



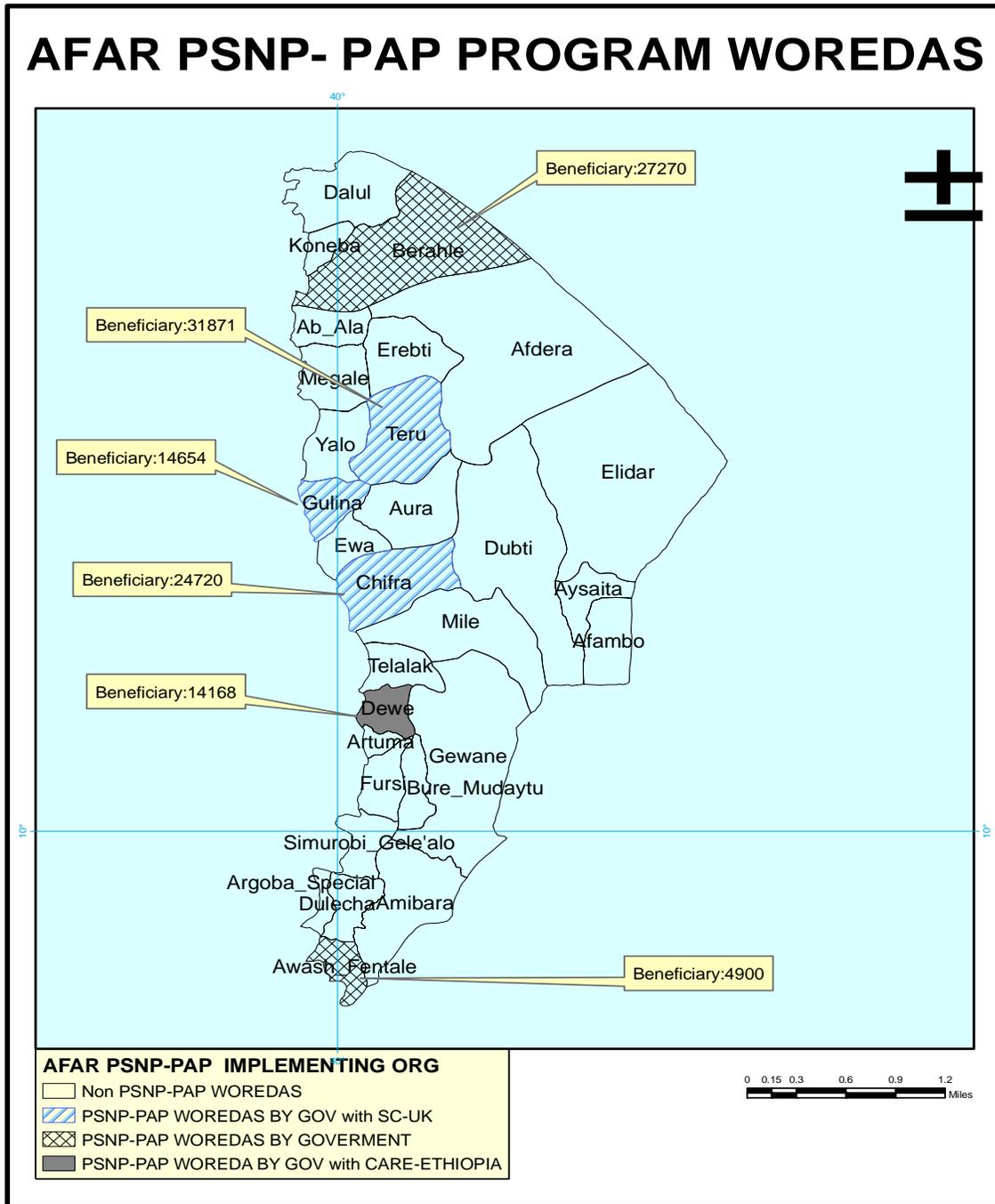
Productive Safety Net Programme Pastoral Areas Pilot (PSNP PAP)

Livelihood/KAP Baseline Assessment Dewe Woreda, Afar Region

Final Report

Submitted to: CARE Ethiopia

**April 2010
Addis Ababa, Ethiopia**



Acknowledgements

The consulting firm, Dynamic Institute for Consultancy and Training (DICT), is grateful to all individuals and organizations who one way or another contributed for the success of this Livelihood and KAP Baseline study. In particular, DICT's team of consultants would like to thank key informants that represented various stakeholders at regional and woreda levels as well as community members participated in focus group discussions. Indeed, Ato Hassen Abdela- Head of the regional government Bureau of Disaster Prevention and Preparedness and Ato Kalid Jemal the PSNP-PAP Coordinator made invaluable contributions in providing the necessary information as well as in facilitating the field level data collection process. Moreover, acknowledgement is due to the staff members of CARE Ethiopia, especially those in Dewe and Awash. Finally, the consultants are indebted to the enthusiasm and support of Head Office Staff members; namely, Dr. Dereje Nigusse, Asnakew Assefa and Bena Musenbi.

List of Acronyms

AHA	Animal Health Assistants
AHTs	Animal Health Technicians
ARI	Acute Respiratory Infection
BOPRD	Bureau of Pastoral and Rural Development
CBPWD	Community Based Participatory Watershed Management Approach
CSA	Central Statistics Agency
DA	Development Agents
DICT	Dynamic Institute for Consultancy and Training
DP &FSB	Disaster Prevention and Food Security Bureau
DS	Direct Support
ESMF	Environmental and Social Management Framework
ETB	Ethiopian Birr
EWS	Early Warning System
FFSSC	Federal Food Security Steering Committee
FSCB	Federal Food Security Coordination Directorate
FSP	Food Security Programme
GOE	Government of Ethiopia
HDDs	Human Dietary Diversity
HEA	Household Economy Analysis
HH	Household
HICE	Household Income Consumption Expenditure
KAP	Knowledge, Attitude and Practice
KFSTF	Kebele Food Security Task Force
MoARD	Ministry of Agriculture and Rural Development
MoFED	Ministry of Finance and Economic Development
NGO	Non-Governmental Organisation
NRM	Natural Resource Management
PA	Peasant Association
PSNP PAP	Productive Safety Net Programme Pastoral Pilot Programme
PSNP	Productive Safety Net Programme
PTF	Pastoral Task Force

PW	Public Works
PWFO	Public Works Focal Units
RFSSC	Regional Food Security Steering Committee
RRM	Rapid Response Mechanism
RRT	Rapid Response Team
TLU	Tropical Livestock Unit
USAID	United States Aid for International Development
Vets	Veterinarians
W/KFSD	Woreda/Kebele Food Security Desks
WFSD	Woreda Food Security Desk
WFSTF	Woreda Food Security Task Force
WFSTF	Woreda/Kebele Food Security Task Force
WoFED	Woreda Office of Finance and Economic Development
WPARDO	Woreda Pastoral and Rural Development Office

List of Boxes, Figures and Tables

Boxes:

Box 1 Objectives and components of PSNP

Box 2 CARE's PSNP-PAP Project objectives and intermediate results

Figures:

- Fig. 1** Land use/Land cover of Dewe woreda
- Fig. 2** Coverage of Health, Potable Water and Education for Dewe and Afar, 2009
- Fig. 3** Herd composition Dewe woreda, 2009
- Fig. 4** Drought and Resource Degradation: Causality as perceived by Pastoralists
- Fig. 5** Age composition of HH members
- Fig. 6** Comparison of percentage of wealth groups
- Fig. 7** Average number of livestock holdings now and five years ago
- Fig. 8** Relative Importance of Reasons for Loss of Livestock Asset
- Fig. 9** Reasons for Borrowing
- Fig. 10** Food source by wealth category
- Fig. 11** Number of Food Gap Months
- Fig. 12** Percentage distribution of HHs by specific food gap months
- Fig. 13** Most widely sold livestock
- Fig. 14** Trends in HH Income during the past 12 months
- Fig. 15** Household source of income
- Fig. 16** Households expenditure pattern

Tables

- Table 1** Summary of the findings of 2009 baseline survey Dewe Woreda
- Table 2** Livelihood/KAP Survey objectives and their implications to the PSNP roll-out issues
- Table 3** Key Questions in the PSNP-PAP
- Table 4** Population by sex and Place of Residence for Dewe, Zone-5 and Afar region
- Table 5** Dewe woreda: Agro-ecology, topography, accessibility and livelihoods
- Table 6** Positions and staffing requirement of Dewe woreda administration
- Table 7** Trends in natural asset possession over time
- Table 8** Trends in Human Assets
- Table 9** Trend in Financial Asset
- Table 10** Ranking of Vulnerabilities
- Table 11** Vulnerabilities, changes and causes
- Table 12** Mitigating and Coping strategies
- Table 13** Knowledge on the Existence and Typology of the Natural Resource Base
- Table 14** Level of knowledge on various issues related to water and rangeland
- Table 15** Disappeared grass and tree species (all are local names)

Table 16	Other Knowledge, Attitudes and Practices
Table 17	Mode of utilization of Water and Plant/Vegetation Resources
Table 18	Ranking of values attached to natural resources across years
Table 19	Mobility Pattern of People and Livestock in Dewe Woreda
Table 20	Seasonal Calendar
Table 21	Summary of Knowledge, Attitudes and Practices on Natural Resource Management
Table 22	Sex Composition of HH Members
Table 23	Livelihood Category * Headship
Table 24	Dependency Ratio
Table 25	Marital status by head of households
Table 26	What is the total number of wives by male headed HHs
Table 27	Head of households by age
Table 28	Percentage distribution of HH by Education status of household heads
Table 29	School enrolment (read and write) by age category
Table 30	Number of HH members died by Age
Table 31	Cause of death by type of diseases
Table 32	Percentage Distribution of main source of drinking water at the moment by headship
Table 33	Distribution of estimated distance from house to water point in kilometre by headship
Table 34	Percentage distribution of volume of water a household uses by headship
Table 35	Bathing frequency (day/week) by category of family members and headship
Table 36	Distribution of HH by treatment of the water before drinking by headship
Table 37	If yes how do you treat the water?
Table 38	Main source of fuel for cooking by Sex of HH Heads
Table 39	Percentage distribution of HHs by access and utilization of infrastructure
Table 40	Livestock holding comparison
Table 41	Livestock population and Per capita TLU for Afar, Dewe and Survey HHs
Table 42	TLUs and Mean Price Index Per HH
Table 43	TLUs by Wealth Category
Table 44a	TLUs by Sex of HH head
Table 44b	TLUs by Livelihood Category
Table 45	Percentage of HHs by reason for selling, bartering or renting-out your livestock asset during the last 12 months
Table 46	Percentage distribution of HHs by family member labour mobilization
Table 47	Livelihood base during the past 12 months
Table 48	Main sources of Food during the past 12 months
Table 49	Current main sources of important food commodities
Table 50	Descriptive Statistics on Food Gap Months
Table 51	Number of food gap months by Livelihood category
Table 52	Number of food gap months by Sex of HH head
Table 53	Type of support from relatives/ friends within or outside the community
Table 54	HDDS by Wealth Category

- Table 55** Ranking of Coping strategies
- Table 56** Trends in HH Coping strategies (multiple responses N=414)
- Table 57** Average Annual Income by Sources
- Table 58** HHs Total Annual Expenditures
- Table 59** Expenditure patterns
- Table 60** Age category * Sex Cross tabulation
- Table 61** Age category * MUAC category Cross tabulation
- Table 62** Underweight, Stunting and Wasting among children 6-59 months
- Table 63** Severe underweight, stunting and wasting children 6-59 months
- Table 64** Vaccination and Vitamin A supplementation
- Table 65** Prioritization of livelihood development related problems at various levels

Executive Summary

The Productive Safety Net Program-Pastoral Area Pilot (PSNP-PAP) project is a one year and eight months project being implemented in 18 pastoral woredas of Ethiopia: three woredas in SNNPR, three woredas in Oromiya, six woredas in Somali and six woredas in Afar Regions. The PSNP-PAP aims to (a) assist chronically food insecure people attain food security and (b) significantly improve the capacity of the woreda government, implementing partners and PSNP operational communities. The PSNP-PAP aims, in particular, to provide evidence which will be input to the future PSNP roll-out in pastoral areas. Similar to the regular PSNP, two main components comprise the PSNP PAP: (i) a labour based public works component; and (ii) a component focused on direct transfers of food, intended to support households that are unable to participate in the labour based public works component.

CARE Ethiopia, funded by USAID, is supporting the implementation of a PSNP-PAP in all Kebeles of Dewe Woreda of Afar Regional State. The goal of the project is improving the food security condition for 24,888 individuals while generating evidence-based lessons to design a full-scale safety net program in pastoral regions. The strategies included are distribution of food through food-for-work program to assist development of productive infrastructures-pasture and water resource rehabilitation, and direct food transfer to prevent livelihoods slide back and enhance capacity of local communities to manage risks which otherwise adversely affect their livelihoods.

CARE Ethiopia commissioned Dynamic Institute for Consultancy and Training (DICT) to conduct baseline assessments on livelihood and KAP regarding Natural Resources Management (NRM) in order to set benchmarks for PSNP-PAP strategic objectives and indicators that will assist the generation of evidence based lessons from changes or impacts as a result of intervention, which will inform PSNP-PAP roll- out formulation process. This assessment was carried out between June and August 2009 and the major findings and recommendations are summarized and tabulated below.

Demography: *according to CSA 2008 report, 42,323 people (24,817-males-59% and 17,506 females-41%) inhabit Dewe. The spatial distribution of the population indicates that 40,041 (95%) live in rural areas, whereas the rest 2,280 (5%) are urban dwellers. Average HH size in Dewe woreda is six persons, which is exactly similar to the regional average for the year 2006 (CSA, 2006). It is found out that household size varies across headship; i.e. female-headed HHs are with lesser family size compared to male-headed ones, which is the characteristic of poor HHs in the area.*

Livelihoods: *Dewe is one of the drought prone Woredas of Afar regions. The people's livestock based livelihoods are depleting through time mainly due to recurrent drought and other contributing factors such as tribal and clan based conflicts, which disrupt the production system. There are also no effective asset protection or risk management interventions inbuilt in the government/community system to assist local people adaptation to the situation. Reliance on livestock-based livelihoods alone is becoming a more risky business. To cope with the situation local people practice diverse*

activities in addition to livestock keeping (pastoral production), which includes agro-pastoralism through rain fed and small scale irrigated agriculture and petty trading activities. Certain households are also dropping out from pastoralism as they loose their assets and start engaging in casual labour and other informal livelihood diversifications such as charcoal and fuel wood production and marketing due to lack of choice. Remittance is also increasingly becoming a means of livelihood.

Wellbeing analysis: wealth ranking of sample HHs carried out based on livestock ownership showed that (i) about 60% of the HHs own only up to 2.75 TLUs¹ livestock/person less than the 4TLUs threshold/person, which constituted only 18% of the HHs ten years ago. Thus, a significant proportion of the pastoralists are highly food insecure. (ii) Medium wealth group HHs (26% now and 35% 10 years ago) own 8 TLU, hence are food secure or capable of leading active pastoral livelihood; (iii) Better-off HHs owns 25.1TLUs their proportion has dramatically decreased from 47% ten years ago to 14% at present. The results showed that there is a significant inequality in livestock holding among different wealth groups. A HH of size six, on average, possesses 8.3 TLUs or 1.45 TLUs per person, which is far below 'the minimal livelihood norm' of 4 TLU per person for pastoralists in the Horn of Africa (ICRC, 2005)

Education: school enrolment for children of age 5 to 17 years has reached at about 78.3%. The overwhelming majority (82.2%) of the HHs heads are illiterate with female headed HHs more literate than male headed HHs (19% and 16.6% respectively).

Health: access to primary health service is very limited with a total estimated coverage of 41.8 %. At the Woreda level, 20% of the respondent households experienced sickness; and 15% of the respondents reported death of household members. Depending on their location local people travel from 5-30Km to the woreda town to get primary medical care (travelling for 1-6 hours carrying patients)

From the HHs interviewed a total of 53 persons died during the last 12 months. 47% of the deaths were in the age category of 5-15 yrs; 33% were over 15 yrs and 21% were children under 5 yrs of age. In fact, most (85%) of the people died in the age category of >15 yrs were reported to be household heads. The main causes of death were malaria (44%), TB (26%), internal parasites (15%) and 15% by other factors (such as accident, and measles).

Water and sanitation: access to potable water source is very low with a total estimated coverage of 53 %. About 22.7 % of the inhabitants have to travel more than 7 kms to access safe water. In an average of 78% of the survey HHs, all family members bath at least three days per week and

¹ TLU (Tropical Livestock Unit) is equivalent to 1 camel or 1.43 cattle or 10 sheep/goats. Based on the local standard, a minimum of 4TLU per person is required to lead active pastoral livelihood in the Horn of Africa.

in the rest 22% bathing is practiced at least every other day. None of the respondents have improved hygiene and sanitation practice.

Nutritional status: *there is high level of (30.6%) malnourishment (MUAC < 125 mm) among under 5 years' children. Out of these, 5.6% were severely malnourished, yet the rest 25% were moderately malnourished. Severe underweight, stunting and wasting is pervasive among children between 6-59 months which constitute 16.7%, 20.9% and 5.6%, respectively. Regarding morbidity, diarrhoea followed by ARI and malaria are the three most prevalent diseases among under 5 children. Whereas Vitamin A supplementation coverage is 91.7%, Measles and BCG vaccinations are nonexistent*

Development standards: *Dewe Woreda falls far below the regional and as well as national averages in poverty status. Taking the national total poverty line of 1,075 Birr for the country, 77% of the people in Dewe are estimated to be under poverty. This is a poverty level far above the national average of 38.7% and that of Afar 56% (in 04/05). In general, a significant proportion (68%) of the Woreda people are estimated to live under the poverty line- living with less than US 1\$ per day, which explains the prevalence of extreme poverty and hunger.*

Food Source and Access: *livestock/livestock products and grain constitute the major component of Dewe Communities' diet. There is chronic and increasing food insecurity in the Woreda. About 31% of the HHs experienced food gap that prolonged from 7 to 12 months. The aggregated average food gap months for the Woreda are 6.6 months. Reportedly, PSNP covers about 6.3 months (96% of the gaps) every year. Poor households also get support from better-off clan members through the Zeka payment managed by the religious leaders. Better-off people pay one goat or sheep for every 30 goat/sheep or 10 cows and one heifer for every five camels to be given to poor families. However, as the proportion of better-off households and their livestock ownership is declining through time the Zeka system is getting weak.*

Furthermore, an average Human Dietary Diversities (HDDs) of 4.1 has been obtained. This means, on average, a HH in Dewe consumes 4 different types of food within 24 hrs during the time of interview (local bread, milk boiled with water and coffee husk, boiled or fried grain (maize or wheat) and fresh milk. However, general analysis reflected disparity across wealth categories: HDDS of 5.4 for the better-off, 4.5 for the middle and 3.9 for the poor HHs. The average meal frequency/day during the wet season and dry season is 3 and 2 respectively.

Household Income: *household survey respondents estimated their annual income to be ETB 2,512 on average (ETB 419 per household member considering 6 individuals per household). Most of the households obtain their income from sale of livestock and livestock products (60%), followed by non-farm employment (wages, salary, business) 14-20% and the remaining 20-26% obtained from gifts and remittance depending on the wealth status. Income from livestock and products sell is declining through time as the resource base is getting depleted.*

Expenditure pattern: *The average annual HH expenditure or consumption for the same respondents was ETB 5,486 (ETB 914 per household member considering 6 individuals per household which is over twofold of the estimated income). About 19% of the HHs spends up to ETB 2,000, 22% spend between 2,000 and 3,000 and 59% spend over ETB 3,000. This finding is in agreement with HICE 2000 survey report for Afar region, which says 87% of household's annual expenditure is between*

ETB 2,000 and 12,599. The lion share of the expenditure (64%) goes for food not disaggregated by food types such as –staple food, non staple food – food security purchase followed by clothing (13%). About 10% goes for health services and remaining 13% for education, transportation, animal health and other expenses. This shows that there is limited resource re-invested on sustainable livelihoods such as livestock asset building. Lower levels of human resource development indicators like health, education and sanitation are exhibits for the non-income dimension of poverty in Dewe. Moreover, decision of expenditure are made by men only (in 60% of the HHs), which is one indicator of gender inequality that adds to the non-income dimension of poverty.

Institutional arrangement capacity: government offices in charge of facilitating project implementation lack technical staff (existing staff also are not well trained), office facilities, and logistics such as transportation, communication and overhead cost to mobilize the existing staff.

KAP on natural resource management: Central to the KAP on NRM in Dewe is livestock resource. Knowledge about livestock, water, pasture land and climate is sophisticated, whereas knowledge about soil is low. Overall, positive attitude towards water and rangeland resources has been observed, albeit the practices are at rudimentary stage. Although eroded since imposition of parallel government system, the Afar pastoral communities are endowed with a rich traditional structure and knowledge base which regulates and manages the proper up keep and utilization of natural resources. These includes water resources establishment and management, fodder tree management, pasture reserve and utilization, herd management through mobility, herd splitting, traditional health service etc. Rangeland resource gets deteriorated due to invasive and unpalatable bush/shrub encroachment, high stocking rate-beyond the carrying capacity of the land, and drought and internal and external conflict also contributed for weakening the traditional system.

PSNP-PAP Related issues: On average, 5 persons are targeted per HH under PSNP. 56% of the respondents stated that they are aware of the targeting criteria for the selection of PSNP beneficiaries. Most (83%) of the respondents reported that they are beneficiaries of the PSNP. About 79% of the PSNP beneficiaries were under the public work category of the program, while 22% were included under direct support. Large proportions of the direct beneficiaries are from poor wealth category. 98% of the PSNP food payments is consumed, yet only 2% is sold to purchase additional requirements; 86% preferred monthly transfer due to lack of other resources to cover gap periods, whereas 14% (relatively better-off families) suggested two month transfers.

Recommendations

1. Huge investment and strenuous efforts are required to improve access to social services. Productive Safety Nets Programme and other food security programmes should be linked with broader development programmes (such as sector development programmes: health, education, water and roads) in order to alleviate the social service problems.
2. Short-term and long-term mechanism to improve institutional capacity development should be in place: The institutional capacity interventions should be integral part of food security development interventions; and it should be systematically integrated with the development dynamics in order to ensure sustainability of the programme results. Local government partnership with NGOs and other development actors who have better capacity will help to address the capacity issues.

3. *Beneficiary targeting by food security programme (such as PSNP) should consider the population dynamics including dependency, headship, disability, and marriage status (polygamy)*
4. *Food security/livelihood interventions need to reflect and consider the livelihood dynamics through comprehensive understanding of livelihoods of the different social groups. Livestock risk mitigating measures should be among the livelihood interventions that are appropriate to pastoralists. For agro-pastoralists and ex-pastoralists income generating interventions could be more relevant which should be mainstreamed to the boarder development interventions in pastoral regions. Mode of transfer and implementation of public work activities need to reflect the livelihood diversity; and consider seasonality and mobility pattern of the different livelihood groups.*
5. *Food security/livelihood interventions in pastoral areas should focus primarily on both household and community asset development/creation. In this regard, (i) the interventions should primarily focus on improving rangeland and livestock productivity. Development objectives and programmes need to minimize vulnerability/ hazards by considering the vulnerability context; (ii) The risk management interventions need to be mainstreamed in Food Security Programmes and other types of development interventions to minimize the consequences of the prevailing risks, thereby enhance sustainable livelihood at household and community levels; (iii) The existing livelihood strategies and options, particularly the natural assets should be strengthened and enhanced, providing a base for sustainable food security and livelihoods. Improved natural resource management, particularly rangeland management through prevention and control of invasive shrubs and trees, area enclosure and appropriate pasture development; (iv) Improved linkage between food security programmes and other sectors development programmes need to be improved and deepened; and (v) Water harvesting structures for both crop and pasture production, and small scale irrigation should be promoted in potential areas with sufficient planning.*
6. *Any interventions in pastoral areas should be viewed against the pastoralists' knowledge, perceptions, practices as well as expectations pertaining to livestock development. Specifically, PSNP interventions should strengthen KAP on NRM: enhance the KAP through establishing appropriate mechanisms to ensure strong engagement of customary institutions (which are still strong in natural resource management and conflict management). Moreover, empowering women is a key to address natural resource depletion as well as for improved hygiene and sanitation*
7. *Strengthening and mainstreaming the traditional knowledge and social assets, providing a base for sustainable food security and livelihoods, into the broader development interventions to meet the development needs of the different livelihood groups.*
8. *In implementing social protection interventions (such as safety nets programme) need to reflect the scale and size of the chronically/transitory food insecure population. Different levels of support based on the food gaps.*

Table 1: Summary of the findings of 2009 baseline survey Dewe Woreda

Indicators	Baseline results
1. Demographic characteristics	
1.1 Woreda population size	42,323
- Male	24,817
- Female	17,506
- Rural population	40,041 (95%)
- Urban population	2,280 (5%)
1.2 Average Household size	6
1.3 Female headed households	25%
2. Education	
2.1 School enrolment (5-17 yrs)	78.3%
2.2 School enrolment (15-59 yrs)	20.0%
2.3 HH heads	82.2% Illiterate
2.4 Range of distance to closest school	2-10 Km
3 Health	
3.1 Health service coverage	41.8%
3.2 HHs experienced sickness past month	20%
3.3 HHs lost member family members within last year	15%
3.4 Main causes of death: malaria, TB, internal parasites, diarrhoea,	44%, 26%, 15%, 15%
3.5 Deaths by age category: 5-15 yrs, >15 yrs <5 yrs	47%, 33% 21%
3.6 Health service coverage	41.8 %
4 Water supply and sanitation	
4.1 HHs no access to potable water sources	53%
4.2 HHs travel more than 7kms to access potable water	22.7%
4.3 Bathing frequency (3 day/week and every day)	78% and 28%
4.4 % of people that have improved hygiene and sanitation practices	0% - No toilet and no garbage disposal system
5 Nutrition-Food Utilization	
5.1 Number of meal per day (August)	2.8
5.2 Anthropometric results	
5.2.1 Underweight(Malnourishment-MUAL 12gmm)	30.6%
5.2.2 Stunting	20.9%
5.2.3 Wasting	5.6%
5.3 Morbidities-the three top prevalent diseases	Diarrhoea (79.1%), ARI (18.6%) & malaria (2.3%)
5.4 Vitamin A supplementation coverage	91.7%
5.5 Measles and BCG vaccination	Non-existent
6 Food Access	
6.1 Average number of months of inadequate food provisioning	6.6

Indicators	Baseline results
6.2 Dietary diversity	
6.2.1 Average HDDS	4.1
6.2.2 HDDS for the Better-off	5.4
6.2.3 HDDS for the Middle	4.5
6.2.4 HDDS for the Poor	3.9
7 Welfare:	
7.1 Orphans	10%
7.2 Disability	6%
7.3 Out Migration	11%
8 Livelihoods	
8.1 Pastoralists	74%
8.2 Agro-pastoralists	24%
8.3 Drop outs	2%
9 Wealth Categories	
9.1 Better off	14%
9.2 Medium	26%
9.3 Poor and Very poor	60%
10 HH assets: average price index of HH assets:	ETB 29,742 (livestock) and ETB 10,739 (physical) asset
10.1 Livestock ownership	Better-off Middle Poor
Cattle	15-20 6-7 0-1
Camel	11-17 5-11 0-2
Sheep	12-25 10-20 3-12
Goat	12-25 10-20 3-12
10.2 Cultivated total areas by 54 HHs (42 male and 12 female)	240 hectares or 4.4 ha/HH
10.3 Sell of Assets	63% sell livestock and 13% for physical assets to by food
11 HH Enterprises and Financial intermediaries	
11.1 Average number of HH enterprises	1.21
11.2 MFI	None
11.3 Members of SCG	26%
11.4 Membership to cooperative unions	21%
12 KAP on NRM	
12.1 Knowledge on Livestock, Water, Rangeland and Climate	High
12.2 Knowledge on soils	Low
12.3 Attitude towards water and rangeland	Positive
12.4 Practices on water and rangeland management	
12.4.1 Traditional water management practices	Weakening
12.4.2 Rangeland area under improved management practices	Low, but improving

Indicators	Baseline results
12.5 Vulnerability and livelihoods Diversification	12.6
12.7 People living with less than US1\$ per day	(68%)
12.8 % of people that are chronically food insecure in targeted areas	31% (7 to 12 months food gap)
12.9 # months per year resource transfers are required	0.3 (6.3 already covered under PSNP)
13 Income and Expenditure	
13.1 Average annual HH cash income	2,512 ETB
13.2 Income proportion by source	
- Livestock & livestock products	60%
- Remittances, gifts	20-26%
- Petty trade	14-20%
13.3 Average annual HH expenditure	5,486 ETB
14 PSNP Related Indicators	
14.1 Average no. of persons targeted per HH	5
14.2 Awareness about targeting criteria	53%
14.3 Attitude towards targeting criteria applied	87% happy; but 13% not
14.4 Preferences of PSNP resource types	62% opted for food, yet 38% cash
14.5 Transfer modality	86% monthly, 14% every two month
14.6 Average distances from houses to the distribution site	5.3 km
15.7 Average estimated time elapsed for collection of monthly transfer	5 hours and a mean of 2.5 nights

TABLE OF CONTENTS

<i>Area Map of AFAR PSNP-PAP Pilot Woredas.....</i>	<i>ii</i>
<i>Acknowledgements.....</i>	<i>iii</i>
<i>List of Acronyms.....</i>	<i>iv</i>
<i>List of Tables and Figures.....</i>	<i>v</i>
<i>Executive summary.....</i>	<i>ix</i>
1. INTRODUCTION TO THE BASELINE SURVEY	18
2. OVERVIEW OF THE PRODUCTIVE SAFETY NET PROGRAMME PASTORAL AREAS PILOT (PSNP- PAP)	20
2.1 Objectives of the PSNP.....	20
2.2 Objectives of PSNP-PAP	20
3. FRAMEWORK AND METHODOLOGY OF THE SURVEY	22
3.1 Conceptual Frameworks	22
3.2 Methodological Approach	24
3.3 Limitations of the Survey.....	25
4. PROFILE OF THE SURVEY AREA.....	27
4.1 A Glimpse of Regional and Woreda Profiles	27
4.2 Profile of Dewe Woreda	28
5. SURVEY RESULTS	32
Module 1. Livelihoods and Vulnerability Situation	32
Module 2. Knowledge, Attitude and Practice (KAP)	41
Module 3. Characteristics of Surveyed Households.....	60
Module 4. Household Asset Ownership	69
Module 5. Household Food Source, Income and Expenditure	76
Module 6. Child Nutrition: Anthropometric Results	87
Module 7. Food Security Programmes and PSNP-PAP Related Findings	90
6. SUMMARY OF MAJOR FINDINGS AND RECOMMENDATIONS	92
MAJOR REFERENCES.....	97

1. Introduction to the Baseline Survey

The Productive Safety Net Program-Pastoral Area Pilot (PSNP-PAP) project is a one year and eight months project being implemented in 18 pastoral woredas of Ethiopia: three woredas in SNNPR, three woredas in Oromiya, six Woredas in Somali and six woredas in Afar Regions. The PSNP-PAP aims to (a) assist chronically food insecure people attain food security and (b) significantly improve the capacity of the woreda government implementing partners and PSNP operational communities. The PSNP-PAP aims in particular to provide evidence which will inform to the future PSNP roll-out in pastoral areas. Similar to the regular PSNP, two main components comprise the PSNP-PAP: (i) a labour based public works component; and (ii) a component focused on direct transfers of food, intended to support households that are unable to participate in the labour based public works component.

CARE Ethiopia funded by USAID, is supporting the implementation of a PSNP-PAP in all Kebeles of Dewe Woreda of Afar Regional State. The goal of the project is improving the food security condition for 24,888 individuals while generating evidence-based lessons to design a full-scale safety net program in pastoral regions. The strategies included are distribution of food through food-for-work program to assist development of productive infrastructures-pasture and water resource rehabilitation, and direct food transfer to prevent livelihoods slide back and enhance capacity of local communities to manage risks which otherwise adversely affect their livelihoods.

CARE Ethiopia commissioned this Livelihood/KAP Baseline Survey in order to set benchmarks for the ongoing PSNP-PAP intervention in Dewe. The survey results were meant to assist the refinement of indicators embedded in the project that are geared towards the generation of evidence based lessons from changes or impacts as a result of the intervention. This, in turn, will inform the PSNP-PAP roll-out for the upcoming phase. Thus, the bases for the design of the baseline questionnaires were the PSNP pilot design and guideline documents and the pastoral issues paper produced to inform the next phase FSP in pastoral areas.

The survey was carried out between June and August 2009 and the major findings are summarized and tabulated below. It involved generating baseline livelihoods information, the community knowledge, attitude and practices, and development initiatives that enhance livelihood security. The baseline survey was meant to gather and generate information on, among others: Household composition, household assets profile, household livelihood needs, particularly household seasonal food profiles such as food access and deficiency, household income level and expenditure pattern, indigenous knowledge, attitudes and practices in relation to managing natural resources, especially pasture and water, number and use of productive infrastructure and social services, risk management and disaster mitigation strategies.

The baseline information is interpreted in the context of the PSNP pilot options (see section 2). Based on the survey results, general recommendations are suggested triggering concerted efforts development by different development actors in the survey woreda and in other pastoral areas.

The purpose of this report, is therefore, to present to the client the preliminary results and major findings of the survey. In light of this, the report is organized in six parts as follows. Part-2 provides an overview of the PSNP-PAP and Part-3 deals with the framework and methodology of the survey. Part-4 presents profile of the survey area. Part-5 provides the survey results as presented in six modules. Finally, Part-6 presents summary of findings and recommendations.

***N.B.** In addition to this volume II, which is the main report, there are other reports viz., volume I -summary report and volume III that includes annexed tables and detail methodologies.*

2. Overview of the Productive Safety Net Programme Pastoral Areas Pilot (PSNP- PAP)

2.1 Objectives of the PSNP

The Productive Safety Net Programme was launched in Ethiopia in 2005 to help households that face regular food shortages during difficult times. It is now a key part of the Government's overall food security programme. It is implemented in woredas that regularly face food problems. It aims to achieve food security for those who have been dependent on relief due to chronic food insecurity.

Box 1. Program Objectives and components of PSNP

The PSNP has the following specific objectives:

1. Prevents asset reduction at the household level (e.g. sale of key breeding livestock);
2. Prevents long-term problems caused by short term food shortages;
3. Builds assets at the community level (e.g. improved access to existing water points, construction of markets; improved access to markets).
4. As well as solving urgent needs for food the PSNP also aims to:
 - a. Support longer term changes in the rural areas,
 - b. Encourage households to be involved in production and investment,
5. Promote markets by increasing the amount of cash households can spend.
6. The Productive Safety Net Programme has two parts:
 - i. Labour-intensive Public Works for able-bodied (*fit and healthy*) beneficiaries from households that face regular food shortages,
 - ii. Direct Support for households that face regular food shortages but who have no labour or other means of support.

Source: PSNP-PAP Guideline, 2007 as adopted from PSNP PIM

2.2 Objectives of PSNP-PAP

Extracted from the Pilot Design and Implementation Guideline documents, the PSNP-PAP aims at providing basis for development of pastoral areas safety net. As stipulated in the PSNP-PAP the outputs identified include:

- Indicator performance tracking table
- Various targeting mechanisms tested for appropriateness;
- Nature of appropriate (to livelihoods and principles) public works identified;
- Appropriate transfers systems established (type, timeliness and modality);
- Appropriate institutional structures and capacity to deliver the programme determined;
- Contingency mechanisms for shocks designed and tested;
- PSNP operational guidelines and manuals adapted to the pastoral context.

Furthermore, the PSNP-PAP guideline outlines the following options that are to be tested during the pilot phase in pastoral areas:

- **Targeting:** Combined administrative and community, Community- value based and Self-targeting approaches
- **Seasonality:** The timing of programme activities will depend on the seasonal calendars of the different livelihood systems in the lowlands. These calendars are variable and the programme will be flexible to ensure appropriate timing of public works and of transfers to beneficiaries.
- **Type of transfers:** Both cash and food will be tested during the pilot phase as well as variable wage rates across regions.
- Ways of delivering the cash or food (transfer modalities)
- **Risk management:** Various risk management strategies will be applied as appropriate during pilots.
- **Implementation arrangement:** Partnership with NGOs;

Box 2. CARE's PSNP-PAP Project objectives and intermediate results

Objective 1: To enhance the viability of pasturelands and water resources through community-based public works.

Intermediate Result 1.1: 4,725 MT of Title II food will be distributed in the woreda through FFW activities in support of developing productive infrastructure and sustaining livelihoods

Objective 2: To protect the assets of resource poor households.

Intermediate Result 2.1: Direct Food Transfers. 1,181 MT of food transferred to 9,956 (women and men) through direct support to prevent further livelihoods slide back.

Intermediate Result 2.2: Targeted communities trained in human health and hygiene.

Objective 3: To generate promising practices and effective approaches and relevant strategies to implement the safety net program in pastoral areas.

Intermediate Result 3.1: Community approved safety nets interventions identified and lessons documented.

Source: CARE Ethiopia, 2005

3. Framework and Methodology of the Survey

3.1 Conceptual Frameworks

The consulting firm adopted livelihood framework and trend analysis in order to capture livelihood/vulnerability dynamics over times (past, current and future). In addition, the pastoral issues and PSNP-PAP key questions were also used as frameworks for the baseline survey.

(i) Livelihood/Vulnerability Framework: The pastoral livelihood/vulnerability is consisted of social system (inclusive of human and social capital), livestock production system (including mobility) and natural resource (range/grazing land, water, etc), marketing (including the marketing facilities, marketing function, etc), and livelihood transformation (livelihood dynamics: pastoralism, agro-pastoralism, ex-pastoralists).

Based on the theoretical insights from literatures, the conceptual framework for livelihood and food security was adapted as analytical lens to discern the livelihood and food security situation in Dewe. The trend analysis order was also used to better understand the livelihood dynamics in order to identify appropriate interventions in accordance with the livelihood transformation pattern.

(ii) Linkage between the baseline survey objectives and the Pastoral PSNP Roll-out issues

A number of specific objectives are outlined in the ToR of the livelihoods/KAP baseline survey. These objectives should be linked to the Pastoral issues that could affect the FSP roll-out during the next phase FSP. The main issues include: scale/size of chronically food insecure people, caseloads, targeting, mode and type of transfer, resource dilution, Public work planning and implementation, mobility/seasonality, vulnerability, conflict, graduation from PSNP/FSP. Table-2, below, shows the linkages of the survey objectives and the information required to understand the critical issues that influence the Pastoral PSNP roll-out.

Table- 2 Livelihood/KAP Survey objectives and their implications to the PSNP roll-out issues

Specific Objectives of the Survey	Implication to Pastoral FSP roll-out	
	Information required on	Specific contribution to address outstanding issues
Household composition,	Characteristics of PSNP pilot beneficiary and non-beneficiary households	Targeting (different livelihood categories)
Household assets profile	Level of food gaps (number of food gap), main source of food and incomes, and expenditure	Mode and type of transfer
Household income level and expenditure pattern		Scale/Size of chronically food insecure households
Household food profiles		Seasonality, resource preference,

Specific Objectives of the Survey	Implication to Pastoral FSP roll-out	
	Information required on	Specific contribution to address outstanding issues
	mobility	Resource dilution (which is unavoidable in pastoral areas)
Knowledge, attitude and Practices	Indigenous knowledge on natural resource management, and the broader aspect of livelihood strategies	Public work planning, implementation, sustainability
Social networks	customary institutional arrangement in socio-economic decision-making	Conflict
Risk management and disaster mitigation strategies	Vulnerability mapping	Vulnerability: livelihood risk management (such as livestock relief interventions)
Institutional arrangement and capacity	Capacity to implement FSP	Coordination and capacity
Number and use of productive infrastructure and social services	Mapping development interventions (examine access and availability of basic infrastructure and services), natural resource, mobility pattern, etc	Graduation: Linkages/integration with other pastoral development programs

Source: Based on CARE's ToR

(iii) PSNP-PAP key decisions: There are key issues that woredas and regions have to make with regard to the structure of the PSNP pilot, presented in a hierarchy of questions in table 3. The information generated in reference to the key questions could help understand the PSNP household beneficiaries' understanding and perception of PSNP and generate additional information on the extent to which PSNP contributes to alleviating food insecurity at household level.

Table-3 Key Questions in the PSNP-PAP

Basic Questions and Indicators	Implementation questions	
Do we need a safety net?	What mode of transfer	Cash, Food or a mixture
Why do we need it?	What wage rate is appropriate?	Consider Terms of trade
Who do we need it for? Which livelihood groups are most in need? And can we reach them?	Which targeting modality?	Community, Administrative, Self targeting or a combination
How can safety nets respond to different livelihoods in pastoral areas?	How public works is designed/determined?	Community engagement, plus woreda development plans
Are beneficiaries using transfers to link safety nets with basic services?	How should public works labour be organised	Hours of work, size of work teams
What programmes do the	Which organisations should be	Government alone or government

Basic Questions and Indicators	Implementation questions	
woredas have capacity to implement?	involved in public works implementation	partnership with NGO and/or private sector
Do regions and woredas have adequate financial systems to deliver transfers in a timely and accountable manner?	What customary institutions should be involved; and where are their most appropriate roles?	Clan, Gada system, religious institutions, etc.
	What contingency mechanisms will best support the programme in times of shock?	Expanded public works, livelihood interventions, links to livelihood initiatives, emergency response

Source: CARE Ethiopia survey result, 2009

3.2 Methodological Approach

Several planning meetings were conducted with CRE Ethiopia head office and field staff to agree on the survey designs, sampling methodology and contents of the household level survey questionnaire and check list for key informants discussion. Based on these consultations, an Inception Report was submitted to CARE Ethiopia; and discussed agreement reached before the start of actual field work. DICT’s team of consultant including Ato Girma Tegenu, Dr. Tafesse, Ato Tewodros, Ato Getu and Ato Birhanu were involved in the baseline survey. In addition, supervisors and five enumerators were deployed and collected the household level information. Questionnaire was pre-tested and amendment was made based on the feed back obtained. Supervisors provided field level technical back stopping to enumerators throughout the survey period.(for details refer the technical proposal and inception reports at CARE).

3.2.1 Types of data and collection methods

The survey data source includes secondary information and first hand information collected by the survey team through household interviews and participatory methods (such as focused group discussions, key informants discussions, observations, case studies, etc...) to triangulate the findings. In the household level, Food and Livelihood Survey, a total 267 randomly selected HHs were included from various wealth categories. Out of these, 238 (90%) valid responses were obtained and analysed. In addition, information regarding nutrition was collected through anthropometric measurement taken from 72 under 5 children i.e. one in every third HH. The results were further complemented and/or supplemented by reviewing reports from health facilities as well as by discussing with health professionals and women groups.

Furthermore, a total of 18 FGD sessions were held involving a total of 90 participants drawn from 19 villages of the four kebeles. Besides, a total of 32 key informants were communicated that represented community leaders, local and regional government officials, CARE Ethiopia field staff and partner organizations like PFE and PCDP. It is worthwhile mentioning that findings obtained from FGDs and key informant interview are directly related to the KAP and food and livelihood survey results. Indeed, the qualitative data

obtained through FGD are also presented and discussed in an attempt to validate and/or substantiate findings from quantitative data. Also, different maps (using GIS) were collected to support the descriptive information generated through FGDs, particularly natural resource condition and social services.

Finally, review of pertinent secondary documents including woreda and regional level strategic plan documents, CARE's project document, regional atlas etc also provided useful data in the analysis of the qualitative and quantitative information obtained from the primary sources.

3.2.2 Sampling Techniques

A multi-stage cluster and random sampling method was used to select households and Kebeles/communities to be included in the survey. Four Kebeles (Kilenti & Deressededa, Adalie & Woderage, Wahilo & Gedele, and Kahertu & Tulti) representing pastoral and agro-pastoral livelihoods were selected for the survey. During the selection of Kebeles, livelihoods, size of population and safety net beneficiaries, distance from centre and recurrence of conflict were duly considered in an attempt to ensure adequate level of representation (see also vol. 3/3.1 for details).

In selecting households for interview, proper representation from the population along characteristics like livelihood zoning, gender, ethnicity as well as urban-rural set-up were considered. Whereas 75% of the total sample HHs was pastoralists, the rest were either agro-pastoralists (23%) or dropouts (2%). Besides, 80% were beneficiaries of the PSNP, yet the rest 20% were not. In terms of headship, 75% were males (MHHs) and 25% females (FHHs). With regards to sources for qualitative data, at community/Kebele level, the participants in focused group discussion were constituted from different wealth groups (an average of 5 persons in each wealth group). Meanwhile, key informants were purposively selected and communicated from different organizations at various levels.

3.2.3 Data Output, Analysis and Discussions

Different and appropriate techniques of analysis were applied for the qualitative and quantitative data analysis. Household Economy Analysis (HEA), SPSS software and Excel spreadsheets were used for the analysis of the primary information. Descriptive statistics; mainly, cross-tabulations, frequency, averages, and percentages were used in the presentation, analysis and interpretation of the findings. Furthermore, quantitative data collected using checklists were analyzed and interpreted in light of the objectives of the survey. Data outputs and analysis were organized, discussed and triangulated (including results from the review of secondary information) in reference to the conceptual frameworks.

3.3 Limitations of the Survey

The field data collection for the survey started in the first week of June and ended by mid July. During this time there was conflict between Afar and Oromo communities. It was difficult to get key informants at Kebeles and Woreda levels as they were highly engaged in

settling the disputes. The enumerators often had to make repeated visits to complete an interview and discussion with key informants, particularly for the nutrition aspect.

The scattered and mobile nature of pastoralists and lack of rural road access, associated with the onset of the *meher* rainy season created difficulty to access survey areas and sample households.

Due to the long history of emergency support, also associated with PSNP, people through time have developed dependency syndrome. It was difficult to get concrete information regarding number of months of food gap; consequently, determine duration of support.

The recurrent drought in Afar and the socio-cultural belief not disclose livestock holding made difficult to get concrete evidence on the trends of livestock holding and herd dynamics. Both key informants and interviewees exaggerated the livestock mortality and livestock bust is significantly high.

4. PROFILE OF THE SURVEY AREA

4.1 A Glimpse of Regional and Woreda Profiles

The Afar National Regional State (ANRS) is located in the northeast part of Ethiopia between 39° 34' and 42° 28' East Longitude and 8° 49' to 14° 30' North Latitude (BoFED, 2009). Bordering with the Ethiopian crop farming highlands of Amhara and Tigray regions as well as the lowland pastoral areas of Oromiya and Somali region, over 93% of the Afar people is pastoralist whose subsistence food and income come primarily from livestock (CARE, 2005).

With an estimated area of about 96,707 km², Afar has a total population of 1,411,092 out of which 55.73% are males and 44.23% are females. The region has an estimated density of 14.59 people/km². 86.6% of the population is considered rural inhabitants. The entire region is inhabited by 247,284 households with a single household accommodating nearly 6 persons on average (CSA, 2007). Administratively, ANRS, at present, is divided into 5 Zones, 32 Woredas and 401 kebeles (BoFED, 2009).

In terms of level of development, Afar is one of the least developed emerging regions of Ethiopia. Food poverty is widespread in Afar (39%) compared to a national average of 38%. Livestock is the main source of income and food for the Afar pastoralists. The region has about 10.18 million livestock population (i.e. cattle 2.34 mil., goats 4.3 mil., sheep 2.5 mil., camel 0.85mil. and equines 0.19 million). Nevertheless, productivity of livestock in terms of milk and meat remained very low. Furthermore, the region is characterized by less access to some of basic services compared to national average. The Afar pastoralists are among the populations with the least enrollment in Education. The gross enrollment rate is only around 37%, which is around one-half of the national average of 73% in 2007. Gender wise-comparison of coverage uncovered that there is a pronounced disparity: enrolment rate of 29.68% for girls versus 42.68% for males. Likewise, Afar has a disproportionately low health service with the potential regional health service coverage of 70%. Access to potable water remains very low with coverage of 53%, which is more or less similar to the national average (54%). Moreover, the sanitation situation is very poor; only 3.37% of households have access to sanitation facilities, which is far below the national average (35.6%).

In short, the Afar region is characterized by pervasive and persistent problems of poverty and food insecurity. Albeit recent developments, limited access to and utilization of social services and infrastructure has been exacerbating the possibilities of threat of famine, malnutrition and disease. Depletion of the natural resource base, mainly water and pasture resources, are adversely throwing their impacting on food security, nutrition, and health. Indeed, resource degradation, by way of triggering conflict, has widely been observed to claim the lives and livelihood of pastoralists. (BoFED, 2009, MoFA, 2009 and CARE, 2005)

4.2 Profile of Dewe Woreda

Location and Administrative Division

Dewe Woreda is one of 32 Woredas of Afar National Regional State, administratively located under Zone 5 of the region. Dewe is situated 60 Kilometres off the Bati-Mille all-weather road on the way to the zone capital town of Dalifagae. Administratively, Dewe is divided into ten kebeles. The Woreda has wide range of topographic features. The four Kebeles found bordering the highlands of the Amhara region have hilly topography with a semi arid ecological characteristic dominated by bush and shrub vegetation. In general, acacia trees and various short shrubs cover large proportion of Dewe's landscape. The low laying areas of the Woreda that are located along the Awash river bordering Gewane Woreda, Dalifage woreda and Issa areas/Endufo that are predominantly with arid agro-ecology located on average around 800 meters above sea level. Dewe is endowed with one perennial river named *Dewe River* and other seasonal rivers that are small flood streams. In addition, four of the ten kebeles of Dewe are established along the Awash river basin.

Demographic Profile: In terms of population size, Dewe is the leading from among the five woredas included under the zone. According to latest CSA report, Dewe is inhabited by a total of 42,323 people, which is 23% of the zone total population size. There are 24,817 males and 17,506 females constituting 59% and 41% of the Woredas total woreda population. The spatial distribution of the population indicates that 40,041 (95%) live in rural areas, and the rest 2,280 (5%) are in urban areas (CSA, 2007).

Table-4 Population by sex and Place of Residence for Dewe, Zone-5 and Afar region

	Population by				Total
	Sex		Place of Residence		
	Male	Female	Urban	Rural	
Dewe	24,817	17,508	2,280	40,043	42,323
Zone-5	105,254	78,447	12,259	171,442	183,701
Region	786,338 (56%)	624,754 (44%)	188,973 (13%)	1,222,119 (87%)	1,411,092 (100%)

Source: Based on CSA, 2007

Livelihood and Topography

In terms of livelihood, the woreda is predominantly occupied by pastoralists. The remotest kebeles from the woreda centre are predominantly pastoralists. The agro-pastoralists livelihood is observed in four kebeles, which are considered as sedentary. However, there is no data regarding the number of ex-pastoralists. Alike most pastoral areas livestock rearing (camel, cattle, goat and sheep) is the main stay for the majority (>90%) of the population in Dewe Woreda. Remaining 10% or less located bordering Oromiya region practice agro-pastoral livelihoods usually through shared cropping. The livelihood types by kebeles are described in Table 5.

Table-5 Dewe woreda: Agro-ecology, topography, accessibility and livelihoods

No.	Kebele	agro-ecology	topography	accessibility	livelihoods
-----	--------	--------------	------------	---------------	-------------

1	Adelili & Woderage	Semi-Arid and Lowland	Hilly with some Bushy Plain	5 kms away from the seat of the Woreda	Agro-pastoralist and some petty tread in the urban area
2	Eyeledi & Gendewori	“	“	11km Away	Agro-Pastoral
3	Kilenti & Deressededa	“	“	9 km Away	“
4	Wahilo & Gedela	“	“	8 km Away	Agro-pastoralist
5	Fereskori & Gedanso	“	“	48 km Away	Pastoralist
6	Yemodu & Kobakoma	“	“	22 km Away	“
7	Kilelo & Gamora	Arid/800masl/	Sandy plain	72 km Away	“
8	Kehertu & Tutili	Arid/800masl/	Sandy plain	79 km Away	“
9	Dewobora & Kubet	Arid/800masl/	Sandy plain	70 km Away	“
10	Halbi & Sonkorkora	Arid/800masl/	Hilly	78 km Away	“

Source: Dewe Woreda Administration Statistical Abstract, Strategic Plan of Dewe Woreda, 2006.

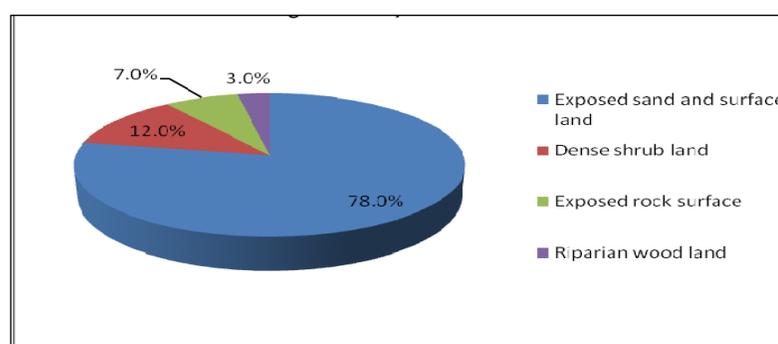
Pasture Productivity: The Percentage of Pasture Productivity (in Kg/ha) for Dewe showed that for 27.7% it is between 400-500 and 21.8% lies between 300-400 accounts . While 14.6% is between 250-300 kg/ha, 12.3% and 7.3% lie between 200-250 and 500-600, respectively. Out of the rest, 5.9%, is between 600-800, 3.1% below 200 kg/ha, yet only 6.3% is above 800 kg/ha.

Livestock Population: The total of livestock population in Dewe woreda has been estimated 203,809 out of which goats accounted to 101,524 (50%), sheep 50,762(25%), cattle 35,457 (17%), camels 15,240 (7%) and equines accounted to 826 (below 1%).

Land Use/Land Cover: From the major distinct types of land cover classification in Dewe woreda are exposed sand and surface land (78.0%), dense shrub land (12.0%), exposed rock surface (7.0%) and riparian wood land (3.0%).

In 2007/08 the total cultivated land and covered by crop in Dewe woreda is 122 hectares and the overall major crop production of the woreda in the same year is 3,963 quintals (3,375 qtls of maize, 525 qtls of sorghum and 63 qtls of other types of crop)

Fig.1 Land use/Land cover of Dewe woreda



Source: Strategic plan of Dewe, 2006 and BoFED, 2009

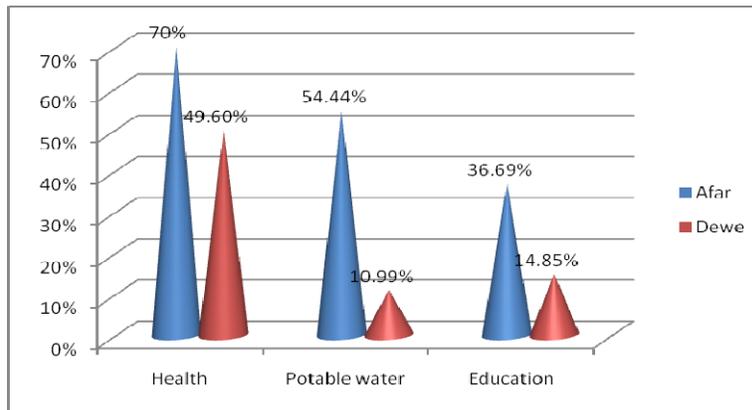
Soil Types: There are four major distinct types of soils in Dewe woreda. Eutric fluvisol accounts for 40%, Lithic Leptosol 35%, Calcaric cambisol 18% and Rock surface constitutes 7% of the woreda’s soil.

Coverage of Social Services

As can be seen from fig.2 below, access to social services in Dewe woreda is very poor, even by regional standards.

With regards to education, in the year 2009, gross enrolment rate is estimated at only 14.8% i.e. 17.83% for male and 11.13 for females.

Fig 2. Coverage of Health, Potable Water and Education for Dewe and Afar, 2009



Source: Based on Regional Atlas of Afar, BoFED,2009

The woreda enrolment rate is far below the regional average of 37% for the same year. Similarly, access to health and water services is poor in Dewe. The overall health coverage is 49.61% in 2009 with the coverage of health posts and health centres in the woreda are 30% and 35.44%, respectively. The regional potential health coverage of 70% shows how Dewe lags in terms of access to health. Finally, potable water supply coverage of the woreda is 10.99%, which is far below the region's average of 54.44% for the year specified before.

Institutional Arrangements: At woreda level, the government structure is functional, and many of the positions in each government office have largely been filled. As shown in table 6, the prominent woreda level government offices have the required staff in terms of number. However, it was difficult to get full picture in terms of qualification though it was reported during the discussion with key informants at woreda level that the available staffs lack the required qualification and skill.

Table-6 Positions and staffing requirement of Dewe woreda administration

Offices	Number of positions (government structure)	Position filled	Positions not filled
Woreda Administration Office	19	13	6
Woreda Pastoral and Rural Development Office (WPARDO)	43	41	2
Woreda Food Security Desk (WFSD) under WPARDO	No office	No office	No office
Woreda Education Office	13	6	5
Woreda Health Office	No office	No office	No office
Woreda Water Office	No office	No office	No office
Woreda Justice Office	10	9	1

Source: Dewe Woreda Administration Statistical Abstract, Strategic Plan of Dewe Woreda, 2006.

The woreda has just two farmer/pastoral training centres, located in ‘Adelili and Woredage’ and ‘Kinenti and Dereseda’ kebeles each of them with three DAs. This shows that only 6 development agents are available out of the 30 development agents required for the 10 kebeles. The office facilities and equipment at woreda level in all government offices is very poor. There is no sufficient room, resulting in poor working environment. There is limited computer and related facilities. Two computers (desk tops), two printers and office furniture were purchased by PSNP-PAP for the WFSD. Power supply is limited at woreda centre. Only woreda administration and health offices have one vehicle each.

5. Survey Results

As stated in the survey methodology, the findings from the livelihoods/KAP baseline survey will be presented below based on its framework. The different results, obtained from the different methodologies (secondary information review, household interviews, FGD and observations), are triangulated so as to understand the consistency of the findings. It is worthwhile mentioning that findings obtained from FGDs are directly related to the food and livelihood survey results, which revealed the consistency of the results.

Module 1. Livelihoods and Vulnerability Situation

1.1 Livelihood Capitals

Similar to other pastoral areas, the main livelihood capital of the rural people in Dewe woreda include: natural, human, social, financial and physical assets.

1.1.1 Natural Assets

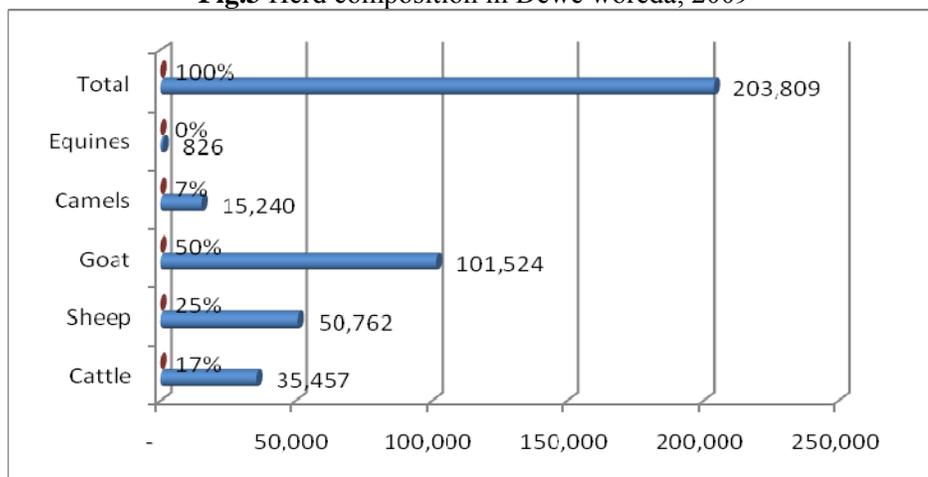
The key natural assets for the target communities are livestock, cultivable land, and water. The livestock and cultivable land are covered under module 3, household asset ownership section.

Livestock

Subsistence livestock production serves as the foundation for rural livelihoods in the woreda. The livestock population of Dewe woreda is estimated to be 203,809, which covers around 2% of the regional population i.e around 10 million as estimated by Sanford & Habtu quoted in MoFA, 2009.

As far as herd composition is concerned, the number of shoats (goats and sheep) dominates followed by that of cattle and camels. This is presented in the figure 3 below:

Fig.3 Herd composition in Dewe woreda, 2009



Source: Strategic plan of Dewe, 2006 and BoFED, 2009

Sanford guesses a decrease of 15% for cattle, 5% for sheep, 5% for goats and 0% for camel between May 1999 and May 2000 drought in better zones while it was relatively higher for

worse zones 45%, 15%, 15%, 25% respectively for cattle, sheep, goats and camels. In the mean time, Solomon Desta describes cattle population dynamics as “boom and bust”. In an inventory for the 56 households in 17 years, there was 37% decline from an average of 92 head/ household in 1980-1 to 58 head/ household in 1996-7. The magnitude of net cattle sales and slaughter during the same period was < 2/household/ year. This indicates that most of the change in the cattle population dynamics resulted from mortality. In density dependent environment, other factors such as fodder resource shrinkage and drought may not favour herd growth and the general effect is that livestock per household declines. Generally, livestock number growth may continue to be affected with current situation of recurrent drought, thus cattle boom and bust is the trend in many pastoral areas.

Cultivable land: At woreda level, around 122 ha of land has been cultivated. But, no comprehensive data is available regarding the distribution of cultivated land across kebeles and on the number of households who are engaged in crop farming, including opportunistic farming. However, the FGD participants reported that the practice of crop cultivation as main source of livelihood for agro-pastoralists and supplementary source of food for pastoralists has been increasing from time to time. See household asset ownership section for the details.

Grazing/rangeland and vegetation cover: The vegetation cover and rangeland potential have reported to be significantly deteriorating over years. Currently, the woreda is predominantly covered by acacia and during rainy season, the palatable grasses (Adodoita, Keselto, Gersa, Uda, Ado Hara) grow sparsely. Parthenium species and invasive acacia species (such as *Acacia melifera*) are the predominant invasive plants. Around 75% of the land in Dewe is estimated to be invaded by the invasive species. (See also GIS map annexed for details on the encroachment of Dewe Woreda by the invasive species).

Water resource: The community of the woreda is spatially settled in such a way that 4 kebeles are established along the Awash river basin, another 4 kebeles are settled around Dewe river. The remaining 2 are located at distant from the two rivers. Rain is the main source of water for pasture and livestock. However, due to recurrent drought, the temporal and spatial distribution of rain has become unpredictable.

Trends in natural assets: Asked to compare the life situation now and ten years ago, one of the FGD participants, expressed that “*Comparing the situation now with the situation ten years ago is comparing day with night*”. Table 7, next page, summarizes the result of the FGD on trends and changes in livelihood assets over the last ten years.

Table 7- Trends in natural asset possession over time

10 years ago	Now	Future (Vision)
<p>Water</p> <ul style="list-style-type: none"> • Rivers such as Gewane and Awash, other intermittent rivers were full of water. • Sufficient ground water recharge and availability • Sugum, Karma and Deda season rains on time <p>Pasture</p> <ul style="list-style-type: none"> • Enough grass coverage for both camel and other small animals • Diversified tree and grass species <p>Livestock</p> <ul style="list-style-type: none"> • Livestock holding, on average, was around 250 i.e. 162 for better-off, 84 middle and 12 for poor HHs) N.B. This is based on the wealth ranking exercise presented under module 3. • Low level of disease and high capacity to resist • Enough livestock products to feed households • Many wild animals 	<ul style="list-style-type: none"> • Rivers drying (FGD participants in Kehirtu said that we can walk crossing awash river which was impossible 10 years ago • Sugum, Deda and Karma rainfall decreased both in amount and spatial and temporal distribution • Currently, there only few grass and tree species. Most tree and grass species disappear as a result of continuous drought • The size and pasture land decreases significantly; resulting in change of mobility pattern (more frequent vertical movement-to non-pastoral areas) and tension/conflict over pasture has increased • An increasing trend of livestock death, leading most of the households to destitution. The average livestock holding estimated to be 27. • Low availability of livestock products as the livestock holding of households decreased significantly • Low resistance to diseases as a result mortality rate has increased • Reduction in number of wild animals 	<ul style="list-style-type: none"> • With the current situation of water availability and recurrent drought, pastoralists feel that total loss of livestock is inevitable • The situation is gloomy unless pastoralists get support to construct water points • High livestock death with the current increase in drought

Source: FGD participants, June 2009

1.1.2 Human Assets

Human asset in this analysis refers to the knowledge, skill and health of individuals in the households and the community. The FGD and discussion with Woreda key informants pointed out that there is a considerable knowledge and skill in natural resource management and conflict resolution. Table 8, next page, summarizes the outcome of the FGD discussion in human asset possession.

Table 8 - Trends in Human Assets

Ten years ago	Now	Future
<ul style="list-style-type: none"> • Less access to health services • Children have no access to school • Knowledge and skill in natural resource management • The prevalence of malnutrition was low • There was no skill on cultivation • Traditional knowledge of conflict management 	<ul style="list-style-type: none"> • Clinics to provide health service • Children have access to education to certain extent • Knowledge and skill in natural resource management diminishes • Malnutrition as a result of drought has increased over the past ten years • Few pastoralists started to practice farming (skill in crop production) • There are still traditional knowledge of conflict management and negotiation for pasture access with neighbouring non-pastoral communities 	<ul style="list-style-type: none"> • Children will be better educated as there are new schools • Pastoralists will not have enough to eat that will affect our health

Source: FGD participants, June 2009

The FGD discussion also revealed that a number of health problems such as malaria and abdominal diseases and respiratory complications are common in most of the surveyed areas.

1.1.3 Financial assets

In pastoral areas, financial assets are very limited. There are limited financial credit service providers. The experience of interest bearing lending and borrowing is limited due to the religious structure. The existing practice is just grant (fund not revolved and with no attached interest rate), supported through NGOs. Priority is given for resource poor household to help them diversify their livelihoods and beter cope the recurrent drought.

The outcome of the FGD indicated that the main income source of all wealth groups is sale of livestock. Poor HHs sell sheep and goats while the medium and better of families can also sell cattle and camel depending on the HH cash requirement. As discussed in the previous session, livestock population, including its productivity, has significantly been decreasing through time as a result of drought and associated problems. In the recent past, the term of trade with cereals has also contributed in the loss of livestock as households have to sell many livestock to purchase food. The FGD in all PA's reveal that there are no formal financial institutions in the Woreda. Table 9 below, summarizes the results of the FGDs.

Table 9 - Trend in Financial Asset

Ten Years ago	Now
<ul style="list-style-type: none"> • High income as a result of livestock and livestock products though it was difficult to estimate the average income • Terms of trade were better than now. Before ten years selling one goat was enough to purchase 50 kg wheat or sorghum • No financial institutions to provide service in the community • Loan (experience of borrowing money) from each other has been in abundant 	<ul style="list-style-type: none"> • Less income as pastoralists do not have enough livestock to take to the market and the productivity decreased • The value of money has also significantly decreased as opposed to the previous days (pastoralists have to sell three shoats to buy one 50kg sack of wheat) • The recent conflict also affected income as pastoralists cannot move to market place in Oromiya zone of Amhara region where they can get reasonably high price for their product • There are no financial institutions to provide credit service but a few number of FHHs received credit from NGO's • Loan from each other reduced in amount with a decrease in livestock holding

Source: FGD participants, June 2009

1.1.4 Physical assets: Infrastructure and Social Services

The availability and accessibility of basic infrastructure and social services such as water, road, education and health are important in assessing the general welfare and socioeconomic condition of the population.

Access to Water: Potable water supply in the Woreda is considered inadequate with only one in ten person having access to potable water supply. There are 3 deep wells (motorized), 4 shallow wells and 1 hand dug well that are supplying water to the entier woredas population. The majority of the rural pastoral people access water for human and livestock consumption from ‘Eilas’-traditional water points, Dewe river and ponds. (*see also GIS map 2 annexed on the distribution of water points*).

Considering the low coverage, water development has been one of the priority development programs of the Dewe woreda since 2005, yet limited progress has been achieved. There is no safe water source in many of the rural kebeles.

Access to Road: The woreda centre is year round accessible, but there are about 2 remote kebeles which are less accessible. The road network and standard for the woreda stands at a very low level. It can be said that there are no functional roads that connect all the ten kebeles with each other and to the woreda administration. Distance of kebeles from the woreda center ranges from 8 km to about 79 kms (see Table-4 on page 13). In absence of transport facilities and year round connection, it is difficult for the woreda offices to reach the remote kebeles. This situation is further complicated by the mobile nature of the pastoralists and the remotest kebeles are pure pastoralists.

Access to Education: Education coverage of the woreda has increased since 2005. There are 1 secondary school, 10 primary schools and 2 secondary schools located at an average 2 kms

distance from all target communities, 11 alternative basic education centres /ABECs/ which are providing service to the community. However, during the discussion with kebele key informants, it was reported that the quality of education is poor. School children absentees is common, particularly at times of critical drought and conflict. (see also GIS map-3 annexed on part C).

Pastoralists/Farmers Training Centers: Information obtained from the woreda administration office surfaced that there are only two farmers training centers located in ‘Adelili and Woredage’ and ‘Kinenti and Ereseda’ kebeles, each of them with three DAs.

Access to Human Health Facilities: The health service coverage is estimated at 24%, which is below the regional average 40%. Pastoralists do have limited access to health services when they move away from their communities during drought period.

There is 1 (one) health clinic and 4 (four) health posts. Considering the number of kebeles, an additional 6 health posts are required to fulfil the national requirement. With regards to health professionals, there is 1 senior clinical nurse, 3 junior clinical nurses, 5 health extension workers providing services to the community. The information collected from the Woreda health office indicated that the top ten diseases are Malaria, Water Born Diseases/Diarrhoea, Respiratory Tract Infection, Conjunctivitis, Skin Infection, Intestinal Parasite, Wound, Urinary tract Infection, accident, and measles. (See also GIS map-6 annexed for details on part-C).

Animal Health Facilities: In the year 2005, there is only one animal health clinic which was served by 1 animal health professional, 2 assistant health professionals, 2 additional animal health technicians, and about 35 community animal health workers.

Market: The woreda population utilizes the woreda center (Dewe town), Dalifage (zonal town) and Bati and Kemisie towns (in Oromyia zone of Amhara Region), as their principal market for purchasing and selling commodities. Dewe town is located alongside the main transportation artery that connects the Dewe woreda to the larger markets.

Qualitative data on the physical assets conditions and trends have been gathered and analysed. The FGD with Kebele representatives and different wealth groups indicated that there is an overall improvement in the physical asset of the community such as road, school, and water point construction. In this connection, the FGD participants, retrospectively, described the situation ten years ago when there was no road that connects villages; no school for children; no telephone service and no water schemes other than ‘Eilas’ that were constructed by the community.

Nowadays, however, access to water source has improved as a result of around ten water schemes constructed during the past decade. Accessibility of the woreda and kebeles has also improved due to the construction of roads as well as physical availability of schools in all kebeles of Dewe. Participants of the FGDs were also with optimistic expectations regarding

further improvements, especially in the level of access to and utilization of road, water and schools in the future. (See also table 5.28 and 5.29-annexed in part B).

1.1.5 Social Assets

In pastoral areas, social asset is very crucial part of livelihood components and strategies. Afar communities are known to have strong social bonds and share resources equitably. They are governed by traditional law, known as “Afar ada”: a system of law, or meda, through which disputes within and between clans are settled. The communities are organized into clans, called mela, each with a hereditary clan leader, a feima aba, responsible for carrying out punishments, and a group of elders. Each level has its own leader, referred to as aba (e.g., burra aba), manage the clan’s internal affairs. They organize assemblies to settle disputes according to customary laws. Each clan living in the same territory has its own residential area (“metaro”). The residential area has grazing land and water. The clan that owns the pasture allows other clans to use it.

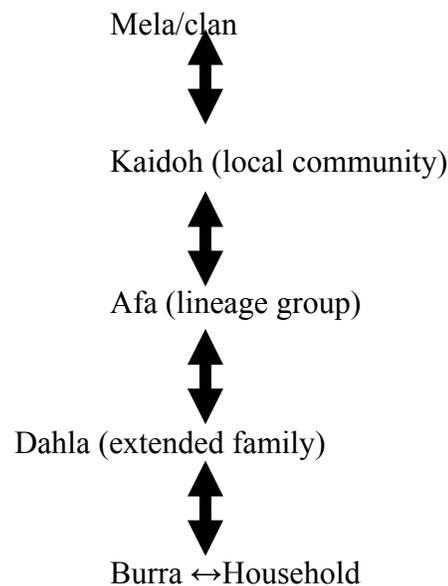
Their social structure which constitutes a norm, values, and beliefs, attitudes, shared a common form of social and economic environment. It serves for the people to lead their social activities and livelihood generation. The power structure goes from the main clan to the small unit; and the local institutions are determined accordingly. In rangeland management, the customary institutions have the potential to play a number of roles. These include:

- ✚ the promotion of collective efforts or community mobilization for early detection, prevention and control of risks, etc, making effective implementation of laws and regulatory issues;
- ✚ the potential to help increase accountability and rule of laws (by-laws, regulatory, policy issues) and equity in resource use (for instance, they can make decision on who and for what purpose to use the rehabilitated/ restored land) and risk management setting mechanisms and procedures for traditional safety net (supporting poor people, which is mainstreamed to Muslim religion/belief through the so called “Zeka”);
- ✚ the development/management of common property resources (e.g., grazing land, forest) and the integrated planning of village resources, does by its very nature demand wider forms of clan hierarchal structure such as (micro)-watershed management and the power structure.

However, as reported during the survey at different levels, the customary institutions have been deteriorating due to different factors. The customary institutions need to be strengthened so that their functions may easily be restored through their involvement in local development planning, implementation and monitoring and evaluation. For instance, the importance of customary/local institutions and their viability and functions should be considered during PSNP beneficiary targeting and appeal mechanisms, and labour-intensive public works planning, implementation, and monitoring and evaluation. For instance,

currently, there is a practice of pasture scouts. A team of range scouts guides the movements and monitors the state of rangeland before allowing herds to use it. This system is called “eddo” (or “Addo” in southern and central Afar). The men selected as “eddo” should be reliable, well respected, gentle and calm, capable of walking long distances. The team checks how much fodder and water are available, and whether the quality is good enough for the different livestock types; and it estimates how long the animals can graze on the particular rangeland. Therefore, assessing the existing status will be very crucial; and its contribution and viability for management of invasive plants will be determined accordingly.

The hierarchy of clan base structure is described as:



1.2 Vulnerability Situation

1.2.1 Prevalence and severity of Vulnerability

The vulnerability assessment uncovered that, like many pastoral areas, households in Dewe are vulnerable to a number of natural and man made risks. The top five recurrent hazards are: drought, conflict, livestock disease, high terms of trade and flood. Middle and better-off households sustain mobility in search of pasture and water.

Pastoralists felt that the production and productivity of livestock was magnificent before ten years. In those good days, communities were less familiar with issues such as drought, food shortage and hunger. In those times, if one of the rainy seasons in a given year fails, shock would fall over all of the community and they would go further to level that year with a special name.”

As can be seen from Table 10, the main stress factor before ten years was flooding in the river banks. However, drought is ranked first now as the severity of the drought increases with time.

Table 10-Ranking of Vulnerabilities

Vulnerability categories	Identify and rank the main stress factors most affect their livelihoods Ten years ago and now, including future trend		
	Rank Ten years ago	Rank now	Rank for the Next five years
Drought	4	1	1
Livestock Death	5	2	2
High terms of trade	3	3	Not sure
Conflict	2	2	3
Flood	1	4	4

Source: FGD participants, June 2009

Conflict ranked second in both cases, this could be due to the persistent conflict with Isaa. Conflict mapping exercise revealed that conflict over resource, pasture and water, is a usual phenomena in Afar region. The FGD with the Kebele representatives in the four surveyed PA's revealed that there has been an on-going conflict with Issa but conflict with the Oromo people in Amhara region has recently been reappearing after many years of peaceful co-existence. The discussion with FGD participants in all surveyed areas shows that the livelihoods of the pastoralists have been affected as a result of the escalation of the conflict with Oromo's in Amhara region bordering the Woreda. Movement of people across the border to Oromiya zone of the Amhara region is restricted as a result of conflict. This has negatively affected access to market places. The conflict also restricted the pastoralists from taking their livestock to their dry season grazing land which is situated in the conflict zone.

1.2.2 Vulnerability changes

Changes in the vulnerability situation, during the past ten years, along with the causative factors have been assessed and presented in Table 11 below:

Table 11-Vulnerabilities, changes and causes

Vulnerability categories	Type of change from ten years to now	What were the main reasons
Drought	<ul style="list-style-type: none"> • Has increased both in area coverage and frequency. The frequency was once in ten years but this increased to 1-2 years in the recent years. • This has affected the livestock productivity and makes the livestock easily susceptible to diseases. • The reduction limiting availability of food to the households and income of the households 	<ul style="list-style-type: none"> • The continuous failure of the different rain seasons. • Pastoralists relate it with religion beliefs • land degradation and disappearance of forest and grass species
Livestock disease	<ul style="list-style-type: none"> • Has increased and animals could not withstand diseases as they are weak because of the drought 	<ul style="list-style-type: none"> • Livestock become weak as a result of shortage of pasture and water • They eat grass which they do not eat in good seasons which could cause diseases
Conflict	<ul style="list-style-type: none"> • There was no conflict with Oromo people for many years but the conflict has ignited again recently • The conflict with Issa is still prevalent 	<ul style="list-style-type: none"> • The conflict with Isaa is still prevalent which mainly due to the competition for resources • The conflict with Oromo people has affected the livelihood of the community but there is no clear reason for the escalation of the conflict
High terms of trade	<ul style="list-style-type: none"> • There is an increase in both livestock and cereal price. However, the increase in the price of 	<ul style="list-style-type: none"> • This is related with the global food price increase but the FGD participants could not

Vulnerability categories	Type of change from ten years to now	What were the main reasons
	cereals is much higher than livestock price which affects the terms of trade	figure out the reason

Source: FGD participants, June 2009

1.2.3 Mitigating and Coping Strategies

Findings presented before showed that pastoralists in Dewe are trapped into a vicious cycle of livelihood deterioration and vulnerabilities. To mitigate the deterioration of livelihoods and vulnerability, pastoralists practice a number of mitigating and coping measures. These are presented in the following Table 12. However, many of the coping measures contribute to livelihood deterioration. Selling of livestock in the absence of sufficient livestock holding contributes to further deterioration of livestock holding.

Table 12- Mitigating and Coping strategies

Mitigating strategies	Coping strategies
<ul style="list-style-type: none"> • Support from each other (food sharing) • Changing herd composition • Attempt to diversify livelihood strategies (practicing crop production) • Conflict resolution • Construction of water harvesting structures (newly suggested) 	<ul style="list-style-type: none"> • Sale of livestock • Reduce frequency of food • Eat wild animals during drought • Eating non preferred food • Reduce non stable foods • Sell domestic assets • Borrow money • Getting livestock from others to use the milk from the livestock

Source: FGD participants, June 2009

Module 2. Knowledge, Attitude and Practice (KAP)

2.1 Background

Knowledge, Attitude and Practice (KAP), commonly denoted as the three pillars of excellence and wisdom, constitute a triad of interactive factors characterized by dynamism and unique interdependence. KAP survey is a representative survey of a specific population to collect information on what is known, believed and done in relation to a particular topic. Meanwhile, CARE Ethiopia commissioned DICT to undertake a KAP survey on natural resource, specifically on water and rangeland management of the pastoralists in Dewe woreda. KAP on Natural Resource Management (NRM) is directly or indirectly linked to existing livelihood strategies and vulnerability issues and is also embedded in the mobility pattern/ seasonality calendar, conflict management and traditional safety net mechanisms. Results of the KAP survey are presented as follows.

2.2 Knowledge about Natural Resources (Water and Rangeland)

Descriptive and predictive knowledge of the pastoral communities in Dewe has been assessed focusing on, among others, the levels of awareness about the existence, typology, sources, trends and distribution of knowledge associated with natural resources in general and water and rangeland in particular. Besides, information has been collected on mode of resource utilization, management techniques, problems/causalities and trends along with the abilities to predict the future.

Overall, the people have sophisticated knowledge about livestock, water, plant and vegetation as well as that of climate. Indeed, the pastoralists' level of knowledge about livestock husbandry is central to their understandings of other natural resources. In all of the FGD sessions, the participants were able to tell the herd composition now and in the past, milk based breeding strategy to increase number of lactating animals, disease prevention and other herd management strategies.

Water and rangeland resources are the other key natural resources to pastoral and agro pastoral communities. Table 13 below describes the findings of the focused group discussion about the KAP of local communities to these and other key resources in the area.

Table-13 Knowledge on the Existence and Typology of the Natural Resource Base

Resource type/category	Level of Knowledge		
	High	Moderate	Low
Livestock			
Water			
Plants and vegetation			
Climate			
Traditional veterinary & human medicine			
Wildlife			
Soils & Minerals			

Source: FGD participants, June 2009

With regards to water, classification is made as ground and surface water resources. According to them, ground water is the best quality water which is currently scarcely available. Likewise, from the resource category under plants and vegetations, the pastoralists identified the top-quality species of grasses and trees that are most preferred to their livestock. Moreover, the pastoralists were found to tell the distribution of these resources across space or kebeles and woredas as well as time and trends in the availability across years. Similarly, their knowledge of climate, another natural resource, is found to be higher as associated with the volume and durability of rainfall received that in turn determines the availability or accessibility of water and pasture in an area.

Meanwhile, moderate level of knowledge has been observed among the pastoralists regarding traditional veterinary and human medicine. The pastoralists knowledge of livestock diseases and their curative mechanisms were more of traditional than modern. However, their knowledge about modern veterinary and human medicine has been a recent phenomenon that has witnessed slight advancements. Findings on the wildlife resource

indicated that the pastoralists with moderate level of awareness about wild animals, yet their level of interactions has been very limited and the resources are almost totally unutilized. Finally, in relative terms, the level of awareness about soil and mineral resources is very low. With the exception of FGD participants in two of the eight kebeles, the knowledge about soil types, textures and fertility has been unfamiliar. Besides, availability of mineral resources is unknown to the pastoralists, and even to the concerned local government agencies. No concrete data is also made available regarding the area cultivated and number of households who are engaged in crop farming, including opportunistic farming.

The findings, as presented in Table-14, showed that knowledge on the major problems and trends regarding water and rangelands are higher. This is followed by moderate level of knowledge on issues like predictive knowledge, mode of utilization, and traditional.

Table-14 Level of knowledge on various issues related to water and rangeland

Issues related to Water and Rangeland	Level of Knowledge		
	High	Moderate	Low
Explaining problems/ trends in NR condition			
Ability to predict the future			
Mode of utilization			
Traditional institutions/ NRM techniques and informal sanctions			
Modern NRM techniques and formal sanctions			
Diversified livelihood options			
Measurement: size, volume, and distance			

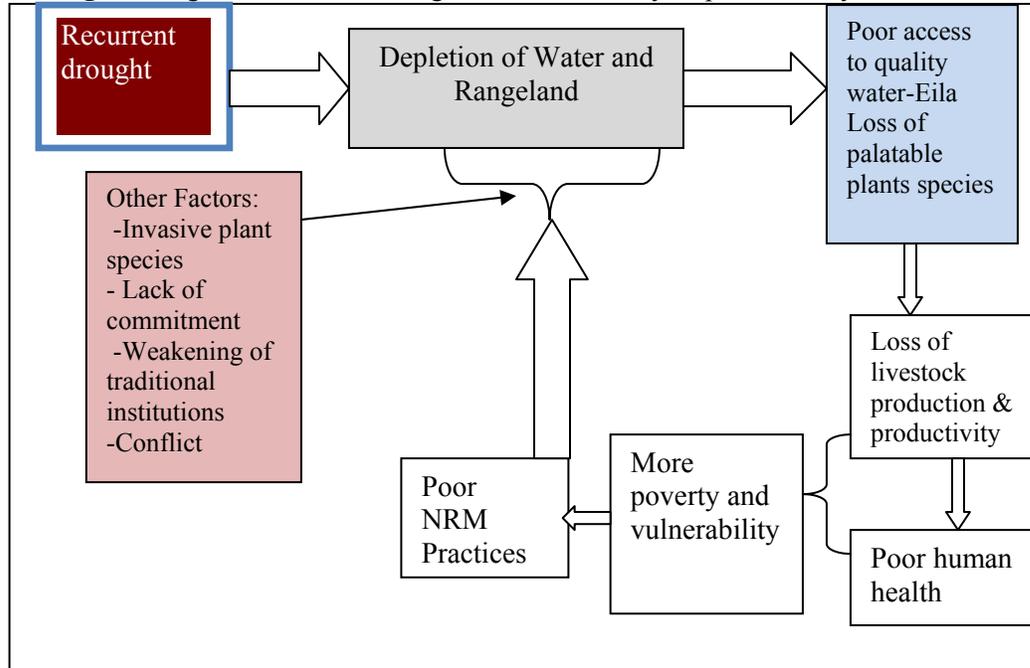
Source: FGD participants, June 2009

However, lower level of knowledge has been observed on modern NRM techniques, options for livelihood diversification as well as measuring the resource base.

Explaining problems and trends in Water and Rangeland conditions, overwhelming majority of the pastoralists in Dewe are well aware of the problems associated with water and rangeland resources degradation. Moreover, they were capable of providing sensible explanations of causes-and-effects pertaining to the depletion of these resources.

At the beginning of their reasoning is recurrent drought that resulted in the depletion of water resource. Albeit what causes drought has mostly been unexplained or subject to religious and mythical explanation, its effects in degrading the natural resources base has been well articulated.

Fig.4 Drought and Resource Degradation: Causality as perceived by Pastoralists



Source: FGD participants, June 2009

The FGD participants unanimously agreed that the ever increasing frequency of drought has led to a dramatic decline in the amount, diversity and coverage of forest and grass species. To this end, they enumerated the following species of palatable grasses and trees as in a state of disappearance:

Table 15- Disappeared grass and tree species (all are local names)

Disappeared grasses	Trees
Durfuta, Melif, Kuruf	Warayta, Yemarukta, Gensalto
Eisesu, Durfu, Susekie, Duleta	Kusera, Subula, Waero, Durfieta, Melif
Musa, Sordiyita, Kelha, Bunket, Halal	Halal, Habaleta

Source: FGD participants, June 2009

The outcome of the FGD in all four surveyed PA's indicated that as a result of the frequent drought the availability of rain and ground water has significantly decline. Drought also resulted in the deterioration of pasture, shrinkage of grazing land and water shortage which results in livestock death and reduction in productivity. This also affected the possession of other assets such as financial assets, and human capital. According to the FGD in the four surveyed PA's, Rivers and streams which used to flow fully during rainy seasons have decreased the discharge and started to dry up. The FGD participants in all surveyed PA's also reported that as a result of the increase in frequency of drought, forest and grass species has significantly decreased both in diversity and coverage. The recurrent drought and the infestation of the land by invasive acacia species (*Acacia melifera*, locally called-*Merkatu*) have resulted in the disappearance of grasses and shrubs which were abundant 10 years ago.

The FGD participants also expressed that the social safety net and networking of support has decreased as the number of better-off people are by far less than poor people. In a nutshell, the deterioration of natural asset has significantly been affected the financial, human (nutrition and health) and social asset of the households. Furthermore, the FGD with the key informants and different wealth groups indicated that the food security situation has deteriorated through time as pastoralists lose their livestock. The FGD participants also mentioned that pastoralists cannot feed their children as they used to do ten years ago. The discussion also revealed that they cannot milk cows and camel as in the previous days. The FGD participants perceive that children are not as healthy as they used to be ten years ago (see also module 6 in this volume).

Besides, the ever depletion of the natural resource base, mainly, water and range has also been attributed to human-made causes. Almost all of the key informants and discussants agreed that lack of commitment as well as weak complementarities between the traditional/informal and modern/ formal institutions are among the factors causing or aggravating the problems. With regards to commitment, they described past pastoralists or their ancestors as pertinacious recalling their level of determination to take care of water and grazing resources, conformity to values and norms as well as their refusal to be easily defeated by problems. But, the present generation lacks the commitment to maintain these traditions and ultimately losing the resilience to survive in the present harsh environment. Besides, development interventions aimed at augmenting KAP of the communities are either minimal or misguided by an unfavourable attitude that considers local KAP as a characteristic of backwardness. Most of the interventions are not geared towards revitalizing the age-old indigenous pastoral institutions and building up their resilience. Rather, formal government organizations are functioning in parallel to the indigenous ones, which are still widely accepted and relatively the most influential in guiding and directing behaviors and actions. Finally, conflict was also among the human-made factors that aggravates the water and rangeland degradation in Dewe. To this end, conflict of pastoralists with adjacent woreda of the Amhara region has been reported to ameliorate the natural resource degradation by discouraging mobility-a key to NRM among pastoral communities in dry land areas like Dewe.

Needless to say, therefore, access to water and pasture has been seriously limited. This, according to the findings of the survey, is among the reasons for the present poor livestock production and productivity trap in Dewe. This in turn is one explanation to the present poor health as manifested by prevalence of malnutrition and physical fitness of the inhabitants at large.

In a nutshell, the combined effect of the aforementioned factors is reported to be more poverty and vulnerability. In this regards, a significant proportion of the pastoral communities have lost their livestock, which means losing wealth, power, and prestige and joined the category of destitute. Even the present livestock population is incapable to provide

by products with the required amount and quality. Finally, the poverty and vulnerability situation is found to induce improper management of natural resources thereby completing the vicious cycle of degradation.

The pastoralists’ analytical knowledge about water, rangeland and livestock resources is also evidenced in their analysis of trends in the resource conditions (Table 16 below).

Table-16 Other Knowledge, Attitudes and Practices

Knowledge, Attitudes and Practices	Purpose/Benefits	Trend over years (deteriorating/sustaining)	Opportunities to enhance
Mobility	Imporve access to water and pasture	Deterirating due to increased confclit, pasture deteiration	Startegic pasture and water points development Confclit management
Conflict management	Mitigate confclit over resource use and others	Declining	Establish proper mechnims how to strenghten and link with the formal structre
Traditional safety net	Support poor people through “zeka” (Muslim belief) and share resource	Deterirating due to deterioration of livelihoods	Mainstream traditional safety net to development programmes (need detail assessment)

Source: FGD participants, June 2009

Mobility: It should be noted that the mobility pattern of the pastoralists in Dewe shows that, during dry seasons, they move to the grazing areas in Amibara and Gewane woredas that are seriously invaded by the plant. Owing to the high risk of invasion by *Prosopis*, which is mostly transmitted through animals fed to the plant, the findings suggest that there is low level of awareness in the area.

Ability to Predict the Future: The pastoralists’ ability to predict has been assessed and found to be at a moderate level. In particular, the ability to forecast the likelihood of occurrence or not of events like drought, animal diseases, prices etc at present was compared against the past. It was found out that pastoralist in the past were making predictions of these events with minimum margins of errors. Nowadays, however, it is hardly possible to predict drought because of the repeatedly witnessed irregularities in the patterns of rainfall. Let alone in the short rainy seasons of Deda and Sugum, we are not certain to receive rain in the dominant rain season of Kerma. (See also seasonal calendar on page 39). Prices of grain were changing faster as compared to the situation in the past where trends were associated with seasons. In addition, pastoralists are increasingly exposed to new animal diseases whose nature and characteristics are little known. Thus, the quality to tell about the future is either distorted or mostly left for supernatural force-‘Alah’.

Mode of Resource Utilization and Livelihood Options: Findings further showed that there is a moderate level of knowledge with regards to mode of utilization of water and rangeland or plants and vegetation. In this connection, the FGD discussants were asked to enumerate, in order of priority, the various uses of the resources. Accordingly, utilization of both water and plants/vegetation has been confined to either for consumption or livestock production.

Table 17 Mode of utilization of Water and Plant/Vegetation Resources

Use of water	Use of plants/trees
1. For animals consumption	1. Feed for animals
2. Without water no pasture-trees and grasses	2. For fuel and construction
3. Food and cooking	3. Medicine for animal and human being
4. Washing/bathing	4. As a shade and too cool the air temperature
5. Crop cultivation	5. Prevents soil erosion Others: for cleaning teeth and safeguards from enemy

Source: FGD participants, June 2009

As can be seen from Table 16 above, water as a resource for crop cultivation is the least important as compared with other uses. Linked to this, the options available for livelihood diversification were assessed. It was found out that there is low level of awareness in this regards. Participants of 4 out of the 16 FGD sessions identified small-scale irrigation and apiculture as variable options, yet in the rest of the kebeles where pastoralists dominate the people are almost totally unaware of the various means of livelihood diversification.

Meanwhile, a menu of viable livelihood options that constitute small-scale irrigation, apiculture, charcoal making, petty trade, and formal employment were presented by key informants representing woreda level government agencies. It was also noted that although pastoralism is still the mainstay of the livelihood in the woreda, few pastoralists have recently started practicing crop production along the river banks of Awash, Dewe and other intermittent rivers. Not only is the number of crop cultivators, very limited number of crops are grown that include maize, teff, pepper and tomato. The discussion with the FGD participants and the Woreda key informants, however, indicated that there is a growing interest by many pastoralists to practice crop production, albeit the persistence of drought in the area.

According to the FGD with pastoralists and who started crop production and Woreda key informants interview, the main reasons for the growing interest to diversify the livelihood option through crop production are:

- The climate change makes things worse to continue only depending on livestock production because of the continuous drought and loss of livestock. Some of FGD participants expressed that they have lost their entire livestock and are left with no option to continue as pastoralists.
- The FGD participants mentioned that they are not able to cover the household consumption from livestock products. However, the term of trade is high as a result as a we have to sell many livestock to cover the food gap. Hence, if water is available in the rivers we prefer to produce crop production to reduce the loss of livestock to purchase food.
- The price of cereals has become high and as a result we have to sell many animals to purchase a sack of wheat. This forced us to see another option to get the food source.

- The income from crop is much higher than the income from sell of livestock

Knowledge on Resource Management Techniques: The pastoralists' knowledge of traditional water and rangeland management was found to be moderate and better than their level of awareness on modern management techniques. Accordingly, in all the FGDs the participants were well aware of the traditional water management mechanism called 'Eila' and capable of describing the informal sanction mechanisms to ensure compliance to the management system. Similarly, they reported to know the traditional rangeland management system and the control mechanisms. In this regards, it is noted that bush-fire, rotation and Meblo or village level enclosures were the most prominent mechanisms in managing the pasture land and as well for controlling pests. However, bush-fire is not applicable these days mainly due to the recurrence of drought and conflict. Rather, thinning is among the practices by the local people, particularly to get rid of the invaders and encroacher in Dewe. When asked about their knowledge of other rangeland management techniques, only in a quarter of the FGD sessions the participants identified an integrated Area Closure technique. Recently introduced by the local government and CARE, the management practice is aimed at improving access to pasture while rehabilitating the rangeland resource. Though this is a practice culturally not acceptable among the Afar, they have been convinced about its benefits and also reported that it is so far beneficial as they have witnessed the regeneration of the lost plant species in the enclosures. But, they are still with reservations as the practices might trigger conflict and not adopted to fit into the local institutions for resource management. According to experts of the local government and CARE field staff, however, participatory area closure is considered as the best alternative and being implemented for improving the pasture condition in Dewe.

Knowledge on Measurement: Measurement unit like for size, volume and distance are with far reaching implications to NRM. In general, the level of awareness of the people about modern measurement units has been minimal. In almost all of the FGDs, the discussants were asked to describe available resource of water and grazing areas as well as distances they travel to use the resources. It was found out that the pastoralists were not in a position to use standard units to measure size, volume and distances. They were describing distances in terms of time elapsed, size of land by its carrying capacity and volume of water using fetching materials.

Sources, Trends and Distribution of knowledge: The pastoralists' source of knowledge about water and rangeland resources has largely been obtained from experiences. In other words, the present knowledge has been acquired from ancestors or transcended through traditional institutions, yet modern education has marginal role in the acquisition, transmission and transformation of the knowledge base. Appreciating efforts of integrating natural environment or resource management in the curriculum of schools, the fact that the customary laws on natural resource management are not documented is a glaring gap.

When evaluating trends in the level of knowledge of the pastoralists across years, it was found out that the level of knowledge has not been progressive. Rather, most argued that, there is a tendency for knowledge to dramatically decline especially as viewed against the predictive abilities of the past and present pastoralists.

Findings on the possession of knowledge also uncovered high level of disparities across different segments of the communities. In this connection, elders were found to be more knowledgeable than the youth or children. Similarly, community members were found to have better knowledge about water and rangeland as compared to experts in the formal government institutions. Women were found to have better knowledge about water than rangeland resources. Meanwhile, review of discussions across livelihood categories indicated that pastoralists that have started to practice agro-pastoralism and those in the local government cycle enumerated more than three livelihood options including crop cultivation, apiculture, charcoal production, and petty trade as viable for livelihood diversification in Dewe. With the exception of FGD participants in the agro-pastoral Kebele of 'Kilenti and Deressedá', those people in the predominantly pastoral kebeles were not aware of these options due to limited exposure and lack of supportive interventions. Relatively, the remote kebeles are with limited knowledge of diversification than those near to the center-Dewe.

2.3 Attitude and Practices on Water and Rangeland Resources

Livestock resources are the most valued and central to the KAP of pastoralists. Accordingly, the findings showed that livestock is essential for their survival and is the basis for social stratification i.e. the prime factor in defining the level of power, prestige and wealth of pastoralists. Asked about their knowledge about and attitude towards the natural resource base, almost all were found to describe the various components of the physical environment in its interdependencies to the livestock assets. Water is described as a resource determinant of the number and quality of livestock. Then classification is made accordingly: ground water is better than surface water because animals consuming it are more healthy, more productive and resilient to drought. Hence, 'Eila'-water wells are given due respect and provided with utmost care than rivers and ponds. Similarly, those plant species that are preferred by their livestock are the best known and highly valued than other species. It is learnt that pastoralists in Dewe have positive attitude towards preserving forest/trees for the perceived benefits stated in the previous section. People are not allowed to cut trees which are green during rainy season as there are other grasses and trees that can be used during wet season. They use these preserved trees during drought time. If people violate the rule there is a punishment in the form of offering Camel or goat for slaughtering. Moreover, it is embedded in the people's culture that killing wild animals is a taboo; and there is a punishment if someone violates and kills wild animals.

An extension to the positive attitude towards water and rangeland resources, the pastoralists are highly concerned about the ever depleting water and rangeland resources the

consequences and concomitants include loss of livestock productivity and production that ultimately resulted in their present poverty and vulnerability.

Table-18 Ranking of values attached to natural resources across years

Source: FGD participants, June 2009

The opinions of community concerning the different livelihood components of the pastoralists, with a particular emphasis to the natural assets including water, livestock, pasture, and forest, have been assessed vis-à-vis their importance to support their survival and thrive. Accordingly, taking 10 years as a benchmark, livestock was identified by the community as the most valued natural asset as it was vital for their survival and thrive followed by rangeland, water resources and forest respectively.

The rankings changed both in the contemporary times as well as for the future. An exception to this is livestock, which still remains to be the most valued natural resource asset to the community in Dewe. In fact, compatible with the other findings of the survey, livestock asset, with high doubt as it is also undergoing increasing depletion, is expected to continue as

Natural assets	Ranking, across years, the implications of natural resources for the pastoral communities to survive and thrive					
	Ten years ago	Rank	Now	Rank	Next five years	Rank
Water		3		2		
Livestock		1		1	Livestock	1
Pasture		2		3		
Forest		4		4		
					Farm land	2

the most valued asset for the community. Nonetheless, the people are with great pessimism about the existence of the other three natural resources in the foreseeable future. This is due to factors including drought, the value attributed to the same natural resource assets show some disparity. On the other hand, in line with the desire to accommodate as a coping strategy on the one hand and considering the growing level of practice in farming, farming/farm land is expected or considered to be the most second most important natural resource asset in the coming five years.

Perception of Factors Causing/Aggravating the Resource Depletion

Drought is the underlying cause for the depletion of water and grazing resources in Dewe. The pastoralists in Dewe, intuitively, associate loss of livestock production and productivity to recurrent drought that resulted in retrogression of perennial plant species and the depletion of water resource. Besides, they were resentful of the dramatic decline in the number and quality of livestock. Accordingly, these days, meat and milk obtained from their livestock that eat the invasive species of Parthnium and Acacia SP is not as tasty or delicious as what they used to get in the past. Their arguments suggested a correlation between the decline in quality of livestock product and rangeland degradation, mainly the lost palatable plant species. Similarly, poor health condition of their livestock is associated with their reliance on

surface water like rivers and ponds, to which pastoralists resort to due to inaccessibility of ground water-their best choice probably become of mineral water. Whether such correlations are factual or mythical are subject to further investigation.

Furthermore, the severity and magnitude of water and rangeland degradation has further been aggravated by other factors including the introduction of invasive species, lack of commitment, conflict and weakening of traditional pastoral institutions. According to the FGD participants, the widespread of invasive weeds like Parthnium weeds Acacia species, which are locally named as America and Merkato, respectively, has growingly become a serious threat during the last decade replacing the indigenous flora. However, in none of the kebeles the people were aware of Prosopis Julifora-the most popular invasive plant in Afar, locally called Woyane or Dergi Hara. In effect, the people are mostly indifferent to the potential impacts of Prosopis and no concerted effort is being exerted to combat it at this earlier stage.

2.4 Practices on Water and Grazing Land Management

2.4.1 Management of Water

‘Eila’, described as centuries-old indigenous water management system of the Afar, has still remained the most popular system for a sustainable and equitable access to quality water in Dewe. Conventionally, Eila is communally constructed in ground water rich areas. Mostly, one influential person in the clan initiates the construction of Eila and mobilizes support from other members of the community including ‘Dalla’- an extended family, ‘Feima’-youth groups or other structures up in the Clan system. With the perception that ground water is the best quality water, Eila is preferably located far away from rivers in order to avoid possible entrance of surface water that is believed to pollute the Eila.

With regards to mode of utilization, Eila is the source of water both for livestock and human consumptions. However, in times of drought or chronic shortage of water there is a herd splitting practice whereby only people, small animals like goats and heifer as well as lactating camels and cows are given priorities, yet the rest animals are fed on rivers and ponds. In the water management tradition, people and livestock consume water separately. Even the different livestock i.e. camel, sheep, goat, and cattle are fed to water from Eila independently or turn by turn. This deserves appreciation as it is a mechanism to protect and prevent the transmission of contagious diseases.

Meanwhile, based on the distribution of Eilas, the traditional councils –Meblo at clan or Dalla are responsible for the proper and equitable utilization of the Eila as well as for resolving conflict whenever it arises over water use. To this end, there is a norm widely held and obeyed by users the violation of which is punishable- up to 12 goats or a camel to ensure conformity to the norms.

More interestingly, Equity is found to be the best policy in the management of Eila in Dewe as elsewhere is in Afar. Both in principle and practice, Eila is accessible to all, even to those outside a given community. Hence denial of one's access to use water from Eila is a strictly forbidden act under any circumstance. This is underpinned in their belief that discriminatory use of water automatically result in dryness of the Eila.

Notwithstanding the above impressive features, there are also some shortcomings observed in the system. The role of women is mostly limited to utilization with a marginal involvement in decision making. The practice is that women in Dewe are the most intimate with frequent visits to the Eila, albeit they are with limited or no say in important decisions central to its management. Moreover, the contemporary management systems of Eila in Dewe are mostly found to lose the aforementioned essential features of Eila. The recurrent drought has depleted the ground water potential. This has resulted in dryness of some Eilas or functionality of most only for less than a year period. In addition, the present pastoralists are forced to construct Eilas near rivers. The combined effect of these is a dramatic decline in the quality and volume of water from Eilas.

Moreover, physical observations of selected Eilas in Dewe and discussion with the community groups also uncovered that there are both good and bad practices. To start with good practice, there are few Eilas like in Egole and in Heray Dera villages of the woreda that are well-managed at present. For example, the Eila in Umer Knota or Heray Dera is frequently cited as a model water point. It is constructed far away from river and has been serving in both dry and rainy seasons, hence is labelled as one of the safest sources of water in the woreda. The management system is still stronger. People and different livestock are separately treated, a practice which is rare in other Eilas. Both men and women participate in the management. Indeed, women's engagement in the maintenance of the Eila is found to be an unprecedented practice. Moreover, the informal sanction mechanisms are still alive in the management of this Eila. The Eila is serving not only the villagers, but also outsiders which are evidence to the commitment to respect principles embedded in the traditional Eila management system.

Contrary to such good practices, however, it is rarely possible to see Eilas that are located far from rivers, but are functional for over a year or two. For instance, physical observation of an Eila in Adelele Kebele uncovered certain malpractices. The well is constructed on the verge of a seasonal river. Women were seen to wash cloths just on the entryway to the Eila. While others were fetching for domestic consumption, camels and cattle were fed at a time. Thus, no differentiation of livestock and people in water use was observed. This poses serious limitations on the structure and quality of the water causing or aggravating the poor health or hygiene and sanitation problem of the communities. Although women were almost all of the users observed at or around the Eila, discussion with them revealed that they play very limited role in the maintenance of the well as well as in punishing those who misuse the resource. It is worthwhile mentioning that, support by an external agency (FARM-Africa) in

upgrading this Eila has been a duly recognized intervention by the community. Albeit efforts to encourage community participation, the people are still not comfortable with the newly introduced design meant for protecting the Eila from entrance of water from the river. Moreover, those pastoralists were found to criticize such interventions on the ground that this is an indicator of the people's lack of commitment to protect and/or preserve Eilas. Accordingly, it is uncommon for pastoralists to look for such supports, which could be the responsibility of the localities. Rather, support is suggested in the construction of new and perennial Eilas that will be managed by the indigenous institutions.

In a nutshell, factors that include recurrent drought and weakening of customary water management institutions were found to be the salient features in the water resource management in Dewe. Furthermore, women -the most important persons in water utilization were denied the right to have equal say in the most important decisions. Finally, interventions for improved water resource management in Dewe necessitate rejuvenating the indigenous water resource management through enhanced level of involvement of the communities, especially women.

Findings uncovered that the management of water for irrigation purpose is recent phenomenon in Dewe. As small-scale irrigation is a livelihood option confined to few kebeles, the management of water for crop cultivation is not within the scope of Eila. However, discussion with those engaged in cultivation uncovered that there are attempts to establish separate institutional arrangement for water management. They have elected a leader to mainly allocate water for each irrigation plot. Apart from this, however, there is no clearly established norm to direct the actions and behaviour of those engaged in crop-production.

2.4.2 Management of Pastureland: Practices, Challenges and Suggested measures

The following natural resource management practices are pointed out by the FGD participants and key informants interviewed:

1. Traditional Rangeland Management Practices

- a. **Meblo or Enclosure of Marginal pastureland:** There is a practice of area closure to use the pasture during dry seasons though this practice has been diminishing due to the decrease in availability of pasture production and productivity. Every clan has a boundary for grazing but if they want to move to the territory of the other clan the Dalas are responsible to lead the discussion among clans and allow the other clan to move to the territory managed by another clan.
- b. **Bush Fire:** this as a widely practiced rangeland management system in the past. It was noted that the pastoralists in Dewe used to practice bush fire that enabled them to preserve the most palatable species while preventing invasive weed. Currently, however, rainfall is volatile and the management practice is rarely practiced.

- c. **Thinning:** the pastoralists of Dewe also practice thinning whereby they identify and sort those species that are palatable and those that are invaders and encroachers thereby removing, manually, the latter ones.

2. Modern Pasture Management Techniques

- a. Area Closure (by CARE, about 144 hectares area closure is planned for 2 years and so far 71 hectares of pastureland enclosed in all kebeles of the woreda while by Local Government)
- b. Identification and thinning of noxious woody plants (undesirable encroachers and invaders plant species while preventing valuable woody species.
- c. Enclosure of marginal pastureland and over seeding of ecologically desirable species.
- d. Enclosure of bare pasturelands, reseeding with local valuable grass species and termination of grazing for 2 to 3 rainy seasons till setting of seeds and shelters
- e. Production and conservation of hay bales from wet season grazing areas for dry season utilization (cut-carry system)
- f. Rotational system of grazing seasonally- not within seasons which escalates further degradation of pasture land, especially those marginal areas/steep-slopes with accelerated erosion

It is worthwhile noting the following points in the management of natural resources:

- There is clear division of labour between male and female; male collect wood for house construction and women collect wood for fire wood
- In irrigation water management, which is rarely practiced, the pastoralists elect a leader to mainly allocate water for each irrigation plot
- The community is endowed with the following resources/capacities:
 - Local knowledge in management of natural resource
 - Land topographically suitable for irrigation
 - Local institutions and management structure for managing natural resource and community mobilization, conflict mitigation and resolution
 - Quick information sharing system locally called daagu on pasture, conflict, calling meeting and water availability

2.5 Mobility Pattern, Seasonal Calendar and Other KAP

2.5.1 Seasonal Livelihood Calendar and Analysis

The mobility nature of pastoralists is considered as one of the human/social capital that help survive in dryland areas. It entails a wealth of knowledge and practice. The FGD in all surveyed areas pointed out that both as a mitigating and coping strategy the communities move to nearby zone, Oromiya zone around Chefa and to Awash River banks in a place called Megenta for grazing during dry season such as Hagayee. The length of stay depends on the rainfall situation in their area but usually they return back end of July. Better of wealth group FGD participants in Wahilo and Deressedha Kebele said that:

Although movement of livestock is from one place to another in search of pasture and water is business as usual to pastoral community even in the past, the intensity and the frequency of movement has increased with the intensification of drought. The pastoralists do not get regular

rain in their respective kebeles and the productive capacity of the pasture land has dramatically declined. Therefore as a way out, Pastoralists often move with their livestock to areas where water and pasture is available.

Analysis of mobility map showed that there is a general trend of movement of pastoralists from Dewe Woreda to Zone 1 and Zone 3 of the Afar regional state during the short dry seasons of the year. Those kebeles along the awash river tend to capitalize on the pastures beyond the Awash river in Zone 1 and Zone 3 during the dry season. While those kebeles adjacent to the Amhara region have a history and practice of moving to the pastor rich range in Oromia Zone during the same season. Major challenges that the community encounter during their movement include, among others, decline in production and productivity, problem of loss of livestock to frequent raids, and persistent conflict with the Issa/especially for those along the Awash river/ and with the Oromo /for those community members adjacent to the Amhara region/.

Table-19: Mobility Pattern of People and Livestock in Dewe Woreda

Kebele	Dry season	Wet season	During peak drought/abnormal year	Associated problems
Kehertu & Tutili	Zone 1, 3 & Oromia Zone of Amhara region	Pastoralists stay in their own localities	Oromia Zone of Amhara Region and Zone 3	Decline in production and productivity; Problem of raids; Conflict with the Issa and Oromo
Dewebora & Kubet	“	“	“	“
Kilelo & Gamora	“	“	“	“
Fereskori & Gedansa	“	“	“	“
Halbi & Sonkorkoro	“	“	“	“
Yemudu & Kobakomar	“	“	“	“
Eyeledi and Gendewori	“	“	“	“
Kilenti & Deressedda	“	“	“	“

Source: Dewe Woreda Administration Statistical Abstract, Strategic Plan of Dewe Woreda, 2006.

2.5.2 Seasonal Livelihood Calendar and Analysis

Similar to other pastoral areas, there is clear seasonal calendar in Dewe woreda. The seasonality affects the food security situation of the different livelihood groups (pastoral and agro-pastoralists). The dry period overpasses the rainy season, which is very critical in the current situation-recurrent drought and unpredictable rainfall. Analysis of the seasonal livelihood calendar suggest that the food security/livelihood interventions in pastoral areas need to be linked to those key seasonality patterns and level of food security (considering the key differences at various times of a typical and a bad year) and the deferent livelihood groups (agro-pastoral, pastoral and ex-pastoralists). The livelihood seasonal calendar is presented in Table 20 on next page.

2.5.3 Other Practices: Drought management, conflict resolution and traditional safety nets practices

When ‘Kerma’, the dominant rainy season, comes to an end the animals are taken back to the villages near the river where it is blessed with abundant pasture. The occurrence of drought is highly associated with the dryness or wetness of the rainy seasons. In Afar area, main rainy season starts in July and it goes up to September (Kerma). In addition to this, the community gets short series of showers-Konitu (October to November), Debaba (from December to January), Dira (February), and Sugum (March /April). During the normal year, the dry seasons are November (dada), January (Asure, Erfabahe), February (sefer), May (Awel Mehamed), June (hagay/Arategna Mohammed).

2.6 Summary and conclusions on KAP

In Dewe, as elsewhere in the Afar pastoral groups, livestock are the most valued resources that are central to the KAP of pastoralists on NRM in general and on water and pasture land management, conflict management and traditional safety net in particular. This implies any interventions guided towards improved management of these issues should be viewed against the pastoralists’ knowledge, perceptions, practices as well as expectations pertaining to livestock development. Table 20, below, presents summary of the Knowledge, Attitudes and Practices on specific issues.

Table 21: Summary of Knowledge, Attitudes and Practices on Natural Resource Management²

Key behaviour	Knowledge		Attitude		Practice	
	Aware	Unaware	Positive	Negative	Always	Rarely
Area enclosure	MEDIUM	MEDIUM	HIGH	LOW	LOW	HIGH
Bush clearance	LOW	HIGH	MEDIUM	LOW	LOW	HIGH
Hay making	LOW	HIGH	HIGH	LOW	LOW	HIGH
Protecting multi - purpose fodder trees	HIGH	LOW	HIGH	LOW	MEDIUM	MEDIUM
Maintenance of water points	LOW	HIGH	HIGH	LOW	LOW	HIGH
Management of water facilities	MEDIUM	LOW	HIGH	LOW	LOW	HIGH

Source: KAP Study, 2009

The level of awareness about livestock, water, pasture land and climate is higher and attitudes and practices for wise use of these resources have been favourable. Moderate level of KAP has been observed on wildlife and traditional medicines. However, knowledge about soil resources and implications limited.

² A score of 1 to 3 was used in rating level of knowledge, attitude and practice on NRM: 1 for low, 3 for medium and 3 for high.

The problem of water and rangeland degradation is well recognized along with the increasing severity across years. Besides, pronounced effects on livestock production and productivity there by aggravating poverty and vulnerability is well understood. This is largely attributed to drought and other causes like invasive species, conflict, and lack of commitment and weakening of indigenous institutions. Nonetheless, what causes drought and the relationship between soil and water and rangeland resource degradation is mostly left unexplained. Besides, knowledge on mode of transmission of existing invaders or encroachers as well as potential ones like *Prosopis juliflora* is not developed. Thus, awareness raising interventions is of relevance and timely.

Knowledge about natural resources in general and predictive ability of the pastoralists in particular has not witnessed advancements. Knowledge is mostly acquired through experience and transcended via informal institution, yet modern education is not observed to facilitate the transformation of KAP in the communities. Moreover, there is disparity in the level of knowledge along such attributes as age, sex, places, and livelihood category etc. Suggested interventions may include documenting and disseminating the indigenous KAP. Training and increased involvement of extension agents and use of media are very important.

Awareness about utilization of natural resources for diversified livelihood is very marginal. Options of viable livelihood strategies are not properly mapped out and support to encourage the influx of more people in livelihood options other than livestock production is undeveloped. Yet, the viability of excessive dependence on livestock as the principal source of livelihood is questioned. On the one hand efforts to improve livelihood development should focus on quality and/or market-orientation and build the capacity of private drug vendors. On the other hand diversification of income opportunities through different interventions is essential, among others:

- *The need for increased support for irrigated farming: most importantly, small-scale irrigation should be accompanied by inter-woreda/ regional water resource utilization plans.*
- *Conflict resolution mechanisms have to be strengthened and mainstreamed in all interventions*
- *Diversification of income opportunities through different interventions such as credit service for the poor to start small business and*
- *Besides, other options like apiculture, petty trade etc should be properly mapped-out and promoted,*

Knowledge on indigenous water and rangeland management system and techniques is better than their knowledge about modern ones. The people still prefer the indigenous systems to the modern ones. In this connection, Eila is still the best water management system, though it has not been in a state of advancement to ensure access to quality and adequate amount of

water in an equitable and sustainable basis. Similarly, controlled bush-fire which was the most popular and accepted pasture land management technique is no more applicable mainly because of unpredictability of rainfall.

Empowering women is a key to address natural resource depletion as well as for improved hygiene and sanitation. Specifically, encouraging women in the management of Eila is found to be a key to improved management practices. However, Mismanagement of Eilas has also resulted in the misuse of water resources laying favourable conditions for the widespread of communicable diseases;

Any support to upgrade water points or rehabilitate the rangeland should start from genuine participation. This necessitates due recognition and efforts of rejuvenating the indigenous KAP of the communities. Integration of the modern management techniques with the conventional ones is a vital necessity. Furthermore, capital intensive interventions in areas of constructing new Eilas in accordance to the age old practices of the pastoralists should be planned and implemented.

Module 3. Characteristics of Surveyed Households

From the four kebeles of Dewe covered by the Food and Livelihood Baseline Survey, a total 267 sample HHs were included from various livelihood groups, gender groups and wealth categories. Out of these, 238 (90%) valid responses were obtained and analysed.

3.1 Size and gender Composition

The 238 HHs included in the survey reportedly accommodate a total of 1,432 members. This means the average HH size is 6 persons, which is exactly similar to the regional average HH size of 6, according to Statistical Abstract Projection, based on CSA, 2007. 49% of the respondents disaggregating the result by gender, 42% of MHHs and 64% of FHHs are with average HH size of 5 persons and below. It is found out that the proportion of MHHs increases as the HH size increases. Indeed, lower HH size is the characteristic feature of poor HHs as evidenced in livelihood map of Afar region (SC-UK, 2006).

The sex composition, depicted in Table 22 below, showed that 54% of the HH members were males and the rest 46% females. Likewise, the sex composition reflects the woreda and regional level facts: males constitute 57% of the total population of Afar and 59% of Dewe's population (CSA, 2007).

Table 22- Sex Composition of HH Members

HH Members by Sex	Frequency	%
Total males in the HH	778	54%
Total females in the HH	654	46%
Total	1,432	100%

Source: Survey, 2009

3.2 Livelihood Category

The livelihood category of the HHs showed that, most (74%) are pastoralists. Out of the remaining, 24% are agro-pastoralists, yet the rest (2%) are ex-pastoralist. There is significant difference across headship: 75% and 25 are MHHs and FHHs, respectively.

Table 23- Livelihood Category and Headship

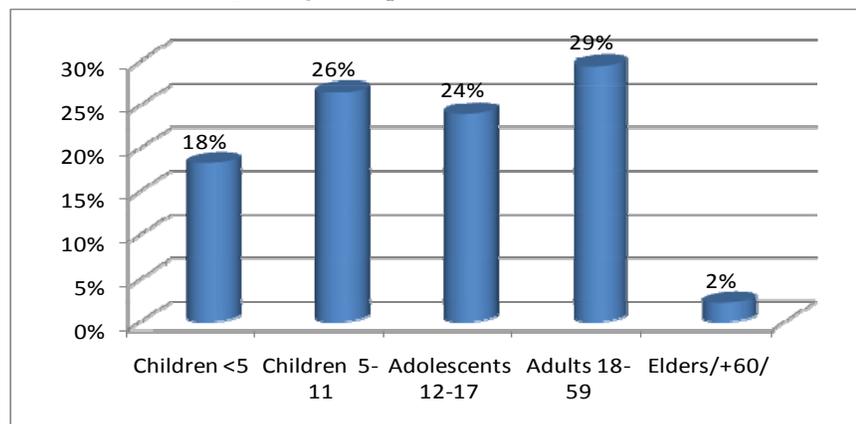
Livelihood groups	Headship					
	Male		Female		Total	
	Frequency	%	Frequency	%	Frequency	%
Pastoralist	108	76%	34	24%	142	74%
Agro-pastoralist	34	24%	13	28%	47	24%
Ex-pastoralist	2	1%	2	50%	4	2%
Total	144	75%	49	25%	193	100%

Source: Survey, 2009

3.3 Age Composition and Dependency Ratio

As presented in figure 5, HH members in the adolescent and adult age groups together constitute 53% . Whereas children 5 to 11 years comprise 26%, under five children and elders account for 18% and 2% respectively.

Fig. 5 Age composition of HH members



Source: Baseline Survey, 2009

Survey results also showed high level of dependency in Dewe. Accordingly, the proportion of young and old people is found to be 63%, whereas the population in the working age group of 15 to 64 years accounted for 37%. As presented in Table 24 below, the dependency ratio is computed to be 167, which is by far greater than the regional and national averages of 82 and 93, respectively, in the year 2007. This means there are about 167 young and old dependents in Dewe to be supported by every 100 persons in the working age group.

Table 24- Dependency Ratio

HH Members by Age category	Frequency	%	Dependency ratio
<15	867	61%	= (867+29)/ 536= 167
15-64	536	37%	
>64	29	2%	
Total	1,432	100%	

Source: Survey, 2009

3.4 Headship: Sex, Marital Status and Age of HH Heads

Out of the total HH-Heads included in the survey, 75% were males (MHHs), yet the rest 25% were females (FHHs) - a figure near to the national average for rural Ethiopia-one-in-five HHs are FHHs. In terms of marital status, 96% of MHHs and 66.7% of FHHs are married. 17.5% and 12.3% of the FHHs reported that they divorced and separated, respectively.

Table 25- Marital status by head of households

Marital status	Male Headed HHs		Female Headed HHs		Total	
	Frequency	%	Frequency	%	Frequency	%
Married	169	96.0	38	66.7	207	88.84
Widowed	2	1.1	1	1.8	3	1.29
Divorced	1	0.6	10	17.5	11	4.72
Separated	3	1.7	7	12.3	10	4.29
Never married	1	0.6	1	1.8	2	0.86
Total	176	100.0	57	100.0	233	100.00

Source: Survey, 2009

Regarding marriage types, as can be seen from Table 26 below, a cumulative of 40% of the MHHs practiced polygamy; i.e married to more than one wife. The rest 60% of the HHs were with monogamous marriage type.

Table 26- Total number of wives by male headed HHs

Number of wives by male headed households	Frequency	Valid Percent
1	75	60
2	43	35
3	6	5
Total	124	100.0

Source: Survey, 2009

Age of HH heads ranges from 20 years old to 70 years, the mean age being 40 years. However, majority of them were between 30-50 years old for both male and female headed households.

Table 27- Head of households by age

Age Group	Male head households		Female headed households		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
20-25	13	7.34	10	16.7	23	9.70
26-30	26	14.69	9	15	35	14.77
31-40	70	39.55	29	48.3	99	41.77
41-50	45	25.42	8	13.3	53	22.36
51-60	14	7.91	3	5	17	7.17
61-70	6	3.39	1	1.7	7	2.95
Above 71	3	1.69	0	0	3	1.27
Total	177	100.00	60	100	237	100

Source: Survey, 2009

3.5 Education

Education is one of the major socio-economic factors that influence livelihood options and vulnerability to risk. The education situation as described by level of literacy, school enrolment and drop-outs is presented as follows.

Literacy level: Survey results on literacy situation, depicted in Table 28 on next page, showed that overwhelming majority (82.2%) of the HHs heads are illiterate. Relatively female headed HHs are literate than male headed HHs (19% and 16.6%) respectively.

Table 28- Percentage distribution of HH by Education status of household heads

Education Status	MHHs		FHHs		Total	
	Frequency	%	Frequency	%	Frequency	%
Yes	28	16.6	11	19.0	39	17.2
No	141	83.4	47	81.0	188	82.8
Total	169	100.0	58	100.0	227	100.0

Source: Survey, 2009

School Enrolment: Net attendance Ratio has been assessed and presented below.

Table 29- School enrolment (read and write) by age category

Age categories	MHHs		FHHs		TOTAL	
	Frequency	%	Frequency	%	Frequency	%
< 5 years	1	1.1	0	0.0	1	0.9
5-17 yrs	74	78.7	16	76.2	90	78.3
18-59 yrs	18	19.1	5	23.8	23	20.0
>60yrs	1	1.1	0	0.0	1	0.9
Total	94	100.0	21	100.0	115	100.0

Source: Survey, 2009

As can be seen from the Table 29, 78.3% of the children (90% boys and 60% girls) are attending school from 5-17 years age group. The rest 20% of school enrolment is covered by those above 17 years.

Dropout: From the survey population, a total of only 7 children were out of school during the last 12 months. This represents over all dropout rates of 5.7 %; of this the majority of the drop out is from MHHs. Two third of the school children who are currently attending school are living with their parents while the rest of the school children are not living with their parents. More school children are living with their parents in FHHs than MHHs. Among the children who are living outside their parents, 82.6 % of them get support from their parents while 14 % of them from boarding school. The situation is almost the same both for MHHs and FHHs. The drop-out rate has been significantly attributed to poverty and other vulnerability issues.

Thus adult literacy and primary education through formal and alternative basic education facilities should aggressively be promoted to enhance short and long term human capabilities in the area. In particular, given the complexity of gender issues and the marginalization of girls, strategic focus should be given to retention of girls at school in higher grades.

3.6 Health

Assessment of the health status of HH members showed that 20% of the HHs experienced sickness during the past month. Besides, 15% of the respondents reported death of a member during the past one year. A total of 53 persons died during this period. As can be seen from the Table 30, 47% of the deceased were in the age category of 5-15 yrs; 33% over 15 yrs and 21% were children under 5 yrs of age. In fact, most (85%) of those died from >15 yrs were

reported to be heads of the households. During the focus group discussion it was known that high mortality rate is common among the poor household as they are not bale to afford to travel and cover health expenses at to zone health centres or referral hospitals in Kombolcha or Dessie.

Table 30- Number of HH members died by Age

Age category	Number died	Percent
<5 yrs	11	21%
5-15 yrs	25	47%
>15 yrs	17	32%
Total	53	100%

Source: Survey, 2009

The respondents were also asked to tell the causes of death. Accordingly, malaria, TB and Intestinal parasites were the three-top diseases that caused death. 29% of the diseased persons were reported to be chronically ill before dying. Whereas 75% of these HHs took the sick for proper care by health institutions, the rest 25% didn't visit health institutions. Problem of transportation and physical inaccessibility of health institutions were the main reasons, accounting for 81%, followed by reliance on traditional healers (19%).

Table 31- Cause of death by type of diseases

Cause of death	Frequency	%
Malaria	15	44%
TB	9	26%
Intestines Parasite	5	15%
Other like accident, age and measles	5	15%
Total	34	100%

Source: Survey, 2009

3.7 Welfare Conditions

Child Welfare: Of the total children who are attending school, 64% are living with their parents, while the remaining 36% are living with guardians for their biological parents are either deceased or migrated to other areas as they are pastoralists. The majority (82.6%) of those children who are not living with their biological parents are being supported by relatives, yet 14% of them are supported by boarding school. The situation is the same for both male and female headed households. Meanwhile, out of the total respondents, 10% reported to have orphan or adopted children. But, none of these children have access to boarding schools.

Disability: 6% of the HHs was found to have HH members that suffer from physical disabilities of one kind or another. Of those who live with disabilities, 67% are between 18-59 years and the rest 33% are elders (over 60 years). Findings also showed that none of these HH members have received proper care mainly because of lack of modern institutions, financial constraints and limited access to transportation.

Migration: 24 or 11% of the HHs (12% of FHHs and 10% of MHHs) experienced out migration i.e. their family members left the house in the last twelve months. The major reasons included seeking jobs, conflict and marriage. Focused group discussion participants noted that most of the people out migrated to look for job are from poor wealth group families. On the other hand, only 8 or 4% experienced in-migration of outsiders who joined their families during same period.

3.7 Water and Sanitation

HHs access to and utilization of potable water has been assessed. Findings obtained from the respondents have been in support of the views and opinions held by most of FGD participants and key informants at woreda level.

Regarding water source, the findings revealed that the majority of the HHs, regardless of sex of the head, in the survey area has no access to an important source of drinking water such as piped water. Of the respondents HHs, 39.5% get water from river stream and pond; where as 29.1% and 24% get water from communal tap and borehole/ protected well respectively. Pastoralists who travel with their animals' uses river during the dry season and flood water during the wet season. Poor households who are not able to pay fees for tap water sources Uses River and flood water sources.

Table 32 Percentage Distribution of main source of drinking water at the moment by headship

What is the main source of your drinking water at the moment?	Sex of the HH head?		Total
	Male	Female	
Piped water inside the house	0	1	1
Piped water outside the house	2	2	4
Communal tap (Bono)	32	15	47
Borehole/protected well	34	6	40
Unprotected well	9	0	9
River, stream, pond	44	21	65
Total	121	45	166

Source: Survey, 2009

Distance from house to water points: Table 33 below presents that 77.3% the HHs travel less than 6 kms to fetch water and the remaining 22.7% travel more than 7 kms. More female headed HHs travel more than 7 km (34%) as compared to male headed HHs (19.1%)

Table 33-Distribution of estimated distance from house to water point in kilometre by headship

Distance grouped	Male Headed HHs		Female Headed HHs		Total	
	Frequency	%	Frequency	%	Frequency	%
1-2 KM	51	30.4	13	23.2	64	28.6
3-4 KM	53	31.5	14	25.0	67	29.9
5-6 Km	32	19.0	10	17.9	42	18.8
7-8 Km	9	5.4	3	5.4	12	5.4
9-10 Km	5	3.0	4	7.1	9	4.0
11-12 Km	1	0.6	2	3.6	3	1.3
13-14 Km	2	1.2	1	1.8	3	1.3
15-20Km	5	3.0	0	0.0	5	2.2
20-30 Km	0	0.0	1	1.8	1	0.4
>31	10	6.0	8	14.3	18	8.0
Total	168	100.0	56	100.0	224	100

Source: Survey, 2009

Volume of Water Consumed: With respect to average usage of water per day the majority of the HHs (71.2%) uses greater than 21 litres per day per individual and only 22.2% the HHs uses less than 5 litres per day. Female headed use more water per day (78%) than male headed HHs (68.8%).

Table 34- Percentage distribution of volume of water a household uses by headship

No. of Liters	Male headed Hhs		Female headed HHs		Total	
	No	%	No	%	No	%
<5 liters	38	24.2	9	16.4	47	22.2
6-10 liters	6	3.8	0	0.0	6	2.8
11-15 liters	1	0.6	1	1.8	2	0.9
16-20 liters	4	2.5	2	3.6	6	2.8
>21 liters	108	68.8	43	78.2	151	71.2
Total	157	100.0	55	100.0	212	100.0

Source: Survey, 2009

Bathing Frequency: The survey findings depicted in Table 35 next page showed that in an average of 78% of the respondents, all family members bath at least three days per week and in the rest 22% bathing is practiced at least every other day. Although the difference in bathing frequency by age category is insignificant, bathing frequency is found to favour female headed households. Disaggregating the result by sex-of HH head, only 18% of the MHHs as compared to 32% of FHHs wash at least every other day. This means family members of FHHs are relatively with larger bathing frequency, hence larger volume of water consumption, than those in MHHs.

Table 35- Bathing frequency (day/week) by category of family members and headship

Family members/ age category	Bathing Frequency					
	3 days and below/week			4days and above/week		
	MHHs	FHHs	Aggregate	MHHs	FHHs	Aggregate
<5yrs	75%	66%	70%	25%	34%	30%
5-11yrs	80%	62%	75%	20%	38%	25%
12-17yrs	82%	67%	76%	18%	33%	24%
18-59yrs	85%	66%	78%	15%	34%	22%
>60yrs	90%	80%	85%	10%	20%	15%
Aggregate	82%	68%	78%	18%	32%	22%

Source: Survey, 2009

Meanwhile, the overwhelming majority (73.9 %) of respondents don't treat water before drinking. Male headed households are better in treating water than female headed households (29.2% and 17.2% respectively). It is, however, paradoxical that almost all the respondents are aware of the benefits of treatment. The problem is that of practice than that of a knowledge gap. Moreover, workload on FHHs might have contributed to their poor practice of treating water (Table 36).

Table 36- Distribution of HH by treatment of the water before drinking by headship

Response	Male headed Hhs		Female headed HHs		Total	
	No	%	No	%	No	%
No	119	70.8	48	82.8	167	73.9
Yes	49	29.2	10	17.2	59	26.1
Total	168	100.0	58	100.0	226	100.0

Source: Survey, 2009

Among those who treat water, half (50.8%) of them treat water by boiling and 46% by water guard and the remaining 3.3% use filter method of treatment (See Table 37 below).

Table 37- If yes how do you treat the water?

Type of treatment	Male headed HHs		Female headed HHs		Total	
	No	%	No	%	No	%
Boil	28	56.0	3	27.3	31	50.8
Water guard	22	44.0	6	54.5	28	45.9
Use filter	0	0.0	2	18.2	2	3.3
Total	50	100.0	11	100.0	61	100.0

Source: Survey, 2009

Access to Toilet and Garbage Disposal: Information on HHs sanitation facilities was also collected during the survey by type of toilet\latrine. Accordingly, the only type of toilet facility used in the survey area was an open area (bush). Indicating that there are no improved toilets such as flush toilet, ventilated improved pit (VIR) and pit (both for private and community).The type of garbage disposal mechanism in which majority of the survey HHs used is unprotected well, constructed near the house that exposes the society to different type of diseases.

Similar to the problem of toilet facilities, HHs reported that there is no practice of using improved garbage disposal mechanism. About 50% (106 households: 86 male headed and 20 female headed households) of the respondents have a practice of using unprotected well near the

house. They are using unprotected well. Disposable plastic materials are observed all over many areas, affecting the environment because plastic materials are not decomposable.

Fuel Source: The main fuel source is natural trees. This shows that there is deforestation going on in Dewe woreda. Charcoal making practice is emerging, and seems to be more practiced by female headed households, which is also a source of income. (See Table 38).

Table 38- Main source of fuel for cooking by Sex of HH Heads

Sources of fuel	Sex of the HH head?						Total		
	Male			Female			No	% within Sex of the HH head?	% of Total
	No	% within Sex of the HH head?	% of Total	No	% within Sex of the HH head?	% of Total			
Wood	173	98.3%	73.7%	57	96.6%	24.3%	230	97.9%	97.9%
Charcoal	1	0.6%	0.4%	2	3.4%	0.9%	3	1.3%	1.3%
Animal dung	1	0.6%	0.4%	0	0.0%	0.0%	1	0.4%	0.4%
Kerosene	1	0.6%	0.4%	0	0.0%	0.0%	1	0.4%	0.4%

Source: Survey, 2009

3.8 Trends in Access to and Utilization of Services/Infrastructure

The HH's understanding of the trends in their access to and utilization of the social services/infrastructure has been assessed. For all livelihood groups, the trends has remained the same or increasing for education, health/safe water, animal health, market to products and road condition compared with the condition a year ago. However, access to finance/saving and credit reported to be deteriorating (by 50% of the respondents), but those who reported that access to finance is the same (33.8%) and improved (15.7%) compared with the condition a year ago.

Majority of the households reported that there is little improvement in terms of availability and use of social infrastructure. Limited households report that the availability is very high. As can be seen from Table 39, FHHs assume lower positions in their access to and utilization credit and saving facilities, veterinary and human health/water services.

Table 39- Percentage distribution of HHs by access and utilization of infrastructure

Categories		How do you assess the HH's present access to and utilization of infrastructure?			Total
		Deteriorated	Same	Improved	
Education	No.	15	38	183	236
	%	6.3%	16.0%	77.2%	100%
Health/safe water	No.	52	99	86	237
	%	21.9%	41.8%	36.3%	100.0%
Animal health	No.	80	81	70	231
	%	34.6%	35.1%	30.3%	100.0%
Finance/saving and credit	No.	100	67	31	198
	%	50.5%	33.8%	15.7%	100.0%
Road condition	No.	27	37	173	237
	%	11.4%	15.6%	73.0%	100.0%
Market to products	No.	68	102	66	236
	%	28.8%	43.2%	28.0%	100.0%

Source: Survey, 2009

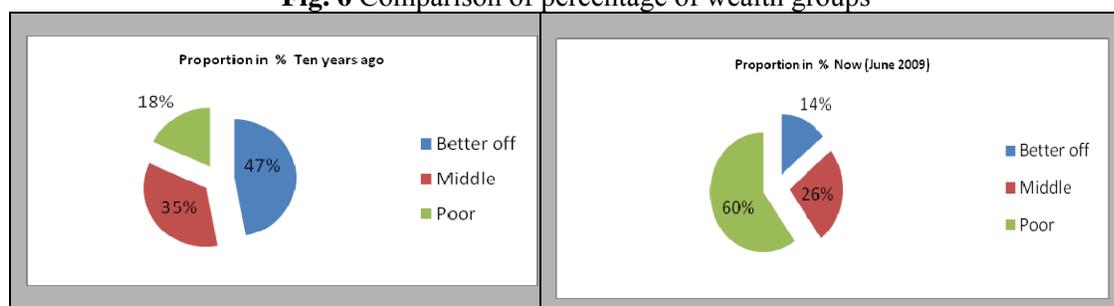
Module 4. Household Asset Ownership

Information was collected on the various assets owned by households, including livestock, cultivated land, physical assets like tools and domestic utensils, and financial resources owned by the surveyed households. This section presents the survey results in conjunction with results of wealth ranking exercises.

4.1 Livestock Assets

Livestock is the most important asset category for wealth classification in Dewe, with cattle the most common animal type commonly owned in the survey area. With regard to wealth categorization, results from wealth ranking exercises revealed that the main criterion used by the community to categorize wealth is livestock holding. The proportional piling exercise done with the FGD participants showed that the percentage of better off significantly declined in the last ten years (figure 6). While the percentage of poor households increased through time indicating that most of the households are becoming impoverished. By the criteria that communities used to categorize wealth ten years ago, all households currently fall in poor category.

Fig. 6 Comparison of percentage of wealth groups



Source: FGD with different wealth groups in the four surveyed PA's of Dewe woreda

Applying the wealth ranking exercises based on the FGD results on the ownership of livestock assets, approximately 60%, 26% and 14% were reported to be poor, middle and better-off households. Furthermore, results of FGDs with different wealth groups in the four surveyed PA's, showed the criteria and trends in livestock holding, which through time, has dramatically declined.

Table 40- Livestock holding comparison³

Livestock Holding	Ten years ago			Now		
	Better off	Middle	Poor	Better off	Middle	Poor
Camel	65-115	40-70	5-10	11-17	5-11	0-2
Cattle	100-150	45-60	10-15	15-20	6-7	0-1
Sheep	75-115	60-70	15-30	12-25	10-20	3-12
Goat	75-115	60-70	15-30	12-25	10-20	3-12
Donkey	5-10	3-5	1-2			

Source: FGD with different wealth groups in the four surveyed PA's of Dewe woreda

³ The wealth ranking is almost similar to the SC-UK's 2006 wealth characterization for Livelihood Zone-6 (Araamis ke Adaar Pastoral Livelihood Zone) to which Dewe belongs.

Analysis based on results of the wealth ranking exercise, presented in table 39 before, uncovered that ten years ago the total livestock head count per household in Dewe was estimated to be an average of averaged 216 i.e. 51 camel, 47 cattle, and 118 shoats. However, the average livestock holding significantly declined to reach to the present 27 livestock/HH i.e. 7 camels, 8 cattle and 22 shoats.

Visibly, the skewed distribution in livestock holding showed the poor, that constitute the larger proportion of the community, possess a relatively very small number of livestock. The FGD participants attributed the dramatic decline in livestock holding to recurrent drought. The current increase in the price of cereals also result in loss of livestock as pastoralists sell more livestock now than before ten years to purchase the same quantity of food.

Analysis of quantitative data and secondary documents corroborate the findings presented before. To start with, the pastoralists in Dewe are found to be worse-off even by the regional average for livestock holdings. Based on the estimated total livestock population of around 10 million and the present 1.4 million human population of Afar, the average per capita Tropical Livestock Units/TLUs for the region is computed to be 2.24. This shows that the Afar pastoralists stood below ‘**the minimal livelihood norm**’ of 4 TLU per person for pastoralists in the Horn of Africa (ICRC, 2005). The survey results, however, showed that the situation in Dewe is much worse. As depicted in Table 40 below, the per capita TLUs for Dewe Woreda is 1.38, while it is 1.45 for the survey HHs.

Table 41 Livestock population and Per capita TLU⁴ for Afar, Dewe and Survey HHs

Livestock Type	Total livestock population and per capita livestock holdings in TLUs					
	Afar		Dewe		Survey HHs	
	Total livestock	Per capita TLU	Total livestock	Per capita TLU	Total livestock	Per capita TLU
Cattle	2,340,000	1.16	35,457	0.62	1,276	0.58
Goat	4,300,000	0.30	102,524	0.26	2,966	0.35
Sheep	2,500,000	0.18	50,762	0.13	1,449	0.12
Camel	850,000	0.60	15,240	0.38	579	0.40
Total	9,990,000⁵	2.24	203,983	1.38	6,270	1.45

Source: Sanford & Habtu in MoFA, 2009, Dewe Strategic Plan, 2006, CSA 2007 and Survey Result

Meanwhile, attempt is made to calculate the monetary value of the livestock assets. Using the above findings and the average HH size of 6, a HH in Afar possesses an average of 14 TLUs. This is estimated to worth ETB 43,327 according to the average price estimates made by the respondents for the year 2009. The findings, as can be seen from the table below, showed that a HH in Dewe possesses a total of 5 cattle, 28 shoats and around 2.4 camels. This gives an

⁴ Computation of per capita TLU involved the following steps: First, the per capita livestock heads was obtained by dividing the livestock population to the total human population size of Afar and Dewe, which is 1,411,092 and 42,323 respectively. Then the conversion factor used by Sanford and Habtu (2000) was applied. Accordingly, 1 cow/cattle=0.7 TLU; 1 shoat (sheep or goat) =.1 TLU, and 1 camel=1.0 TLU. Note that, TLU per HH is computed by multiplying the per capita TLU by 6, which is the average HH size for Afar and the survey respondents.

⁵ The livestock population doesn't include Equines, which is estimated to be 190,000 for Afar and 856 for Dewe.

average HH's TLU of 8.3 or a livestock holding, worth ETB 27,593. Similarly, the survey HHs possesses an average of 8.7 TLUs with a mean price of ETB 29,742.

Table 42 TLUs and Mean Price Index per HH

Livestock Type	Based on survey		Average Unit Price	Based on woreda level data	
	Mean Number	Mean Price index		Mean Number	Mean Price index
Cattle	5	8,200	1,640	5.3	8,713
Goat	21	8,589	409	15.4	6,283
Sheep	7	2,023	289	7.6	2,198
Camel	2.4	10,930	4,554	2.3	10,399
Total	8.7 TLU	ETB 29,742		8.3 TLU	ETB 27,593

Source: Based on Dewe Woreda Strategic Plan, 2009 and Survey result

The survey results further uncovered greater disparities in livestock holding across wealth groups, sex of the household heads and livelihood categories and as depicted in Table 43 below, 73% of the HHs fall below the average (9 TLUs) for the survey HHs. Of those below the average, the poor HHs constitutes 92%, while the rest (8%) are from the middle class. This is support of the skewed distribution of livestock asset evidenced in the FGD results presented before.

Table 43 TLUs by Wealth Category

Wealth category	Average TLU Possessed			Total
	3 and below	4 to 8	9 and above	
Better-off	0	0	8	8
	0%	0%	100%	100%
Middle	7	7	30	44
	16%	16%	68%	100%
Poor/Very poor	77	80	24	181
	43%	44%	13%	100%
Column Total	84	87	64	235
%	36%	37%	27%	100%

Source: Based on Dewe Woreda Strategic Plan, 2009 and Survey result

Gender differential livestock holding is also observed in Dewe. Interestingly, there is large proportion of female headed households, compared to MHHs, with livestock holding below the average TLUs. Accordingly, 82% of the FHHs and 71% of the MHHs constitute those (73 %) of the HHs below the average 9 TLUs.

Table 44 TLUs by Sex of HH head

Headship	Average TLU/HH Possessed			Total
	3 and below	4 to 8	9 and above	
MHHs	56 (32%)	69 (39%)	52 (29%)	177(100%)
FHHs	30(50%)	19 (32%)	11(18%)	60 (100%)
Total (%)	86 (36%)	88(37%)	63 (27%)	237 (100%)

Source: Survey, 2009

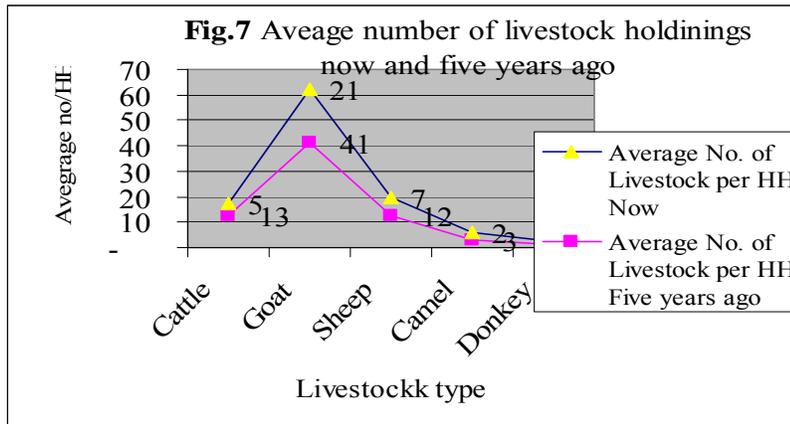
Similarly, the survey result showed differences in livestock holding by livelihood categories. In this regards, table below, shows that 75% of the pastoralists are with livestock holdings below the average 9TLU as compared with 58% of agro-pastoralists and 50% of ex-pastoralists.

Table 45 TLUs by Livelihood Category

Headship	Average TLU/HH Possessed			Total
	3 and below	4 to 8	9 and above	
Pastoralists	53(37%)	55(38%)	35(24%)	143(100%)
Agro-pastoralist	13 (28%)	14(30%)	20(43%)	47 (100%)
Ex-pastoralists	1(50%)	0(0%)	1(50%)	2 (100%)
Total (%)	67 (35%)	69(36%)	56 (29%)	192 (100%)

Source: Survey, 2009

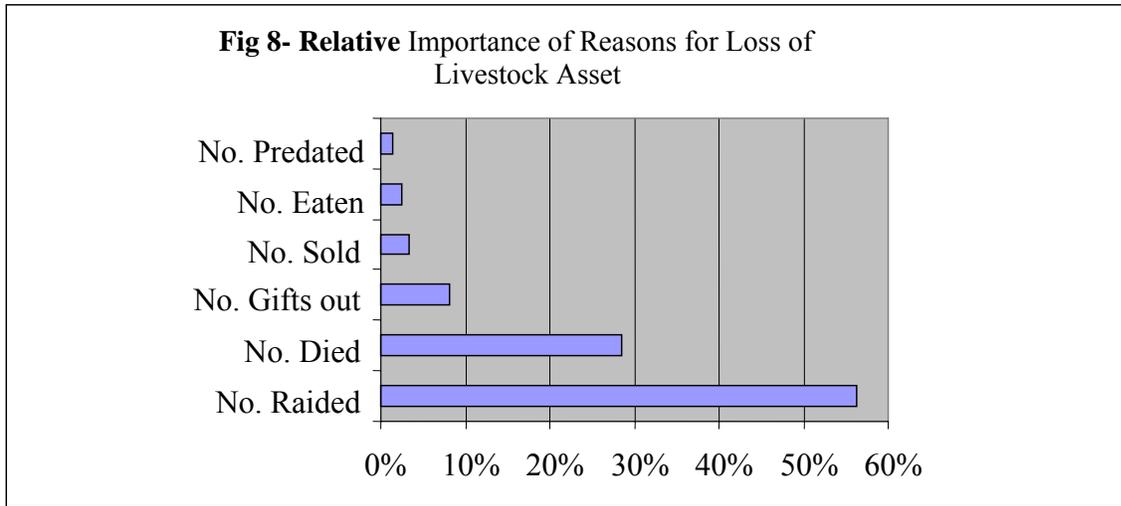
Finally, the survey result showed that the HHs experienced a cumulative of 49% loss of livestock assets between this year (2009) and five years ago. As depicted below, percentage loss in the number of cattle and shoats experienced by a HH during the past five years period was larger than the number of camels and donkey.



Source: Survey, 2009

Inventory of the number and composition of livestock by HHs, a year ago and now, was done to assess livelihood dynamics. Findings suggest that net losses both in the number of livestock and price indexes were observed. Accordingly, 124 HHs reported to possess livestock asset last year, out of which 10 HH experienced a total loss, i.e. a 10% decline in the number of HHs with livestock asset during the past twelve months. The findings showed that the differences in loss of livestock across gender and livelihood categories are insignificant.

In terms of number, there has been a dramatic decline, by 40%, in the total number of livestock from 11,052 last year to 6,748 at present. Findings further showed that, among the reasons that contributed for the net loss, raid, death, gift-out, sell and slaughtering were the most important factors, in order of importance, responsible for nearly 99% of the losses. This is presented in Figure 8 on next page.



Source: Survey, 2009

The above findings corroborate with other studies that uncovered a remarkable decline in livestock holdings in Afar. Studies in Afar by Sanford and Habtu (2000) showed that from 1998 to 1999, the per capita TLU holding decreased from 4.1 to 2.25. Accordingly, they estimate the percentage loss to reach at 15% for cattle, 5% for sheep, 5% for goats and 0% for camel between May 1999 and May 2000 drought in better zones while it was relatively higher for worse zones 45%, 15%, 15%, 25%, respectively.

In nutshell, the implications of the above findings are clear. Livestock holding in Dewe is inadequate to lead a normal or up-to the standard living both in absolute and relative terms. Given the ever declining trends in livestock productivity, both in Afar and Dewe, the empirical evidences suggest that livelihood of the pastoralists is seriously threatened. The situation has been aggravated by a dramatic decline in livestock, which is mainly attributed to recurrent drought, price increases and conflict.

4.2 Cultivated Land

Farm land operated by survey HHs during the time of interview seems to be significant. Total areas of 240 hectare, by 54 households, were cultivated during the last 12 months. Average land size cultivated through irrigation is estimated to be 4.4, yet 80 % of the households cultivate less than 5 hectare. Each household has on average 3 plots, and a maximum of 8 plots. However, as reported by FGD participants, the size of cultivated land per household varies from year to year due to drought; and crop framing practice is considered as opportunity farming.

The practice of farming is predominantly by male headed households. 42 male headed households' respondents are engaged in crop farming as compared to the 12 female headed

households who are engaged in crop farming. Similar trend is observed in number of plots of land owned by both male and female headed households.

Similar to non-pastoral areas, there is a practice of renting-in/out of farm land. The main reasons for renting-out, as reported by respondents' households, is that they no longer needed the land (54%), which is associated with recurrent drought, while 27.3 % rented-out to pay for social events and the rest was for buying foods and school fees.

Analysis of responses across wealth categories indicated that 90% of those who rented out land were from poor or very poor, yet the rest were HHs from middle class. Among the households who are practicing agriculture the type of use right seems not shared by the majority i.e. 83.7 %; the remaining 16.3 % of the households share the land with other households.

In terms of labour mobilization, men, women and children were found to be engaged jointly. The household interview survey result reveals that the majority, 70 %, of the crop farming field or garden is cultivated jointly by men and women, while in 26.1 % of the HHs the land is cultivated by men only. Children are engaged in cultivation among 3.9% of the HHs and there is no HH where women are single-handedly engaged in crop cultivation. Disaggregating the data by headship shows that the proportion of work done jointly in female headed households is greater than male headed households for the reason that the former need more support than the latter.

Table 46- Percentage distribution of HHs by family member labour mobilization

Cultivated by	Sex of the HH head						Total	
	Male			Female			Count	%
	Count	% within Sex of the HH head?			% within Sex of the HH head?	% of Total		
Jointly	23	67.6%	69.6%	69.6%	75.0%	19.6%	32	69.6%
Men only	9	26.5%	26.1%	26.1%	25.0%	6.5%	12	26.1%
Children	2	5.9%	4.3%	4.3%	0.0%	0.0%	2	4.3%
Total	34	100.0%	100.0%	100.0%	100.0%	26.1%	46	100.0%

Source: Survey, 2009

4.3 Physical Asset

4.3.1 Housing condition

Majority (84%) of the respondents believes the traditional Afar Houses/ *Ari's*/ are culturally and environmentally accepted and best suited to the mobile way of their life. However, women who are in charge of constructing the traditional houses feel that it is hard work to collect construction materials and re-innovate every year.

4.3.1 Tools and Domestic Utensiles

In pastoral areas, the physical assets owned at households are limited and are mainly domestic than productive assets as compared to non-pastoral areas. Findings showed that on average, a HH in Dewe possesses physical assets worth ETB 10,739 i.e. around 14,000 for MHHs and 10,000 for FHHs. Among the domestic assets widely possessed include, but not limited to,

clothing-spirit and cultural dress, milk fermentation pot, milk container, torch, knife, cooking pot, rope, and radio. Hoe and sickle were productive assets relatively held by nearly 40% of the respondents, yet others like plough and water pump were possessed by few or 5% and less. Findings showed that of those who possess productive tools, FHHs constitute less than 5%.

Meanwhile, 13% of the respondents reported to have practiced selling or renting of their households during the past 12 months. In terms of wealth category, 77% of those who sold or rented-out the physical assets were the poor/very poor HHs, 60% of which are from FHHs. This is followed by middle households (20%). Asked about their reasons, regardless of wealth group, the respondents reported that household assets are sold to cover costs of medication and other social expenses.

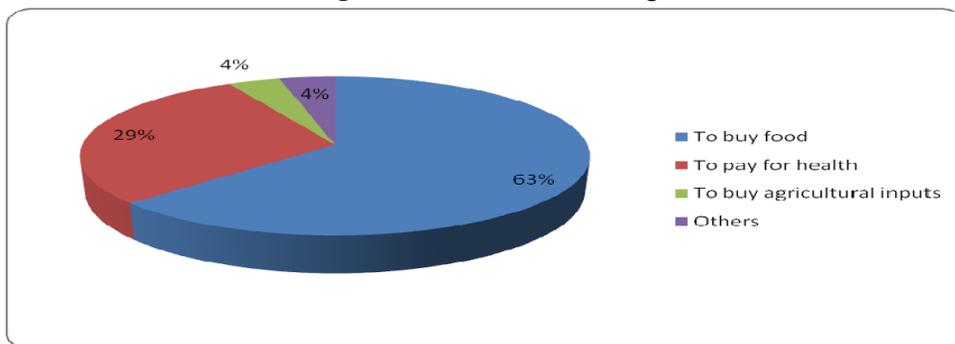
4.4 Financial Asset

From the total sampled households, majority (74%) of the households' respondents reported that they do not belong to credit group or scheme. In terms of headship, of those 26% who have access to finance, 21% were MHHs, yet FHHs are only 5%. Disaggregating by livelihood category, only 16% of pastoral HHs as compared to 51% agro-pastoral and 50% ex-pastoral HHs belongs to the financial institutions.

Regarding membership of the HHs to a particular pastoral cooperative association, it was reported that 46% of MHHs and 23% of FHHs reported that they do belong to a particular pastoral association/group. Also, on average, 2.5 persons per a HH were found to be members of these associations.

The findings showed that 36% of the HHs (53% agro-pastoral and 25% pastoral HHs) borrowed money during the past 12 months. As far as reasons for borrowing is concerned, most (63%) of the respondents borrowed to buy food; 29% to cover expenses for human health.

Fig. 9 Reasons for Borrowing



Source: Survey, 2009

Whereas 4% accessed loan to buy agricultural inputs, the rest used loans for other reasons like covering expenses for education and social events.

Module 5. Household Food Source, Income and Expenditure

5.1 Household Food Consumption: Source, Access, Dietary and Copings

Food source: Survey respondents were asked to identify the most prominent sources for their livelihoods during the past 12 months. Findings as summarized in Table 47 show that Livestock and livestock products followed by PSNP are top on the list. Petty trade and remittance are also among the most important food source reported by 23% and 15%, respectively.

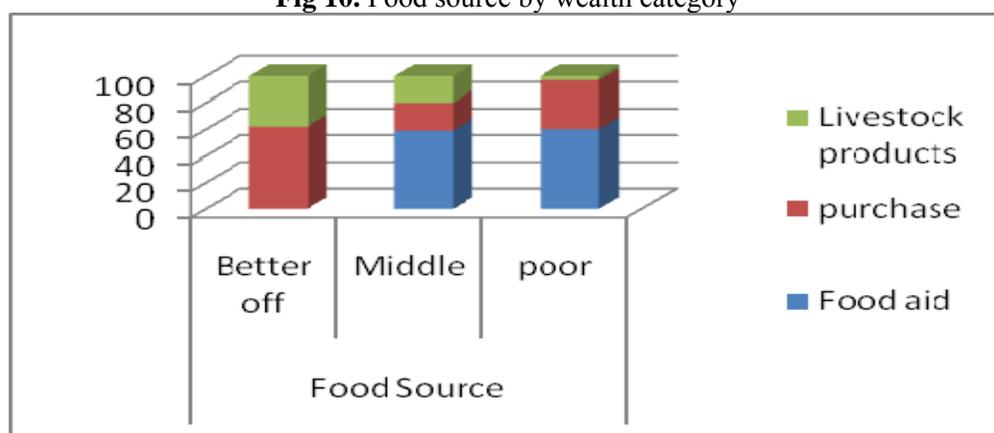
Table-47 Livelihood base during the past 12 months

Livelihood base	Weighted Response	Percent
Livestock and livestock products	45	37%
PSNP	47	26%
Petty trade	35	23%
Remittance	23	15%

Source: Survey, 2009

FGD results, shown in Figure 10, indicated that the main source of food for the better of households is livestock products such as milk and meat and purchase of cereals. This is directly proportional to their livestock holding which is higher compared with other wealth groups. Food aid in the form of productive safety net is the main source of food for the poor households. The finding also shows that purchase covers significant portion of the household food source of poor households as they have less livestock product to consume. Comparing with the poor HHs, the middle wealthy households are in a better position to obtain their food from livestock products.

Fig 10. Food source by wealth category



Source: FGD with different wealth groups, June, 2009

Survey results showed that for a total of 83% of the HHs formal and informal transfers are the main sources of food, whereas the rest 17% rely on food from own sources.

As can be seen from table 48, the formal transfers, mainly PSNP resource is the main source for the majority (82%) of the HHs, yet informal transfers including borrowing is the main source of food for 2% of the HHs. With regards to the 17% HHs who obtain food from own sources, purchase and production are reported to be the main sources of food for 12% and 5% of the HHs, respectively.

Table-48- Main sources of Food during the past 12 months

		Main sources of food					Total	
		Transfers			Own sources			
		PSNP resource	Informal transfers & borrowing	Sub-Total	Purchase	Production		Sub-Total
Wealth category	<i>Better-off</i>	2 (29%)	0 (0%)	2 (29%)	3 (43%)	2 (29%)	5 (71%)	7 (100%)
	<i>Middle</i>	37 (88%)	1 (2%)	38 (90%)	4 (10%)	1 (0%)	4 (10%)	42 (100%)
	<i>Poor/Very poor</i>	126 (81%)	4 (3%)	130 (84%)	18 (12%)	7 (5%)	25 (16%)	155 (100%)
Total		165 (81%)	5 (2%)	170 (83%)	25 (12%)	9 (5%)	34 (17%)	204 (100%)

Source: Survey, 2009

The above findings are clear indications of the excessive dependence of the pastoralists on external assistances. Moreover, analysis of the results by wealth categories showed that the proportionally large number of HHs in the poor and middle wealth categories rely on PSNP as opposed to the wealthier HHs. Meanwhile, there is a slight difference in the source of food as analysed by livelihood category. In this connection, 5% of the pastoral HHs as compared to 7% of the agro-pastoralists feed themselves from own sources. However, there is insignificant difference in source of food when viewed against gender of HH head.

The households reported to have an average of 2.8 meals per day during the day before they were interviewed. The number of meals for children averaged 3.2 per day. Cereals and milk are the first and second most important food commodities. PSNP transfer is the most important source followed by own production and purchase. Then follow by tea & coffee, sugar and sugar products; pasta and biscuits and meat. With the exception of meat, which is mostly from own source or exchange of PSNP transfers, most are purchased, borrowed or gifted-in.

Table 49- Current main sources of important food commodities

Food Item	Sources				
	Own production/garden	Purchase	PSNP transfers: public work and direct	Gifts from friends/neighbors	Others: borrowed,
Cereals	20%	17%	51%	3%	9%
Milk	47%	5%	36%	8%	4%
Tea & coffee		79%		8%	12%
Sugar & sugar products		74%		6%	20%
Pasta and biscuits		80%		8%	12%
Meat	38%	5%	45%	10%	2%
Others(vegetables and fruits)	27%	51%		4%	18%

Source: Survey, 2009

Duration of Food Gap⁶: Survey results on the number of food gap months revealed that on average, food gap lasts for 6.6 months. From the total food gap months, PSNP is reported to cover 6.3 months, i.e. by PSNP transfers filling 96% of the gaps.

Table- 50 Descriptive Statistics on Food Gap Months

Description	Valid N	Minimum	Maximum	Mean
For how long in a year do you face food gap?	232	1.00	111.00	6.6121
How many months of the food gap are covered by PSNP?	228	1.00	12.00	6.3158

Source: Survey, 2009

As can be seen from Fig. 11 below, 42% experience 1-3 months food gap and 27% for 4-6 months. A cumulative of 31% of the HHs encounter food gaps for a prolonged period ranging from 7 to 12 months.

Fig 11. Number of Food Gap Months

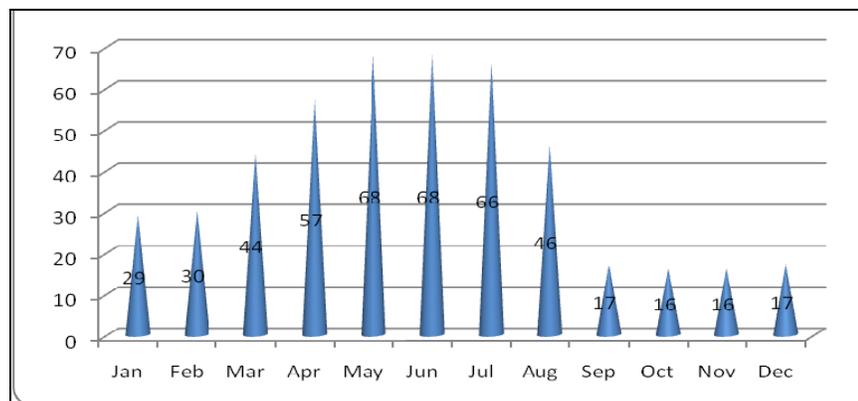


Source: Survey, 2009

Furthermore, the specific months when HHs experience food gaps has been assessed.

⁶ FANTA's methodology guide (FANTA, 2007) was applied to assess months of adequate food provisioning.

Fig.12 Percentage distribution of HHs by specific food gap months



Source: Survey, 2009

As depicted in Fig.12 before, May, June, July and April are months when food gap is the most prevalent in Dewe. (See also Table-annexed).

Result of the seasonal calendar analysis also corroborates the above findings (see also table seasonal calendar on page 41). Accordingly, in a total of five months the people reported to experience high level of hunger. The months include October, November and December (in Gilaal and Deda seasons) and May and June of Hagai. Whereas moderate level of hunger is reported in January, February, March and April (of Gilaal and Sugum seasons) the level of food gap is medium. During the rest period; i.e., July, August and September (under Kerma season) low level of food gap has been reported. Equally distributing the medium hunger period to the high and low food gap months, on average the people in Dewe experience seven months of food gap.

Survey results were further disaggregated to learn if there are any disparities vis-à-vis variables like gender, livelihood categories and wealth groups. The findings pinpointed that food gap is much more pervasive among HHs under the agro-pastoral and ex-pastoral livelihood categories than those in the pastoral category.

Table 51 Number of food gap months by Livelihood category

Livelihood Category	Number of Food Gap Months				Total
	1 to 3	4 to 6	7 to 9	10 to 12	
Pastoralist	41 (30%)	45(33%)	46 (33%)	6(4%)	138 (100%)
Agro-pastoralist	5(11%)	7(15%)	31(66%)	4(9%)	47(100%)
Ex-pastoralists	0(0%)	1(33%)	2(67%)	0(0%)	3(100%)
Total	46(24%)	53(28%)	79(42%)	10(6%)	188(100%)

Source: Survey, 2009

As can be seen from the Table 50, 30% of the pastoral HHs as compared against 11% agro-pastoral and 0% ex-pastoral HHs constitute the 24% of HHs that are with food gap months that last for 1 to 3 months. On the contrary, 75% of agro-pastoral and 67% ex-pastoral HHs is with

food gap that persists for 7 months and above. Yet, HHs in the pastoral livelihood category that experience food gap for 7 and above months is 37%.

Likewise, FHHs experience food gap for more prolonged period than MHHs. In this regard, Table 52 below shows that 25% of MHHs, against 48% of FHHs, reported to encounter consumption gap for above six months.

Table 52 Number of food gap months by Sex of HH head

No. of food gap months	HHs who experience food gap by sex of the HH head?					
	MHHs		FHHs		Total	%
1 to 3	69	48%	15	26%	84	42%
4 to 6	39	27%	15	26%	54	27%
7 to 9	30	21%	23	40%	53	27%
10 to 12	5	4%	5	8%	10	6%
Total	143	100%	58	100%	201	100%

Source: Survey, 2009

Food gap by wealth category showed that a considerable proportion of HHs in the Middle and Poor or very poor categories suffer from food gaps that last for prolonged period, yet the better off relatively experience shorter number of food gap months (Table-annexed). In general, during the last 12 months, 67% of the respondents received assistances in the form of food, cash, or both; yet the rest 33% didn't receive

Further triangulation uncovered that around two third (67%) of the HHs received assistances of one kind or another to fill the consumption gaps during the past twelve months. Concerning forms of assistances, as presented in Table 53, food accounts for 52%, followed both and cash only, respectively.

Table-53 Type of support from relatives/ friends within or outside the community

		Frequency	Valid Percent	Cumulative %
Valid	Food only	112	52	52
	Cash only	14	7	59
	Both	17	8	67
	Neither	74	33	100.0
Total		217	100.0	

Source: Survey, 2009

5.2 Household Dietary Diversity/HDD⁷

To assess a varied diet, different types of food consumed by the HHs were asked using a 24 hour recall period. The sum of food groups consumed by all HHs was divided by the number of interviewed HHs. The overall mean dietary diversity score is about 4.1. This means that, on

⁷ Both the data collection and computation of dietary diversification scores was made based on FANTA's methodology guide (FANTA, 2006)

average, HHs had consumed about four to five different food groups within the previous day. The survey results, as presented below, showed differences in HDDs across wealth group. The HDDs for the poor HHs averaged 3.9 as compared to the HDDs of 5.4 and 4.5 for the better-off and middle HHs, respectively.

Table-54 HDDs by Wealth Category

Wealth Category	HDDs	Proportion
Better-off (14%)	5.4	0.8
Medium (26%)	4.5	1.2
Poor /very poor (60%)	3.9	2.3
Total		4.3

Source: Livelihood Survey, 2009

Likewise, disaggregating the results by gender of HHs uncovered that FHHs are with HDDs of 3.5, which is below the HDDs 4.3 for MHHs. Nevertheless, there is no remarkable difference in HDDs by livelihood category.

Furthermore, attempt was made to estimate HDDs a year ago assessing food items consumed during seven days a year before the time of interview. The results showed that HDDs was 4.1, which implies a 5% improvement in the HDDs. The main contributing factors for the improvement are that the PSNP resource transfer during the pilot period includes pulses and vegetable oil, which were not included during the previous years' PSNP resource transfer.

5.3 Coping Strategies and Trends

The HHs was asked to identify and rank the three most important coping strategies they apply in times they encounter difficulties, mainly food gaps. Sell of livestock asset, with insignificant differences across gender of HH head and livelihood categories, appeared top in the all of the three rankings.

Table-55 Ranking of coping strategies

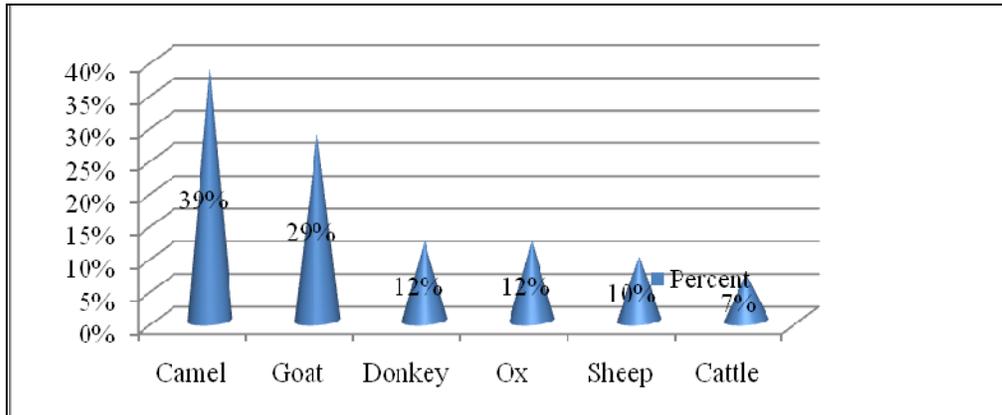
Source: Survey, 2009

Copings	First	Second	Third	Weighted average	Percent
Sell of livestock	126	70	41	107	87%
Petty trade	8	11	3	9	7%
Farming	2	3	2	3	2%
Remittance	2	4	1	3	2%
Monthly Salary	1	1	1	1	1%
Total	139	89	48	123	100%

Accordingly, 87% of the respondents sell livestock in times of chronic food shortage. Whereas engagement in petty trade covers 7%, others like farming and remittance were also among the coping mechanisms.

Regarding the livestock types HHs sell in times of difficulties, the findings showed that camels followed by goat, donkey and sheep are placed in their order of importance. This is presented in the figure below:

Fig.13 Most widely sold livestock



Source: Survey, 2009

The HHs survey further uncovered that many of the mentioned coping strategies existed prior to the introduction of PSNP. Respondents' evaluations of the trends in the various coping strategies are analysed and presented by sex of HH heads in Table 56. Aggregate results showed that 54% of the HHs has witnessed strengthening of the coping strategies, yet 23% noted that their coping strategies have been deteriorating during the past five years. The rest 18% coping strategies remained the same. Disaggregating the results by gender showed that female headed HHs are relatively with positive developments. As depicted in the Table 56, the coping strategies of 62% of FHHs were improving as compared to 51% of MHHs.

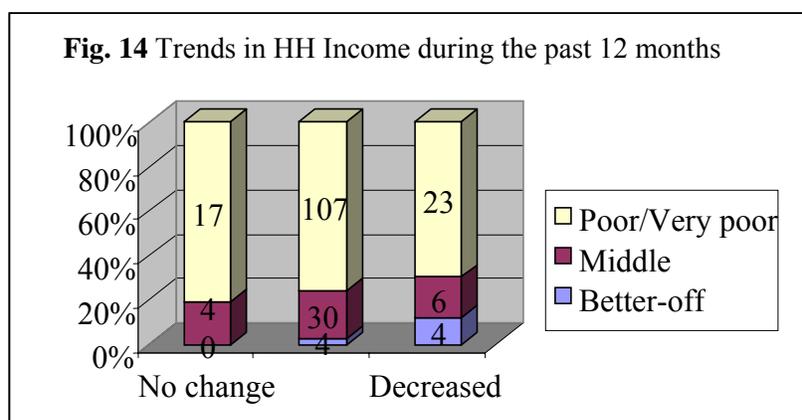
Table 56- Trends in HH Coping strategies (multiple responses N=414)

Headship	Trends in coping strategies			Total
	Deteriorating	No change	Improving	
MHHs	76 (24%)	78(25%)	160 (51%)	314(100%)
FHHs	20(20%)	18(18%)	62(62%)	88 (100%)
Aggregate	96(23%)	96(23%)	222(54%)	414

Source: Survey, 2009

5.4 Household income and consumption/expenditure pattern

HH Income: Income of the sample HH's has been assessed along with the trends and sources. The actual mean annual household income that was estimated by the respondents during the survey registered to be about 2,512 birr, which is equivalent to 419 birr per individual taking the average HH size of 6 for the respondents. However, positive developments have been observed in terms of HH income during the past 12 months. 72% of the HHs (72% of MHHs and 70% of FHHs) has witnessed improvements in income during the past 12 months, as opposed to 28% (28% MHHs and 30%FHHs) whose incomes either decreased or remained the same.



Source: Survey, 2009

Wealth-wise, most of those who witnessed improvements belong to the poor and middle, yet the better-off relatively dominate those respondents whose income has been unchanged. Meanwhile, a significant difference was observed in the trends of income when viewed against livelihood categories. Accordingly, 91% of the agro-pastoral HHs, as compared to 63% of the pastoral, witnessed increase in HH during the previous year.

Furthermore, the findings revealed that most of the households obtain their income from sale of livestock and livestock products (60%), followed by non-farm employment (wages, salary, business etc) (20%). Crop cultivation, sell or rent-out of physical assets and remittance were the third, fourth and fifth income source in their order of importance.

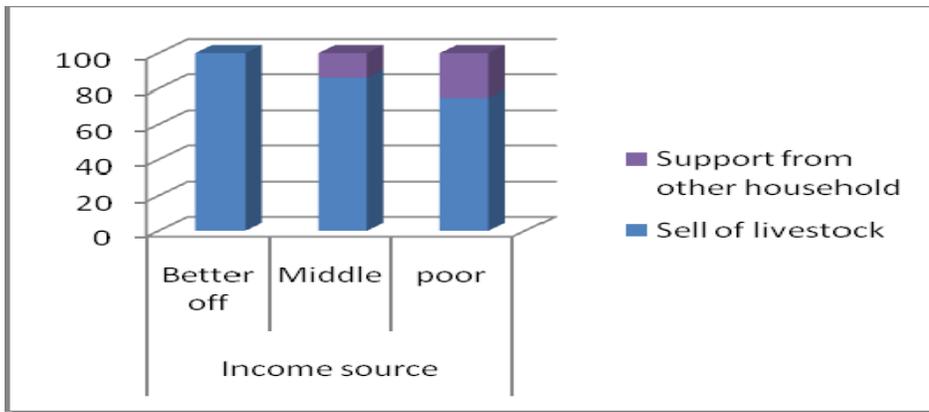
Table 57- Average Annual Income by Sources

Income Sources	Average in ETB	Proportion
Livestock and livestock-products	1,502	60%
Non-farm employment (wages, salary, business etc)	515	20%
Crop and fruit cultivation	194	8%
Selling/renting of HH/physical asset	132	5%
Remittance	129	5%
Natural resource based activities like wood, charcoal, honey, etc	40	2%
Total	2,512	100%

Source: Survey, 2009

According to the result of FGD with different wealth groups in all surveyed PA's, livestock sales are the main source of income. The ultimate source of income for the better off households is sale of livestock. The middle wealth group households get 14% of their income from support from other households in the form of gift and/or loan. The poor households get a quarter of their income from support from other households. This shows that the social safety net plays a significant role in the livelihood of the community.

Fig. 15 Household source of income



Source: FGD with Agro-pastoralists

The above findings corroborate with findings presented in the previous section that emphasized the role of social assets in Dewe and Afar at large. Inter-households social supports constitute part of income of the middle and poor households. This indicates that the social safety net and support mechanism which demonstrates strong connectedness and networking is the key social capital that poor households can benefit during crises. As a result of the recurrent drought, most of the households are dependent on the better off households. However, the social safety net has decreased both in amount and area coverage during the last ten years. For example, the amount of “Zeka” decreased in amount as the better off households lose their asset.

Household Expenditure Pattern

HHs’ expenditure pattern has also been assessed focusing on the amount of expenditure as well as the items and modes of decision to discern the gender dimensions in the HH economy. The survey results on average annual expenditure or consumption level showed that a HH in Dewe expends nearly ETB 5,486 for food and non-food items. This is considered to be equivalent or a proxy indicator for describing income-poverty situation in the area. This implies the mean household expenditure/ annum/ individual are about 914 Birr.

In general, however, a significant proportion (68%) of the HHs i.e. 72% FHHs and 68% of MHHs are estimated to be under this poverty line- living with less than ETB 2.5 per day, which is far below 1USD per day. In terms of livelihood category, 77% of the pastoralists as compared to 53% of the agro-pastoralists the population below poverty line. Taking the national total poverty line of 1,075 Birr for the country, 77% of the people in Dewe are estimated to be under poverty, which explains the prevalence of extreme poverty.

As can be seen in Table 58, only 19% of the HHs spends ETB 2,000 and below, yet 22% are spending up to ETB 3,000. The rest (78%) are with expenditures amounted above 3,000 birr. This partly corroborates with results of the HICE 2000 survey, which reported the fact that 87% of households in Afar Region spend between ETB 2,000 and 12,599 per annum.

Table 58- HHs Total Annual Expenditures

Total expenditures	Frequency	Valid Percent	Cumulative Percent (%)
1-500	7	3.2	3.2
500-1000	5	2.3	5.5
1000-1500	17	7.7	13.2
1500-2000	13	5.9	19.1
2000-2500	7	3.2	22.3
2500-3000	27	12.3	34.5
>3000	144	65.5	100.0
Total	220	100.0	

Source: Survey, 2009

Furthermore, it was found out that a considerably large (64%) of the total expenditure went to food, followed by 13% to clothes and 10% to human health. On the contrary, agricultural inputs, savings etc received insignificant proportion (a sum of 2%) of the expenditures by the HHs. This is one characteristic of poverty. According to the HICE 2000 survey, Afar Region has one of the highest figures concerning domestic expenditure in relation to all payments: out of the total payments per person per year. 95.8% is spent on domestic expenditure, which is higher than the national average of domestic expenditure (86.6%).

Mode of decision over expenditure is an indicator for the non-income dimension of poverty in Dewe. Overall, decision over expenditure is dominated by males (60% of the cases) as compared to 20% of the decisions dominated by females, predominantly in female headed-households. In the rest 23%, both males and females decide together in matters related to expenditure. This displays the fact that the pastoral communities of Dewe are predominantly patriarchal or male dominant.

Table 59-Expenditure Patterns

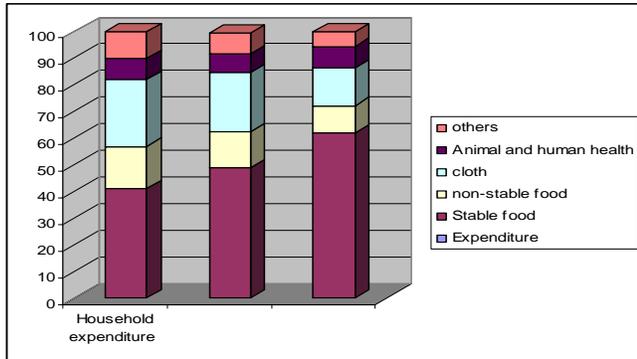
Expenditure Items	Mean Annual in ETB	Proportion	Who decides		
			Male	Female	Both
Food	3,232	64%	48%	25%	25%
Clothes	653	13%	56%	19%	25%
Human health	505	10%	51%	19%	30%
Religious and cultural ceremonies	308	6%	52%	20%	28%
Agricultural inputs	120	2%	74%	0%	26%
Support of relatives	109	2%	40%	20%	40%
Livestock health	47	1%	86%	8%	6%
Others: schooling, saving, debt payment	46	1%	77%	19%	4%
Total	5,019	100%	61%	20%	23%

Source: Survey, 2009

Analysis of qualitative information on expenditure uncovered that all HHs, regardless of their wealth groups, spend significant amount of their income on staple food purchase. As shown in Figure 16, significant amount of the household expenditure by the poor household

goes to stable food as the poor households have limited amount of livestock product to cover their food need.

Fig. 16 Households expenditure pattern



Source: FGD results

This on the other side indicates that the food aid is not covering the stable food gap need of the households supported by Productive Safety Net. This implies poor households have to sell the livestock or get financial support from the better-off to cover their food gap. The expenditure for non stable and cloth decreases as one goes from the better-off to the poor households.

Module 6. Child Nutrition: Anthropometric Results

Anthropometry measurements were taken from a total of 72 under 5 children: 35 (48.6%) boys and 37 (51.4%) girls who are in the age category of less than 5 years old children.

Table 60-Age category * Sex Cross tabulation

Age category (in months)		Sex		Total
		Male	Female	
6-12	Count	7	20	27
	% within Age category	25.9%	74.1%	100.0%
	% of Total	9.7%	27.8%	37.5%
12-24	Count	10	5	15
	% within Age category	66.7%	33.3%	100.0%
	% of Total	13.9%	6.9%	20.8%
24-36	Count	9	4	13
	% within Age category	69.2%	30.8%	100.0%
	% of Total	12.5%	5.6%	18.1%
36-48	Count	8	8	16
	% within Age category	50.0%	50.0%	100.0%
	% of Total	11.1%	11.1%	22.2%
48-59	Count	1	0	1
	% within Age category	100.0%	.0%	100.0%
	% of Total	1.4%	.0%	1.4%
Total	Count	35	37	72
	% within Age category	48.6%	51.4%	100.0%
	% of Total	48.6%	51.4%	100.0%

Source: Nutrition survey, 2009

Analysis of MUAC data, as presented in table 61 below, uncovered the prevalence of malnourishment (MUAC < 125 mm) among 30.6% of the total sample children. Out of these, 5.6% were severely malnourished, yet 25% were under mild malnourishment. Higher rate of malnourishment (18.1%) was obtained for children 6-12 months as compared to 9.7% for children of 12-24 months. It is also found out that children in the age category of 6-12 and 12-24 months had severe malnourishment (MUAC < 110 mm) rate of 5.6%, whereas 25% of the children had fallen under moderate malnourishment (between 110 and 125 mm).

Table 61- Age category * MUAC category Cross tabulation

Age category	MUAC category (in mm)				Total	
	<110		110 – 125		No.	%
	No.	%	No.	%		
6 - 12	2	2.8	11	15.3	13	18.1
12 - 24	2	2.8	5	6.9	7	9.7
24 - 36	0	.0	1	1.4	1	1.4
36 - 48	0	.0	1	1.4	1	1.4
Total	4	5.6	18	25.0	12	30.6

Source: Nutrition survey, 2009

Furthermore, the prevalence of underweight among the age category of 36-48 months is found to be the highest rate (19.4%), followed by 24-36 months 4.2%, and 1.4 % for each age group of 12-24 and 48-59 months. This indicates that 26.4 % of children’s weight is considerably lower than the anticipated same age of the children. Low prevalence of stunting i.e. 1.4% observes among the age category of 48-59 months children and increases sharply to 13.9%, 19.4% and 20.8% for the age groups of 24-36, 12-24 and 36-48 months children respectively. Then the prevalence reaches the peak of 34.7% for children among 6-12 months. Stunting reflects failure to achieve expected length as compared to healthy and well nourished children of the same age. High prevalence of stunting resulted from chronic insufficient protein and energy intake, frequent infection, sustained inappropriate feeding practice and poverty. It is to be recalled that the mean number of meals for children was 3.2 per day. Thus, the prevalence of malnutrition is largely attributed to poor nutritional content of the food fed to children, especially by over 60% of the HHs that are categorized as poor. The FGD result on trends of human capital in Dewe is also in support of this. Accordingly, the ever depleting natural resource base has resulted in the dramatic decline of livestock products: milk and meat, hence prevalence of malnourishment. Furthermore, out of 90.3% of stunted children, 54.1% young children below 2 years had a large rate of stunting. So that it needs a considerable focus to minimize the long term irreversible effects malnourishment.

Table-62-Underweight, Stunting and Wasting among children 6-59 months

Age category by month	% of under weight	% of stunting	% of wasting
6-12	0	34.7	13.9
12-24	1.4	19.4	5.6
24-36	4.2	13.9	5.6
36-48	19.4	20.8	6.9
48-59	1.4	1.4	0.0
Total	26.4	90.3	31.9

Source: Nutrition survey, 2009

Children among the age group of 6-12 months has the largest prevalence of wasting of 13.9% and declines to 6.9% wasting point in the age category of 48-59 months children then followed by 12-24 and 24-36 months of children having the same rate of wasting of 5.6%. Wasting is an indicative of current and acute malnutrition and provides information related to short term nutritional effects such as seasonal changes in food supply and illness.

Severe Malnutrition: As can be seen in Table 63 on next page, the prevalence of severe underweight, stunting and wasting in children between 6-59 months which constitute 16.7%, 88% and 5.6% respectively. The high prevalence of malnutrition particularly for stunting is resulting from chronic malnutrition and brings about long term cognitive and developmental effects. Such long effects are irreversible. So that it is important to prevent malnutrition particularly before it affects children below two years of age.

Table-63 Severe underweight, stunting and wasting children 6-59 months

Age category by month	Under weight <-2.	Stunting <-2.	Wasting <-2.
6-12	0	32	1.4
12 -24	1.4	19	2.8
24-36	2.8	14	1.4
36-48	12.5	21	0
48-59	0	1	0

Source: Nutrition survey, 2009

Vaccination: The survey found that Vitamin A supplementation coverage is 91.7%, due to health intervention made by government, where as Measles and BCG vaccinations are nonexistent both by cards and mothers recall. This indicates that the routine EPI program is very poor, requiring strengthening to increase the coverage.

Table -64 Vaccination and Vitamin A supplementation

	n	%	95% CI
Measles by card (9-59 months)	0	0	-
Measles by card and recall (9-59 months)	0	0	-
BCG by scar (6-59 months)	0	0	0.0- 0.86
Vitamin A in last 6 months (6-59 months)	91.7	2	0.0 -5.9

Source: Nutrition survey, 2009

Morbidity (2 weeks prior to the survey): The situation of the prevalence of diseases among the sample of under5 age groups of children within the two weeks prior to interview was collected. As depicted in the table below, the prevalence of diarrhoea (47.2%) is much higher than others, which is followed by ARI (11.1%) and malaria (1.4%). As describes in the table below the prevalence of diarrhoea among the age group under 12 month is high (23.6%) followed by 12-24 month (12.5%), 24-36 month (8.3%) and 36-48 month (2.8%) children. While the prevalence of ARI is 11.1%, out of which children among the age group of 36-48 and <12 months constitute 4.2% and 2.8% respectively. According to the survey result the prevalence of malaria is minimal as compared to diarrhoea and ARI which holds the rate of 1.4%.

The survey results also showed that 93% of children that were affected by Diarrhoea, ARI and Malaria had visited health facilities while 7% of the affected children had not been taken to any health facilities by their parents/guardians (see also table 5.73 and 5. 74 annexed).

Module 7. Food Security Programmes and PSNP-PAP Related Findings

Given that the next phase FSP aims to roll-out in pastoral areas, an effort was made to collect information on the development programmes being implemented; and the PSNP beneficiaries' understanding/perception of the PSNP and other pastoral issues. The following major findings were obtained.

7.1 Food Security/Livelihood Development Related Problems and Suggested Interventions

As clearly reported in the previous sections, the findings of the study provided adequate evidences in support of the fact that inhabitants of Dewe woreda are chronically food insecure. In response to this, a number of food security interventions are being implemented by different development actors.

Table 65 below presents the different food security/livelihood interventions being supported and implemented by different actors.

Table 65-Prioritization of livelihood development related problems at various levels

Sector programs/projects	Objectives	Specific activities	Coverage		Program/ project life		Budget source
			Number of kebeles	Total population	Start	end	
Productive Safety Net Program Pastoralist Areas Pilot/PSNP-PAP/	Community level asset building; Household Asset protection	Productive public Work; Direct food transfer	10	14,168	May 2008	Oct. 2009	USAID
Support for Sustainable Development /SSD/	Changing dependency and on rain fed agriculture		1	250 HH	2008	2012	--
Pastoralist Community Development Program/PCDP/	To achieve sustainable livelihood for the pastoralists	Communal asset building	4	--	April 2009	April 2011	Regional Gov't
School Feeding	Increasing student enrolment and addressing the problem of school drop-out rates	School feeding for students at school	10	1617	Before 1999	On-going	WFP

Source: Dewe Woreda Administration Statistical Abstract, Strategic Plan of Dewe Woreda, 2006.

Findings surfaced that, in Dewe woreda, there are two generic livelihood categories (pastoral and agro-pastoral), and three primary wealth groups in the woreda, classified on the basis of livestock holding. There are notable variations within each wealth group and between kebeles, due primarily to disparities in an attempt to exercise farming to diversify livelihood strategies. Within each wealth group there are minority of households who are depending on income generating activities. Poor households are disadvantaged by smaller livestock holdings. This limits the food and income source from livestock, forcing these households to rely on food aid/ PSNP and traditional safety net. Middle households have slightly larger livestock holding. However, they can not still be self-reliant in terms of food source and income. They usually fall under the transitory food insecurity situation. Better-off

households hold larger livestock holding. They ensure their food self-sufficiency and better income from livestock and livestock products sale. However, these groups of households are still vulnerable to drought that their livestock holding decreases at alarming rate. Loss of livestock productivity is also threatening livelihood of the people in dewe.

Owing to the above and related facts, the following development interventions were suggested by FGD participants and key informants communicated during the survey period:

- Pastoralist who participated in the FGD expressed that they started practicing farming as an alternative livelihood option. Very few farmers have been trying farming in the river banks. Farmers start to diversify their livelihood option. Most pastoralists express interest to practice crop production side by side to livestock production. This could be further assessed and taken as an option. Making water availability should be seen in connection to this.
- Water harvesting structures for both crop and pasture production
- We have to see the option of increasing productivity by reducing the livestock number (productivity vs. livestock number). This is suggested in relation to the need of enhancing pasture production and increasing water availability through construction of water harvesting structures.
- Diversification of income opportunities through different interventions such as credit service for the poor to start small business and nutrition education intervention with in PSNP.
- Intensive livestock production (focusing on the quality)
- Conflict resolution mechanisms have to be strengthened. One woreda key informant mentioned that this is one area where we look for support from NGO's;
- Improved animal health service
- Agro pastoralists suggested the need for increased support for irrigated farming

7.2 PSNP Related Findings

- On average, 5 persons per household are targeted by the PSNP. This is below the average HH size of 6 for the respondents;
- 56% of the respondents stated that they are aware of the targeting criteria for the selection of PSNP beneficiaries. Most (83%) of them were found to believe that they are beneficiaries of the program because they are poor HHS;
- Asked about the specific targeting criteria applied, 83% stated that they were selected as beneficiaries because they are poor. Lack of livestock, mainly camel, was a criterion for the inclusion of 9% of the respondents; whereas belongingness to the community was a

reason for 3%. Others like lack of capacity and large family size were cited by the rest 4%;

- Attitude towards the criteria applied for beneficiary selection showed that most or 87% were happy, yet the rest 13% did not give response.
- 78% of the beneficiaries were under the public work category of the program, yet 22% were included under direct support. In fact, from among those who are receiving direct support the number of beneficiary HHs from the poor wealth category, proportionally, exceeds those from middle and better off. In terms of headship, 46% of FHHs as compared to 13% MHHs are included under the direct support category;
- The beneficiaries' preferences of PSNP resource transfer showed that 62% opted for cash because cash can easily be used for non-food items and purchase of livestock, yet 38% prefer food to cash as the food price is very high and not easily accessible in market.
- As far as use of PSNP resources is concerned, overwhelming majorities (98%) reported to consume the food, where as the rest 2% sold the food, particularly the pulses and vegetable oils (sold in local market for traders).
- With regards to the period of transfer, 86% preferred monthly transfer, whereas 14% suggested every two month transfers. Poverty and drought as well as lack of other livelihood options to sustain lives were among the main reasons for preferring the monthly transfers;
- The respondents identified a number of problems associated with distribution of PSNP resources. Most importantly, inappropriateness of the time, transportation and administrative problems were mentioned in their order of importance;
- The respondents were also asked about the existence and proper functioning of institutional arrangements viz. Kebele and community appeal committees. 64% of the beneficiaries are aware of the presence of the appeal committees, whereas 36% do not know;
- Information gathered on the functionality and/or reliability of the committees revealed that responsiveness to complaints, provision of information, and commitment to serve the communities were emphasized by considerable proportion of the respondents. On the contrary, the levels of transparency and participation or engagement of customary institutions and the community at large in the PSNP were not the qualities of the appeal committees.

6. SUMMARY OF MAJOR FINDINGS AND RECOMMENDATIONS

This section attempted to summarize key findings and recommendations to reflect the pastoral issue and PSNP-PAP key questions. Accordingly, the major finding/issues and recommendations (“development implications”) are presented as follows:

1. Very low standards in terms of social development indicators reported. (i) Education coverage of the Woreda very low. School enrolment for children of age 5 to 17 years is about 78.3%. The rest 20% of children are above 17 years old. Of the respondent HHs 82.2% are illiterate with female headed HHs more literate than male headed HHs (19% and 16.6% respectively). Five years plan (Regional/Woreda Strategic Plan, 2005: 12.78% to 84.12%) has not yet been achieved. Most villages need to travel at least 5 to 10 km to get school. **(ii) Health service coverage:** health service coverage in Dewe Woreda is low (41.8 %). The regional average (the potential regional health service coverage is currently 70%). About 20% of the survey HHs in Dewe Woreda experienced sickness; 15% of the respondents reported death of members of households during one year prior to the survey period. A total of 53 persons died during this period. 47% of the deceased were in the age category of 5-15 yrs; 33% over 15 yrs and 21% were children under 5 yrs of age. Most (85%) of those died from >15 yrs were heads of the households. The top ten diseases are Malaria, Respiratory tract infection, Acute Watery Diarrhoea, Conjunctivitis, Skin Infection, Intestinal Parasite, wound, and Urinary tract infection. The main cause of death is malaria, followed by TB intestinal parasite and diarrhoea **(iii) Water: the rural water supply coverage** of Afar is estimated at (55%). The Woreda coverage is similar to the regional average: 29.1% and 24% get water from communal tap and borehole/ protected well, respectively. However, majority, 77.3%, of the sample HHs travel less than 6 Kms to fetch water and the remaining 22.7% travel more than 7 Kms. More female headed HHs travel more than 7 km (34%) as compared to male headed HHs (19.1%). About 73.9 % sample HHs don’t treat water before drinking. **(iv) Malnutrition:** Despite improvements in access to and utilization of social services, malnutrition has increased over the past ten years. The lack of milk and similar by-products causes abdominal bulging on children.

Recommendation 1: *Need for a concerted effort. Huge investment and strenuous efforts are required to improve access to social services. Productive Safety Nets Programme and other food security programmes should be linked with broader development programmes (such as sector development programmes: health, education, water and roads) in order to alleviate the social service problems. Thus adult literacy and primary education through formal and alternative basic education facilities should aggressively be promoted to enhance short and long term human capabilities in the area. In particular, given the complexity of gender issues and the marginalization of girls, strategic focus should be given to retention of girls at school in higher grades.*

2. Capacity in terms of human and physical aspect is generally poor, characterized by inadequate human and physical capacity gaps at different levels. Human capacity in terms of number and skill is very limited. At regional, **Woreda** and community level, there are a number of vacant positions and available staff lacks the required education and skill. Particularly at Kebele level, development agents and health extension workers have not yet fully recruited as per the national/regional proposed requirement. There is *lack of required office and transportation facilities at Woreda and Kebele levels.*

***Recommendation 2.** Short-term and long-term mechanism to improve institutional capacity development in place: The institutional capacity interventions should be integral part of food security development interventions; and it should be systematically integrated with the development dynamics in order to ensure sustainability of the programme results. Importance of local government partnership with NGOs and other development actors who have better capacity help address the capacity issues.*

3. Dependency ratio is very high: with an estimated dependency ratio of 167 for Dewe, the problem of dependency is more pervasive even by country and regional averages of 93 and 82 respectively. Moreover, in terms of headship, 25% of the households are FHHs and a cumulative of 40% of the MHHs practiced polygamy; i.e. married to more than one wife. Disability was reported in 6% of the HH, and 11% of the HHs experienced out migration, seeking jobs, owing to conflict and marriage.

***Recommendation 3.** Beneficiary targeting by food security programme (such as PSNP) should consider the population dynamics including dependency, headship, disability, and marriage status (polygamy)*

4. Livelihood system is not uniform-there are pastoralists (74%), agro-pastoralists (24%) and ex-pastoralists (2%), but periodical monitoring is required as there is fast livelihood dynamics due to the change of natural resource base and the over-all change in livelihood strategies and components. The seasonality and mobility pattern is also linked to the livelihood strategies. In terms of wealth category, poor, middle and better-off households constitute 60%, 26%, 14%, respectively. However, in all categories of livelihood groups, the livelihood situation is increasingly deteriorating due to increasing recurrent drought and other hazards. Poor Households (60%), which constituted only 18% ten years ago, have small livestock holding and low food and income sources. Middle HHs (26% now and 35% ten years ago) is better-off, compared to the poor, but they are not self-sufficient.

***Recommendation 4.** Food security/livelihood interventions need to reflect and consider the livelihood dynamics through comprehensive understanding of livelihoods of the different groups. Livestock risk mitigating measures should be among the livelihood interventions that are appropriate to pastoralists. For agro-pastoralists and ex-pastoralists income generating interventions could be more relevant which should be mainstreamed to the boarder development interventions in pastoral regions. Mode of transfer and implementation of public work activities need to reflect the livelihood diversity; and consider seasonality and mobility pattern of the different livelihood groups. This implies that proper targeting by implementing different targeting mechanisms is necessary. Seasonality and mobility aspects are less important for agro-pastoralists and ex-pastoralists.*

5. The Livelihoods of the different livelihood groups is deteriorating at alarming rate due to the increasing vulnerability to drought, conflict and the over-all deterioration of rangeland production and productivity the livelihoods of the different livelihood groups is deteriorating

at alarming rate. As a consequence, more people suffered from transitory and chronic food insecurity. The livestock holding is found to be equivalent to 2.3 Tropical Livelihood Units (TLUs) for Afar, yet is 1.3 for Dewe and 1.4 for the survey HHs. Hence, the pastoralists in the survey area are far below the minimal livelihood norm of 4TLUs. Owing to the dramatic decline in the number of livestock across years (around 40% loss during the past five years) and the depletion of livestock productivity, the livelihood of the people is seriously threatened. The current livestock sale does not show the real market off-take rate. Livestock sale reaches below the threshold. In addition, unbalanced terms of trade are also increasingly observed because the value of livestock against value of food stuff has significantly decreased as opposed to the previous days. Pastoralists have to sell three shoats to buy one (50kgs) sack of wheat, which costs around 400 birr. In general, reliance on livestock-based livelihoods is becoming more precarious as vulnerability continues to prevail. In the absence of effective asset protection and/or enhancement interventions and risk management interventions, livelihood asset will continue deteriorating at an alarming rate.

Recommendation 5. *Food security/livelihood interventions in pastoral areas should focus primarily on both household and community asset development/creation. In this regard, (i) the interventions should primarily focus on improving rangeland and livestock productivity. Development objectives and programmes need to minimize vulnerability/ hazards by considering the vulnerability context; (ii) The risk management interventions need to be mainstreamed in Food Security Programmes and other types of development interventions to minimize the consequences of the prevailing risks, thereby enhance sustainable livelihood at household and community levels; (iii) The existing livelihood strategies and options, particularly the natural assets should be strengthened and enhanced, providing a base for sustainable food security and livelihoods. Improved natural resource management, particularly rangeland management through prevention and control of invasive shrubs and trees, area enclosure and appropriate pasture development; (iv) Improved linkage between food security programmes and other sectors development programmes need to be improved and deepened; and (v) Water harvesting structures for both crop and pasture production, and small scale irrigation should be promoted in potential areas with sufficient planning.*

6. KAP on Natural Resources Management necessitates rejuvenation: In Dewe, as elsewhere in the Afar pastoral groups, livestock are the most valued resources that are central to the KAP of pastoralists on NRM in general and on water and pasture land management in particular. Findings showed that the level of awareness about livestock, water, pasture land and climate is higher and attitudes and practices for wise use of these resources have been favourable. Moderate level of has been observed KAP on wildlife and traditional medicines. However, knowledge about soil resources and implications limited. Knowledge on indigenous water and rangeland management system and techniques is better than their knowledge about modern ones. Knowledge about natural resources in general and predictive ability of the pastoralists in particular has not witnessed advancements. Besides, awareness about utilization of natural resources for diversified livelihood is very marginal.

Recommendation 6: *Any interventions guided towards improved management of these issues should be viewed against the pastoralists' knowledge, perceptions, practices as well as expectations pertaining to livestock development. Specifically, PSNP interventions should strengthen KAP on NRM: enhance the KAP through establishing appropriate mechanisms to ensure strong engagement of customary institutions (which are still strong in natural resource management and conflict*

management). Moreover, empowering women is a key to address natural resource depletion as well as for improved hygiene and sanitation.

7. Traditional Knowledge and Social assets play significant role in many ways: contribute significantly to natural resource management and livelihoods sustainability. Sharing of resource is the traditional safety net mechanism that the poor households get a quarter of their food source/income from support from other households. This shows that the social safety net plays a significant role in the livelihood of the community. The communities are still organized into clan base structure, and governed by traditional law, so that traditional safety nets, having reciprocity nature, conflicts and rangeland management issues are managed at different levels.

Recommendation 7: Strengthening and mainstreaming the traditional knowledge and social assets, *providing a base for sustainable food security and livelihoods*, into the broader development interventions *to meet the development needs of the different livelihood groups.*

8. In Dewe Woreda, Food gap lasts for nearly 7 months. 31% of the HHs (poor and very poor households) encounters food gaps for a prolonged period ranging from 7 to 12 months. A significant number of people depend on PSNP or externally driven livelihood strategies, such as PSNP or food aid (for those who are not targeted for PSNP). Most of the households obtain their income from sale of livestock and livestock products (60%); however, the income obtained from livestock sale is not sustainable because the livestock sale has reached below the threshold. A considerably large (64%) of the total expenditure went to food followed by 13% to clothes and 10% to human health. This shows that there is limited resource invested on sustainable livelihoods (such as livestock asset building).

Recommendation 8: *In implementing social protection interventions (such as safety nets programme) need to reflect the Scale and size of the chronically/transitory food insecure population. Different levels of support based on the food gaps. 42% of the respondent households experience 1-3 months food gap. Better-off and transitory households fall under this category. 57% of the respondent households, who are considered to be chronically food insecure households, suffer from food gaps for more than four months: 27% for 4-6 months; and 31% of the HHs encounter food gaps for a prolonged period ranging from 7 to 12 months.*

////////////////////////////////////

Major References

1. BoFED (ANRS), 2009. Regional Atlas 2
2. CARE Ethiopia, 2005. Piloting Safety Net Program in Pastoral Areas Project Proposal
3. CARE Ethiopia, 2009. Piloting Safety Net Program in Afar Region May, 2008 - October, 2009
4. CSA, Abstract Report, 2007
5. ICRC, 2005. Regional Livestock Study in the Greater Horn of Africa.
6. MoFA, 2009. Assessing progress by the Developing Regional States in implementing their development plans (Draft)
7. PSNP-PAP, 2007. Guideline for the Implementation of Productive Safety Net Programme Pastoral Areas Pilot
8. PSNP-PIM, 2004 Productive Safety Net Programme Implementation Manual
9. Regional Profile (ANRS), 2005
10. SC-UK/DPPB, PARD, PCDP, Mercy Corps, APDA in 2006. Livelihood Zone (LZ) Map Afar Regional State, Ethiopia:
11. Strategic Plan of Dewe Woreda, 2006.