



Ministry of Agriculture

*Enabling Pastoral Communities to Adapt to Climate  
Change and Restoring Rangeland Environments  
Programme*

**A Participatory Assessment of Viable Potential Income Generating Activities  
in Six Pastoral Weredas**



Participating UN Agencies

2011

## Table of Contents

		PAGE
	TABLE OF CONTENTS	2
	LIST OF ACRONYMS	4
	LIST OF TABLES	5
	LIST OF FIGURES	5
	LIST OF CHARTS	5
	LIST OF BOXES	5
	EXECUTIVE SUMMARY	6
PART I:	ASSESSMENT APPROACH	7
	1.1. Introduction	7
	1.2. Objectives and Scope of the Assessment	8
	1.3. Methodology	8
	1.3.1 Sampling Procedures	9
	1.3.2. Design and Implementation	10
	1.3.3. Data Processing and Analysis	10
	1.4. Limitations	11
PART II:	BACKGROUND AND CONTEXT TO ENV'T JOINT PROGRAM	12
	2.1. Synopsis on Global Discourse on Climate Change Effects	12
	2.2. Ethiopian Context	13
PART III:	DATA ANALYSIS AND INTERPRETATION	16
	3.1. Analysis on Respondents' Profile	16
	3.1.1. Respondents by IP Areas	16
	3.1.2. Respondents by Sex and Age	17
	3.1.3. Respondents' Marital Status and Family Size	17
	3.1.4. Respondents' Education Level	18
	3.2. Analysis on Socio- Economic Aspects	18
	3.2.1. Means of HH Livelihood	18
	3.2.2. Status of Livestock Ownership	19
	3.2.3. Relief and Livelihood Support	21
	3.3. Analysis on Vulnerability Indicators	21
	3.3.1. Access to Animal Feed and Water	22
	3.3.2. Food Insecurity	22
	3.3.3. Loss of Livestock	23
	3.3.4. Erratic Rainfall	23
	3.3.5. Flood	23
	3.3.6. Aggravating Factors for Vulnerability	24
	3.3.6.1. Bush Encroachments	24
	3.3.6.2. Scanty Health and Poor or Non-existent Sanitation Facilities	24
	3.3.6.3. Other Factors	25
	3.4. Analysis on Potential Livelihood Alternatives	25

	3.4.1. Milk and Butter Making	26
	3.4.2. Hides and Skins Preparation	26
	3.4.3. Petty Trading	27
	3.4.4. Animal Fattening	27
	3.4.5. Bee-keeping	28
	3.4.6. Poultry	28
	3.4.7 Small Scale Agriculture	28
	3.4.8. Harvesting Pasture and Water	29
PART IV:	CONCLUSIONS AND RECOMMENDATIONS	30
	4.1. Conclusion on the Major Findings	30
	4.1.1 Respondents' Profile	30
	4.1.2. HHs Livelihood Aspects	31
	4.1.3. HHs Desires for IGA Engagement	31
	4.1.4. Vulnerability Indicators	32
	4.2. Recommendations	32
	4.2.1. Prioritized Alternative HHs Livelihoods	32
	4.2.1.1. IGAs for Women	32
	4.2.1.2. IGAs for Men	34
	4.2.1.3. Summary of IGA Recommendations	35
	4.2.2. Approaches and Systems for IGAs	35
	4.2.2.1 Training Support	36
	4.2.2.2. Input and Financial Support	37
	4.2.2.3. Local Contribution	37
	4.2.2.4. Formation of Management Committee for IGA	37
	REFERENCES	38
	ANNEXES	
	Annex 1: Map of the Assessment Areas	39
	Annex 2: Household Survey Questionnaire	40
	Annex 3: Key Informants Interview (KII)	43
	Annex 4: Market Assessment Tool	44
	Annex 5: Focus Group Discussion (FGD)	45
	Annex 6: Observation Checklist	46
	Annex 7: Assessment Team Composition	47

## LIST OF ACRONYMS

DA	Development Agent/Worker
ECSA	Ethiopian Central Statistical Authority
F	Frequency
FAL	Functional Adult Literacy
FAO	United Nations Food and Agriculture Organization
FFW	Food For Work
FGD	Focus Group Discussion
GTP	Growth and Transformation Plan
HH	House Hold
HHH	House Hold Head
IGA	Income Generating Activities
IP	Implementing Partner
JP	Joint Program
KII	Key Informant Interview
MC	Management Committee
MDG-F	Millennium Development Goals Achievement Fund
MoA	Ministry of Agriculture
MoFED	Ministry of Finance and Economic Development
NGO	Non-Governmental Organization
PASDEP	Plan for Accelerated and Sustainable Development to End Poverty
PC	Program Coordination
SNNPRS	Southern Nations Nationalities and Peoples Regional State
SPSS	Statistical Package for Social Sciences
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WDR	World Development Report
WFP	World Food Program

**LIST OF TABLES**

		<b>Page</b>
Table 1	IP Locations	8
Table 2	Respondents By Location	16
Table 3	Respondents' Livestock Ownership	19
Table 4	Summary of IGA Recommendations	

**LIST OF FIGURES**

Fig 1	Donkey Used as Farming Animals around Harshin	20
Fig 2	Migration in Search for Better Environs	22
Fig 3	Dairy Products Utilization	26
Fig 4	Petty Trade Practices	27
Fig 5	Poultry Practices	28
Fig 6	Private Ponds	29

**LIST OF CHARTS**

Chart 1	Joint Program Outcomes	14
Chart 2	Respondents by Sex	17
Chart 3	Respondents by Marital Status	17
Chart 4	Respondents' Family Size	18
Chart 5	Respondents' Education Level	18
Chart 6	Means of Livelihood	18
Chart 7	Respondents' Income Status	19
Chart 8	Vulnerability Indicators	21
Chart 9	Loss of Livestock	23
Chart 10	Livestock Affecting Factors	25
Chart 11	Areas of Potential IGAs	25

**LIST OF BOXES**

Box 1	Economic, Financial and Market Aspects of Livelihoods	15
-------	---	----

## Executive Summary

*It is obvious that the Ethiopian government has committed to address the challenges of climate change effects through policy reform and targeted programs focusing on: improving pastoral livelihoods and asset base; management of rangelands and encouraging livelihood diversification. For this, a JP was started in July 2010 in such a way that it provides a unique opportunity to pilot innovative comprehensive approaches that link policy and strategy level activities. It was designed on the ground of livelihood dimensions that can improve pastoralist's capability to adapt to climatic changes and contribute to the MDGs achievements for 32160 direct beneficiaries in 17 Kebeles in 6 districts of Afar, Somali, SNNPR & Oromia. In line with the outcomes, the program was supposed to enable the communities to generate additional income through livelihood diversification thus contributing to the country's poverty alleviation targets.*

*Thus, a participatory viable IGA assessment has been conducted in the program implementing areas with the major objective of identification, prioritization & development of viable IGAs as means to build-up resilience of pastoral communities by concentrating on a few areas in the four region., characterized by a large pastoral community dependent on livestock under fragile ecological conditions, highly vulnerable to climate change. For this, an assessment team comprising of different professionals from MoA (i.e. expertise on natural resources, livestock, socio-economics, project management and gender issues) and JP focal persons of the IP regions and districts were involved. Quantitative data were randomly selected from a total of 1535 HHHs that were selected on the basis of multistage random sampling technique. Moreover, FGDs were conducted with selected personalities from all walks of life at Kebele level. Furthermore, observation and market assessment were held in all the assessment areas. What is more, regional & district level different sector officials thought to be responsible for the case in point were interviewed to complement triangulation. Accordingly, the data obtained both quantitatively and qualitatively were analyzed followed by concluding remarks.*

*Based on the major findings, the drawn conclusions include; means of income of the vast majority of HHHs was very insignificant, almost all HHHs were severely vulnerable for climate change effects, and there was huge need of diversifying means of HHHs livelihood. Concerning vulnerability indicators, scarcity of food and water for HHHs; shortage of animal feed and water; loss of livestock; erratic rainfall; and flood were denoted as the major ones. In line with this, it was portrayed that bush encroachments, scanty health and poor or non-existent sanitation facilities were indicated as aggravating factors for vulnerability.*

*Therefore, pastoral communities need to be supported to develop alternative means of livelihood. These interventions need to involve diversification into livelihoods that are not completely alien to lifestyles of the pastoral communities. These IGA initiatives may involve formation of groups which may bring together between 10 – 30 HHHs with major focus on women. These groups can be supported to undertake a variety of socio-economic activities. First, major emphasis should be made for women to be engaged in milk processing, small business ventures, flour-mill, small scale gardening, forage seed production, & bee-keeping. Secondly, men should be engaged in animal fattening (which can also be run by women), sand collection, & harvesting animal feed & water for sale. On top of that, different approaches and systems should be designed. That is, training & input supports should be provided. Apart from this, there should be local contributions (not in cash but in kind) from direct beneficiaries to create sense of belongingness which is very important for sustainability. Finally, management committee should be formed in each implementing area for the responsibility accountability purpose.*

## PART I: ASSESSMENT APPROACH

### 1.1. Introduction

According to the Environment Joint Program document (MoA, 2009), in Ethiopia climate change has reduced pastoral communities' basic resource including rangeland, constrained mobility and significantly reduced the number and productivity of livestock. Changes in the traditional land use systems and limited alternative livelihoods have obviously aggravated the *status quo*.

It is cognizant that the Ethiopian government has committed to address these challenges through policy reform and targeted programs focusing on: improving pastoral livelihoods and asset base; management of rangelands and encouraging livelihood diversification. For this, an Environment Joint Program (JP) has been implemented since July 2010 in such a way that it provides a unique opportunity to pilot innovative comprehensive approaches that link policy and strategy level activities. It is designed on the ground of livelihood dimensions that can improve pastoralist's capability to adapt to climatic changes and contribute to the MDGs achievements in the concerned regions and districts. In addition, the program will enable the communities to generate additional income through livelihood diversification thus contributing to the country's poverty alleviation targets. In line with this, all the concerned partners are expected to jointly conduct activities covered in the results framework and M&E plan periodically as required. This would include assessment of the risks and assumptions to determine whether they are still valid.

Currently the implementation has been put in place and the related activities are being carried out. Obviously, each IP at the Federal or Regional/District levels has its own specific responsibility areas to implement the JP. Hence, PC office (MoA) is responsible, among other tasks, for the participatory assessment of the IGAs as per the specific output stated as "**Communities in seventeen villages of the six districts participate in livelihood diversification activities so as to cope with climate change related livelihood risks**" under Outcome 3 presented as "**Pastoral community coping mechanism/sustainable livelihood enhanced**". Based on the project document and the related AWP, the results will include identification of a variety of income diversification schemes which will streamline areas of intervention and assist designing IGA which will be implemented in the second and third year of the project life by both pastoral male and female households, acquisition of income generation skills & establishment & making functional community development fund in the six Kebeles. As it was vividly indicated in the AWP that the implementation of the participatory assessment of IGAs to be accomplished within the first year of the program implementation period includes identification of IGA areas, development of community development fund scheme and implementation of income diversification scheme.

To this end, the participatory assessment was conducted in two months (June – July/2011) by the assessment team comprising professional with different relevant academic and work background from MoA and related IPs at regional and Wereda levels (see Annex 7 for Assessment Team Composition). The whole report is presented in four parts; Part I discusses about the assessment approach while Part II deals with overview of the program. The third one, Part III, presents data analysis and interpretation. The last part, Part IV, is all about the major findings conclusion and recommendations.

## 1.2. Objectives and Scope of the Assessment

Based on the project document (MoA, 2009), the general objective of assessment focuses on the identification, prioritization and design (development) of viable income generating activities as a means to build-up resilience of pastoral communities by concentrating on a few areas in the four regions, characterized by a large pastoral community dependent on livestock under fragile ecological conditions, highly vulnerable to climate change.

The specific objectives of the assessment are:-

- To assess the state of vulnerability, livelihood capitals (physical, natural, human, financial and social), activities, strategies, and coping mechanisms for the pastoralist communities with major emphasis to women;
- To outline the existing and viable income generating alternatives for supporting the vulnerable families with particular emphasis to women;
- To Identify products that could be made and sold at the proposed local markets and beyond;
- To review other ongoing interventions including food security programs eliciting lessons for the ongoing project and to recommend on coping means.

Concerning the scope of the assessment, the overall evaluation task focuses on assessing the existing and potential income generating activities, appraisal for analyzing the viability of these income generating activities, forward feasible recommendations. All the areas within the seventeen Kebeles of the IP (see Table 1 for the IP locations) that have inhabited by the target pastoral communities are identified and mapped with geographic considerations.

Region	District/Wereda	Village/Kebele
1. Afar	1. Telalak	1. Adalil & Dawe 2. Waydalelina 3. Kululi & deta
	2. Adarr	1. Jeldi 2. Ledi 3. Sailu
2. Somali	1. Harshin	1. Madawayin 2. Farahliben 3. Afufley
	2. Aysha	1. Dhegago 2. El-lahelay 3. Dawale
3. SNNP	1. Selemago	1. Giyoo 2. Omo Rambi 3. Gura
4. Oromia	1. Teltele	1. Sabba 2. Sariti

Table 1: IP Locations

## 1.3. Methodology

The assessment task was carried out on participatory assessment approach. The reason for choosing participatory assessment method was that this approach has three key elements: *people*, *power* and *praxis* (Finn, 1994). It is *people*-centered (Brown, 1985) in the sense that the process of critical inquiry is informed by and responds to the experiences and needs of people involved. Participatory research is about *power*. Power is crucial to the construction of reality, language, meanings and rituals of truth; power functions in all knowledge and in every definition. Power is knowledge and knowledge creates truth and therefore power (Foucault, 1980). Participatory assessment is also about *praxis*. It recognizes the inseparability of theory and practice and critical awareness of the personal-political dialectic.

Significantly, the whole assessment focused mainly on the insecure livelihood pastoralist communities who have been staying within the vicinity of the target Weredas. The assessment took the form of an exploratory and analytical approach. Initially, preliminary planning and review sessions were held with the contact persons of each IP Regions and IP Weredas. Through these sessions, all the areas that have been inhabited by the target pastoralist communities were identified and mapped. Care and attention were taken to ensure that geographical considerations to be taken into account so that no areas inhabited by these people within the assessment areas (within the peripheries of the 17 project implementing villages/Kebeles) would be left out.

Accordingly, the core asset categories or types of capital upon which livelihoods were built in terms of increasing access were human, social, natural, physical and financial capitals. This assessment considered the main livelihood analysis and institutional framework in the operating areas qualitatively. Primary and secondary data were collected to be analysed in a way that gives the general livelihood situation of the communities.

### 1.3.1. Sampling Procedure

Effort has been exerted to ensure that the sampling approach was as inclusive as possible so that all pastoralist communities within the 17 villages/Kebeles of the target Weredas were within the sample frame. Multi-stage random sampling<sup>1</sup> was therefore applied to ensure that all the locations with target pastoral communities were identified, and this was narrowed down to selecting sub-locations within the village/Kebele with the highest populations of pastoralists who have been most vulnerable.

From the sample sub-locations, the sampling further was narrowed down to villages with the highest concentration of the most vulnerable pastoralist households with major focus on women-led ones. This process ensured that the seventeen villages/Kebeles were identified to participate in the assessment. The project's planned total direct beneficiaries were 32160 (M 17502 F 14658).

Concerning the sample of Kebeles, all the 17 program implementing Kebeles (100%) was taken. Regarding HHs, from each of the seventeen Kebeles first HHs of the most vulnerable sub-locations were selected and then sample size of 1535 was determined by using computer software for sample size calculator (see website 1 under Reference section) applicable for such a large population size. The margin of error (confidence interval) applied was 2.5% whereby the confidence level used was 95%. More significantly, the sample size (i.e.1535) employed was larger by about 5% than the calculated figure (i.e.1467). This was believed that any increase in sample number on the calculated one strengthens validity and reliability of the source data.

---

<sup>1</sup> This probability sampling technique is selected for it involves a combination of two or more sampling techniques; Retrieved: [http://www.experiment-resources.com/probability\\_sampling.html#ixzz1Erml6gHb](http://www.experiment-resources.com/probability_sampling.html#ixzz1Erml6gHb)

### 1.3.2. Design and Implementation

The assessment was designed to employ qualitative and quantitative instruments for data collection. At the household level, interviewer-administered questionnaires were employed. To complement the use of these questionnaires, observation was also used to take stock of the livelihood styles, environment, potential means of income, and access for water (multipurpose). Qualitative data were obtained using Key Informant Interviews (KII) and Focused Group Discussions (FGD). Regarding KII, officials and experts supposed to be directly concerned with the program at different hierarchical levels (Region, Wereda and Kebele) have been involved. Whereas, FGD participants in all the seventeen Kebeles were randomly selected from HHs beneficiaries, different sector offices at Kebele level including Kebele administration officials, community elders, religion leaders and women and youth affairs representatives. More importantly, market assessment was made thereof through which the demand and supply aspects of some goods and services in the area were assessed. These instruments were used to reach a variety of stakeholders who have additional value in terms of their understanding of background and current issues pertaining to the concerns and scope of this assessment as expressed in the above objectives.

During the implementation of the assessment, DAs were identified and selected as enumerators based on specific criteria. These included acceptable literacy and numeracy levels, some previous background with research, surveys or participation in the earlier national census exercise. Besides, they were people who understand the local language, culture and idiomatic expressions very well. In addition, there were deliberate efforts to ensure gender inclusiveness so that men and women would participate. Before embarking on field data collection, the enumerators were given an orientation and they had an opportunity to pre-test the questionnaire. After pre-testing, problematic items were reviewed and refined. When administering the questionnaires at household level, opportunity sampling was used. In situations where a household which was sampled to participate was found locked or adults were unavailable, a households with similar characteristics in the village were identified and the assessment was undertaken in that village.

At the end of each day of field data collection, there were review meetings. The purpose of these meetings was three-fold. First, they enabled the team to review the process and take stock of observations made. Secondly, they helped the team to review any emerging problems and backstop on the process as the need arose. Thirdly, but not necessarily the least, the sessions helped identify what was needed to be done differently in order to improve on the overall approach to data collection at household level.

### 1.3.3. Data Processing and Analysis

This assessment generated qualitative and quantitative data. The former was analyzed on a gradual basis right from the onset of the data collection exercise. This involved review sessions at the end of each day of data collection in each village. Data accrued from observation was analyzed on a regular basis in the course of data collection. Of special importance to this assessment were observations that were carried out on the state of housing and related issues concerning the overall IGAs of the pastoralist communities. During the

reviews, enumerators had a chance to share any observations that were in line with the objectives of this assessment. It is to be noted that the rest of the qualitative data which were obtained through FGD and KII were analyzed in Addis Ababa. On the other hand, quantitative data involving questionnaires to be administered at household level were analyzed using the Statistical Package for Social Sciences (SPSS), which is a computer software package. The outcome of the SPSS analysis was compared with impressions generated by field observations and information from qualitative data. Based on this comparison, specific issues relating to the objectives of the assessment were emerged to inform the findings contained in the final report.

#### **1.4. Limitations of the Assessment**

To some limited extent some households had expectations of support from the enumerators. This was borne out of the fact that there seemed to be a trend from previous studies done by other organizations to provide some aid to respondents. To cope with these demands, enumerators took time to explain the purpose of the assessment and how the results would be utilized, which seemed satisfactory to those interviewed at household level.

On the overall, these limitations did not have any considerable effect on the quality of data obtained as well as the findings of this assessment.

## PART II: BACKGROUND AND CONTEXT TO ENV'T JOINT PROGRAM

### 2.1. Synopsis on Global Discourse on Climate Change Effects

The view that human activities are likely responsible for most of the observed increase in global mean temperature ("global warming") since the mid-20<sup>th</sup> century is an accurate reflection of current scientific thinking (NRC, 2008). Human-induced warming of the climate is expected to continue throughout the 21<sup>st</sup> century and beyond. The scientific question of what constitutes a "safe" level of atmospheric greenhouse gas concentrations has been asked. This question cannot be answered directly since it requires value judgements of, for example, what would be an acceptable risk to human welfare. In general, however, risks increase with both the rate and magnitude of future climate change.

Nobody is immune to climate change, regardless of where they live, or whether they contributed to it. In fact, climate change is nothing short of a crisis of the commons, and tackling it effectively will require all the ingenuity and collaborative spirit of the human race. As countries meet in December 2009 in Copenhagen to shape a new international response to climate change, the price of delay or inaction appears very high. *WDR 2010* (see 2 under Reference Section) notes that developing countries everywhere will be disproportionately affected by the climate crisis. The developing world already faces greater climate risks, even as it is preoccupied with trying to help one in four people living in extreme poverty, over a billion hungry, and 1.6 billion without access to electricity.

Attaining the Millennium Development Goals and ensuring a safe and sustainable future beyond 2015 become more difficult as the planet warms, rainfall patterns shift, and climate-related natural disasters become more frequent. Global warming of 2°C above pre-industrial temperatures could result in permanent reductions in annual per capita consumption of 4 to 5 percent for Africa. These losses would be driven by impacts on agriculture. *WDR 2010* argues that the world must act now, act together, and act differently, before costs go up and avoidable hardships are needlessly endured by poor and vulnerable people.

Two-thirds of Sub-Saharan Africa's surface area is desert or dry land, and the region is also home to many fragile terrestrial and coastal ecosystems. Climate projections for Africa presented in the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (see 3 under Reference Section) include a likely average temperature increase of 1.5 to 4° C in this century, which is higher than the global average. Anticipated changes in rainfall patterns will be accompanied by an increase in droughts and floods, and sea level rise. Devastating floods have been reported across Sub-Saharan Africa. Rain fed agriculture — the main safety net of poor people in rural areas — employs about 70 percent of the population. Already, crop failure and livestock death are imposing significant losses.

As the World Bank's *World Development Report (WDR) 2010* (see 4 under Reference section): *Development and Climate Change* says, lives and livelihoods can be preserved and improved if we act immediately and collaboratively to protect past gains; ensure that future development is climate-resilient; help people to adapt to new weather patterns and cope with extreme events; find new economic

opportunities in a changing climate; and work toward meeting energy needs sustainably. Climate change has made growth and poverty reduction more complicated and difficult, but it also presents tremendous opportunities. There is a growing realization that the cost of building climate resilience into existing development programs is far less than the cost of emergency relief, rehabilitation, and recovery associated with disasters. While Africa accounts for only 4 percent of global carbon dioxide emissions, more than 60 percent of the region's emissions are due to deforestation and land degradation. Therefore, with improved land, water and forest management practices, mitigation and adaptation go hand in hand for Africa.

It is now clear that climate changes have been, in many parts of the world, Africa and in particular in countries like Ethiopia, brutally affecting socio-economic sectors including water resources, agriculture, forestry, fisheries and human settlements, natural ecosystems, environment and human health. Article 4.9. of the United Nations Framework Convention on Climate Change (see 5 under Reference Section) (UNFCCC) calls for addressing the specific needs and special situations of the least developed countries. In line with this the Seventh Session of the Conference of Parties (COP 7) established instruments and mechanisms for supporting adaptation, including the establishment of three new funds namely the Special Climate Change Fund, the Least Developed Countries Fund and the Adaptation Fund.

## 2.2. Ethiopian Context

According to the ECSA (2008), Ethiopia has a population of 73.9 million with a male to female composition of 50.5% and 49.5%, respectively. The total pastoral area in Ethiopia is estimated to be about 625, 000 km<sup>2</sup> of which the Afar, Somali, SNNPRS and Oromiya rangelands comprise 52.02, 24.33, 14.50 and 4.86 percent respectively. Rangelands support for pastoral & agro-pastoral communities of 12-15 million whose economy is entirely dependent on livestock production. The pastoral population comprises 46.9% female.

As indicated in the Environment JP document, the range lands in Ethiopia provide multiple functions as a habitat for a wide array of domestic and wild animal species and a habitat for diverse and wide range of native plant species. The lowlands are also important sources of livestock supply to the highland small holders. Moreover, they support rural & urban lowlanders with milk, meat, & investment opportunities. However, there are problems that hamper pastoralists in Ethiopia. The major ones include: high vulnerability of pastoralists-especially women to climate change, disintegration of traditional resource management practices, and inadequate institutional capacity. Because of these factors, the pastoralists have remained one of the most vulnerable groups, especially with the emerging climate change. In the pastoral areas, water shortage for both humans and livestock especially during the dry season is a major concern. The loss of animals (loss of assets) seriously affected the livelihood of the pastoralists. Consequently it has resulted in food insecurity and vulnerability to minor climatic shocks in the whole of Afar and Somalia regions, 30% of the districts in Oromia and 24% of the districts in SNNPR and more than 50% of the chronic drought-affected population in the country is from the pastoral areas.

As climate change is a global issue, individual organizations given their mandates lack the capacity to take a comprehensive and cross- sector view and approach of climate change issues. To this effect, the participating UN agencies including UNEP, FAO, and UNDP bring to bear the normative (policy/strategy,

research), programmatic interventions at the beneficiary level and capacity development (human/institutional capabilities) in Ethiopia. They are supporting the government partners, pastoral communities and other relevant stakeholders on major areas that are very important to increase resilience of pastoral communities to climate variability through implementation of various adaptation options and alternatives livelihoods.

To this end, initially the Ethiopian Government, through the Plan for Accelerated and Sustainable Development to End Poverty/ PASDEP (MoFED, 2000) had committed to address these challenges through policy reform and targeted programs focusing, among others, on: improving pastoral livelihoods and asset base; management of rangelands and encouraging livelihood diversification through the coordination of Ministry of Agriculture. Later on Growth and Transformation Plan (GTP) was launched and believed to speed up the plans in this regard (MoFED (2010). Development assistance received from the Spanish Government through MDGs Achievement Fund Environment Joint Program (JP), *Enabling Pastoral Communities to Adapt to Climate Change and Restoring Range Lands Environment*, is expected to contribute to strengthening capacities to implement these strategies and programs both at national and community level.

Concerning the result framework, the core objective of the JP is to enhance the enabling policy environment to effectively plan and execute pastoralist related climate change adaptation and mitigation measures at federal, regional and district levels and pilot measures to enable the pastoral communities develop capacity for managing climate change risks and shocks in six districts of the four regions (see Annex 1 for the Map of the Program Implementation Districts). The program applies different approaches to achieve mainstreaming of climate change adaptation and mitigation options into the national, sub-national and district development plans and into different sector policies and strategies, especially those concerned with pastoralist as well as restoration of rangeland environments.

The guiding framework for the project is an integrated multiple level intervention that link policy and strategy



*Chart 1: Joint Program Outcomes*

with institution building and on the ground action that is focused on pastoralists adaptation to and mitigation of climate change. On the ground intervention will enhance the coping mechanism of communities at the pilot districts while generating knowledge and experience for subsequent up-scaling to other pastoral districts. It

will also provide feedback for policy making. Policy and institutional capacity development components will enhance responsiveness of policy and institutional environment and create strategic planning framework for

immediate, medium and long term adaptation to and mitigation of climate change that is tailored to circumstance of various pastoralist communities. To realize these objectives the JP is composed of three components that are corresponding to the three outcomes (see Chart 1 .for the outcomes) being followed by different outputs under each outcome. Among these outcomes, “Outcome 3” is all about strengthened responding capacity to the climate change risks and challenges.

Accordingly, “output 3.3.” of the this outcome states that communities in seventeen villages of the six districts participate in livelihood diversification activities so as to cope with climate change related livelihood risks. The results include support a variety of income diversification schemes, acquisition of income generation skills and establishment and making functional community development fund in the six districts. As a result, it is evident that profit is a central goal of any business activity. Without carefully studying the *cost-benefit analysis*<sup>2</sup> of an activity in a particular setting, it is difficult to know whether that activity will generate profit. *Box 1*<sup>3</sup> below is all about the economic, financial and market aspects for improving livelihoods of the pastoral communities who are vulnerable for climate change effects. This would likely be contributory to the assessment by providing some ideas to look for ways of IGAs for pastoral communities.

### **Box 1: Economic, Financial and Market Aspects of Livelihoods**

*One of the main challenges in reducing poverty in pastoral areas lies in ensuring market access for sustainably produced goods while simultaneously maintaining traditional practices and pastoral lifestyles. Market access is also one of the most prominent mechanisms through which incentives for sustainability can be delivered, and plays an important role in risk management for pastoral peoples.*

*Pastoralists produce a variety of goods including dairy products (milk, yoghurt, butter, etc), meat products, hides, skins and wool, and work animals (for riding, hauling, herding, etc.). The way these products are marketed depends on a number of factors including distance to markets, types of markets (cash versus barter), competition from other producers and demand for products. Income can also be generated through a range of conservation-related activities including eco-tourism, and sale of medicinal plants, gums, and fruits.*

*International trade and tariff systems have been accused of depressing the price that pastoralists can expect from the market, thereby threatening the long-term financial sustainability of pastoralism. Market access for pastoral products has been negatively impacted by the globalization of markets and increased concerns over health and safety. In particular, trends towards tracking meat and milk products from the source to market require a formal monitoring system which is not compatible with most pastoral systems.*

*Market access for pastoralists can be supported through: (1) the marketing of specialty products, (2) the inclusion of sustainability considerations in purchasing decisions, (3) support to supply chain coordination, (4) facilitating access to credit, (5) capacity building for pastoral producer associations, and (6) providing veterinary services to maintain the quality of meat and milk products.*

To this end, as it was vividly indicated in the AWP that the execution of the participatory assessment of Income Generating Activities (IGAs) to come to reality in the 3<sup>rd</sup> Q of 2003 EC (i.e. January-March/2011) of

<sup>2</sup> Cost benefit analysis: Refers to the process of quantifying anticipated costs, revenues, and profits involved in a particular business activity in order to determine whether that activity will generate profit or loss (USAID, 2007, IGA Manual)

<sup>3</sup> Source: A GOOD PRACTICE GUIDE Pastoralism, Nature Conservation and Development: Accessed at <http://www.acdivoca.org/acdivoca/PortalHub.nsf/ID/ethiopiaPLI>

the implementation period towards identification of IG areas, development of community development fund scheme and implementation of income diversification scheme.

### PART III: DATA ANALYSIS AND INTERPRETATION

The main purpose of the study was focused on the identification, prioritization and design (development) of viable income generating activities as a means to build-up resilience of pastoral communities by concentrating on a few areas in the four regions, characterized by a large pastoral community dependent on livestock under fragile ecological conditions, highly vulnerable to climate change. For this, a total of 1535 interviewer administered household survey questionnaires were distributed among pastoral communities within the program implementing localities. All of the questionnaires (100%) were filled-out and returned. Accordingly, the data were encoded and processed by using appropriate software (SPSS). The related analysis and interpretation of the data will be discussed as follows.

#### 3.1. Analysis on Respondents' Profile

##### 3.1.1. Respondents by IP Areas

Table 2 below indicates the distribution of respondents by Region, Wereda and Kebele. As it can be seen in the table, the total respondents in the seventeen Kebeles of the six project implementing under the four Regions were 1535. Pertaining to the distribution frequency, the table depicts that the basic HH questionnaires were taken to the selected sample HHs in all the seventeen Kebeles.

As it can be shown in the table, the distribution rate of data gathering tool in each Kebele was quite proportional, i.e. between 5% and 7% except one Kebele named Farah-liben (in Harshin Wereda of Somali Region) where the rate indicated 4.2%..

Region	Wereda	Kebele	F	%
Afar	Telalak	Adalil & D.	76	5.0
		Waydalelina	107	7.0
		Kululi & det	76	5.0
	Abaar	Jeldi	81	5.3
		Ledi	80	5.2
		Sailu	79	5.1
Somali	Aysha	El-la'eley	88	5.7
		Dawale	80	5.2
		Dhagego	90	5.9
	Harshin	Medewain	104	6.8
		Afufley	106	6.9
		Farah-liben	64	4.2
SNNPR	Selamago	Omorombi	101	6.6
		Giyo	79	5.1
		Gura	109	7.1
Oromia	Teltele	Saritie	103	6.7
		Sebba	112	7.3
		<b>Total</b>	<b>1535</b>	<b>100</b>

Table 2: Respondents by Location

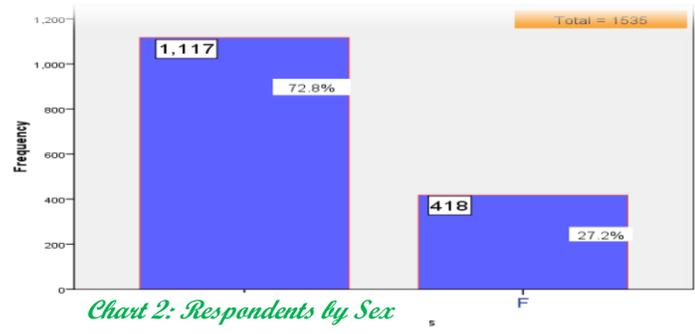
The reason for the reduced rate of distribution was heavy rain for about three days in the area affecting access to reach at each scattered settlement of the HHs. To this effect, it was observed by the assessment team that the livelihood aspects of the neighboring Kebeles were almost similar and the undistributed questionnaires were used in the other adjacent sub-kebeles, believed to represent the livelihood facets of the Farah-liben communities.

Similarly, the very nature of scattered settlement of the communities in many Kebeles was very difficult to access during the assessment period. For instance, there was no rain in Aysha (Somali) and in both of Afar during the assessment time. As a result of this fact, lots of HHs left their Kebeles in

search for better pasture and water for their livestock. Despite this fact, the distribution proportion between 4.2% and 7.3% at Keble level was believed by the assessment team that there was no significant difference that affects the assessment results since there is a similarity in environmental contexts among them.

### 3.1.2. Respondents by Sex and Age

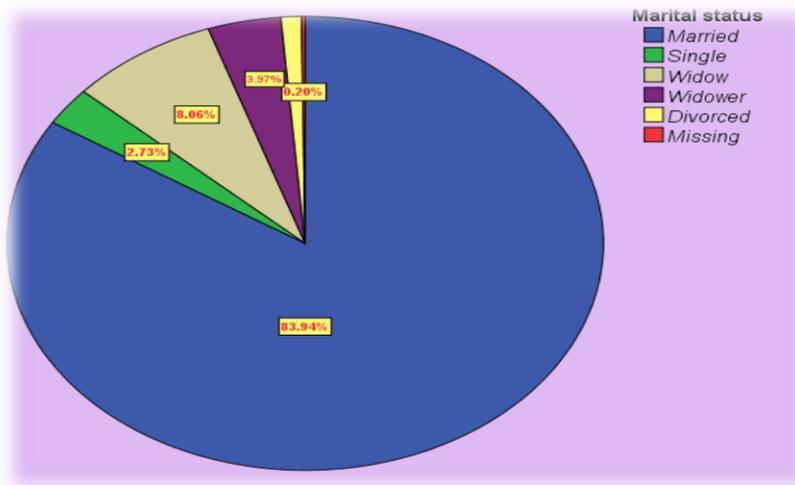
With regard to sex of HH respondents, *Chart 1* reveals that 1117 (72.8%) of the HHHs were males and 418 (27.2%) were females. This designates that nearly three-fourth of the households of pastoral communities was headed by men. In other words, women comprising only about one-fourth, were HHHs.



According to the obtained data, the age group of respondents representing pastoralist communities in the program implementing villages in all the regions was various. It is depicted in the table that majority (i.e., 42.6% for age 20-35 plus 35.3% for age 36-45). That is over three-fourth were observed to be embraced under the category age groups between 20 and 45. This entails that majority of the HHHs of the pastoral communities were in a working-age category indicating that they would have practicable potential to be engaged in IGAs if they got opportunities.

### 3.1.3. Respondents' Marital Status and Family Size

As far as the marital status of the respondents is concerned, overwhelming majority (83.94%) confirmed to be married. The rest were of different marital status as illustrated in Chart 3. From this one can deduce that a vast majority of the HHs of pastoral communities in the villages where the Environment Joint program is being implemented were married.



It is also more likely to have more family members for married HH couples compared to those the unmarried ones. This would lucidly

*Chart 3: Respondents' Marital Status*

imply

that there are more mouths to feed in married HHs which needs additional source of income whereby food self-sufficiency would be inconceivable unless additional income is generated.

Chart 4 is associated with this in that it shows family size of the HHs presumed to be sample respondents.

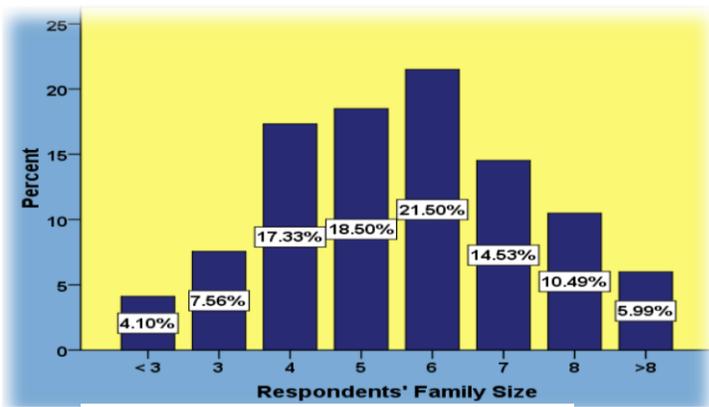


Chart 4 : Respondents' Family Size

Accordingly the vast majority of the respondents (82.35%) had family members between 4 and 8. In other words, the larger average family size among the pastoral communities in the program implementing locations was 6. This means that it was found to be too hard for HHHs to withstand the challenges of food insecurity as there was an increased family size.

### 3.1.4. Respondents' Education Level

According to Chart 5, a great majority of the respondents (over 90%) had never attended school at any level which indicate us that the majority of the pastoral communities of the IP areas had been illiterate. On the other extreme, only very few (below 10%) replied that they had attended school and completed primary level. The respondents who rated secondary and higher were only below 2% which is statistically insignificant. This implies that pastoral communities had got little or no opportunities for access for education.

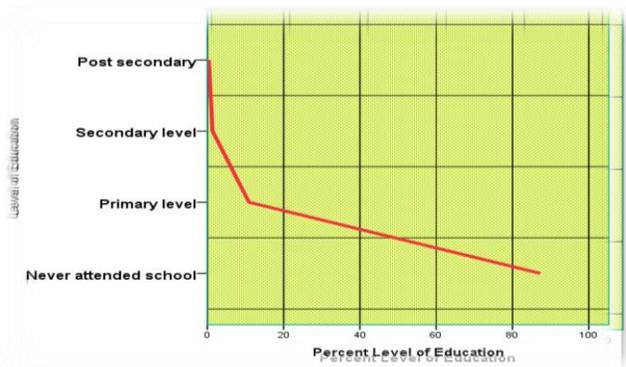


Chart 5 : Respondents' Education Level

## 3.2. Analysis on Socio-economic Aspects

### 3.2.1. Means of HH Livelihood

It is clear that pastoral communities rely mainly on livestock for their survival needs. Having this in mind the respondents were asked to indicate on what means of livelihood they depend.

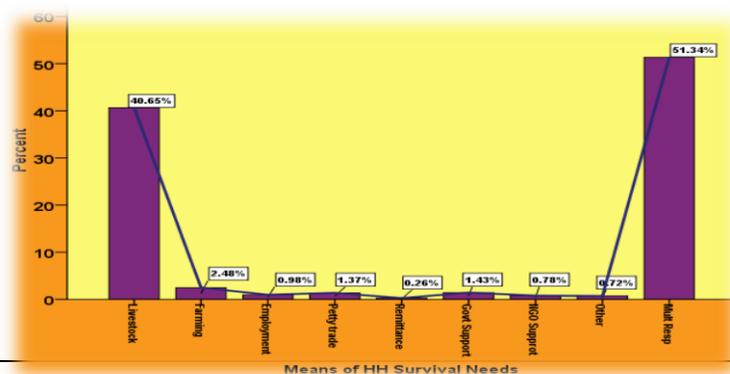


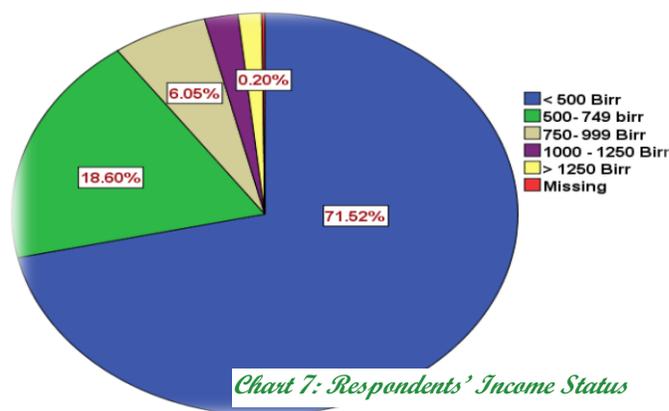
Chart 6 : Respondents' Means of Income

Hence, different means of survival needs were forwarded by different respondents. As shown in Chart 6 respondents who replied farming paid employment, petty trade, government support, NGOs support and remittance

all together to constitute below 9% by proportion. Despite the fact that there were some other factors pointed as means of income, only livestock were the dominant means of income for HHs in the area.

According to the information gathered from FGD participants in each program implementing village, although livestock were the main means of HH livelihood to rely on, it is getting hard to depend on livestock since recently due to climate change effects. As a result of this fact, pastoral communities' monthly income has become extremely- dwindling.

As denoted in Chart 7, majority of the respondents confirmed that their monthly income could not exceed ETB 500 (only about \$ 29 USD). This would mean only about \$0.90 USD per day. Thus, one can infer from this is that pastoral communities were under poverty line index generally. Even those who retorted as their monthly income to be between ETB 500 and 749 were from the areas relatively with better access to public service settings whereby they could have some access to different livelihood support services, i.e., support from government, NGOs, remittances, and the like.



### 3.2.2. Status of Livestock Ownership

Table 3 below presents livestock ownership status of the respondents of this IGA assessment. As portrayed in the same table, the respondents were asked to indicate how many animals they own by filling in the table under the corresponding number of animals.

Livestocks	Cattle		Camels		Sheep		Goats		Chicken		Donkey	
	F	%	F	%	F	%	F	%	F	%	F	%
0	385	25.2	810	52.9	521	34.1	257	16.9	1282	83.6	984	64.2
1-5	655	42.6	357	23.2	221	14.4	233	15.1	144	9.4	542	35.2
6-10	268	17.4	196	12.7	210	13.7	237	15.4	65	4.2	8	0.5
11-15	70	4.6	93	6.0	177	11.5	221	14.4	23	1.5	1	0.1
16-20	70	4.6	31	2.0	129	8.4	168	10.9	11	0.7	0	0.0
21-25	39	2.5	13	0.8	92	6.0	131	8.5	3	0.2	0	0.0
26-30	36	2.3	18	1.2	83	5.4	123	8.0	6	0.4	0	0.0
>30	12	0.8	17	1.1	102	6.6	165	10.7	1	0.1	0	0.0
Total	1535	100	1535	100	1535	100	1535	100	1535	1534	1535	100

Table 3 : Respondents' Livestock Ownership

Accordingly, majority of the cattle owners (67.8%) were realized to have none or very few (< 5). And yet those who indicated as cattle owners were dominantly from the three Kebeles of Selamago Wereda of SNNPR. The reason for rearing few or no cattle in other areas of the program implementation regions was due to loss of pasture and water resulted from climate change effects as elucidated by the data obtained via FGD and KII.

Regarding camels, over half of the respondents (52.9%) replied that they did not have camels at the moment. Those who replied to obtain camels fewer than 5 were below one-fourth (23.2%). Although, the number of respondents, who rated as camel owners was found to be too few to discuss, the economic importance of camel for pastoral communities was found to be sky-scraping. HHs use them to transport belongings from place to place when they move in search for pasture and water for their livestock. They also use them for milk to feed the HH. Moreover, as observed through qualitative data, the number of camel owners is too small in Teltele and none in Selamago. The reason for this was found to be that the communities around Borena and Selamago less familiar with camels than those in other pastoral areas.

Concerning small ruminants (*shoats*), the possession level varies from place to place. The table could show shoats were available in almost every place where the program was being implemented but at different number depending on the owning capacity of the communities. It was observed (and verified by FGD participants) that small ruminants were the first priority alternative for them to keep just because they could live on simple feed (bushes).

As far as owning of chicken is concerned, pastoral communities were not habituated by obtaining chicken albeit the environment seems auspicious. What is down-to-earth is that the communities did not have awareness and related skills to get economic advantages of poultry. Many HHs around villages of Selamago in SNNPR and Medewaine Kebele in Harshin in Somali Region were observed to have some sort of experience of raising chicken. Thus, there is high potential of generating income out of chicken especially in the aforesaid locales.

As regards to donkeys, there was no significant number of respondents to have donkeys for their

tremendous economic advantages. Those who keep donkeys were understood to employ them just only to serve for carrying some household needs here and there. On the contrary, in some areas pastoral communities who were trying to cultivate some plots of land as alternative means of income were scrutinized to use donkeys for farming purpose. This implies that donkeys are very constructive animals for different purposes. In environs where cattle cannot adapt dry and desert climate conditions, donkeys can serve for farming purpose (see Fig 1) because they can survive much better than cattle in dry areas.



*Fig 1: Donkeys used as farming animals around Harshin*

### 3.2.3. Relief and Livelihood Support

Pastoralist communities depend on occasional relief supplies from the World Food Program (WFP) which is channeled through the Government of Ethiopia and other Non Governmental Organizations. Some support from NGOs is in the form of Food for Work (FFW). In addition, these people also get some support from local relatives and friends within the communities and in the neighborhood as well as remittances (for a few) from their relatives in the Diaspora. Local support is mainly in the form of water and some milk to a very limited extent.

### 3.3. Analysis on Vulnerability Indicators

Vulnerability denotes a set of conditions and processes resulting from physical, social, economic and environmental factors which increase the susceptibility of a community to the impacts of hazards. In the context of this assessment, the assessment team considered access to basic needs and necessities of life specific to pastoral communities, which include access to food, water, health care, and education.

Chart 8 is all about indicators of vulnerability of pastoral communities for climate change effects. It is cognizant that since recently climate change effects have been touching more severely pastoral communalities than any other part of societies globally.

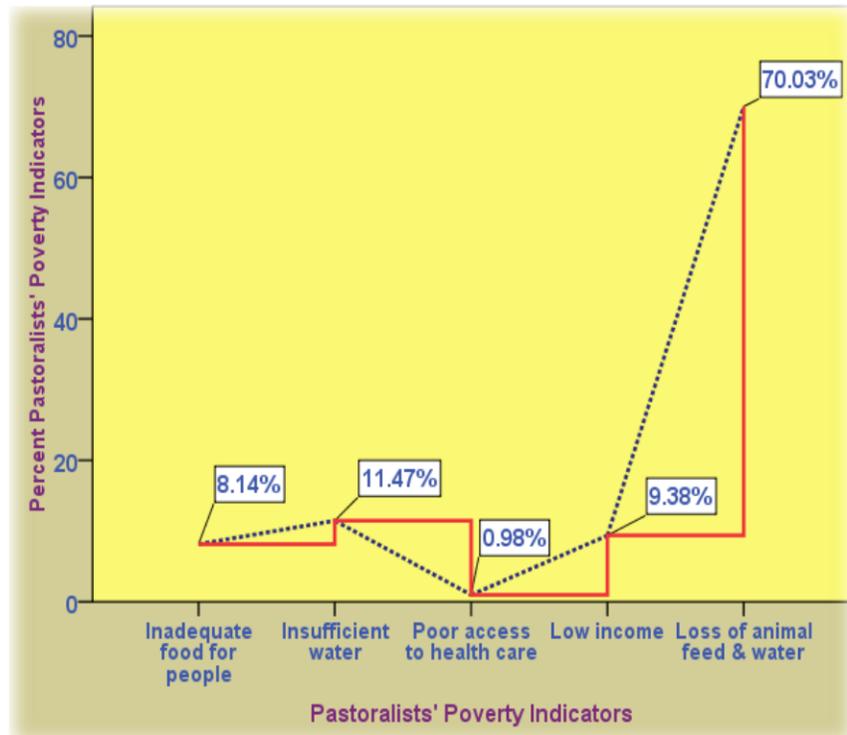


Chart 8: Vulnerability Indicators

The points mentioned in the same chart are supposed to be the significant indicators of vulnerability in this case. With regards to this, the respondents were asked to indicate as to how climate change affected their livelihood by indicating which variable affected most. These can be treated in the points presented hereunder.

### 3.3.1. Access to Animal Feed and Water

Among the other indicators, “Loss of animal feed and water” was regarded as the most affecting problem by majority (i.e., 70.3%) of the respondents. Next, “Insufficient water” was rated as the most serious problem by



*Fig 2: Migration in Search for Better Environs*

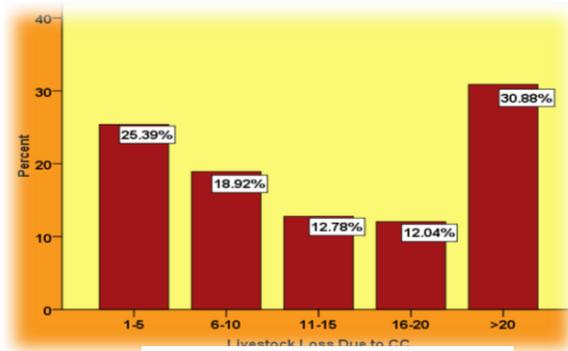
11.47% of the respondents. In fact the respondents who replied only this were found to be those who had few or no livestock at all. Vis-à-vis, as stated by FGD participants and the surveillance made by the assessors, pastoral communities use migration as a coping mechanism for loss of animal feed and water in search for pasture and water. Fig 2 illustrates migration of vulnerable HHs. These days, these migration tricks are found to be frequent phenomena around pastoral communities.

### 3.3.2. Food Insecurity

In spite of the fact that the remaining indicators were, inadequate food for people, poor access to health care and low income were rated as the least affecting ones being rated by 8.14%, 0.98%, and 9.38% respectively, they were reported as the common problems that affect livelihood of pastoral communities as confirmed by the FGD participants in all the assessment areas. Loss of water was highly emphasized by the FGD participants in these areas, too.

### 3.3.3. Loss of Livestock

Pastoralist communities are characterized by one common denominator i.e., that they all depend on



*Chart 9: Loss of Livestock*

livestock – which is the backbone of their unstable pastoralist economy. Without livestock, these households have no milk, meat and several other livestock by-products as well as income accruing from the same. As indicated in Chart 9, the respondents were asked to indicate how many animals under their possession died due to climate change effects if they had got animals. Respondents who had experienced loss of over 20 heads of livestock per household in the last 3 to 4 years constitute 30.88%. This implies that

the severity of climate change effects around pastoral communities was very high.

In connection with this, qualitative data obtained denoted that there were plenty of livestock losses very recently. For instance, there was a practical case story from one person in Jeldi Kebele of Ada'ar Wereda in Afar Region. He reported that his uncle had 120 heads of livestock (both cattle and goats) and all died in 2009 drought period. Then, the person became mad. Another case was that in Oromia around Borena it was said that more than 200,000 heads of livestock died in 2010 only. All these imply that depending on livestock as a means of livelihood has become a desperate issue.

### 3.3.4. Erratic Rainfall

It was observed that the unreliability of rainfall situation in pastoral areas has been getting severe from time to time over the past five years. As a consequence of this fact, people around the areas have been suffering from scarcity of food, water and pasture. In this regard, the current East Africa's drought is the case in point. For instance, currently with the harshest drought in decades, millions of people in the Horn of Africa are now at risk. Tens of thousands in Somalia have lost their lives to starvation, disease, and violence although the case in Ethiopia seems to be less severe. Based on the obtained data, almost all the pastoral communities in the assessment areas have been found to suffer from such erratic rainfall consequences.

### 3.3.5. Flood

It is apparent that inconsistency in rainfall results in torrential raining, which obviously creates in fierce flood. The 2006 flood consequences explain the severity of the case for pastoral communities when lots of people and livestock were lost. Due to this pastoral communities have been suffering a lot.

### **3.3.6. Aggravating Factors for Vulnerability**

According to some data obtained qualitatively, bush encroachment, scanty health and poor or nonexistent sanitation facilities were understood as aggravating factors for climate change vulnerability as discussed below.

#### **3.3.6.1. Bush Encroachment**

Nowadays, getting reliable pasture land during dry seasons around pastoral communities has become a rare issue. Unlike the times earlier than two years or so, the rangeland areas whereby pastoral communities use for their livestock are now become thorny bushes. This has aggravated the rangeland utilization problems in almost all assessment areas. However, as a coping mechanism communities have been making attempts to be engaged in clearing some bushes so as to develop some rangelands.

thorny trees and shrubs such as “prosopis” and the like have been observed to have invaded a lot of rangelands in Afar and Somali. The very nature of these trees and shrubs was found to be thorny and evergreen invading the rangelands. No trees or pasture can grow under these ones. Despite the maximum efforts to eradicate, it has become too challenging for the communities facing the problems to do so.

All these were found “to fan the flames of” climate change adverse effects and thereby to magnify vulnerability.

#### **3.3.6.2. Scanty Health and Poor or Non-existent Sanitation Facilities**

According to the data obtained during the assessment period, sanitation facilities are scanty especially in the absence of running water. All areas within the villages do not have toilet facilities and present clear environmental sanitation hazards. Most people can ill-afford the cost of Medicare. The villages also lack means of solid and liquid waste disposal.

Although it was observed that there were government-established health posts in some of the program implementation areas, majority of them were found not to be operational. Except the buildings no one was seen around. The major reason for this was said that health workers did not have interest to serve in those areas. In addition, the community around was understood to lack awareness to prevent from disease before medicinal interventions.

### 3.3.6.3. Other Factors

Factors that could be considered as vulnerability indicators could be different depending on different conditions. For the case like climate change versus pastoral communities would be common everywhere. This could include loss of human life, loss of pasture, limited access to market, poor health care for livestock, children dropout from schools, and the like.

In line with this, the respondents were asked to indicate the major factors that had been affecting their household earning power over the last two to three years. For this, although they mentioned different factors as mentioned above, majority (69.32%) did not show specific factors and rated multiple responses. Accordingly, except loss of pasture and loss of livestock which constituted 10.55% and 15.31% respectively, those who rated the remaining factors specifically were very few.

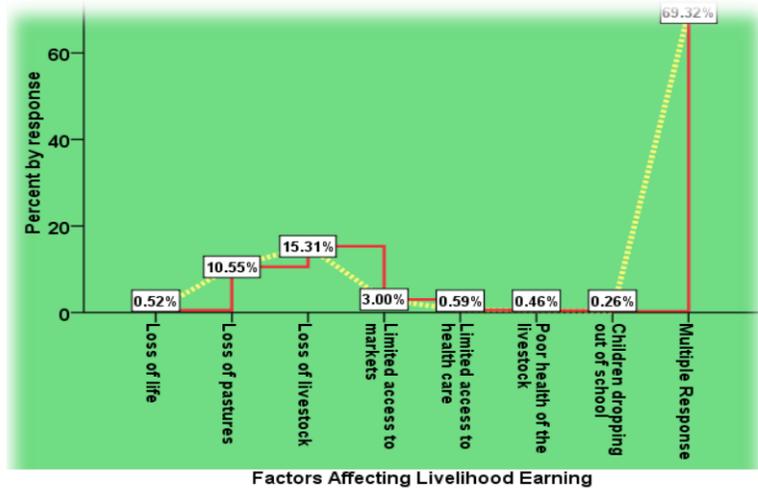


Chart 10: Livelihood Affecting Factors

### 3.4. Analysis on Potential Livelihood Alternatives

Chart 11 is all about areas of potential income generating activities (IGAs) assessed around the program implementing villages. All the respondents were asked to reply to what type of income generating activity they were interested to be engaged if they got an opportunity to secure some means of grants or just support. The respondents replied to this question differently. This could be explained one by one in the following paragraphs.

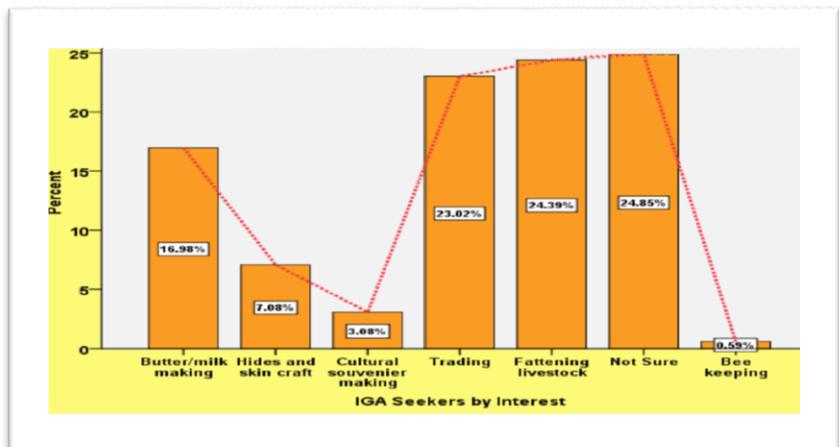
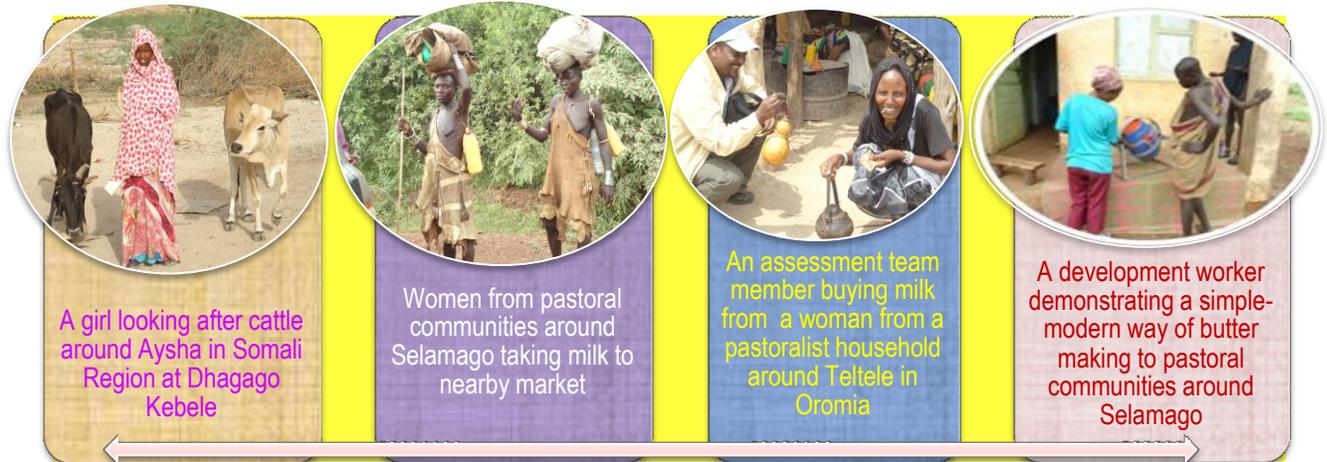


Chart 11: Areas of Potential IGAs

### 3.4.1. Milk and Butter Making

As shown in Fig 3, among the respondents who have already had some livestock that are used for dairy products, 16.98% replied that milk and butter making was their priority alternative subject of interest for IGA commitment.



*Fig 3: Status of Dairy Products Utilization around Pastoral Communities*

This also shows that pastoral communities were quite aware about making income from dairy products. The implication is that if these people get opportunities for more awareness creation schemes and some sort of skill training, they can produce dairy products to obtain more income unlike their past history.

### 3.4.2. Hides and Skins Preparation

It is indicated in Chart 11, some of the respondents (7.08%) showed interest in generating income by preparing hides and skins. Since great majority of pastoral communities have high potential in this aspect, some households of the pastoral communities can prepare hides and skins provided that they get opportunities to secure some level of skill training and access to market.

This group of society needs to be facilitated through skills training and technology transfer to engage in profitable businesses such as the promotion of the semi-processing livestock hides and skin and sale of the same. This is borne out of the fact that livestock skins are available and since there are no mechanisms for semi or full processing, the local pastoralists just lose out on these types of livestock products. These products have a ready market within the areas and other surrounding where these products are in high demand for the manufacture of shoes and other products.

### 3.4.3. Petty Trade

This type of IGA was selected by a significant number of respondents (23.02%) as portrayed in Chart 11. This was also supported by many pastoralists in the entire program implementing areas during FGD and



A woman making income by preparing local biscuits known as melewa at Dewele Kebele in Aysha Wereda, Somali Region. She says it is the only means of income to provide HH needs for her two kids and other two dependants



A girl selling catadulis Chat (stimulant leaf) & generates income to support HH in Sabba Kebele of Teltele Wereda in Oromia. She brings it from highlands of Konso, neighbouring farming communiity



A woman generating better income by selling pettygoods in a kiosk at Medewayin Kebele in Harshin Wereda, Somali region

Fig 4: Petty Trade Practices

information gathered via KII. In terms of petty trade ventures, a few groups of pastoral communities were engaged in running kiosks which sell foodstuffs, tea, textiles, cosmetics, refreshments and the like. These kinds of IGA require approximately a mere minimum of ETB 1000 for one

to establish. Women were involved in merry-go-round as an IGA.

### 3.4.4. Animal Fattening

It was indicated in Chart 11 that animal fattening was rated as a priority interest of an IGA by some significant number of respondents (24.39%). FGD participants in many areas of the program coverage reported that animal fattening can include all kinds of livestock. Not only oxen but also small ruminates can be fattened so as to secure more income out of the sale of fattened animal. According to the informants of the assessment, the activities of livestock fattening should not necessarily mean *beefing-up*. In the specific context of the pastoral communities under the program coverage Kebeles, fattening should incorporate taking care of limited number of livestock for limited time by better feeding than the ordinary fashion so as to sell for better price. The potential jeopardy in such IGA is access to animal feed and water for the animals.

If there are promising prospects of getting establishment support in terms of credit facilities as well as skill training, these communities have the interest and capacity to be engaged in such IGAs. In reality, this activity cannot be implemented in all areas of the program in the same fashion. The relative availability of feed and water in all weather conditions, adaptation capacity of the livestock in the area, the types/species of livestock supposed to live in the area, the culture of the communities around and the like would be

decisive factors that determine the choice of animal fattening IGAs. What is more, another very important factor is access to market, i.e. the distance that the livestock have to trek to be marketed at profitable price.

### 3.4.5. Bee-keeping

Bee-keeping was believed by some respondents as per the HHs survey questionnaire though it was rated with low proportion of respondents as shown in Chart 11. Nevertheless, the qualitative data obtain through Observation, Market Assessment, and FGD revealed that some areas of the program implementation districts there was soaring potential for bee-keeping and the related honey harvesting. For example, Teltele in Oromia, and Selamago in SNNPR seemed to be better environs for honey harvesting as realized through the assessment. The eco-system in these areas is found to be favorable in that the areas are covered by suitable vegetation for bee-keeping. What matters here is that there is community capacitating issues. Some sort of skills training is highly required in all areas supposed to instigate bee-keeping as an IGA.

### 3.4.6. Poultry Production

It is universal veracity that chicken are very essential animals for almost all parts of societies. However, our pastoral communities do not use them for any purpose at all. This trend is now being changed. One can see chicken here and there in the environs of pastoral communities. Households around Mede-wayin Kebele in Harshin of Somali Region, Giyo and Gura Kebeles of Selamago Wereda in SNNPR were found to already have some practices in this regard.



*Fig 5: Poultry Practices*

Fig.5 is all about chicken farming, i.e. keeping chicken for as income generating activities. HHs can generate adequate income out of sale of eggs and chicken as well in local markets available.

### 3.4.7. Small Scale Agriculture

It was realized through the qualitative data obtained that areas which were relatively near rivers and easily accessible ground water could be engaged in some agricultural activities. For instance, the Kebeles of Telalak Wereda in Afar Region were observed to have all weather flowing rivers. The landscape around and soil nature here were found to be suitable for cultivation of some crops, vegetables, and fruits. If HHs in this areas group themselves in cooperatives, they can change their lives. Likewise, some areas in Selamago

Kebeles were found to be near the Omo-river basin. Thus, if the communities get support for inputs and other related facilities (irrigation, water harvesting structures etc), they can also be productive.

Apart from this, Ela'elay Kebele in Aysha Wereda of Somali Region was found to be ideal place for ground water access. If one digs two to three meters, it is possible to get water. It is also seen that in Afufle of Harshin in Somali Region plenty of HHs have ponds (Birka) which they use it for livestock and producing some vegetables. So if HHs are supported, it is sound to say they can guarantee food security.

### 3.4.8. Harvesting Pasture and Water

It is of paramount importance for pastoral HHs to think of pasture and water that are excess in wet season and that of total loss in dry seasons. If communities are united in cooperatives and supported by the necessary facilities, they can collect/harvest pasture and water around the verge of wet seasons. This would be everything for them during the dry season. As an illustration, there was a case in Harshin Wereda where a single person became rich by selling water from his personal small dam (see Fig.6 for the dam) harvested in the wet season.



*Fig 6: Vulnerability Indicators*

## PART IV: CONCLUSION AND RECOMMENDATIONS

Under this part of the assessment all the concluding remarks are treated. First, conclusion on the major findings is presented. Next, recommendations are forwarded. Last, approaches and systems are suggested.

### 4.1. Conclusions on the Major Findings

Based on the findings obtained from the quantitative and qualitative data obtained and the related analysis on the assessment of potential viable income generating activities, the following conclusions are drawn.

#### 4.1.1 Respondents' Profile

- The inclusion of the seventeen direct beneficiary Kebeles of the program in the assessment has been realized. Although there were some slight variations in sampling number by Kebeles, there were no significant results that adversely affect the results. Thus, it is possible to deduce that the respondents' opinions and related data obtained can represent the overall findings from the locations generally.
- The data obtained indicated that 72.8% of the respondents of the HHHs were males while only 27.2% of them were females. Hence, it is sound to conclude that the overwhelming majority of the pastoral community HHs in the IP areas is being headed by men. In other words women, unlike their foremost multifaceted roles in the HHs, were found to be covered up by men.
- As far as age of the HHHs are concerned, it was found out that 77.9% of the respondents were in the age categories of 20 to 45 years. From this, it would be unassailable that overwhelming majority of the HHHs of the assessment areas were in the "strong working age" but no to avail.
- It was observed that 83.94% of the respondent HHHs were men. The data obtained further indicates that HHs are known by husbands even he is not alive in some areas. For instance, in Somali villages women were found not to come before men and even do not sit together in meetings. This could not allow them to head the HHs. From this, it is fair to conclude that vast majority of women around pastoral communities in the JP implementing areas do not have equal chance of making decisions on HH matters.
- The data obtained portrays that 82.35% of the respondents' HHs were of a family size of 6 on the average. It would be rational to conclude that pastoral communities in the project areas are relatively of a large family size which implies that each HH has got lots of basic need competition with little or no resources owned.
- In relation to educational background of the pastoral communities, about 95% of the respondents rated that they have never attended school. Thus, it is reasonable to conclude that pastoral communities have never or very limited opportunities for access to education. From this one can infer that one of the factors that hinders pastoral communities not to look for way-out on climate change adaptation endeavors.

### 4.1.2 HHs Livelihood Aspects

- It was indicated from the obtained data that despite its unreliability factor, animal husbandry (livestock) is the mere source of livelihood for majority of the respondents. Although other sources were indicated as a means of income for HHs, it was realized that their contribution towards HHs income is very insignificant. From this, one can infer that the pastoral communities around the JP live mainly on livestock with unreliability risks at hardship interludes.
- According to the obtained data on monthly income estimation, about three-fourth of the respondents (72.52%) indicated that their monthly income was below \$29 USD (i.e. about \$0.9/ day). This could obviously lead to a conclusion that the overwhelming majority of the pastoral communities around the JP implementation villages are living far behind poverty line in view of universal life-standard assertion.
- As regards to livestock possession, the respondents' responses were observed to be of different status. Majority have cattle one or less than five. Some have very few camels. Others have sheep and goats. The number of respondents who owned chicken and donkey was insignificant. The livestock owning capability varies from place to place depending on vulnerability degrees and livestock nature to adapt to the surrounding ecosystem. Hence, the nuance here is that though there are some pastoral communities who owned very limited number of livestock with different owning capacities from place to place, \_unlike their recent past (before the calamities of the climate change effects), majority of them did not possess adequate number of livestock on which they merely depend for survival needs.
- As far as other means of income is concerned, it was realized that some pastoral communities with sober deficiencies due to climate change consequences in the assessment areas had been provided with some sort of livelihood supports from different sources (i.e. government, charities, relatives and so on), otherwise they would have lost lives.

### 4.1.3 HHs Desires for IGA Engagement

- With regard to interest areas of IGA as indicated by the obtained data, the following ones are rated by majority of the respondents as viable potential IGAs in different areas.
  - Milk processing ;
  - Animal fattening;
  - Hides and skin preparation;
  - Bee-keeping;
  - Poultry;
  - Farming;
  - Petty trade;
- Thus, it is possible to conclude that there is huge need of diversifying means of HHs livelihood among the pastoral communities for the reason that they have already lost hopes to rely on livestock since recently due to climate change consequences.

#### 4.1.4 Vulnerability Indicators

- Based on the obtained data both quantitatively and qualitatively, it was found out that there were some vulnerability indicators of climate change consequences in the assessment areas. The major ones are mentioned as follows:
  - Scarcity of food and water for HHs;
  - Shortage of animal feed and water;
  - Loss of livestock;
  - Erratic rainfall;
  - Flood;
- Moreover, it was observed that there were major aggravating factors for vulnerability; these include bush encroachments, Scanty Health and Poor or Non-existent Sanitation Facilities
- To this end, it would be sound that the communities in the assessment areas were severely vulnerable to climate change effects and they had little or no opportunities for adaptation interventions towards the consequences.

## 4.2 Recommendations

Based on the major assessment findings and the related conclusions drawn, the following recommendations are forwarded for implementation as viable potential IGAs.

### 4.2.1 Prioritized Alternative HHs Livelihoods

It was explicitly addressed in the assessment that pastoral communities need to be supported to develop alternative means of livelihood. This may take many forms and interventions, but the bottom-line is that such interventions need to focus on diversified forms of IGAs development. These interventions need to involve diversification into livelihoods that are not completely alien to lifestyles of the pastoral communities. These IGA initiatives may involve formation of groups which may bring together between 10 – 30 households (this should not be mandatory). These groups can be supported to undertake a variety of socio-economic activities which include the following (see Table 4 for Summary of IGA Recommendations).

#### 4.2.1.1 IGAs for Women

As discussed so far Women play key roles of HH duties and responsibilities. It was found out that women are the more vulnerable to climate change effects than men in that all they are forced to shoulder all the HH responsibilities even in crisis periods. That is when men flee in search for better zones for pasture and water, women stay there with the crisis with the remaining family members facing the challenges. More importantly, women are much better than men in resources management. It is much better if the IGAs are carried out in groups for different reasons of “unity is strength” and shared responsibilities on undesirable

effects and related risks. To this effect, it is better if women are supported to generate income in the following areas.

- Milk processing:** This includes milk producing and making of different milk products such as butter and cheese. All areas of the assessment have no similar degree of potential for such IGAs. Hence, for cattle and goats rearing the three Kebeles of Selamago and the two Kebeles of Teltele were found to be of high potential. Therefore, it would be viable to initiate women to engage in the area of milk and butter making. In relation to this, it was realized that there was no market problem in the mentioned areas for dairy products. There are nearby urban settings whereby creation of market links would not be difficult. This will enhance the strength of markets in the local areas between the vulnerable ones and the urban people around that become a sustainable alternative source of income for the pastoral communities of this areas.
- Small Business Ventures:** The social settings around the pastoral communities in all the assessment Kebeles were observed to be quite convenient to establish shops/ kiosks for selling various items with high demand in the area. For instance, there is high demand for grains/cereals, textiles, footwear, sanitation items, spices, sugar, food items, refreshments and the like in the mentioned areas. Access for these items in the areas has been met just from markets by travelling 8-12 hours even in some area more than that.
- Flour-mill Establishment:** It was observed that there was no access to flour-mill for communities in the assessment areas. What has been realized in this regard is that all the HHs travel to long distances, about 8-12 hours to get access. Otherwise, it is women's burden to grind the grains on mill-stone at home. Therefore, if women in the communities get opportunities in this aspect, the benefit is twofold. On one hand, it will be of a paramount importance for all communities for the nearby access and they can breathe a sigh of relief from the suffering of mill-stone struggle. On the other hand, it will be a viable income for the group who established that venture.
- Gardening:** Empower women to harness water through the development of hand dug wells, boreholes and earth dams for improved health and sanitation. This can enable them put up gardens and produce vegetables for household consumption and sell the surplus as well. All areas can have some potential for this in various extents provided that they get support in accessing water sources.
- Incense and Gum Production:** Some areas in Afar were realized to be potentially endowed with incense and gum. FGD participants strengthened this fact in that they would be so happy if they get support to engage in producing incense and gum. Meanwhile, the market availability was also assessed to be high.
- Bee keeping.** All areas in Teltele, Selamago and Jeldi and Leddi Kebeles in Adaar have got high possibility for honey-harvesting. It was observed that there were some practices of owning bee-hives and honey harvesting traditionally in the mentioned areas. So, empowering young women and men to form cooperatives for engagement in the IG activity earns an immense merit for the idle youth and those in a fertile age category of these aforementioned areas.

### 4.2.1.2 IGAs for Men

It has been understood that majority of HHs have been headed by husbands in almost all assessment areas. All informants (via FGD and KII) indicated that women play key roles in managing HHs. But majority of men do not bother about HH needs. A great proportion of the amount they earn goes to alcoholic drinks, chat, and the like depending on the existing culture around the community. To this end, it is better to engage women than men in IG schemes. However, there are some activities recommended by FGD participants and KIIs that young men are better than their counterparts in performing the following activities in groups of say 10-30. Meanwhile, women can be engaged in these activities, too.

- **Small Scale Agriculture:** Kebeles of Telalak and Leddi Kebele in Adaar in Afar were observed to have all-weather flowing river nearby. The landscape has also been seen to have some potential for water- shed land use management. Hence, it would wise if young men form groups and engage in farming activities by using small irrigation. They can produce crops, vegetables, fruits and the like for consumption as well as for sale.
- **Animal Fattening:** All the assessment areas were found to have various animal types. It was also realized that demand for fattened animals was high almost everywhere. Base on capabilities of adaption to ever changing climatic hazards, availability of livestock varies from place to place. Nevertheless, it would be possible to fatten animals in each area depending on availability and adaptability nature of the animals. For example, the three kebeles of Selamago and the two kebeles of Teltele were found to have high potential for cattle and shoats fattening. All the Kebeles of Telalak and Adaar Weredas have high potential for goat fattening. In line with, animal fattening can include keeping animals under special care for a while and then take to the market for better profit. This can be practical in all areas of the program coverage. Associated water & pasture harvesting should be carried out in wet seasons for this purpose. Due to scarcity of pasture & water in pastoral areas it is better to engage in shoats fattening than others. Women can be engaged in this activity and should be encouraged to do so especially for small ruminants.
- **Sand Collection:** Communities of Kebeles in Telalak indicated that there is high potential for sand production and marketing in the area. In relation to this, there is high demand for sand in the nearby markets. So empower young men to involve in these activities in groups is highly advantageous.
- **Harvesting Animal Feed and Water:** This could be done in wet seasons when there are abundant pasture and water in the areas. If they are harvested during this period in groups and preserved well, there will be high demand in dry seasons when there is high shortage in this regard. This would be very profitable and also used as a source of generating additional income if it is managed properly

### 4.2.1.3. Summary of IGA Recommendations (see 4.2.1.1. & 4.2.1.2. for detail)

No	IGA Particulars	Recommended for	Potential Area		
			Region	Wereda	Kebele
1	Milk Processing (milk, butter, cheese )	Women	SNNPR	Selamago	3 in each IP Kebeles
			Oromia	Teltele	2 in each IP Kebeles
2	Small Business Ventures (shops/Kiosks for selling items of clothing, food, sanitation, cosmetics etc )	Women (Highest Potential in Somali)	Somali, Afar, Oromia, SNNPR	Each in the IP Weredas	Each in IP Kebeles
3	Flour-mill Establishment (To provide service for the entire communities with charges)	Women	Somali, Afar, Oromia, SNNPR	Each in the IP Weredas	Each in IP Kebeles
4	Gardening (By hand dug wells, harvested water, boreholes ...)	Women	Somali, Afar, Oromia, SNNPR	Each in the IP Weredas	Each in IP Kebeles
5	Incense and Gum Production	Women & Men	Afar	Ada'ar	Leddi and Jeldi
6	Bee Keeping	Women & Men	Afar	Ada'ar	Leddi and Jeldi
			SNNPR	Selamago	3 in each IP Kebeles
			Oromia	Teltele	2 in each IP Kebeles
7	Small Scale Agriculture	Women & Men	Afar	Telalak	3 in each IP Kebeles
			Afar	Ada'ar	Leddi
8	Animal Fattening (Cattle and/or Small Ruminants) (Keeping for a while & preparing for market)	Men & Women	SNNPR	Selamago	3 in each IP Kebeles
			Oromia	Teltele	2 in each IP Kebeles
			Afar	Each in the IP Weredas	Each in the IP Kebeles
9	Sand Collection (Prepare for market around)	Men	Afar	Telalak	Each in the IP Kebeles
10	Harvesting Animal Feed & Water (For sale in dry seasons)	Women & Men	Somali, Afar, Oromia, SNNPR	Each in the IP Weredas	Each in the IP Kebeles

*Table 4 : Summary of IGA Recommendations*

### 4.2.2 Approaches and Systems for IGAs

As has been indicated, the alternative IGAs have pointed out in detail. It is clear that all the indicated IGAs cannot be implemented just for their own sake. All the IGAs contenders should have comprehensive support. These would include the following.

### 4.2.2.1 Training Support

In the first place, in order for livelihoods interventions to succeed, it is noted that pastoral communities have skill gaps which need to be addressed first. These include limited production skills in a number of trades and general limitations in marketing of their products.

- They have skill gaps in the critical areas of relevant agricultural businesses and production procedures. Limited skills in production of horticultural products especially locally available fruits are clearly evident amongst these people. For agro-pastoral communities business to succeed, there are needs to create awareness of small scale agricultural approaches such as farming as a business. For instance, production and marketing of hay and other animal feeds, hides and skins, cheese and butter making as well as production of incense and gum.
- Pastoral communities lack business management concept and skills. This is manifested both at individual and collective levels. At best those who have been involved in some business venture only do some hawking. These individual business ventures denies them the opportunity to undertake collective ventures in selling and marketing including lobbying the authorities to provide for them stalls and other amenities so that they can do more secure and decent businesses within the villages.
- The pastoral communities require resource mobilization skills especially localized fundraising skills and simplified proposal preparation techniques. These skills are crucial for ensuring that prospective businesses start-up capital and financing. In addition to this, they have limited or non-existent craft and trade skills for both men and women. They also require skills in tailoring and dress-making.

Moreover, literacy and numeracy are extremely fundamental to the success of any improvements in livelihood alternatives for pastoral Communities. These are actually prerequisites for their effective involvement in any business ventures of whatever sort. Since a vast majority of these people are functionally illiterate, it is proposed that opportunities be provided for them to benefit from literacy training packages known as Functional Adult Literacy (FAL). These training packages are tied to and closely interwoven with specific IGAs, in which the people are involved. This means that business is not delayed as people go through the numeracy and literacy training. On the contrary, people learn as they do business to earn their living. In order to use water available in the rainy season there should be water harvesting structures construction. Meanwhile the pastoral communities in Harshin of Somali have good practice but in other pastoral communities they lack knowhow and skill.

What is more, other training interventions include phased training on the management of Small and Microenterprises (SME). These training interventions need to be designed and implemented based on the existing skills amongst the pastoralist drop-outs. For instance, the people could be divided into different cohorts. These are determined by parameters such as entry levels and experience of those to be trained, interest in certain crafts or trades, their current business interests and what they seek to do as fresh starters in SMEs. Resource mobilization including simplified proposal and report writing for SME need to be done together with exchange or cross-visits and mentoring of upcoming and successful business ventures. Skill building needs to focus on processing of agro-pastoralist produce with emphasis on horticultural produce

(i.e. semi- or full processing of available fruits) and skills on creative local marketing and market outreach approaches.

#### 4.2.2.2. Input and Financial support

In pastoral areas there are limited access to inputs like selected seed, improved breeds of animals and other social service facilities to engage in different IGAs. So that:-

- Provide support in the form of input capital for revolving loans to support small and micro-enterprise IGAs.
- Provide initial repayable capital in the form of complex (huts or houses) construction and machineries/tools.

#### 4.2.2.3 Local Contribution

**Labour:** Local contribution can be made in the form of labour. This will encompass unskilled, semiskilled and skilled labour.

**Land:** Kebeles or communities should provide some plots of land for construction of mini complex at different level for different purpose in each area based on IG scheme to be selected and implemented.

**Materials:** These will include the purchase of wheelbarrows and donkey carts for transportation of merchandise by the beneficiaries. Others forms of local contribution will include the purchase of water containers for fetching and vending water.

**Cash:** The beneficiary household groups can make contributions in cash. This can initially be about 5% or so, but with time this proportion can gradually be up-scaled with the improved capacity of the beneficiaries as a way of building sustainability momentum. The reason for beneficiary cash contribution is believed to create a sense of ownership among them in IGAs.

#### 4.2.2.4. Formation of Management Committee (MC) for IGAs

It is recommended that the MC should be established in each program implementing Kebele and should be run by competent and inclusive MC comprising individuals proposed by key stakeholders and players from partner organizations and development agencies as set out and delineated in the preceding sections. This team shall be mandated to provide oversight for the overall management and operations of the MC. In addition, this team will ensure that the relevant policies, procedures and systems that will determine how the MC runs are put in place. Furthermore, the MC shall be mandated to identify and hire staff to help run the various sectors that are established. It should be noted that IGA MC is different from MDG-F JP MC which has already been established to be responsible for the management of the whole JP at Kebele level. Rather IGA MC should be accountable to JP MC in one way or another.

## References

### Documents

- Brown, L.D. 1985. *People-Centered Development and Participatory Research*. Harvard Educational Review, 55 (1), 69-75.
- ECSA, 2008. Ethiopian Central Statistics Authority, 'Projections on Housing and Population Census', Addis Ababa, Ethiopia,
- Finn, J. 1994. *The Promise of Participatory Research*. *Journal of Progressive Human Services*, 5 (2), 25-42.
- Foucault, M. 1980. *Power/Knowledge: Selected Interviews and Other Writings*. New York: Pantheon.
- MoA, 2009: *Spanish MDG-F Environment Joint Program Document*,. Retrieved from [http://www.mdgfund.org/sites/default/files/Signed\\_JP\\_Cover\\_Page\\_Ethiopia\\_Env\\_Oct09.pdf](http://www.mdgfund.org/sites/default/files/Signed_JP_Cover_Page_Ethiopia_Env_Oct09.pdf)
- MoFED (2000 ) *Building on Progress A Plan for Accelerated and Sustained Development to End Poverty (PASDEP)*: Addis Ababa, Ethiopia Vol.1
- \_\_\_\_\_ (2010) *Growth and Transformation Plan 2010/11-2014/15 (GTP)*: Addis Ababa, Ethiopia Vol.1 Main Text
- NRC (2008). "[Understanding and Responding to Climate Change](#)" (PDF). [Board on Atmospheric Sciences and Climate](#), US National Academy of Sciences. Retrieved 2011-04-16

### Web sites

- 1 <http://www.raosoft.com/samplesize.html>
- 2 <http://www.worldbank.org/wdr2010>
3. [http://www.ipcc.ch/publications\\_and\\_data/publications\\_and\\_data\\_reports.shtml](http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml)
4. <http://www.worldbank.org/wdr2010>
5. [http://search.yahoo.com/search;\\_ylt=A0oG7k.gbkJOP3QAjOhXNyoA?ei=UTF-8&fr=ytf1\\_yff50\\_&p=unfccc+kyoto+protocol+thermometer&rs=0&fr2=rs-top](http://search.yahoo.com/search;_ylt=A0oG7k.gbkJOP3QAjOhXNyoA?ei=UTF-8&fr=ytf1_yff50_&p=unfccc+kyoto+protocol+thermometer&rs=0&fr2=rs-top)

### Annex 1: Map of Assessment Areas



## Annex 2: HH Survey Questionnaire

### Interviewer-administered IGAs Assessment Questionnaire for Household Heads

The purpose of this interview is to gather data for the participatory IGA around pastoral communities who are prone to insecure livelihood and to determine on viable IGA schemes so as to intervene in the short and/or long term.

#### Section I: Identification

101. Region \_\_\_\_\_ 102. Wereda \_\_\_\_\_ 103. Kebele \_\_\_\_\_ 104. Are you the head of the household? 1) Yes 2) No 105. Sex 1) M 2) F 106. Age in years 1) < 20 2) 20-35, 3) 36-45 4) 46-60 5) > 60 107 Marital Status 1) Married, 2) Single, 3) Widow, 4) Widower, 5) Other \_\_\_\_\_ 108. What is your level of education? 1) Never attended School 2) Primary Level 3) Secondary Level 4) Post Secondary 109. Have you attended any occupational training? 1) Yes 2) No 110. If yes, indicate area of training, \_\_\_\_\_

#### Section II: Household Occupants Aspects

- 201 Number of family members including you 1) <3 2)3 3)4 4)5 5)6 6)7 7)8 8)>8
- 202 Number of female occupants. 1) No one 2)1 3)2 4)3 5)4 6)5 7)>6
- 203 Number of male occupants. 1) No male occupant 2)1 3)2 4)3 5)4 6)5 7)>6
- 204 Age of female occupants 1)<12 years \_\_\_\_\_ 2) 13-19 years \_\_\_\_\_ 3) 20-35 years \_\_\_\_\_ 4)35-50 \_\_\_\_\_ years 5)>50years \_\_\_\_\_
- 205 Age of male occupants 1)<12 years \_\_\_\_\_ 2) 13-19 years \_\_\_\_\_ 3) 20-35 years \_\_\_\_\_ 4)35-50 years \_\_\_\_\_ 5)>50years \_\_\_\_\_
- 206 How many female occupants enrolled in school? 1) Not at all 2)1 3)2 4) 3 5)4 6)5 7)>6
- 207 How many male occupants enrolled in school? 1) Not at all 2)1 3)2 4) 3 5)4 6)5 7)>6
- 208 Are there any occupants other than biological family members? 1) Yes 2) No
- 209 If "Yes", reasons for supporting 1) Lack parental support 2)Lack shelter,3)Lack food, 4)Lack of income, 5)Orphanage 6)other 7)Multiple Response
- 210 Are there females enrolled in school but dropped out? 1) Yes 2)No
211. If "Yes", reason for dropout? 1) un-affordability 2) School too far, 3) Got married, 4) Started small business, 5) Due to peer pressure, 6) Disliking Schooling 7)Unknown reason, , 8) Other ...9) Multiple Response
212. Are there males enrolled in school but dropped out? 1) Yes, 2)No

213. If “Yes”, what was the reason for dropout? 1) un-affordability o school fees 2) School too far, 3) Got married, 4) Started small business, 5) Due to peer pressure, 6)Disliking Schooling 7)Unknown reason, , 8) Other ...9) Multiple Response

**Section III: Socio-economic Characteristics**

301 How do you meet your household survival need? 1) By livestock products 2)By farm products 3) Paid employment 4) Petty trade 5) Remittance 6) Support from government 7) Support from NGOs 8) other\_\_\_\_\_ 9) Multiple Response

302 Household monthly total income estimation in birr? 1) < 500 2) 500-749 3) 750-999 4) 100-1250 5) >1250

303 Which of these affected the household ? 1) In adequate food, 2) Insufficient water 3) Poor access to health care, 4) Very low income 5) Multiple Response

304 Have you ever faced human loss over the last 3 to 5 years due to climate change effects? 1) Yes 2) No

305. If Yes, how many? 1) Unwilling to disclose 2)1 3)2 4)3 5)4 6)5 7)>5

306. Were there losses of livestock over the last 3 to 5 years due to climate change effects? 1)Yes 2)No

307. If yes, how many in general? 1)1-5 2) 6-10 3)11-15 4)16-20 5)>20

308. Which of these events affected your ability to earn a living and provide for your family? 1) Loss of life, 2) Loss of pastures 3) Loss of livestock, 4) Limited access to markets, 5)Limited access to health care, 6)Poor health of the livestock,7)Children dropout 8) Multiple Response

309. To what extent have you experienced loss of crops in your area over the last 3 to 5 years? 1) Not at all 2) Low 3) Moderate 4) High

310. To what extent have you experienced loss of pasture in your area over the last 3 to 5 years? 1) Not at all 2) Low 3) Moderate 4) High

311. To what extent have you experienced loss of water over the last 3 to 5 years? 1) Not at all 2) Low 3) Moderate 4) High

313. How do you cope with some of these problems? 1) Support from the government,2) Support from local relatives, 3) Relief supplies from agencies, 4) Remittances from outside 5) Children engaged in manual works locally. 6) Small business 7) Multiple Response

314. Other than you who else provides support to your family? (More than one response is possible)1)Spouse 2) Relative 3) Charitable organization 4) The government 5)other (specify)\_\_\_\_\_ 6) Multiple Response

315. Do you own any livestock? 1) Yes 2) No If “yes”, how many do you own? (Tick under appropriate choice)

No	Owned	1)1-5	2)6-10	3) 11-15	4) 16-20	5) 21-25	6)26-30	7)>30
316	Cattle							
317	Camels							
318	Sheep							
319	Goats							
320	Chicken							
321	Donkeys Other_____							

322. Do you own any land? 1) Yes 2). No 323. If "yes", how many hectares? 1) < 1 2) 1-3 3) 3--6 4) 6-10 5) > 10

324. How much of your land is cultivated? 1) All 2)3/4 3) Half 4)1/4 5)Not at all

325. How much of your land is used for grazing? 1) All 2)3/4 3)Half 4)1/4 5)Not at all

326. As income generating activities, which of the following can be as per your skills and area of interest as a source of income?  
1) Butter /milk making, 2) Hides and skin craft, 3)Knitting, 4) Cultural or souvenir making, 5) Trading, 6)Fattening 7)Not Sure but need to be engaged in any IGAs

327. What are important livelihood activities in the community, & who (men or women) rely on them (mention top 3 & rate from 1-3)

1)\_\_\_\_\_ 2)\_\_\_\_\_ 3)\_\_\_\_\_

328. If you get support, in what area/s of IGAs do you want to be engaged (Rate from 1 to 3 in terms of preference order)?

A) Farming activities: 1)\_\_\_\_\_ 2)\_\_\_\_\_ 3)\_\_\_\_\_

B) Livestock products: 1)\_\_\_\_\_ 2)\_\_\_\_\_ 3)\_\_\_\_\_

C) Other small business areas: 1)\_\_\_\_\_ 2)\_\_\_\_\_ 3)\_\_\_\_\_

329. What areas of IGAs do you recommend for women to be engaged in your community?

330 In order to have viable IGA for a sustainable livelihood, who should do what?

a) Beneficiaries \_\_\_\_\_

b) Communities in general \_\_\_\_\_

c) Government bodies at different levels \_\_\_\_\_

d) NGOs/CBOs \_\_\_\_\_

### Annex 3: Key Informants' Interview Guiding Questions

- 1) To what extent is climate change an issue within the community?
- 2) Is climate change an increasing problem over the last 3 to 5 years?
- 3) How has climate change affected life in this area and its periphery (costs and benefits)?
- 4) What can be done to minimize and eventually eradicate poverty from the areas of pastoral communities?
- 5) What experiences were there in the locality or Wereda in engaging the pastoral communities in income generating activities?
- 6) What economically viable options exist for engaging current or potential income generating activities practices, with major emphasis for women?
- 7) What type of income generating activities do you recommend for engaging the pastoral communities (especially women) in the locality?
- 8) What challenges & opportunities exist to initiate such new IGAs in the locality?

**Annex 4: Market Assessment Checklist**

A	List the major types of <u>goods</u> available	1. Source of goods a) Locally from around b) Delivered from other locations (outside the village)	2. Who consumes more at present? a) Young men b) Young women c) Adult men d) Adult women e) No difference by consumer f) Other _____	3. What are current prices? Price/ Unit	4. What influences consumers? a) season b) geographical location c) availability d) security e) environment f) other _____	5. How do you rate the level of adequacy to meet the demand? a) high, b) medium c) low
B	List the major types of <u>services</u> available					
C	List the major types of <u>goods</u> not available	1. Who would be more consumers if available? a) Young men b) Young women c) Adult men d) Adult women e) No difference by consumer f) Other _____	2. What would be consumers' demand if available? A) high b) moderate c) low	3. Remarks on observed facts on goods not available currently		
D	List the major types of <u>services</u> not available					

**Annex 5: Guide Questions for FGD**

**1. How do you evaluate the current livelihood sources of income in your area?**

- a) Apart from livestock what are the other main sources of income in your community?
- b) Sources of income that have been reliable over time and why?
- c) Sources of income that have proved unreliable and why?
- d) The current trends that define severity of vulnerability over the last 3 to 5 years?
- e) What are the specific vulnerability threats or risks facing women and girls in the current environment?
- f) Coping mechanisms in dealing with the vulnerability gap over the last 3 to 5 years?

**2. How do you evaluate the current demand and supply of goods and services?**

- a) Does the locality have satisfactory source of goods (adequate food both in quantity & quality) & services
- b) Potential of the area to provide the goods and services
- c) What would be the inputs (capacity in both skill and capital development and conception by the local communities in involving in such production schemes)
- d) What opportunities are there to increase women's access to capital, credit and savings?

**3. What are the challenges of livelihood security?**

Understanding vulnerability within the local socio-economic context through problem analysis

- a. Problem analysis of the local pastoralist economy with a focus on triggers for sustainable livelihood improvement Problem analysis according to the following

	problem	Cause of problem	Coping mechanism
Women			
Men			
Youth			
Community leader			

- b. Core problems experienced at household level
- c. Core problems experienced at community level
- d. Factors that determine vulnerability and coping mechanisms
- e. Indicators of vulnerability within the pastoralist community

Economic indicators	Socio-cultural indicators	Other

**4. Determine Viable Income Generating Activities**

- a) Review productive engagement for vulnerable communities
- b) Determine critical skills for small scale enterprise development
- c) Which small/micro businesses should the local communities (with focus on women) be supported to generate income for a sustainable livelihood?

Type of business	Nature of goods & services desired	Those targeted as consumers

**5. Suggestion on Viable Income Generating Activities for pastoral communities for a sustainable livelihood.**

- a) What beneficiary individuals (men/women) should do?
- b) What communities should do?
- c) What government bodies at different levels (Federal, Regional, Zonal, Wereda, & Kebele) should do?
- d) What NGOs/CBOs should do?

**Annex 6: Observation Checklist**

Take the stock of the livelihood styles

1. Dwellers settlement style \_\_\_\_\_  
\_\_\_\_\_
2. Housing structures \_\_\_\_\_  
\_\_\_\_\_
3. Potential means of income \_\_\_\_\_  
\_\_\_\_\_
4. Access for water (source, safety, distance, use for) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. Condition of land in the area (for multipurpose function) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
6. Sanitation and hygiene conditions \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
7. Human health service condition \_\_\_\_\_  
\_\_\_\_\_
8. Livestock health service condition \_\_\_\_\_  
\_\_\_\_\_
9. Education service condition \_\_\_\_\_  
\_\_\_\_\_
10. Other observation (seems significant) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Annex 7: Assessment Team Composition**

No	Name	Institution	Role
1	Tsegaye Woldegiorgis	MoA, JP Training/Capacity Building Officer	Team Leader & Lead Assessor
2	Kassaun Abate	MoA, Natural Resource Directorate	Assessor
3	Sultan Hussien	Oromia Pastoral Development Commission, Livestock Senior Expert	Assessor
4	Esayas Lema	MoA, Expert Women Affairs Directorate	Assessor
5	Dawit Setegn	MoA, Expert Planning & Programming Directorate	Assessor
6	Abubeker Ali	Somali Region, JP A/ Focal Person	Assessor at Region Level
7	Mohamed Abdulkadir	Afar Region, JP Focal Person	Assessor at Region Level
8	Humnesa G/Selassie	Oromia Region, JP Focal Person	Assessor at Region Level
9	Addisu Komtu	SNNPR, JP Wereda Project Officer	Assessor at Wereda Level
10	Tewodros Sebehat	Afar Region Adaar Wereda Project Officer	Assessor at Wereda Level
11	Rukia Yesuf	Afar Region Telalak Wereda Project Officer	Assessor at Wereda Level
12	Mohamed Jama	Somali Region Harshin Wereda Project Officer	Assessor at Wereda Level
13	Mohamed Shako	Oromia Region Teltele Wereda Project Officer	Assessor at Wereda Level
14	Abdurahman Redwan	Somali Region Aysha Wereda Project Officer	Assessor at Wereda Level