often consume immature enset, which has a negative effect on future harvests of this slow growing crop. Across all wealth groups, families increase the purchase of kocho, maize, and wheat to supplement household consumption. Poor households depend most on purchased staple foods and are therefore especially vulnerable to price increases. These families cope by shifting to less expensive and lower quality foods, reducing daily meals, and decreasing expenditures on non-food items (e.g., clothing, medicine, education, kerosene, ceremonies). Poor farmers sell assets or labor and increase supplementary income activities such as firewood collection. Poor households are also most likely to assume debt in order to meet basic needs. School attendance drops during bad drought years, as families cannot afford school fees and children are needed to earn income or manage the household while adults are working. Generally, households rely heavily on remittances from youth who migrate to urban centers, a trend that intensifies during bad years when local agricultural employment opportunities are minimal.

Population pressure, land fragmentation, small landholding size, lack of pasture area, and limited use of draught power contribute to production shortfalls. As well, wild animals such as warthogs, monkeys, porcupines and apes significantly damage the production and storage of crops production and storage (including post-harvest enset buried for fermentation). This increasing problem diverts scarce household labor away from other activities during times of peak labor demands to protect crops. Some communities organize village campaigns to guard crops, but the problem persists. Plant disease is another widespread and critical problem, particularly for enset. Although research has been conducted at a national level, there are no local extension services to mitigate impacts of plant disease.

In focus group discussions, communities identify a number of key pathways to increase resiliency, namely an increase in enset production, diversification of income generating non-farm activities such as tanning, pottery, and carpentry, and an emphasis on education, particularly for girls and women.

4.5 Cereal and Red Pepper/Cash Crop Livelihood System

The *cereal and red pepper/cash crop livelihood system* extends throughout most of the dry mid-highland and lowland areas of Selti woreda. The landscape is generally flat with an elevation ranging from 1,500-2,000 meters above sea level. Due to moderate

population density and relatively fertile soil, this livelihood system has historically been food secure and self-sufficient in terms of crop production.

a. Livelihood Strategies

Rain-fed cultivation of cereals and cash crops is a primary livelihood strategy in communities within this livelihood system. The primary crops grown in this area include millet, maize and red pepper. Teff, wheat, onion and gomen (cabbage) are also commonly grown on smaller plots of land. Although traditionally, agricultural land in the area was prepared with hand tools the use of draft animals (oxen) has become increasingly common for the cultivation of cash crops. As such, ownership of oxen has become an important determinant of wealth in the area. However, despite their value as productive household assets, there is a shortage of oxen in the area, primarily due to livestock disease and the lack of grazing land.

In addition to ownership of oxen, the primary determinants of wealth in this livelihood system include, the size and quality of land ownership, the density and proximity of eucalyptus stands surrounding the household, and income obtained through remittances. As a result of their oxen ownership, relatively large land holdings, and ability to invest in fertilizer and improved seeds, better off households typically achieve considerably higher agricultural production than households in lower income groups. Livestock ownership also allows better off households to benefit from ensured access to livestock products and increased opportunities for cash income through the sale of animals. Alternatively, poor households, limited by small land holdings, often depend on better off households for employment opportunities.

The two rainy seasons are the belg rains (short rains, March-May) and the meher rains (intense rains, July-September). Most land preparation work occurs in the moths leading up to the meher season and crops are planted with the start of the rains. Whereas many of the crops are most dependent on the meher rains, longer-maturing crops such as maize and millet must be sown during belg rains.

b. Access to Resources and Assets

Human capital: Each of the individual communities within this livelihood system have one operational 1st cycle primary school (grades 1-4) and relatively easy access to 2nd level primary schools in surrounding towns. Still, educational attainment in these kebeles (Dobona bati and Dobo Inseno) is relatively low, particularly among girls. Respondents however, claim that recent trends show improvement in girls' enrolment and participation at all school levels. Although adult literacy is also low within the *cereal and red pepper/cash crop livelihood system*, household members possess a range of marketable skills that support off-farm employment. Common off-farm livelihood activities include leather tanning, pottery, carpentry, tree cutting, as well as production of thatch roofing materials, mats, sacks and mesob (traditional plates).

Despite the existence of rural health posts, the majority of respondents described the level of health service in area as being very poor. Existing rural health posts are typically staffed by two health extension workers, but lack laboratories, essential equipment and

medicine. Communities in this livelihood system do not have access to improved drinking water sources. Instead, water for household consumption is obtained through streams and/or hand-dug wells. During the dry season, community members are forced to obtain water in urban centers or use unprotected water sources shared with livestock, a practice which increases the risk of disease.

Social capital: As is the case elsewhere in Ethiopia, idir, ikub, and community saving/credit associations are most common. In each village, households are organized into an ikub (saving group). Organized as a lottery system funded by periodic collection of household contributions (weekly or monthly), the ikub are drawn periodically and disbursements given to selected households, helping them to invest in and protect assets, make debt payments, cover education fees, or purchase food. Idirs also serve an important social protection role in the community by helping to cover unforeseen health care costs and funeral expenses, or providing cash for mourners in needy households.

Physical capital: Communities within this livelihood system are characterized by relatively good rural-urban linkages as a result of their proximity to urban centers. Various forms of transportation (bus, minibus, donkey cart) are available in kebeles, providing easy access to markets in Butajira or Inseno. Mareko Market in Iseno is one of the largest red pepper markets in the country and serves as a transit center for the export of agricultural production to Addis Ababa, Nazareth and Awasa.

Financial capital: While there are no formal micro-finance/credit institutions in these kebeles, poor households do commonly borrow money from family and/or friends that are better off. Households borrow money to meet food needs and other household expenses such as emergency medical care or school fees. Overall, households establish savings, both cash and grain, although poor families are more likely to assume debt to meet basic needs.

Natural capital: Within the communities themselves, farming households have access to relatively fertile land with minimal erosion. Average household landholdings in these kebeles are relatively large, though a significant number of local youth remain landless. As is the case elsewhere in Selti woreda, landholdings is a major determinant of household wealth in this livelihood system.

Political capital: Traditional organizations such as idir, and elders groups have strong connections to politically affiliated groups and the kebele administration. In every village, elder groups are nominated by the community and are influential in all community decision-making processes, including the selection of PSNP beneficiaries. Women are not involved in elders groups. Rather, all matters pertaining to ‘gender’ are addressed according to religious principles and traditional cultural practices. Despite their limited role in community decision-making, women in the area have acquired the right to share household property and inherit land in the event of the death of a husband or divorce.

c. Risks, Constraints, Risk Management and Coping Strategies

The *cereal and red pepper/cash crop livelihood system* is subject to a number of risks, the most important of which is erratic and/or insufficient rainfall. With an annual rainfall of approximately 900 mm, shortages of water for both human and livestock consumption occur regularly throughout the year. In this livelihood system, meher rains are more important than belg rains because they are essential for the cultivation of maize, sorghum/millet, chickpeas, and red pepper. Delayed onset, early cessation or insufficient quantity or distribution of either belg or meher rains may cause crops to dry in the fields, thereby increasing the risk of pest infestation and widespread food shortages. Such shortages are most sever in the months between April and August, during which time poor households may take loans, sell assets or labor in an order to meet household needs. During food shortages, households also tend to reduce both the number and quality of meals. In response to crop failure, households may also increase production of certain crops such as vegetables (cabbage) and early maturing maize. The sale of livestock to purchase grain is another common coping strategy for vulnerable households.

Respondents claimed that no combination of crop production and livestock rearing is likely to ensure food and livelihood security for poor and middle income families in this livelihood system. This fact was cited as a central reason for the continued evolution of local livelihoods toward cash income generating activities and purchase of household food supplies. This trend serves to further promote the practice of urban labor migration, particularly by poor, landless youth. Poor households are particularly vulnerable to increases in staple food prices given their relative dependence on food markets and limited purchasing power. Better off households on the other hand are less affected by price fluctuations as a result of greater food production from large landholdings. During food shortages, poor households tend to sell daily labor to earn income. However, this response can exacerbate food production deficits among the poor due to the fact that labor is not being applied to the household's own crops.

The most common illnesses in this livelihood system are malaria, TB and diarrhea. Nutritional studies carried out in kebeles within this livelihood system have also shown severe child malnutrition. Each of these reported illnesses have a significant effect on the availability of household labor, limiting both food production and the generation of cash income.

Community social institutions provide mutual support to needy households, reducing community risk of food and/or livelihood security and ensure equitable access to services. Poor households in particular tend to borrow money to meet food needs and other household expenses such as emergency medical care or school fees. Respondents claimed that debt-taking (paid back in cash, in-kind, or in labor) has become a major coping strategy during times of food shortage. This is because low-income households depending on the market for access to food staples typically seek out credit in order to meet household food needs and emergency expenses. During food shortages, households in this livelihood system also reduce expenditures on non-food items such as clothes, grinding mills, kerosene, education, medicine and family or community ceremonies.

4.6 Seasonality, Vulnerability and Risk Mitigation

As mentioned previously, vulnerability is defined as exposure to risk and stress and the lack of ability to cope with the consequences of risk. Vulnerability has seasonal dimension in that individuals and households face different risks, and have changing capacities to cope with them at certain points in time. In agro-pastoral livelihood systems, transitory vulnerability can devolve into a state of chronic vulnerability if households are unable to recuperate from shocks experienced during critical periods in the agricultural season (planting and/or harvesting). This study utilized seasonal calendars and other PRA tools to identify the type, frequency and severity of risks faced by respondents in both woredas. Analysis also involved the identification of gaps between the timing of risks and potential bottlenecks or other constraints affecting the timing of program interventions and/or community responses to disaster.

Risks such as drought, food shortages, malaria, livestock disease, flooding, price fluctuations, and crop infestation were each identified as major causes of vulnerability in Dirashe and Selti woredas. Respondents explained that in recent memory, drought has tended to occur every other year. Late onset and/or early cessation of rains during either growing season (belg and meher) often leads to severe food shortages and creates favorable conditions for pest infestations. Typically, this occurs in March-June and April-August in Dirashe and Selti woredas respectively. However, the timing of PSNP implementation has often been delayed and usually extends into the peak agricultural season (February-June) putting considerable strain on the supply of household agricultural labor. PSNP transfer payments are sometimes delayed by more than two months, often coinciding with increases in prices for food staples, thereby driving down the actual wages earned by beneficiaries. Delayed PSNP payments also exacerbate the vulnerability of households by forcing them to take loans or sell existing assets and/or labor in order to purchase food. In addition to relying on credit and selling productive assets, households are often forced to withdraw children from school during season food shortages. Meanwhile, female household members are often pressed into collecting and selling fuel wood as well as engaging in petty trade.

Seasonal runoff and flooding are also major sources of vulnerability in the area causing damage to crops and farm structures, soil erosion and silt deposition in dams, water logging, and overall reductions in the efficiency and productivity of farming activities. Flooding is most likely to occur between September and October or between March and May in Dirashe woreda, and typically occurs between June and August in Selti woreda. Efforts to manage the risk of flood typically involve the construction of temporary flood diversion channels and bunds on the farm. Both of these activities require significant amounts of labor and time, constraining the amount of labor available for other important household activities. PSNP public works, meanwhile, are strictly focused on SWC activities in public areas (gullies, road sides and hillsides) outside of household farms. Traditionally, farmers in both Dirashe and Selti woredas farmers use green manure, compost and the spreading of crop waste and/or weeds across agricultural fields in an effort to maintain soil fertility and reduce runoff.

Malaria is another recurrent hazard contributing to the vulnerability of households in both Dirashe and Selti woredas between June-August and July-September respectively. The prevalence of malaria is often highest during critical agricultural periods, causing labor shortages that affect both food production and household income generation. In Dirashe, farming households attempt to reduce the risk of malaria by working in lowland fields for only 1-2 days before returning to their homes in mid-highland areas. While mosquito nets have been distributed to household in endemic areas, no other anti-malaria interventions (i.e., DDT spraying campaigns) have been carried out in recent years.

Crop disease, pest infestation, wild animals (Selti), and price fluctuations also pose seasonal threats to household agricultural productivity. As mentioned earlier, plant disease reaches is peak during the rainy season and is viewed as a growing threat for all enset producers, particularly those in Selti woreda. The disease is transmittable from one plant to another and can easily affect an entire enset farm. Farmers have not yet developed any proven mitigation strategies for this disease and there has been no extension support or research aimed at minimizing its impact. Another factor contributing to crop damage on farms closer forests and hill sides is the foraging of wild beasts such as warthog, monkeys, porcupine and apes. Again, farmers deploy household labor to protect fields from animals which otherwise would have been used for other productive purposes.

Seasonal fluctuations in market prices also contribute to the vulnerability of many rural households in Dirashe and Selti woredas. Prices typically rise significantly between the months of September-October and April-August. Poor households are especially vulnerable to increases in staple food prices given their dependence on the market for food and their relatively limited purchasing power (particularly in Selti). In response to price increases, poor households may sell productive assets or non-skilled labor to earn sufficient money to meet household consumption needs. Compounding the problem is the fact that the agricultural productivity of poor households suffers as a result of spending time and labor in off-farm income earning activities. Common coping strategies employed in response to price fluctuations include the sale of livestock (among middle income and better off households), increased consumption of enset, decrease expenditure in non-food items, and withdrawing children from school.

4.7 Household Vulnerability Analysis

In recent years, the rural populations in Dirashe and Selti woredas have experienced a severe erosion of their traditional livelihood systems. Natural, economic and political factors have combined to create both recurrent food security crises and a situation of chronic structural poverty for many of the rural households. Recurrent droughts and diseases have devastated livestock herds and pasture, considerably reducing the sustainability of traditional livelihoods. Tribal conflict resulting from farm land and grazing disputes has also disrupted productive activity and damaged property in several villages within the last few years. Likewise, the process of establishing a new Selti zone and woreda contributed to border conflict between Selti and the neighboring Gurage, Mareko and Hadiya communities. In some cases, conflict has also disrupted governance and administrative processes in affected communities. Such disruptions aggravate the

current lack of qualified personnel, extension services, and material inputs that constrain livelihood security and further erode the social connectedness upon which many of the traditional livelihood strategies depend.

Certain survey sights in Dirashe woreda also reported being isolated and neglected in terms of development assistance provided by government agencies, NGOs and the international donor community. For instance, there are no development programs implemented by NGOs in nearly all of the kebeles. Only standard government services such as health, education and water supply, PSNP and OFSP are operational. As a result, the provision of key social services and critical infrastructure is inadequate, exacerbating the vulnerability of the population to chronic food insecurity.

Each of these factors has negatively affected the ability of rural households to produce crops, maintain livestock herds and sustain alternative sources of income. As a result, their ability to cope with and recover from droughts and other external shocks has been eroded over the last three decades. As traditional livelihoods have deteriorated, those households with easier access to urban centers have better and more diverse livelihood options than those located in more distant and isolated places. For instance, the majority of the population residing in isolated areas such as Busabaso, Billa, Gato, Shilale, Holte and Annota have virtually no consistent access to income generating opportunities.

In both Dirashe and Selti woredas, an increasing percentage of the population, particularly the poor, are surviving on the sale of migratory agricultural labor, unskilled non-farm labor, selling firewood, selling of the local drink chaka and petty trades. Crop production and sale of livestock remain very important to this livelihood system, but are commonly supplemented by these secondary sources of income. Unfortunately, the opportunities for casual labor are inadequate in Dirashe woreda where the one urban center (Gidole) is underdeveloped and cannot absorb increased supplies of labor during food crisis. The case is different in Selti woreda where there are better urban-rural linkages due to its proximity to major urban centers. Here people have relatively good access to various income generating opportunities. However, the lack of alternative and sustainable livelihood strategies remains a significant problem for rural populations in both woredas.

While food price fluctuations have become significant stressors for populations in both woredas, the situation is much more critical in Selti. This is primarily due to the fact that a substantial portion of the population in Selti has become increasingly dependent on market purchased food. As a result, any significant fluctuation in prices of grains or livestock can have an immediate and negative impact on access to food. In addition, the markets are under-developed due to poor infrastructure and poor public transport. In Dirashe Special woreda there are few traders to conduct business with a relatively large number of suppliers. By contrast in Selti woreda the rural-urban linkages promoted by the proximity to main asphalt roads have led to the concentration of markets in big urban centers. In both cases, prevailing market conditions lead to poor terms of trade for the communities in rural areas.

In both woredas poor households are the most vulnerable. This includes landless households, those living on small plots of land, large households with many dependents (children, elderly, disabled, orphans), female-headed households. Many of the poorest households are located in isolated rural communities and derive their livelihoods from the sale of daily labor, fire wood, and forage. Households with limited access to land and/or livestock, including female-headed households that have lost productive assets due to the death of (or divorce from) a spouses are also very vulnerable due to their limited ability to invest in child education or the acquisition of alternative skills.

In addition to diversifying household income by engaging in petty trade, sale of fuel wood, etc., households cope with food shortages by acquiring consumption loans, selling assets and obtaining support through external transfers such as the PSNP. Membership in ikub and idir is also used as a key resource for households needing access to cash or other forms of support during shocks. Respondents suggested that informal community safety nets remain strong (and in some cases becoming stronger) despite the absence of external support (other than the PSNP) and the lack of formal saving and credit institutions in both woredas.

In Dirashe, chronically vulnerable groups tend to be concentrated in geographically isolated areas. In both the mountainous plateaus (Busabaso, Billa and Walayte) and in the lowland areas devoted to cereal crops (e.g. Gato, Holtie, Shilale and Anota), employment and productive resources are scarce; soils are poor and grazing area dwindling. At the same time, access to water, roads, towns, and markets is difficult. On the other hand, communities in Selti woreda falling under the enset-cereal-cash crop and red pepper/cash crop livelihood systems clearly have better opportunities for obtaining income, productive resources, as well as access to infrastructure and services. In this sense, geographic targeting has the potential to successfully address differences in household vulnerabilities.

This section first presents key descriptive statistics that reflect the relative vulnerability to livelihood insecurity among households in Dirashe and Selti woredas (Appendix A). It then presents the results of the household vulnerability analysis disaggregated by woreda. Principal component analysis was employed using an array of asset variables to extract the components that explain the co-variations of the underlying variables. The component that explains the highest variation is used in the cluster analysis to create the vulnerability categories.

Mean household size in Selti is 5.8 while mean household size in Dirashe is 6.3.
Dependency ratios in both of the sample *woredas* in SNNPR region are high. In Dirashe the age dependency ratio is 1.1 while in Selti the ratio is 1.2.

Approximately one quarter of household heads are women in Selti while 14.6 percent of households in Dirashe are headed by women. Approximately 67 percent of the household heads in Selti never attended school while 21.4 percent of household heads left school before completing primary education. Approximately 11 percent of household heads completed primary education. More than 70 percent of household heads in Dirashe never

attended any school (74.3%) while 14 percent left school even before completing primary education. Only 9.4 percent heads of the households completed primary education.

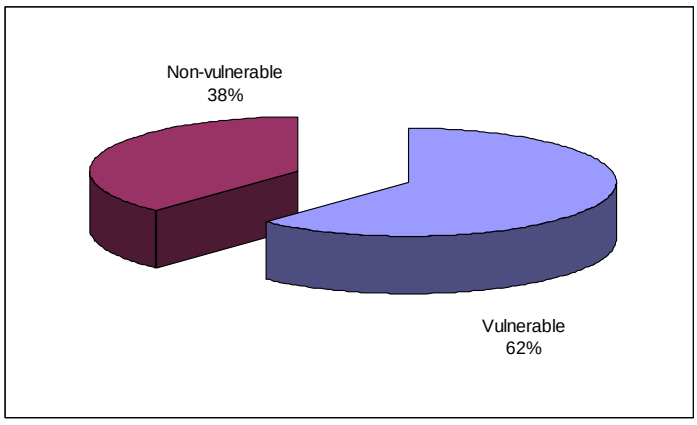
More than 80 percent of households in Selti use relatively safe water sources (borehole or tap water) to meet their potable water needs while 12.5 percent of households depend on springs and 3.5 percent of households rely on water from ponds, streams, dug wells, or rivers. In Dirashe 54.9 percent of households use borehole or tap water for drinking while 10.4 percent of households use spring water. One quarter of the sample households still depend on unsafe sources like ponds, dug wells, and rivers to meet their potable water need.

Approximately 63 percent of households in Selti and 69.4 percent of households in Dirashe never take any measure to purify drinking water.

About 37 percent of households in Selti and 20.1 percent of households in Dirashe do not have any latrine while 45.1 percent of households in Selti and 75 percent of households in Dirashe have pit latrines. Moreover, 15.3 percent of Selti households have access to shared pit latrines and 2.8 percent of Selti households have flush latrines. In Dirashe, only 3.5 percent of households have shared pit latrines and 1.4 percent of households have flush latrines.

Approximately 81 percent of households in Selti and 82.5 percent of households in Dirashe believes malaria is a problem. The common measures to prevent from malaria as identified by the households include “using bed nets” (51.7% in Selti and 28.0% in Dirashe) “draining stored water” (25.9% in Selti). Meanwhile a large proportion of households (20.3 percent of households in Selti and 34.3 percent of households in Dirashe) said “nothing can be done” to prevent from malaria.

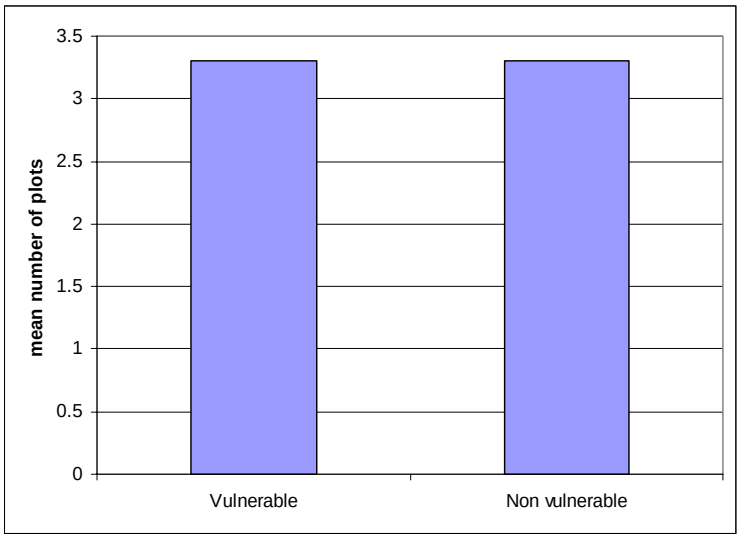
Figure 22: Distribution of Households in Dirashe (SNNPR)



According to the household vulnerability analysis, approximately 62 percent of the households in Dirashe can be categorized as vulnerable (Figure 22) whereas 96 percent of households in Selti were identified as vulnerable. It is important to note that Selti is a peri-urban woreda hence the households living in Selti have means of living other than agriculture and livestock rearing. Use of land and livestock variables in creating the vulnerability index led to a greater proportion of vulnerable households in Selti than actually are. As the number of observation for non-vulnerable households in Selti is too small (6 households), Selti is dropped from the analysis by vulnerability status.

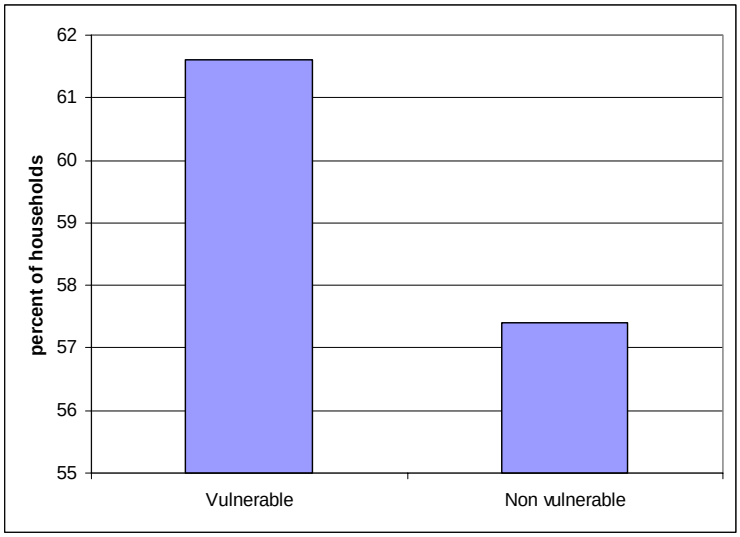
Figure 23 shows that ownership of plots does not vary by vulnerability status of the household. Although, there is no difference in mean number of plots (3.3) own by vulnerable and non-vulnerable households in Dirashe, 50 percent of the vulnerable households two or less number of plots while 50 percent of the non-vulnerable households own three or more plots.

Figure 23: Number of Plots/Parcels of Land Owned or Operated by Vulnerability Group in Dirashe (SNNPR)



Meanwhile the mean area of land owned by vulnerable households in Dirashe (1.9 hectares) is significantly smaller ($p<.001$) than the mean area of land owned by non-vulnerable households (3.6 hectares) suggesting that non-vulnerable households in Dirashe own larger areas of land.

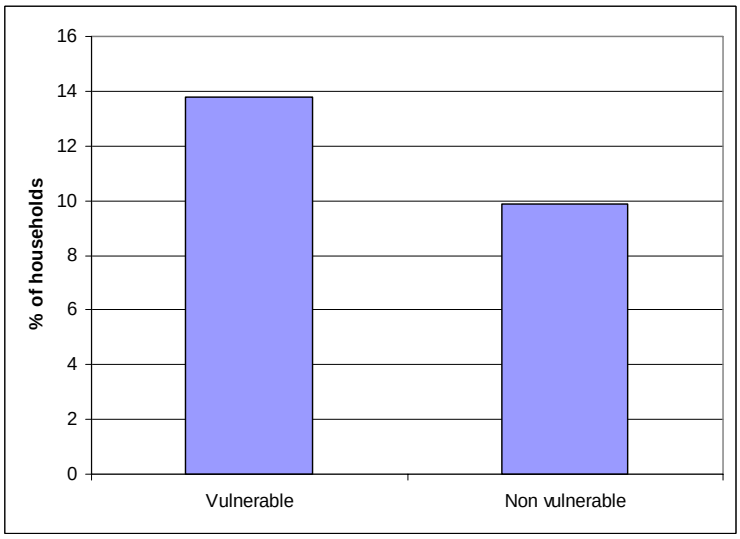
Figure 24: Proportion of Households Engaged Only in Cereal Production in Dirashe (SNNPR)



Results presented in Figure 24 shows that 61.6 percent of 26the vulnerable households and 57.4 percent of non vulnerable households in Dirashe exclusively cultivate cereal. Agro-ecology in Dirashe is especially favorable for cereal cultivation hence a large number of households are engaged in cereal production.

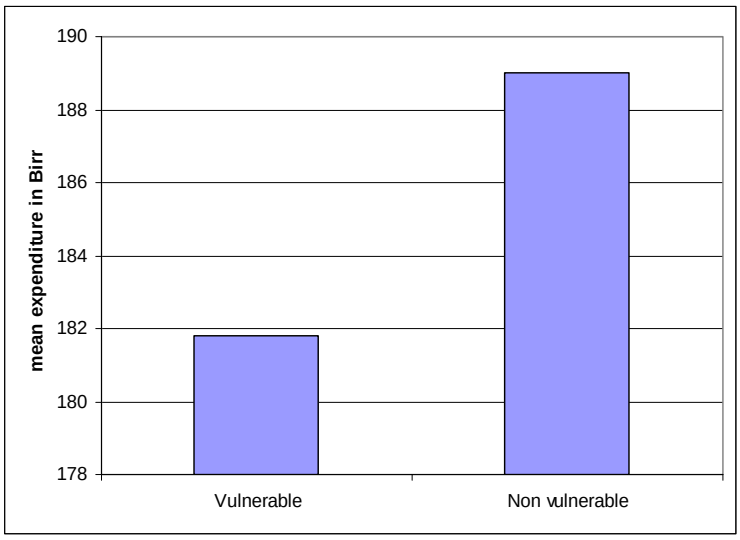
The results from the analysis confirm that a significantly larger proportion of vulnerable households sell livestock in Dirahse compared to non-vulnerable households.

Figure 25: Proportion of Households Selling Livestock in Dirashe (SNNPR)



Approximately 14 percent of vulnerable households sell livestock while 9.9 percent of non vulnerable households also sell livestock (Figure 25). Households sell livestock to cope with the risk of serious livestock diseases mainly trypanosomiasis. Non vulnerable households keep a few animals for 3 to 6 months for fattening purposes while vulnerable households can not even afford to take the risk.

Figure 26: Mean Monthly Household Expenditure in Dirashe (SNNPR)



Expenditure is a proxy to income. Information on expenditure was collected from households to estimate income. Figure 26 suggests that monthly expenditure of non-vulnerable households in sample households in Dirashe is higher than the monthly expenditure of vulnerable households.

Vulnerable households in Dirashe spend 181.8 birr per month while the non-vulnerable households spend 189.0 birr in the same period (Figure 26). One half of the vulnerable households in Dirashe spend 97 birr or less per month while one half of the non-vulnerable households in the same woreda spend 115.7 birr or more per month.

Figure 27 presents the results of estimated value of assets by vulnerable and non vulnerable groups in Dirashe woreda. Estimated mean value of assets own by vulnerable households in Dirashe is 45.4 birr while the value of assets own by non vulnerable households is 151.2 birr. Livestock constitute the majority of assets. In Dirashe, households do not keep livestock because of disease outbreaks, hence the value of assets is low in Dirashe. T-test results confirm that the estimated mean asset value for vulnerable households is different than the mean asset value for non-vulnerable households in Dirashe.

Figure 27: Mean Household Asset Value in Dirashe (SNNPR)

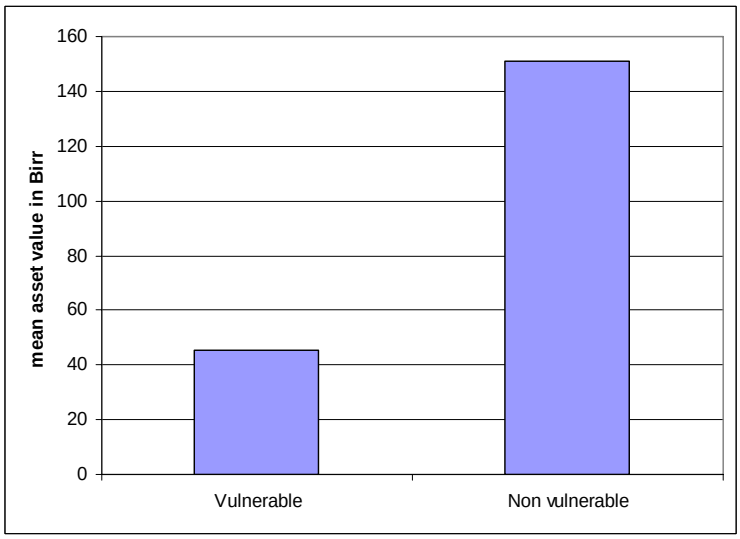
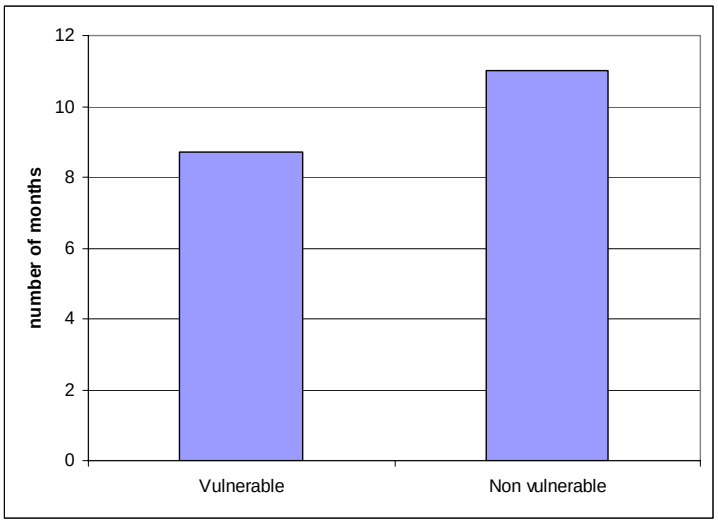


Figure 28: Mean Number of Food Adequate Months per Year in Dirashe (SNNPR)



The mean number of food adequate months as reported by vulnerable households in Dirashe is 8.7 while the mean number of food adequate months for the non-vulnerable households is 11 (Figure 28). The difference is significant at one percent level suggesting non-vulnerable households have adequate food for a greater number of months than the vulnerable households which is as one would expect.

4.8 Household Resilience

As explained in the background to the study (see Volume I), resilience can be defined as the human ability to recover quickly from disruptive change, illness, or shocks without being overwhelmed or acting in dysfunctional ways. Qqualitative research conducted in both Dirashe and Selti woredas identified a range of coping strategies typically employed by vulnerable households in an effort to minimize permanent erosion of existing livelihood systems and/or recover from individual shocks. However, research also shows that these coping strategies have reached their limit in terms of contribution to household resilience. Consequently, it is possible to conclude that the resiliency of households in both Dirashe and Selti, when assessed in terms of the effectiveness of coping strategies, appears insufficient for providing reliable a buffer during recurrent crises. Specifically, the more chronically vulnerable households have few options at hand to protect their livelihoods from further degradation or even to meet basic food security thresholds.

According to the results of FGD, wealth ranking exercises, and interviews with the positively deviant households in each of the six sample kebeles of Dirashe and Selti woredas, the most resilient households are those that have diversified their sources of income to include non-farm activities such as petty trade, and investment in irrigation, animal fattening and other commercial activities. Additionally, resilient households are typically open to change, willing to accept a certain amount of risk, and quick to adapt to new livelihood strategies. They are also different from many households in the area in that they are more likely to save (both money and grain), establish contingency funds and/or grain reserves, avoid alcohol and/or chat and make more productive use of their time (particularly during peal agricultural seasons). Resilient households tend to place a high value on education and other investments in household human capital. Respondents

also explained that the heads of resilient household heads typically encourage mutual decision making with their wives and other family members.

An analysis of household resilience based on the attributes identified above helps provide context to the perspectives offered by individual respondents. While such input is by no means statistically representative, in most cases, individual responses due reflect the range of characteristics, assets and enabling factors that contribute to household resilience within these woredas. Useful insights into positively deviant (resilient) households are offered in the examples below (Box 5 and 6).

Box 5: Case Study – Household Resilience in Dirashe Special Woreda

Kitolo (age 60) lives with 15 family members (including 10 children) in Holte kebele. He owns 5 parcels of land with total land area of about 5 hectares or 20 Affa (local measurement). Kitolo's land is relatively fertile as it is situated on the alluvial soil of Chamo Lack area. A portion of his farmland is subject to seasonal flooding. Kitolo's asset base consists of one house with a corrugated iron roof, three thatched houses on the same premises, four oxen (fattened each year and sold with average price to 3,000 birr), one cow, two calves, and two donkeys. Kitolo's major source of income is through production of maize, sorghum, teff and chick peas. The household produces 100-120 quintal of grains on average during both the main (meher) and short (belg) rainy seasons. Part of the grain is used for household consumption while the rest is stored for later sale at favorable prices. Kitolo's household may store maize and sorghum in underground storage for more than two years.

Despite severe and successive food crises in this kebele during 1993 and 1994, Kitolo's family was able to recover from their own production shortfalls (30-40 quintals) due to stored maize, sorghum and teff reserves. In addition to grain reserves, other practices contributed to the resilience of Kitolo's household. They include the fattening of four oxen and goats, flooding the farm with available rain and saving all surplus harvest. Kitolo also explained that he often discusses major farming activities, asset sales and purchases, as well as other investments with his wife and elder children.

Like Kitolo, Kingino's household reported a variety of practices that make them more resilient in the aftermath of shock. He and his family members cooperate to efficiently and effectively combine available household labor during peak agricultural periods. They work hard, do not drink, are committed to maintaining household savings, and are willing to adapt crop and livestock production in order to maintain their livelihood security.

Box 6: Case Study – Household Resilience in Selti Woreda

Sunamo (Age 48) lives with 15 family members in his home in Walaya Sidist kebele. He owns 1.25 hectares of land, of which 0.75 ha is fully covered by perennial crops such as chat, coffee, enset, avocado and orange. The remaining 0.5 ha is dedicated to the production of cereal crops. Sunamo's land has no irrigation facilities but he uses water harvesting structures for vegetable production. Regarding Sunamo's household asset base, he has two big thatched houses on the same premises (one for humans, the other for livestock and the kitchen). Sunamo owns two heifers, five sheep, one donkey, one wheel barrow, an animal-driven cart, a water pump generator (1,000 lit/sec) which was granted by the CCF for being a model farmer, and a water harvesting structure.

The major sources of income for Sunamo's household include the sale of chat, coffee, trees and fruit seedlings, avocado, orange, and enset. Sunamo's wife is also involved in petty trading and earns extra money for the household income. The family also receives cash remittances from his daughter Sunema who lives in an Arab country. According to Sunamo, household decision-making involves all members of the family at different stages. Sunamo mentioned that he and his wife are equally decisive in all household matters given the fact that she is involved in petty trade and earning cash income through out the year.

In 1997, torrential hailstorms caused enormous crop damage to annual crops, fruits and vegetables throughout the kebele. Most households reportedly lost up to 35 percent of their crops. However, Sunamo's family did not face a food shortage following the storm due to the fact that his wife had been able to purchase food with her cash income. Household food production was also partially maintained on land that Sunamo had rented in a neighgoring kebele. Furthermore, Sunamo's previous efforts toward livelihood diversification by replacing annual crops with fruit and perennial crops helped them to manage the shock. That year, that year, Sunamo sold about 10,000 fruit and tree seedlings to the community through CCF. The resilience of Sunamo's household is also due in part to its proximity to the main road to Addis Ababa via Butagira which ensures good access to markets.

Based on the aforementioned criteria and insights gained from positively deviant households interviewed in both Dirashe and Selti woredas, the study have identified several broad characteristics that contribute to household resiliency in the different livelihood systems currently functioning in SNNPR. In general, households can be considered resilient if they are able to sufficiently feed all family members throughout the year, are able to absorb and/or recover from shocks, voluntarily extend assistance to needy households during shocks, send their children to school, and establish savings (food or cash) or contingency funds for protection during food shortages. Other intangible characteristics that contribute to household resilience include a commitment to (and experience with) saving both money and grain, abstinence from alcohol, family and community support, as well as a common vision and mutual decision-making involving spouses and other family members.

During qualitative research conducted in both Dirashe and Silite woredas, community members suggested a series of benchmarks they felt would be appropriate for determining the resilience of individual households in the region. These benchmarks establish the minimal requirements for achieving resilience in terms of household income, productive assets, and consumption).

Based on income and asset criteria offered by respondents in both woredas, resilient households should have an annual income of 18,000 birr or more for a household with five members. Similarly, households in may be considered resilient if they achieve

certain levels of crop production. Specific production criteria for achieving household resilience include:

- 400 enset plants; and/or
- 500 square meters or more of chat; and/or
- 1 hectare of red pepper (Selti woreda); and
- 1.5 hectares of cereals; and
- livestock assets such as 1 ox, 2 cows and 5 shoats.

Alternatively, in Dirashe woreda (lowland, cereal-producing areas) resilient households can also be described in terms of household consumption. Households within these livelihood systems could be considered resilient if they produce 30 quintals or more of grain (from both belg and meher seasons), are able to save food in underground storage for a period of 2 years, and are able to ensure that all household members consume good quality kurkufa (staple foods) at least 3 times per day throughout the entire year.

4.9 Community Resilience

Enabling and Inhibiting Factors

A resilient community is one that "takes intentional action to enhance the personal and collective capacity of its members and institutions to respond to and influence the course of social and economic change".[4]

This study has revealed that rural communities in both Dirashe and Selti woredas, and else where in the region are becoming increasingly vulnerable to a wide range of hazards and constraints including persistent drought and erratic rainfall distribution, severe soil erosion and declining fertility, landlessness and shrinking landholdings, rapid population growth, high prevalence of human and livestock diseases, poor extension and financial support and poor infrastructure development. Among these factors, the increased vulnerability of rural communities is primarily due consistent increases in population and recurrent drought. While these hazard are beyond the community's to control, proactive measures can be taken to reduce vulnerability and create enabling conditions that allow communities to absorb shock and bounce back from disruptions in social and economic activities. In particular, actions to increase community resilience should focus on the strengthening of existing social structures, adoption and promotion of positive attitudes and beliefs at the individual level, effective use of community and external resources, and inclusive processes of planning and decision-making.

Community elders' groups and religious leaders in both Dirashe and Selti woredas help to create an enabling environment for community resilience through the mobilization of individuals and households towards public activities, as well as mediation and negotiation of community issues. While these institutions tend to exclude women and are typically comprised of individuals from better-off or middle wealth groups, they do play a critical role in managing issues that affect the entire community. For example, community elders, idir representatives, and religious leaders are often granted responsibility for overseeing

[4] Centre for Community Enterprise. (2007).

planning and decision-making process, as well as the use of community and external resources, including implementation of the PSNP.

Potential Activities to Enhance Community Resiliency

Enhancing community resiliency requires specific risk reduction activities where they are most needed. In general, strategies for increasing community resilience fall into one of the three following categories: emergency relief and reconstruction; consumption smoothing; and helping communities cope with uncertainty.

Findings from qualitative research suggest that the provision of drought- resistant, high yielding and early maturing crops, increased production of enset and other cash crops, as well as construction of flood diversion structures, embankments and other SWC activities can buffer shocks and help communities reduce food crisis due to drought and seasonal flooding. Construction and maintenance of roads in isolated areas (especially in Dirashe woreda) can increase access to markets, thereby helping communities to expand economic opportunities for local households.

Filling consumption gaps through PSNP transfers and providing credit services for both household consumption and/or production needs is also critical, particularly in times of crisis. These types of external support help to protect the asset base of temporarily vulnerable households and prevent them from sliding into a state of chronic vulnerability. Technical assistance and training is also essential for helping communities enhance agricultural production, adapt to new income generating opportunities, as well as prepare for and/or mitigate potential shocks.

4.10 Graduation Criteria

As explained previously, PSNP beneficiaries are expected to ‘graduate’ within from the program within five years. However, since its inception, there has been some question as to whether the combination of PSNP and OFSP interventions has truly been able to lift ‘graduated’ households to a state of sustainable livelihood security. This study is intended to contribute to the future implementation of the PSNP by helping to establish mechanisms for defining, measuring and promoting graduation while recognizing differences among various livelihood systems. An effective graduation strategy requires criterion which indicate the degree to which individual households have transitioned from temporary reliance on PSNP and OFSP toward a more independent and sustainable level resilience. The process of developing livelihood-specific graduation criteria involved various stakeholders at different the regional, woreda, and kebele levels. Respondents at each level offered recommended graduation criteria based on factors such as household income, type and number of assets, household consumption, period of time as a beneficiary and other intangible factors. Some of these criteria have been derived from the wealth ranking tables developed during FGDs in each research site of both woredas. Others were formulated based on input from regional, woreda and kebele FSTFs.

Communities within each of the livelihood systems developed recommendations for graduation thresholds for the PSNP, OFSPs as well as thresholds for attainment of household resiliency. The criteria are provided in Table 19.

Table 19: Recommended Graduation and Resiliency Criteria - SNNPR

	Household Income	Consumption	Household Assets	Intangible factors
PSNP graduation				
	- 3,700 birr per year in HH income (560 birr/per person/year or 2,800 for family with five members) + 900 birr/year from PSNP OR - if HH income increases from 560-1,060 per person/year of earns an annual income of $\geq$ 5,000 birr for a HH with five members	- meet at least 9 months of HH food requirements from own production for 2 consecutive years	- 1 ox - 1 cow - 4 goats - 1 donkey - 1 hectare farm land OR - If HH produces 15 quintals of food grain	- HH members abstain from alcohol and chat - HH can reclaim fallowed land or use rented/shared land to produce food crop sufficient to meet 1 year of consumption needs - Commitment and capacity to save (money and grain) - Collective decision making within HH
OFSP graduation				
	- More than 1,060 birr income per person/year (national per capita average) - 50-100 birr/day gross sales from small business - 25 birr/day from skilled labor	- meet 12 months of food requirements from own production - no cases of malnutrition in household 3 meals per day including vegetables, and occasionally meet, eggs and dairy	- 300 enset plants - 500 m^2 chat - 0.5-1.5 hectares farmland for cereals - 1.0 hectare of red pepper - all HH children are sent to school - Highland HH have eucalyptus woodlot with 1,000 seedlings - 500 m^2 of fruit trees (apple, mango, avocado) - 3-5 goats - 2 sheep - 1 donkey - 1 cow - 10-15 quintals of annual harvest	- HH can extend assistance to others during shocks - commitment and capacity to save (money and grain) - HH members abstain from alcohol and chat

Table 19 (cont.): Recommended Graduation and Resiliency Criteria - SNNPR

	Household Income	Consumption	Household Assets	Intangible factors
Household Resilience				
	- HH income ≥ 18,000 birr/year income for HH with 5 members	- no cases of malnutrition in HH	≥ 400 enset plants - 500 m^2 chat ≥ 1.5 hectares farm land for cereals OR - 2-2.5 hectares of fertile land ≥ 15 quintals of grain/year - 2 oxen - 2 cows - 1 donkey - 3 goats > 2,000 in savings/ contingency funds - all children attend school	- adaptive capacity in response to shocks

4.11 Program Linkages and Layering

As is the case throughout the country, a wide array of government and non-government institutions are involved in the implementation of PSNP and OFSP interventions in Dirashe and Selti woredas. While the specific duties, responsibilities and structural linkages are laid out in the PSNP Project Implementation Manual (PIM), coordination between the multiple stakeholders involved remains difficult. The major actors involved in implementation of PSNP and OFSP programs include:

- Woreda council
- Woreda Agriculture and Rural Development Office
- Woreda FSCDP
- Wordea FSTF
- DA office
- Kebele administration
- Kebele FSTF
- Regional FSCO
- Woreda Finance and Economic Development office
- Woreda Sector Offices / Line Departments (natural resources, health, education, water resources, community roads, cooperative promotion)

Vertical Linkages

Effective implementation of the PSNP and OFSP is dependent on consistent dissemination of policy objectives and implementation guidelines between vertically linked institutions at the regional, woreda and kebele levels (Table 21). The PIM identifies clear vertical linkages intended to facilitate coordination between woreda technical experts, kebele administrators, DAs, FSTF personnel at various levels and community/elders groups. While 2006 has seen some improvements in terms of vertical coordination when compared to previous years, significant constraints to effective coordination remain. Among these are a lack of organizational and technical capacity at the woreda level and excess influence of elders' groups in beneficiary targeting and program graduation.

Horizontal Linkages

PSNP budget planning and disbursement is carried out by the Woreda Finance and Economic Development Office in conjunction with Woreda FSCO. A common complaint with respect to the effectiveness of horizontal linkages under the PSNP involved the timing and direction of budget allocations to woreda sector offices/line departments charged with carrying out specific activities. Due to delayed disbursements, sector offices often lack necessary materials and fall behind in scheduling individual activities. The lack of effective horizontal linkages was cited as a major reason for delayed implementation of activities as well as the lack of an integrated, multi-sector approach to improving household resilience under the PSNP.

Table 20: Program Linkages and Layering in SNNPR

Regional level	Woreda level	Kebele level	NGOs
- Regional FSCO communicates with Woreda Agriculture and Rural Development Office and Woreda FSCO to prepare and consolidate annual implementation plan and budget requirements - Regional bureau mobilizes technical assistance to conduct monitoring and evaluation of the program, train woreda experts, and allocate budgets	- Woreda council or FSTF determines the size and annual needs of vulnerable population based on input from Woreda Agriculture and Rural Development Office and FSCO - Woreda council or FSTF then allocates resources to kebeles, facilitates collaboration between line departments and finance/economic development offices to oversee monitoring and evaluation	- In collaboration with the woreda FSO, kebele administration, DAs, and elders groups identify beneficiaries and activities based on community need. - Kebele FSTF in collaboration with the woreda FSC desk and line departments monitor the implementation of PSNP, including the timeliness and effectiveness of budget allocations	- In Selti woreda CHF works in collaboration with the Agriculture and Rural Development Office and FSC desk to support implementation of PSNP and create enabling environment for graduation - CHF has provided training on PIM at all levels (regional, woreda and kebele FSTF) - CCF is also involved with and Rural Development Office and FSC desk in various food security activities in Selti woreda

Successes and Constraints

To date, implementation of the PSNP in both Dirashe and Selti woredas has been reasonably participatory with respect to the planning of public works activities and selection of beneficiary households. Furthermore, a large number of PSNP and OFSP beneficiaries in both woredas have been able to create and protect household and community assets, as well as feed their families and send children to school as a result of project activities.

Nonetheless, several major challenges to effective collaboration under the PSNP, OFSP and other food and livelihood security interventions were identified by community stakeholders. First among these was a lack of capacity among major actors at the woreda level. Specific problems include the small number of adequately qualified staff, high rates of turnover among high-level staff, and poor logistical support provided to sectoral offices involved in PSNP implementation. Some respondents also felt that some woreda level personnel lacked an adequate conceptual understanding of graduation under the PSNP. The degree of inter-agency collaboration between government offices was felt to be weak due primarily to inconsistent communication and/or decision-making among multiple actors.

The lack of transparency and efficiency in budget planning and allocation was repeatedly cited as a major constraint to the effective implementation of the PSNP and OFSP in the region. In Dirashe, 2005-2006 PSNP payments were not made until 3 months after public works were completed in all kebeles. Similarly, the completion and dissemination of consolidated financial reports was a problem among each of the line departments involved in the PSNP.

Finally, the lack of coverage of the PSNP, OFSP and complementary interventions was reported to be a major constraint to promoting community and household resilience in the region. The number of beneficiaries was considered low when compared with the number of food insecure households in both woredas. At the same time, the lack of NGO involvement in Dirashe woreda may heighten the level of dependence on government assistance among those households that are beneficiaries of the PSNP.

4.12 Recommendations

Recommendations obtained from regional, woreda, and kebele stakeholders focus on ways in which the planning, targeting and implementation of the PSNP could best be improved to enable beneficiary graduation. Respondents also offered their views on the types of food and livelihood security programming that would best complement the PSNP and OFSP in order to promote household resiliency throughout SNNPR. A summary of recommendations offered by individual respondents is presented below.

While respondents felt that the PIM adequately explains PSNP policies and guidelines, they suggested the effectiveness of the program has been hampered by a lack of conceptual understanding, particularly among woreda level personnel. They suggested that strong technical backstopping and frequent training at all levels would lead to more effective and efficient implementation of the PSNP throughout the region.

Respondents also suggested that monitoring and evaluation of PSNP activities could also be greatly improved. Periodic monitoring and reporting activities should not be one directional (from woreda to region) but should also include the dissemination of lessons learned in PSNP implementation throughout the region to individual woredas.

Respondents in SNNPR felt that investment in education, skills training, and other human capital interventions is crucial component to increasing resilience among vulnerable households throughout the region. Some suggested that greater emphasis on school feeding programs would lead to increases in school enrolment, particularly among school-age girls. Furthermore, it was explained that greater investment in school infrastructure, materials and remuneration for teachers would be essential for improving the quality of education in the region.

Community representatives also felt that considerable effort needs to be paid to supplying local health facilities with adequate medication, equipment and qualified staff. Many felt that health concerns could also be addressed through a greater effort to rehabilitate and/or construct water infrastructure in both woredas.

The improvement of agricultural productivity was also given high priority among individuals and organization involved in qualitative research activities. Recommended methods of doing so include increased use of improved seeds and fertilizer, adoption of locally suitable cash crops (coffee, haricot bean, chick peas, lentils, etc.) and drought resistant crops such as enset, vegetables and certain varieties of root crops. In order to contribute to sustainable gains in household resilience, introduction of new cropping methods must be supported by the provision of appropriate extension services and improved post-harvest storage facilities. Extension services should also prioritize veterinary care to alleviate livestock disease as well as effective IPM.

Finally, respondents in SNNPR felt that communities and households throughout the region would benefit from improved rural-urban linkages. It is felt that such linkages would ensure greater access to agricultural markets as well as non-farm employment opportunities. Some also felt that the regional government should play an active role in establishing strategic grain reserves and/or cooperative grain banks in order to protect communities from seasonal food shortages and price fluctuations, particularly in Selti woreda.

5. Livelihoods and Self-Resiliency in Afar

Located in Northeast Ethiopia, Afar is divided into five zones with an estimated population of 1.2 million of which 92 percent live in rural areas (APDA, 2005). Rural households typically rely on a pastoral livelihood system heavily dependent on livestock production and marketing. In recent years, however, recurrent drought conditions combined with economic and structural trends and changes have resulted in substantial diminished livestock holdings to a point where replenishing the livestock population to the "old days" is virtually impossible – or may not be desirable. Livestock dynamics in pastoral areas (especially in Afar and Somali) have followed "boom and bust" patterns, where livestock numbers collapse following droughts before gradually increasing to previous levels (Lautze et al. 2003). As a result of this unpredictability, pastoral households and communities have been compelled to consider livelihood diversification within and outside of the pastoralist livelihood system.

Afar is poorly served by basic social services. APDA (2005) reports that all of Afar in 2003 was served by two hospitals, ten health centers, and 71 clinics and health posts. Afar health institutions suffer from a severe lack of medical personnel. One medial doctor serves an average of 86.660 people; one hospital bed exists for every 446, 000 persons. Afar has one of the lowest primary enrolment rates in the country of 32 percent, which is nevertheless an improvement from 11 percent in the early 1990s.

The three pastoral areas selected for quantitative and qualitative research were Taboy, Akigurana-Askoma, and Tibadhana Hafema.

5.1 Livelihood Context

One of 29 woredas in Afar, Chifra is divided into 19 Pastoral Areas (PAs) – equivalent to kebele in the highlands. The woreda Pastoral and Rural Development Office estimates the population to be approximately 100,000. The woreda capital, Chifra, is strategically located on the Djibouti to Woldia (75 km), Mekele (approximately 275km), and Bati (90 km) road, about 150 km southwest of Semera, the Afar Regional Capital, and is served by an all weather gravel road that brings in supplies and imports from Djibouti for the Tigray Region. The Federal Government has plans to upgrade the road to a paved (asphalt) road. A combination of these factors means that rural-urban linkages will undoubtedly be a determining factor for future livelihood improvement and resiliency.

5.2 Lowland Pastoralist Livelihood System

a. Livelihood Strategies

The sample PAs are fundamentally pastoral but PA communities closer to the emerging town of Chifra and the main road to Woldia and Mekele have potentially enhanced opportunities for diversified livelihoods,[5] although it is premature to assign any household to a different livelihood system. The discussion below will therefore emphasize the continued importance and significance of the pastoral livelihood system

[5] Bhenke, et al. (2007) have coined such livelihoods as "*Pastoral with alternative livelihoods.*"

for Afar households in Chifra. More diversified rural-urban livelihood opportunities may arise in the future but are not currently part of the Afar livelihoods portfolio in Chifra.

b. Access to Resources and Assets

Afar households clearly value their livestock as their principal resources and assets. Other forms of capital, however, including human and social capital, are equally important to Afar pastoralists.

Human capital: Afar households in Chifra have experienced some improvement in school enrolment rates – from 11 to 28 percent -- but most children remain out of school. Drought conditions compel Afar households to remain mobile, seriously affecting school attendance. Many children never return to school upon returning from the migration season or event. Children remaining behind with their mothers frequently do not attend school, which is not a priority during periods of shock. Afar households reduce their meals during lean period when men migrate with the livestock, affecting children's ability to actively participate or even attend school when they are hungry.

Access to education and health services is problematic (Box 7). Although Taboy PA – the closest PA to Chifra Town – lacks education or health services, a primary school established in 1975 has given several children the chance to access education. Taboy is also better placed to make use of the health center in the town. Although alternative basic education and health posts exist in other PAs, many of these institutions are not functional.

Box 7: Community Views on Literacy and School Dropouts

> Our generation and some of the younger generation have never had access to education. But we are sending our kids to school to the extent that we can. Unfortunately, children are forced to dropout whenever the whole family moves from one place to another in search of feed for livestock. We cannot leave our children behind as our resources are insufficient to share in two places. We also need our children to look after the cattle, camel and goats. A school feeding program by the government would have allowed us to leave them behind during the seasonal migration (Akigura-Askoma village, men FGD).
>
> Illiteracy is widespread in the whole community. We are just starting to send our children to the ABE centers in our village. School dropouts are high especially during the dry season when we move to other places with our livestock (Akigura-Askoma village, women FGD).
>
> Even today most girls do not go to school. They get married early. We are just starting to send our children to the ABE center in our village. Girls drop out of school to marry and move with the livestock (Hafumena-Tebedha village, women FGD).

Health care is clearly inadequate in Chifra, where 45 percent of all households report an illness during the past month, far higher than illness rates throughout the other sample woredas. The groups were asked where they go when they are ill. The Chifra Health Center appears to be the only option. The health posts in the PAs, except Taboy which did not have one, were not functional. Households further away from the town, are

discouraged to attend the Health Center and resort to traditional medicine.[6] Households invariably practice traditional means of coping with "evil spirits." Afar women make liberal use of aromatic plants.

However, health extension is very limited throughout the woreda. The Health Center in Chifra indicated that patient flow is highest from September to November when malnutrition is rampant. Health personnel give little attention to HIV/AIDS prevention and control. Although the Health Center has limited capacity, it is prevented from health service delivery by:

- Frequent community mobility;
- Low standards of living to cover medication costs;
- Low level of awareness: Afar households turn to the health center only when traditional treatments fail;
- Lack of capacity to launch outreach programs;
- Cultural and religious outlook that discourages use of health services such as family planning.

Access to water and sanitation is problematic as well. More than 80 percent of Afar households in Chifra access their water from rivers or wells and fewer than twenty percent can access borehole or piped water. In contrast, nearly half of the sampled households throughout the nine woredas (including Chifra) use borehole or piped water and only thirty percent rely on river, pond or dam water, which is usually unclean (Table 39). Access to sanitation is just as problematic. Not a single Afar household in the sample access or uses a latrine; approximately 65 percent of all households across the sample do not have access to toilet facilities (Table 40).

Social capital: This is extremely important to pastoral communities and households, who rely on one another during time of difficulties within the traditional clan structure and support mechanisms. Afar Venn Diagrams clearly demonstrate the importance of traditional institutions relative to government or non-governmental formal systems (see Figures 29 and 30). Afar households value their negotiation skills, their trust in one another and in sharing information on market, security and others issues that matter to the community.[7] Afar households highly value information sharing and communication. Box 8 provides specific examples of traditional support mechanisms.

[6] The Woreda Medical Officer confirmed that the illnesses mentioned by the groups were in fact among the top 10 diseases in the woreda. He also indicated that for some illnesses or snake bites, traditional medicine is more effective than what modern medicine could offer. According to the Medical Officer, in principle, people should not die of snake bite but they do because the traditional healers may not be at the spot when the snake bites or by the time the medicine is applied, the poison my have spread in the blood. The negative side of traditional medicine is the belief that tying the medicine around the neck can act as "snake repellent". This gives a false sense of confidence and the individual may lower his/her guard against snake.

[7] This information sharing is locally known as *Dagu*. Although rural communities in all over Ethiopia use informal mechanisms to share information (e.g. coffee ceremonies), the Afar are very serious about it. Two persons coming from different directions and meeting on the road must stop and share news from their respective directions. And pass the news on as they move along.

Figure 29: An Example of Venn Diagram (Asakellelo village men FGD)

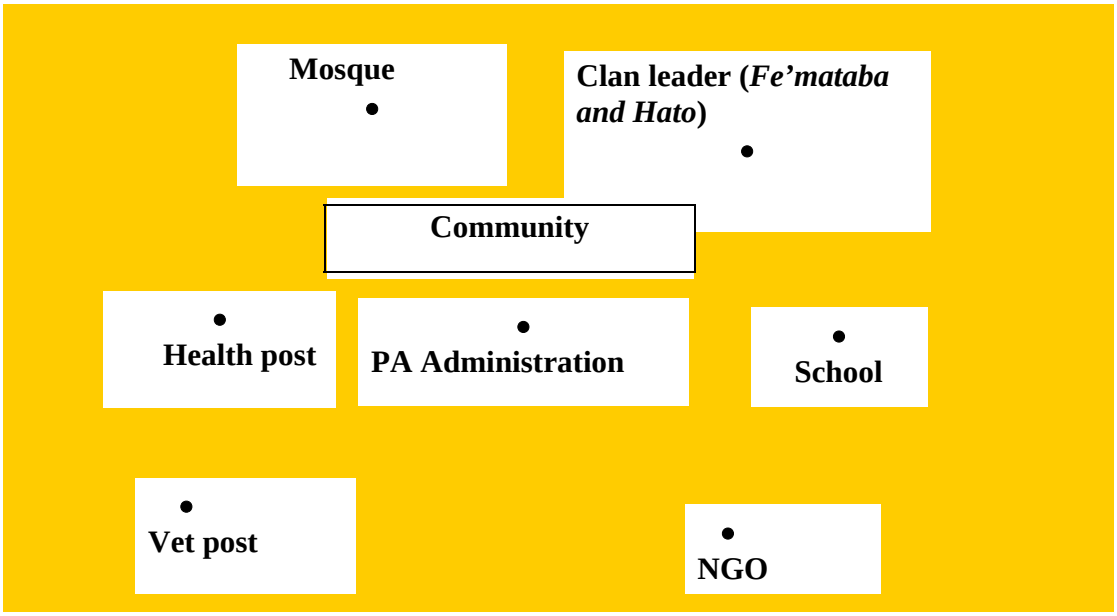
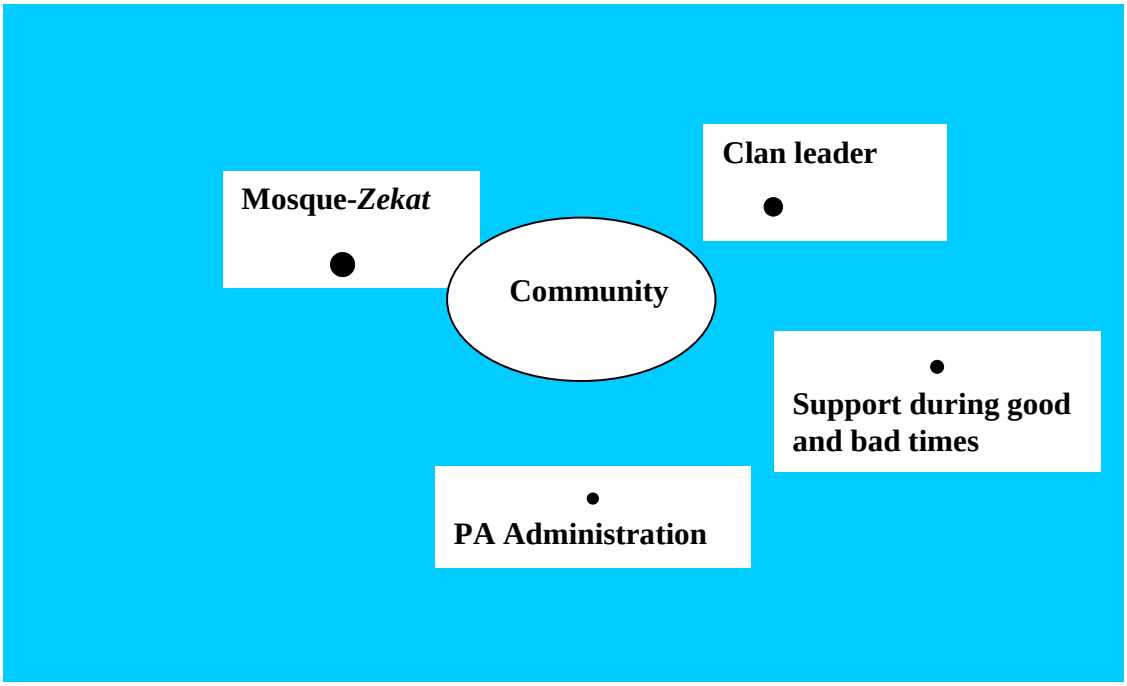


Figure 30: Venn Diagram Produced by Asakellelo Village (Female FGD)



Trust between households remains the most important element of social capital. In the absence of rural banking or micro finance institutions, (see below under financial capital); loans are obtained from relatives or neighbors under no conditions or requirement to present any form of guarantee.

Box 8: Examples of Traditional Support Mechanisms

Haray - A collective assistance from relatives (especially from mother's line) aimed at establishing an economic base that would enable asset-less individuals to lead an economically independent household through marriage.

Hato (Hatota) – a form of assistance aimed at replacing the loss of assets caused by looting or other hazards. The assistance may include the provision of utensils, milking animals (usually for temporary use), small stock and cash.

Billu (Bili Mikla) – whenever members of two clans quarrel, resulting in death of an adversaries, indemnity to the family and clan of the victim is imposed upon other clan.

Zakat- As practiced in the Afar context, similar to *idir* in the highlands. It provides support to a household mourning the death of loved ones mainly by arranging and paying for funerals and comforting those who remain behind.

Source: Focus Group Discussions and Save the Children Livelihood Zone

While acknowledging the continued importance of social capital, community groups consisting of all types of individuals across the PAs unanimously agreed that the social support system has weakened in recent years (Box 9).

Box 9: Community Views on the Current Status of Social Support

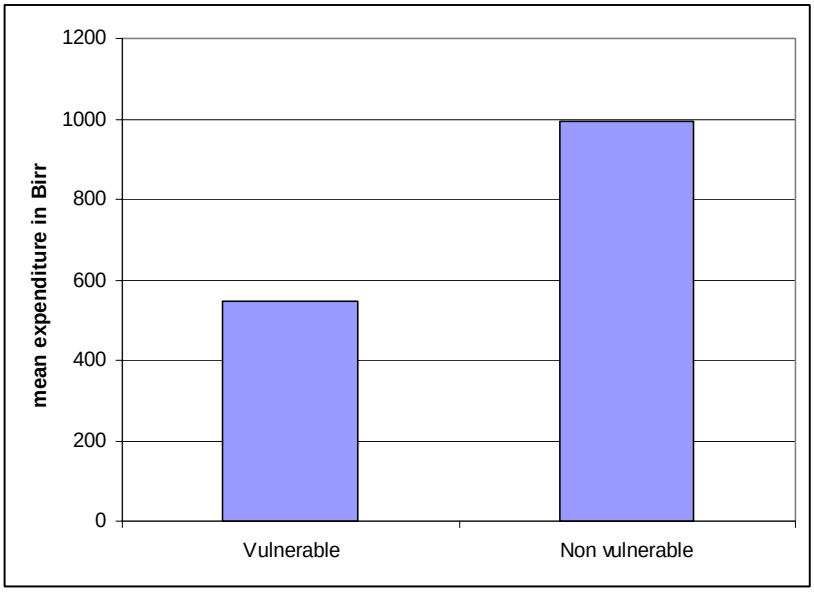
During both good and bad times, the community has its own strong social support patterns that include camel, cattle, goats and cash provisioning. Continued drought and livestock losses, however, have substantially weakened support patterns. It is no longer common to give other households animal such as camel and cattle, and even food and goats provisioning has declined.
- Women (Taboy FGD)

The support and sharing patterns still exist. They are part of what defines us. Nothing will take them away. However, the recurrent drought resulting in livestock losses is challenging the system.

-Men (Hafumena-Tebedha FGD)

Economic capital: Because Afar households in Chifra do not produce food for their own consumption, they tend to spend more on household expenditures than do households from highland woredas. Figure 31 compares monthly household expenditures by vulnerability groups. Non-vulnerable households spend nearly 1000 birr per month for food and other household needs; vulnerable households spend a little more than half that amount. A very high proportion of Afar expenditures go toward food consumption.

Figure 31: Mean Monthly Household Expenditure in Afar



Households in Afar lack access to micro-finance institutions, which are not found throughout the woreda. Instead, households rely on loans from relatives and friends, based on trust, as noted above, although households are never guaranteed that loans will ever be repaid. Afar businesses have notorious failure rates resulting from the lack of repayment culture, a severe handicap for individuals striving to run any kind of profitable business.

Livestock remains the most valuable asset throughout Afar, providing households with the wherewithal for food security, health security and clothing. Livestock ownership in Afar is clearly far higher than in other sample woredas. Non-vulnerable households own on average nearly ten camels or cattle and 25 small ruminants – sheep or goats; vulnerable households own more than two large livestock and eleven small ruminants. Non-vulnerable households throughout the sample woredas (including Afar) own an average of four cattle and 7.4 small ruminants; vulnerable households average just 1.2 cattle and less than three small ruminants. The importance of livestock is dramatically highlighted during times of stress. More than nine out of every ten Afar household in Chifra has been forced to sell their livestock during periods of transitory or seasonal food insecurity during the past two years.

Despite livestock's central importance within the Afar livelihood system, however, Chifra communities lack any semblance of a livestock extension system or more precisely any veterinary service (government or otherwise). Livestock numbers have been declining steadily in recent years largely as a result of recurring drought, but also exacerbated by the lack of veterinary service and changing economic conditions within Afar, impinging on pastoral livelihood strategies.

The Akigora-Askoma men's FGD provided some specifics:

> "Ten to twenty years ago a rich person owned some 300-400 cattle, large size of goats and camels. But now anybody who owns thirty or more cattle and a few goats and camels is considered a rich person. Due to the recurrent drought and livestock diseases we have lost a large part of our livestock. There has been a dramatic decline in livestock in the past ten years."

Strict gender relations of production define livestock ownership and control. Despite their heavy burden and responsibility for domestic and other economic activities, women do not have command over the major livestock types (cattle and camels). Their ownership (or responsibility) is limited to donkeys and small ruminants.[8]

Physical capital: Access to infrastructural resources is limited to:

- Hand pump water wells, Alternative Basic Education Center, elementary school, and health post (Akigora-Askoma PA).
- Alternative Basic Education Center, seasonal road (Hafumera-Tebdha PA),
- Formal school, fully equipped health center and clean water points (Taboy PA). It is worth noting that Taboy households lack social services within the PA but can access services in Chifra Town three to four km away. Taboy households have been able to take only limited advantage of the emergence of Chifra town, where fledgling water, telephone, education, and health services have recently emerged. An all-weather road passes through Chifra, linking Afar with Amhara, Tigray, and Djibouti. The town may become a relatively important hub in future years, contributing substantially to the growth of physical and economic capital in the woreda.
- Other PAs, unfortunately, reported that most facilities were not functional.

Natural capital: With the exception of small farming plots owned by private individuals along the Mille River, all land is considered communal property. Access to communal land is free and open. Households wishing to engage in farming can access land along the river through participation in a lottery allocation process. Crop production remains an uncommon activity for pastoral households in Chifra. Only 22 out of 136 surveyed households are engaged in farming to complement pastoral activities. Average land size cultivated is a miniscule 0.6 hectares, far smaller than the average for the nine woredas of 2.4 hectares. The vast majority of farming households in Chifra only cultivate on one plot of land, in contrast to highlands farming households, who average close to three plots of land for cultivation. (See Figure 32 for a comparison of average land parcels in Chifra by vulnerability group.) Crop production clearly remains peripheral to pastoralism. The few households who do engage in farming activities virtually engage exclusively in cereal production on the very small parcels of land described above (Figure 33).

[8] This type of resource allocation should not be interpreted as negative but as strategic. Donkeys are very useful in transporting the necessities and therefore very helpful to women. Small ruminants are relatively easy to sell in case of household emergency, which women are supposed to attend to.

Figure 32: Number of Parcels of Land Owned or Operated by Vulnerability Group in Afar

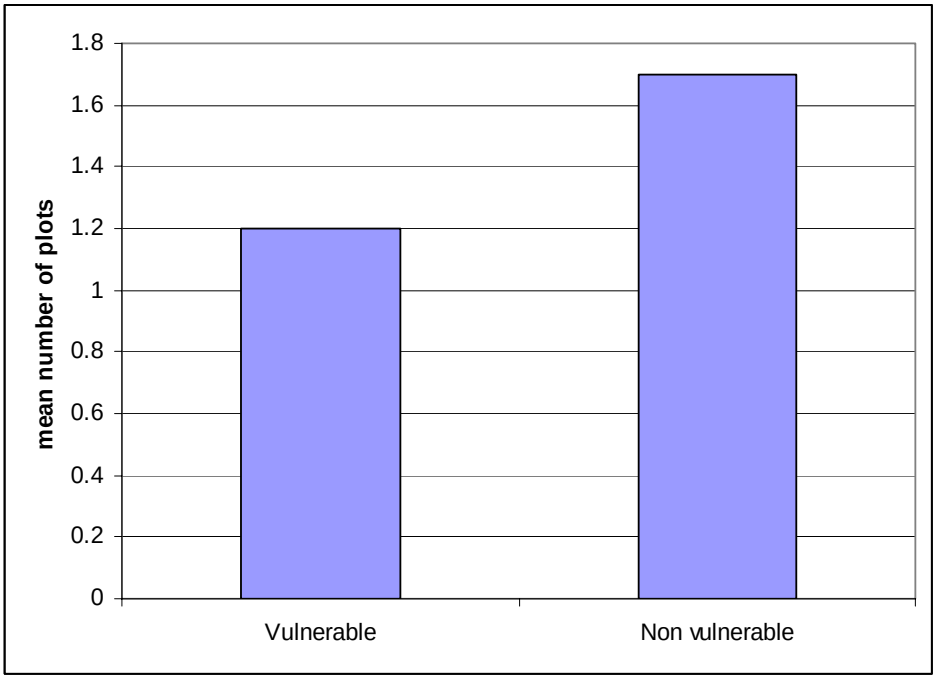
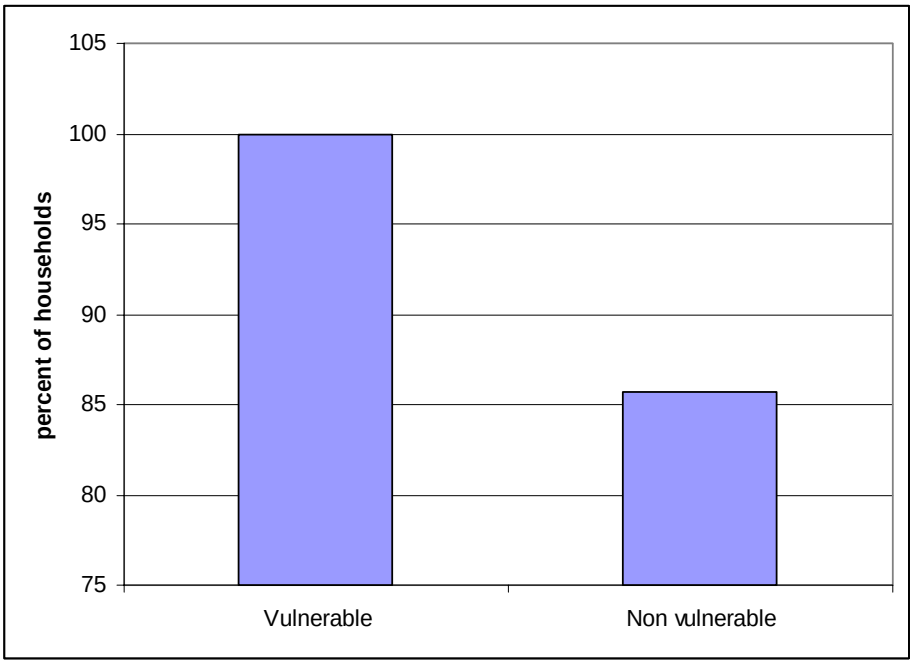


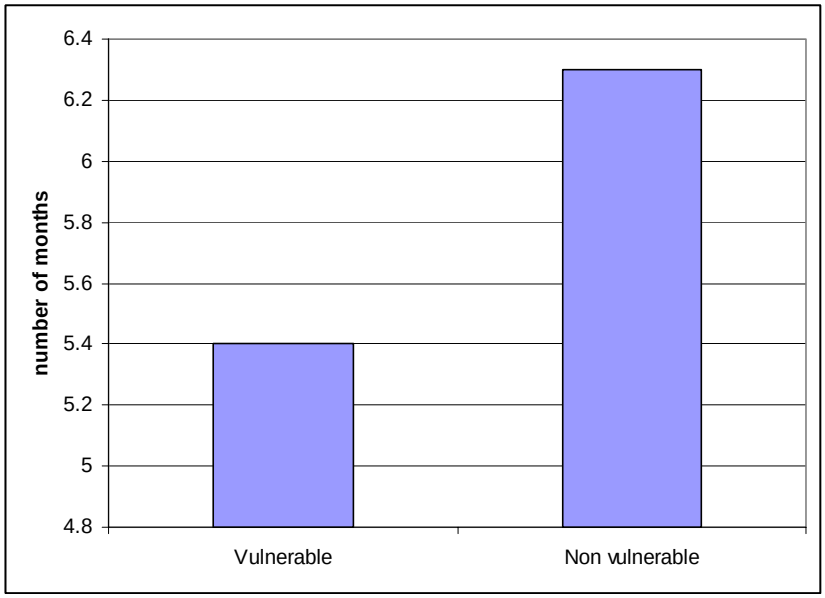
Figure 33: Proportion of Households Engaged Only in Cereal Production in Afar (Chifra)



c. Risks, Constraints, Risk Management and Coping Strategies

As measured by several different indicators, chronic food insecurity is extremely prevalent in Chifra, the only woreda in the sample where households average less than half the year of food adequacy in a country of chronic household food insecurity. Throughout the nine woredas, vulnerable households average 7.4 months of food adequacy per year and non-vulnerable households average 9.4 months. In contrast, Afar households average 5.4 and 6.3 months of annual food adequacy respectively (Figure 34). Afar households do not have a diverse diet, averaging only three types of food items per day, although individuals do consume relatively more meat and milk. Afar households spend approximately ninety percent of their income on food, in contrast to fifty to sixty percent throughout the other sample woredas, which in itself is a high proportion.

Figure 34: Number of Months of Adequate Food per Year in Afar



Pastoral communities in Chifra must encounter numerous constraints and risks that hinder food and livelihood security and household resiliency (summarized in Table 21).

Table 21: Constraints and Risks Facing Pastoral Communities

Constraints	Risks
• Absence of government and non-government food security interventions (e.g. PSNP) • Considerable (unacceptable level of) burden on women and harmful traditional practices undermining women's position. Women's access to resources is very limited ("donkey is a woman's property"). • School dropouts during migration. School regulation denies re-admittance after a certain period of absence. • Serious shortage of pasture for livestock coupled with lack of awareness and skill about fodder production. • No veterinary services- in an area where livestock is regarded the principal source of food and income. • No micro-finance • Underdeveloped culture of repaying loans • Absence of pastoral extension system. Education and training institutions do not pay sufficient attention to pastoral livelihoods.	• Recurrent drought • Flooding along Mille River, affecting cultivation • Presence of Military camp, contributing to: o Environmental degradation (use of natural forest for fuel and construction. The team observed a long line of what appeared to be 'prisoners' carrying firewood to the camp) o Increased HIV/AIDS prevalence (Military personnel are at high risk) • Heavy goods vehicles drivers contributing to HIV/AIDS prevalence in Chifra town (long distance drivers are among the high risk category) • Armed conflict during movement to neighboring woredas in Amhara region in search of grass • Business in Afar, Chifra in particular, is dominated by outsiders (from Amhara, Tigray). • Livestock and human disease

Pastoral households, like their counterparts in the highlands, use a variety of risk management and coping strategies during times of stress. A classic risk management strategy is to diversify livestock types against the risks of disease and drought. The most frequently mentioned coping strategy is migration within and outside the region in time of drought. Afar households also invariably sell their most important productive asset, livestock, as a coping strategy. More than ninety percent of Chifra households have felt compelled to sell livestock during the past two years to cope with food insecurity, a far higher rate of productive asset divestment than occurs in other regions of the country. (Overall, fewer than half of the sampled households, including Afar households, have sold any livestock as a distress sale during the past two years. Households also rely heavily on relatives and clan members for assistance during times of stress, when food consumption patterns change, as households consume less food less frequently and as well less preferred foods.

5.3 Seasonality, Vulnerability and Risk Mitigation

Seasons are vital to pastoralists. The food gap throughout Afar Chifra communities exists for seven to nine months in any given year, from November to June, during which time households are dependent on government food aid and community sharing. Afar households are only able to meet their food needs from their own production or purchases for four to five months of the year. Major diseases have there own seasonality: Malaria breaks out from September to November; upper respiratory track infections from June to November.

The pastoral communities migrate in search of pasture and water for up to six months of the year from November to April. During the time of the Afar resiliency study team visit to Chifra in February, no large animals were observed in the surrounding areas, and only

women, children, and the elderly were visible. All of the young men were in the midst of migration.

5.4 Household Vulnerability Analysis

This section presents the results of household vulnerability analysis of the Chifra woreda sampled from the Afar region. Principal component analysis is employed using an array of asset variables to extract the components that explain the co-variations of the underlying variables. The component that explains the highest variation is used in cluster analysis to create the vulnerable categories. Approximately 82 percent of the households in Chifra are classified as vulnerable (Figure 35).

Figure 35: Distribution of Households in Chifra (Afar)

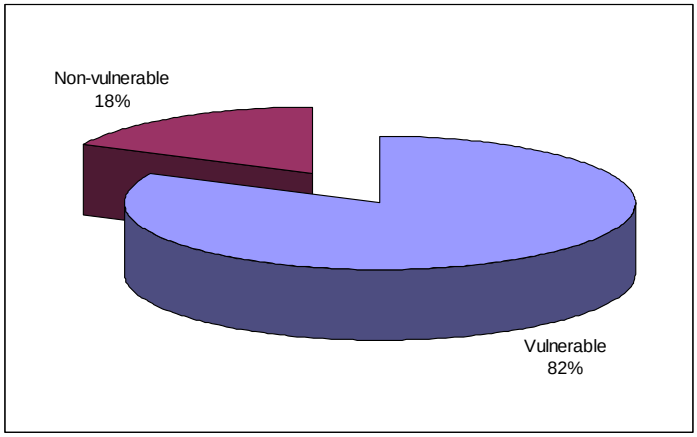
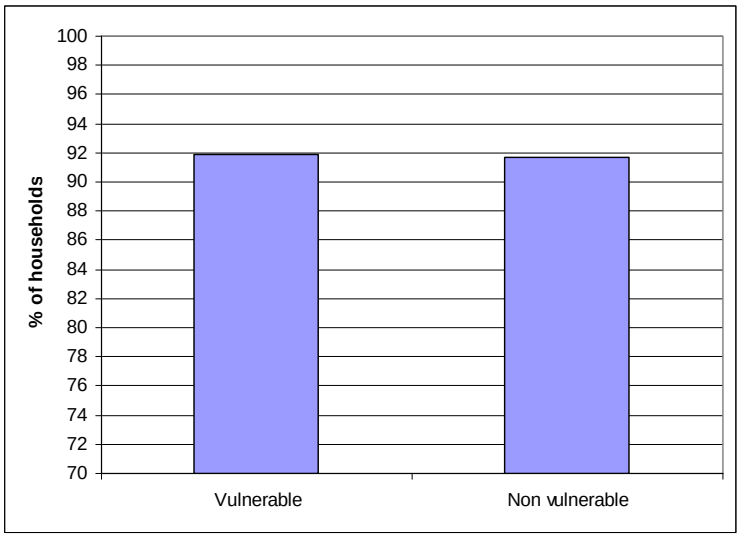


Figure 32 above shows that the vulnerable households in Chifra own less number of plots or parcels compared to the non-vulnerable households. Vulnerable households own an average of 1.2 plots while the non- vulnerable households own 1.7 plots. Moreover, non-vulnerable households own larger area of land compared to vulnerable households (0.7 hectare as opposed to 0.6 hectare) in the reference woreda.

Results presented in Figure 33 above shows that all vulnerable households in Chifra exclusively cultivate cereal while 85.7 percent of non-vulnerable households do the same. Chifra used to be a pastoral area but recurrent drought has forced households to diversify income strategies. Non-vulnerable households with large herds of cattle are still relying on livestock while it was easier for vulnerable households with a few cattle to make the transition from pastoral livelihoods to agricultural livelihoods.

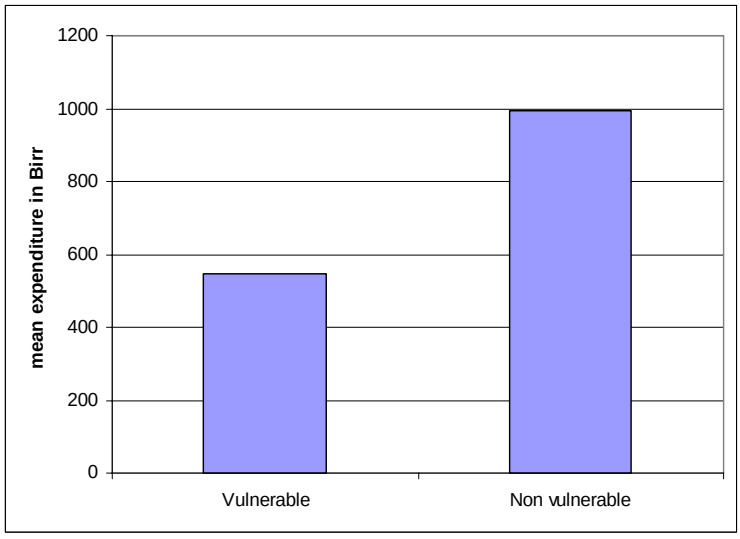
Figure 36: Proportion of Households Selling Livestock in Chifra (Afar)



Approximately 92 percent of vulnerable and non-vulnerable households in Chifra sell livestock (Figure 38). Most of the households, regardless of their vulnerability status, sell livestock because of the recurrent drought.

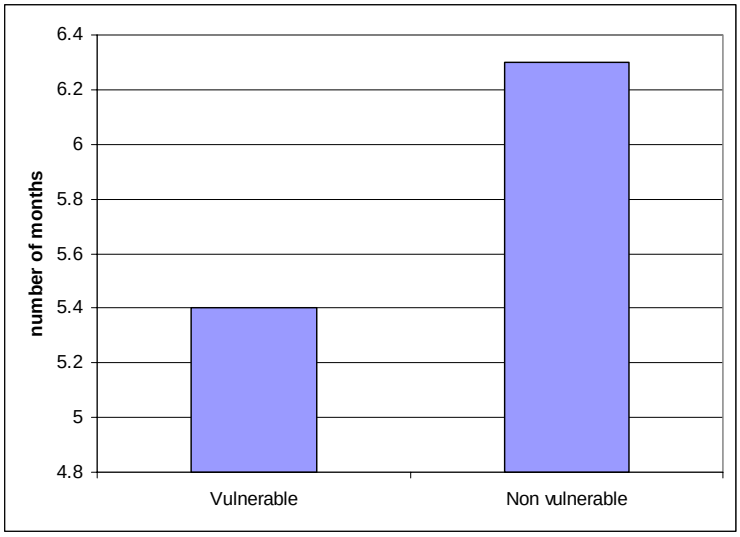
Expenditure is a proxy to income. Information on expenditure was collected from households to estimate income. Figure 39 suggests that monthly expenditure of non-vulnerable households in Chifra is higher than the monthly expenditure of vulnerable households.

Figure 37: Mean Monthly Household Expenditure in Chifra (Afar)



Estimated monthly expenditure of vulnerable households in Chifra is 546.2 birr while the estimated monthly expenditure for non–vulnerable households in the same woreda is 992.3 birr. 50 percent of vulnerable households spend 467.9 birr or less per month while 50 percent of the non-vulnerable households in the same woreda spend 800.8 birr or more per month.

Figure 38: Mean Number of Food Adequate Months per Year in Chifra (Afar)



Vulnerable households in Chifra reported to have 5.4 months of adequate food in a year compared to 6.3 months of adequate food for non-vulnerable households (Figure 40). T-tests fail to reject the hypothesis of equality of means suggesting that the mean number of food adequate months between the two groups are not really different.

5.5 Household and Community Resilience

This study aimed to identify and analyze the characteristics of "positive deviant" (PD)9 individuals in order to define the attributes of resilient households. Resilient households were discovered to have adapted strategies to manage risks and cope with shocks in each of the other eight woredas visited by the assessment team during this study. Case studies in Chifra, however, failed to identify household resilience, as opposed to community resilience, which is explored in the next section. Community groups of men and women explained:

Institutional factors, household resilience & community resilience

Relatively few development projects are underway in pastoral areas in general and the study area in particular. The two major government program interventions – the food security and the productive safety net programs – have yet to be implemented throughout Afar. The World Bank-financed Pastoral Community Development Project (PCDP) is implemented in nine woredas of Afar Region. Although Chifra Woreda is currently excluded, a baseline study was being initiated by the project in Chifra during the time of the Self-Resiliency Study.

Taking these factors into account, household resilience in Chifra appears to be more viable where access to social services and market opportunities are strongest. The emergence of Chifra town will strengthen rural-urban linkages, potentially contributing to

[9] A Positive Deviant is a person or household that has demonstrated the ability to manage and cope with difficulties, learn from these difficulties, and build a better life relative to others in the community. In short a positive deviant person is a resilient person.

household resiliency but also potentially weakening community resiliency. As pastoral households begin to participate in peri-urban activities and diversify livelihood opportunities beyond pastoralism, traditional support mechanisms, the foundation of community resilience, will weaken, Communities situated relatively far from the urban center will retain strong community resilience but weak household resilience. (Refer to the attached Afar Resiliency matrix.)

5.6 Program Linkages and Layering

Because very few development programs are currently being implemented in Chifra, program linkages are weak and the layering rather thin. Across the PAs the government is the most visible development and food aid agent, which is considered to be inadequate and inconsistent, as the following testimonies attest:

Table 22 outlines the existing limited programs and ongoing collaboration in the PAs under study.

Table 22: Collaboration Matrix

Program/ project	Implements	Collaborator	Level of collaboration	Type of collaboration	Lessons
Health & Education Program	LWF; WHO; WEO	Woreda Admin; WPRDO; Kebele Admin.	Woreda; PA	Need assessment/ Implementation	Lack of sensitivity to local situations; Unacceptable delay in implementation
PCDP Baseline study (new)	PCDP Office	Woreda Pastoral and Rural Development Office	Woreda; PA	Implementation	Participatory sample selection Use of local manpower
Livelihood analysis and zoning	Save the Children UK	Food Security and DPP Office	Regional	Planning and implementation	Limited capacity building component

LWF = Lutheran World Federation
PCDP = Pastoral Community Development Project
WEO = Woreda Education Office
WPRDO = Woreda Pastoral and Rural Development Office
WHO = Woreda Health Office

5.7 Recommendations

- All potential programs in Afar must begin from a viable entry point, involving local administration as well as community priorities into the planning process. As part of this process, it is essential to establish effective channels of communication between and participation of formal and informal systems of government.
- Ensure an adequate skills development and local capacity building component to any program for implementation in Afar in order to promote sustainability.
- Social service facilities have been constructed in several Afar communities, but are frequently not staffed or equipped. Social services need to become operational immediately after construction of the facility.
- Health education is a real need (sanitation, HIV/AIDS/ and rural health).
- Build woreda health center capacity to:

- introduce health outreach programs
- initiate mobile health care treatment services
- provide proper services related to HIV/AIDS

- Ensure local communities benefit from the development of small towns. Develop business skills within communities in range of small towns. It is also essential to create market linkages. Afar communities, particularly women, have traditional skills that could be exploited if it were possible to market their products.
- Women are burdened with work responsibilities within and outside of the household. Programs operating in Afar should promote labor-saving technologies for women, who are overworked. In addition, such a program should provide training to clan leaders and elders about women's burdens.
- Mille River is a strategic resource. Chifra PAs could potentially benefit enormously from investment in riverside agriculture, including food production but also fodder production.
- Traditional support mechanisms are now in danger of breaking down, a result of recurrent drought and changing land use patterns encroaching on the Afar pastoral livelihood system. Support mechanisms require reform in the long term and sustained support in the short and middle terms.
- The study team finds it puzzling that animal health is completely ignored. Veterinary services are urgently required to redress this obvious constraint.
- Related to the point above, a holistic pastoral extension system could improve livestock management enormously.

6. Livelihoods and Self-Resiliency in Somali

Although the research team initially considered including the Somali Region in field research activities, enumerators were not able to travel to the selected locations due to their remoteness as well as ongoing security concerns. Nonetheless, considerable effort was directed toward conducting a thorough review of secondary literature on the region. Special attention was given to analyzing the particular factors that contribute to, or detract from the vulnerability of households pursuing predominantly pastoral livelihood strategies.

6.1 Livelihood Context

The Somali National Regional sits at the intersection of Ethiopia and 'Greater Somalia' (Somalia, Somaliland, Puntland, northeast Kenya, Djibouti) in the Horn of Africa, but in many senses remains peripheral to both. As indicated above in Table 1, Somali Region has the largest pastoral population and landmass in Ethiopia.

Devereux (2007) passionately argues that the pastoral communities, Somali Region in particular, are marginalized in several ways. Pastoral households face lover literacy rates, immunization coverage and life expectancy; infant, child and maternal mortality rates are higher than in highland regions, in a country experiencing amongst the lowest economic and social indicators of development in the world. Somali literacy levels are approximately half the national average of forty percent; very few Somali women are literate.

Basic information on public services and basic statistics on well-being indicators in Somali Region are virtually impossible to obtain. Lautze et al. (2003: 72) have referred to "the historical exclusion of Afar and Somali from surveillance systems." In 2006, IFPRI and GOE's CSA produced an 'Atlas of the Ethiopian Rural Economy'. Several maps displaying basic demographic, economic and infrastructure information in this authoritative atlas display the legend 'No data' alongside Somali Region, where access to safe drinking water, marital status of household heads, and even educational facilities remain unknown (IFPRI/CSA, 2006: 33).[10]

6.2 The Paradox of relative wealth and vulnerability

Devereux (2006, 2007) has described the Somali livelihoods paradox of wealth and vulnerability. Somali livelihoods are extremely vulnerable – three drought-triggered emergencies have occurred since 1999 – government spending in the region is low and, as noted above, basic social indicators are almost non-existent. Yet data from nationally representative household income and consumption surveys reveal the Somali Region to be wealthiest (or least poor) amongst all of Ethiopia's rural regions, with the lowest poverty incidence (38% in 2000) and the highest consumption levels. In 1995/96, Somali Region was the only rural region in the country where average caloric intake exceeded the international norm for food security of 2,100 kilocalories per person per day.

[10] As we draft this report, the Ethiopian Government is preparing to launch the Third National Census in May 2007. Supervisors and enumerators are being trained except in Afar and Somali Regions. As usual, the two regions are excluded from the census with a hope that it will be done sometime in the future.

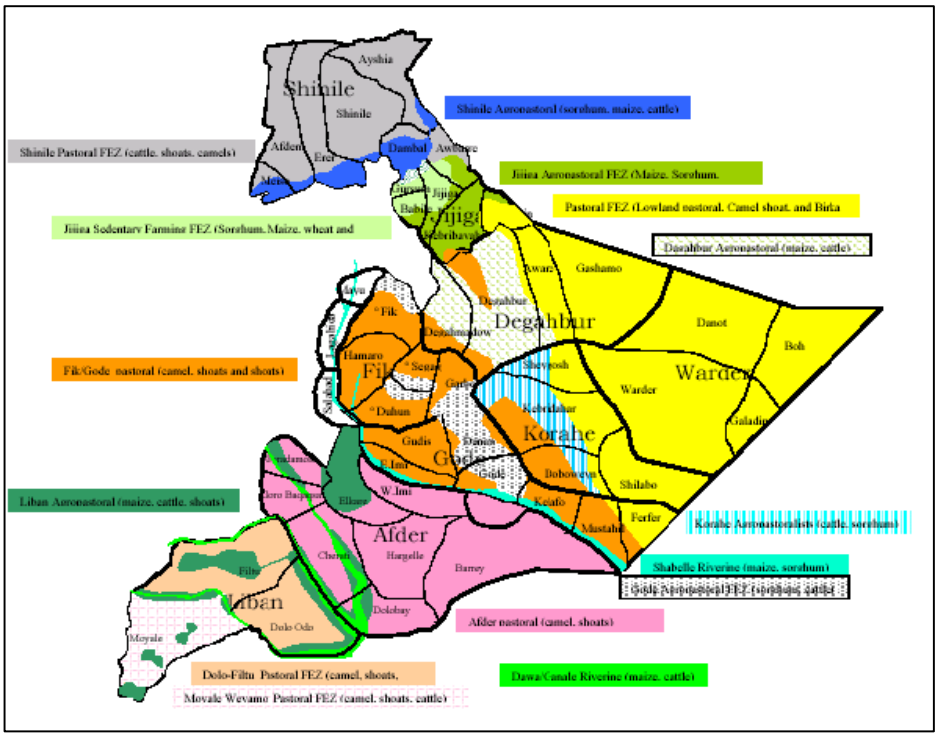
Interestingly, Afar Region, though second poorest in terms of household income, was second most "food secure" in terms of food consumption, only 50 kilocalories behind Somali Region, possibly a reflection of the high meat and milk content of pastoralist diets (Devereux, 2007:3).

This paradox needs some explanation. In Somali Region, atypically, political marginalisation does not necessarily contribute to economic marginalisation. The region lacks basic government services, so Ethiopian Somalis are under-educated and acutely vulnerable to health risks. Economic linkages between Somali Region and highland Ethiopia, including with the capital city of Addis Ababa, are extremely weak. But many Somali communities have livestock and access to lucrative markets abroad.

6.3 Economic integration and cross border trade

A possible explanation of the paradox described above at least partly lies in economic integration. Economically, Somali Region is closely integrated into the economies of Somalia and the Gulf states, especially Saudi Arabia, which is the main market for Somali exports of live animals, livestock products, and khat (or chat), which is largely grown in Eastern Oromiya and chewed as a stimulant throughout the Greater Horn of Africa.

Figure 39: Somali Region Livelihood Zones



With income from sales of livestock, livestock products and trade, many Ethiopian Somalis are relatively wealthy, although the lack of education limits Somali diversification options away from livestock dependence, heightening acute vulnerability

to livestock-related livelihood shocks, including animal diseases, drought, conflict and livestock raids, and disrupted access to water, grazing or markets. Cross border trade is hugely important to Somali livelihoods. Devereux (2007) found that the GOE has persistently attempted to regulate livestock exports out of Somali Region and commodity imports back into the region, employing heavy-handed interventions with some devastating consequences for thousands of livelihoods. Article 74 of Ethiopia's Customs Proclamation decreed the informal cross-border trade that underpins the Somali Region economy to be illegal.

Since 2001, the Government has prosecuted a self-styled 'war on contraband', mainly targeting cross-border traders who work between Somali Region, neighboring countries and the Gulf States. Methods used by the Government to stop what it defines as illegal exports and imports of commodities include: border closures and border patrols, banning foreign-registered vehicles and the use of foreign currencies inside Ethiopia, confiscation of livestock and commodities without compensation, and ransacking local markets. Most recently, the 'war on contraband' has been linked to the 'war on terrorism' in the belief that the former finances the latter, a development severely affecting pastoralist livelihoods.

6.4 Boom and Bust

Another characteristics of pastoral livelihood, particularly that of Somali pastoralists, is a phenomenon some have referred to as "boom and bust" (Ellis and Swift, 1988). Numerous shocks have struck livestock owners in Somali Region in the last few years, exposing them to the 'boom and bust' cycles of accumulation, collapse and rebuilding of herds and flocks that characterize pastoralist economies. As noted in the Afar section above, the pastoralist livestock population has been depleted to the point that recovery to the "old days" is no longer an option. The "boom and bust" theory may no longer be applicable.

6.5 Alternative livelihood opportunities in the pastoral context

Somali households pursue a pastoral livelihood strategy foremost but not necessarily exclusively. The Pastoralist Communication Initiative and the Institute of Development Studies facilitated a scenario-building seminar on pastoralism, which defined four pathways:

- Sustaining pastoralism
- Diversification
- Promotion of export trade
- Seeking alternative livelihoods

Crop Production as a Diversification Strategy: Crop production represents a diversification option, given the pressure on pastoralism. It has been shown that Afar pastoralists are prepared to try farming provided local rivers are diverted for small scale irrigation. IIRR (2004:52) has identified various techniques that might allow traditional pastoral communities to pursue crop production: [11]

[11] Part of a review for Bhenke et al (2007)

- **Irrigation**, ranging from small plots watered by hand or by pump irrigation to large, river-fed schemes.
- **Flood recession agriculture** using water that soaks into the soil during the seasonal flooding of rivers.
- **Water harvesting** rainfall using bunds and ditches to divert rainwater into plots or shallow basins allowing seepage into the soil
- **Dryland cropping** of drought-resistant crops.

Several Somali pastoral areas are crisscrossed by seasonal and perennial rivers that could support farming. Some areas have adequate long rains to plant a variety of cereal crops using similar farming techniques to the Ethiopian highlands. Box 10 presents some examples.

Box 10: Examples of Farming Practices in Pastoral Areas

There are two distinct rainfall patterns in Somali Region which define two dominant farming systems. Riverine farming is practiced along the banks of the perennial rivers, namely Shaballe and Dawa/Ganale in central and southern Somali Region. In these low-lying areas, the long Gu rains fall from April to June which is also the planting season. The short Deyr rains fall between October and December, but are considered unreliable by farmers. Since total rainfall is inadequate for rain-fed agriculture, farming occurs along riverbanks and in river valleys. In the northern Somali zones of Shinile and Jijiga, a third rainy season – karan, between August and September – provides sufficient moisture and a growing season that is long enough to allow the cultivation of crops. The farming methods are similar to those in the Ethiopian highlands – smallholders use of family labor and cultivate with oxen and ploughs. Cereals including maize, sorghum, wheat and barley are cultivated in the various farming systems described above.
Source: Devereux, (2006:63).

The Pastoralist Concern Association Ethiopia (PCAE) has provided agro-pastoralists in Charati and Hagelle districts in Somali Region with small twenty-horsepower pumps capable of lifting eighty cubic meters of water an hour. These pumps enabled the communities to water a large area of land. PCAE organized the farmers into eight groups, gave each group a pump, trained the groups in using and managing the pump, and then supplied them with vegetable seeds. The 287 households included 15 headed by women. The farmers used the pumps to irrigate a total of 33 hectares, planting local varieties of maize, tomatoes and sesame. The initial maize yields, averaging 1.8 tons per hectare, was less than expected because the farmers used unimproved local varieties, broadcast the seed rather than planting in rows and weeded the plots late.

Pastoralists, however, must confront several issues before considering a diversification strategy that includes farming or any other alternative livelihoods:

- Access to land: Although land is legally jointly owned by the government and the people, in practice the clan decides on land use rights, although individual households have the right to pursue crop production on land. One recent survey (Devereux, 2006) found that almost half of the surveyed Somali households own rights to land primarily for farming. Along riverbanks, arable land is usually allocated for

permanent cultivation. Families divide their plots among their relatives and most land is inherited. The average farm size – 1.4 hectares – is larger than in highland Ethiopia but not large enough to promote extensive farming.

- Access to water: Currently farming is restricted to households living in close proximity to rivers.
- Research and extension services: The government is moving quite slowly to establish agricultural research centers in pastoral areas.
- Access to credit, markets and cooperatives: IIRR (2004:59) suggests:
    - Providing access to credit to enable pastoral farmers to cultivate crops, plant trees, and dig wells;
    - Promoting organisations to form plant out grower associations to grow crops such as cotton, sugarcane, and horticultural crops;
    - Establishing facilities to process produce and developing markets for outputs;
    - Assisting farmers to market their produce; and
    - Developing or strengthening cooperatives to promote market opportunities for corps and livestock.

Bibliography

ACF (2006). Towards a Future Without Hunger? The State of Food Security Policy and Programming in Ethiopia. Addis Ababa: Action Contre la Faim

Ahmed, A.G.M, Azeze, A., Babiker, M., and Tsegaye, D. (2002) The Post Drought Recovery Strategies among the Pastoral Households in the Horn of Africa: A Review. Addis Ababa: OSSREA

Amdissa Teshome (2007) *Pastoral Literature Review for the Path to Self-resiliency Study*, Addis Ababa.

Barrientos, A (2007) Does vulnerability create poverty traps? *CPRC Working Paper #*76. Brighton, UK: Institute of Development Studies at the University of Sussex

Belay, K. and Belay, K. (1998) "Factors affecting loan repayment performance of smallholders in the central highlands of Ethiopia: The case of Alemgena District" *Ethiopian Journal of Agricultural Economics* 2(2): 61-89

Bhenke, R. Devereux, S. Amdissa Teshome, White, R. and Wekessa, M. (2007) *Pilot Activities: Extending the Productive Safety Net Programme into Pastoral Areas*. A consultancy report for the Pastoral Taskforce and Food Security Coordination Bureau.

Boserup, E. (1965) The Conditions of Agricultural Growth. New York: Aldine.

Boyden, J and Cooper E (2007) Questioning the power of resilience: Are children up to the task of disrupting the transmission of poverty? *CPRC Working Paper 73*. Oxford: University of Oxford

Castro, A.P. (2002). Social Capital, Assets and Responses to Drought: Preliminary Observations from Interviews, South Wello and Oromiya Zones, Amhara Region, Ethiopia. Madison, WI: BASIS CRSP of the University of Wisconsin-Madison

Centre for Community Enterprise. (2007). The Community Resilience Project. Website accessed June 25, 2007.
http://www.cedworks.com/communityresilience02.html

Chamberlin, J., John, P. and Bingxin Y (2006) Development Domains for Ethiopia: Capturing the Geographical Context of Smallholder Development Options. DSGD Discussion Paper No. 43., EPTD Discussion Paper No. 159. Washington D.C.: International Food Policy Research Institute.

Dercon, S. (2000) Growth and Poverty in Ethiopia in the 1990s: An Economic Perspective. Oxford, UK: Centre for the Study of African Economies, Oxford University, mimeo.

Dercon, S., Hoddnitt, J. (2005) Livelihoods, Growth, and Links to Market Towns in 15 Ethiopian Villages. Washington D.C.: International Food Policy Research Institute

Desta, L., M. Kassie, S. Benin and J. Pender. (2001) Land degradation in the highlands of Amhara region and strategies for sustainable land management. Working Paper No. 32. Addis Ababa: International Livestock Research Institute

Devereux, S (2000) Food Insecurity in Ethiopia: A discussion paper for DFID. Brighton, UK: Institute of Development Studies

Devereux, S., Sabates-Wheeler, R., Tefera, M., and Taye, H. (2006). Ethiopia's Productive Safety Net Programme (PSNP): Trends in PSNP Transfers Within Targeted Households Final Report. Brighton, UK: Institute of Development Studies

Devereux, Stephen. (2006). Vulnerable Livelihoods in Somali Region, Ethiopia. IDS Research Report 57. Institute of Development Studies. April 2006.

Devereux, S. (2006) *Food Security Issues In Ethiopia: Comparisons and Contrasts Between Lowland and Highland Areas,* a Seminar organised by the Pastoralist Communication Initiative, UN-OCHA Sheraton Hotel, Addis Ababa ~ 16 February 2004

Devereux, S. (2007) *Cashing In or Crashing Out? Pastoralist Livelihoods In Somali Region, Ethiopia* Paper presented at the international conference: 'Living on the Margins: Vulnerability, Social Exclusion and the State in the Informal Economy' Cape Town, 26–28 March 2007.

Ellis Frank and Tassew Wlodehanna. (2005). Ethiopia Participatory Poverty Assessment 2004-2005. Ministry of Finance and Economic Development (MoFED), Development Planning and Research Department.

Ellis, J. and Swift, D. (1988) *'Stability of African Pastoral Ecosystems: alternative paradigms and implications for development'*, Journal of Range Management, 41(6): 450-459

Fantahun, A. and Minuye, S. (2000) "Constraints to Agricultural Input Loan Repayment" *Economic Focus* 3(2): 25-27

Fasil, K., Tsegaye, D., and Synvaang, G. (2001) Traditional Coping Strategies of the Afar and Borena pastoralists in response to drought. Dryland Coordination Group Report No. 17. Aas, Norway: Centre for International Environment and Development Studies (NORAGRIC)

Federal Democratic Republic of Ethiopia (FDRE) (2002) *Development and Poverty Profile of Ethiopia for 2002*, Addis Ababa: Welfare Monitoring Unit, Ministry of Finance and Economic Development

FEWSNET. (2006). Southern Nation, Nationalities and People's Region, Ethiopia. Livelihood Profiles. USAID. January 2006.

FEWSNET (2006, December) Ethiopia Food Security Update. Retrieved from: http://www.fews.net/centers/innerSections.aspx?f=et&m=1002198&pageID=monthliesDoc

Garrett, J. (2001) Lessons from the Urban Food-for-Work Program CARE-Ethiopia: Notes and Observations. Washington, D.C.: International Food Policy Research Institute

Gabre-Madhin, E. Z. (2001) Market Institutions, Transaction Costs, and Social Capital in the Ethiopian Grain Market. Research Report 124. Washington, D.C.: International Food Policy Research Institute

Government of Ethiopia (GOE). (2006). Productive Safety Net Programme, Project Implementation Manual. Ministry of Agriculture and Rural Development. July, 2006.

Government of Ethiopia (2003). The New Coalition for Food Security in Ethiopia: Food Security Programme Vol. I. Addis Ababa: Government of Ethiopia

Food for Peace (FFP) and DCHA (Bureau for Democracy, Conflict, and Humanitarian Assistance). (2003). Concept Paper for its Strategic Plan for 2004-2008: Eighth Draft.

Office of Food for Peace, Bureau for Democracy Conflict and Humanitarian Assistance. 37.

Hagos, F., Pender, J., and Gebreselassie, N. (1999) Land degradation in the highlands of Tigray and strategies for sustainable land management. Socioeconomic and Policy Research Working Paper No. 25. Addis Ababa: International Livestock Research Institute.

Helland, J. (1997a) Development issues and challenges for the future in Borena. Bergen: Chr. Michelsens Institute

Helland, J. (1997b) Development Interventions and Pastoral Dynamics in Southern Ethiopia. In R. Hogg (*ed*) *Pastoralists, ethnicity and the state in Ethiopia.* London: Haan Publishing

Helland, J. (2000) Institutional erosion in the drylands: The case of the Borena pastoralists. In L. Manger and A.G.M. Ahmed (*eds*) *Pastoralists and environment: Experience from the Greater Horn of Africa*. Addis Ababa: OSSREA

Hurni, H. 1986. Soil conservation in Ethiopia – Guidelines for development agents. Addis Ababa: Ministry of Agriculture

Institute of Development Studies (2006a, May) Looking at Social Protection through a Livelihood Lens. *IDS in Focus Series.* Retrieved from: http://www.ids.ac.uk/ids/bookshop/infocus.html

Institute of Development Studies (2006b, May) Unconditional Cash Transfers in Africa. *IDS in Focus Series.* Retrieved from: http://www.ids.ac.uk/ids/bookshop/infocus.html

International Fertilizer Development Centre (1993) Ethiopia fertilizer and transport sector assessment. Addis Ababa: USAID

International Institute for Rural Reconstruction (IIRR) (2004) *Food Security in Pastoral Areas*, IIRR, Nairobi, Kenya.

Lautze S., Aklilu, Y., Raven-Roberts, A., Young, H., Kebede, G., & Leaning, J. (2003) Risk and Vulnerability in Ethiopia: Learning from the Past, Responding to the Present, Preparing for the Future. Washington DC: USAID

Lemi, A. (2006) The Dynamics of Income Diversification in Ethiopia: Evidence from Panel Data. Boston, MA: University of Massachusetts-Boston

Lirenso, A. (1993) Grain Marketing reform in Ethiopia. Ph.D. diss. Norwich, UK: University of East Anglia

Mission Australia Research and Social Policy. (2005). *Developing resilience at every stage of a young person's life: Snapshot 2005.* Available on-line: http://www.missionaustralia.com.au/cm/resources/documents/snapshot_families.pdf

MoARD (2006). Productive Safety Net Programme: Programme Implementation Manual (Revised). Addis Ababa: Ministry of Agriculture and Rural Development (MoARD)

MoFED (2006) Ethiopia: Status Report on the Brussels Programmed of Action (BPoA) for Least Developed Countries (LDCs). Addis Ababa: Ministry of Finance and Economic Development (MoFED)

Mogues, Tewodaj (2005). Shocks, Livestock Dynamics, and Social Capital in Ethiopia. Washington, D.C.: International Food Policy Research Institute

Oxfam and NEF (2005). Choices and Constraints: A Study of Livelihoods in the Eastern Ethiopian Highlands. Addis Ababa: Oxfam GB

Pender, J. (2001a) “Rural population growth, agricultural change and natural resource management in developing countries: A review of hypotheses and some evidence from Honduras”. In: N. Birdsall, S. Sinding, and A. Kelley (eds.), *Population Matters: Demographic Change, Poverty and Economic Growth in Developing Countries*. Oxford: Oxford University Press.

Pender, J., B. Gebremedhin, S. Benin and S. Ehui. (2001b) Strategies for sustainable development in the Ethiopian highlands. *American Journal of Agricultural Economics* 83(5):1231-40.

Pender, J., P. Jagger, E. Nkonya, and Sserunkuuma, D. (2001c) Development pathways and land management in Uganda: Causes and implications. Environment and 73 Production Technology Division Discussion Paper No. 85, IFPRI, Washington, D.C.

Pender, J., S. Ehui, and F. Place. 2006. “Conceptual framework and hypotheses”. In: Pender, J., Place, F., and Ehui, S. (eds.), *Strategies for Sustainable Land Management in the East African Highlands.* (*Forthcoming*) Washington, D.C.: International Food Policy Research Institute

Slater, R., Ashley, S., Tefera, M., Buta, M. and Esubalew, D. (2006) PSNP Policy, Programme and Institutional Linkages: Final Report. London, UK: Overseas Development Institute with the IDL Group and Indak International

Sharp, K, Devereux, S, and Amare, Y. (2003) *Destitution in Ethiopia’s Northeastern Highlands (Amhara National Regional State)* Brighton, England: Institute of Development Studies and Save the Children-UK

Sharp, K., Brown, T., and Teshome, A. (2006). Targeting Ethiopia’s Productive Safety Net Programme (PSNP). London, UK: Overseas Development Institute with the IDL Group

Shepherd, A (2007) Understanding and explaining chronic poverty: An evolving framework for Phase III of CPRC’s research. *CPRC Working Paper #80*. London, UK: Overseas Development Institute

Stone, P. (2002) “Retrospective Accounts of Responses to Drought by Female and Male Headed Households of Bati and Dessie Zuria Weredas, South Wello and Oromiya Zones: General Observations from Qualitative Interviews May 12-17, 20002 (*Unpublished Draft*) Prepared for BASIS-CRSP

Tefera, B., Ayele, G., Atnafe, Y., Jabbar, M., and Dubale, P. (2000) Nature and causes of land degradation in the Oromiya region: A review. Socio-economics and Policy Research Working Paper No. 36. Addis Ababa: International Livestock Research Institute.

Tiffen, M., Mortimore, M., and Gichuki, F. (1994) *More people – less erosion: Environmental recovery in Kenya.* London, UK: Wiley and Sons.

Trócaire, CAFOD (2006) NGOs Engaging in the Productive Safety Net Programme – a Study (DRAFT Summary Conclusions) Addis Ababa: Trócaire with CAFOD

von Braun, J., Teklu, T., and Webb, P. (1998) Famine in Africa: Causes, Responses, and Prevention. Baltimore, MD: Johns Hopkins University Press.

Webb, P. and von Braun, J. (1994) Famine and Food Security in Ethiopia. Chichester: John Wiley and Sons

Webb, P. and B. Rogers. (2003). Addressing the "In" in Food Insecurity, USAID Office of Food for Peace. Occasional Paper No. 1, February 2003.

Woldehanna, T. and Alemu, T. (2003). Profile and determinants of poverty in Ethiopia. Paper presented at the 7th Annual Conference of the Agricultural Economics Society of Ethiopia, 7-9 August, Addis Ababa. Mimeo.

The World Bank (2003) Securing Consumption while Promoting Growth: The Role of a Productive Social Safety Net in Ethiopia. Washington, DC: The World Bank

Yu, B. 2005. Agricultural Productivty and Institutions in Sub-Saharan Africa. Ph.D. Dissertation. Department of Agricultural Economics, University of Nebraska-Lincoln.