

Vol. 10. No.4. 2021
©Copyright by CRDEEP Journals. All Rights Reserved.

Contents available at:

www.crdeepjournal.org

International Journal of Environmental Sciences (ISSN: 2277-1948) (CIF: 3.654)



Full Length Research Paper

Livelihood Strategies and Factors Constraining Rural Livelihoods: The Case of Lare Woreda in Gambella Region Ethiopia

Kueth Lul Ruach

College of Environment, Gender and Development Studies, Department of Rural Development, Hawassa University, Hawassa, Ethiopia.

ARTICLE INFORMATION

Corresponding Author:
Kueth Lul Ruach

Article history:

Received: 25-09-2021
Revised: 05-10-2021
Accepted: 16-10-2021
Published: 20-10-2021

Key words:

Livelihood Strategies,
Population sampling,
Livelihood Constraints,
Coping Mechanism and
Seasonal migration

ABSTRACT

This study was conducted to assess the livelihood strategies and factor constraining livelihood in Lare woreda of Gambella region. In order to achieve the objective of the study, data were collected from 150 sample households' base on population sampling of the selected kebeles. Both Primary and Secondary data were collected from various sources. The data were analyzed using SPSS version 16 by applying statistical techniques such as descriptive statistics, frequency, mean, median, rang, standard deviation. The study found that the livelihood strategies are agricultural intensification/intensification such as livestock production, crop production and forest products. The study also found the traditional farming systems, cultural taboos, natural and manmade disasters as the main factors constraining the livelihood of the community. During the disasters households in the study area practiced different coping mechanisms such wild food, intensify fishing, livestock and products sale, migration, remittance and gifts. Hence, government should improve the livelihood of the people by introducing new agricultural farming technology to increase crop production and productivity. New breeding should be introduced to increase livestock production and productivity. Solution to avoid the effects of the livelihood constraints on the rural livelihood assets should be made by the government and stake holders working in the area. Ultimately, some indigenous coping mechanisms should be improved and some have to avoid by the government and the community, which will be the best way of the people to diversify the livelihood.

Introduction

Background

Ethiopia has diverse natural resources and the livelihood of the people depends on agriculture though it's the most famine prone and food shortage in Sub-Saharan Africa. It is the third populous country in Africa with estimated population of 76.5 million in which 85% of the population are living in rural area (CSA, 2006).The agriculture sector plays a significant role in the national economy, livelihood and socio-cultural system and accounts for 45_50% of growth domestic product(Berhanu,2006). The country fall under food deficit due to high dependency ratio, high unemployment rate, low technology for agricultural production and population pressure (MOARD,2009).Though the country has high unemployment rate the agriculture sector support employment of over 80%of the population (Berhanu, 2006).

Rural population has been practicing a number of strategies such as agricultural intensification, livelihood adaptation and diversification, which enable them to attain food security goal. However, the country is still unable to escape the problem of food insecurity. So understanding of alternative livelihood strategies of rural households and factor constrain livelihood are very important to bring economic development and improvement in food security. Identification of coping strategy will also fill the gap during intervention for concerned livelihood improving organization. This is important to commit limited resources available for rural development based on empirical study about the rural poor and its livelihood strategies (Tesfaye, 2003). Gambella is one of the regions where food insecurity is a problem. Many people in the region do not feed themselves from own production and annually depend on food aid from UN-WFP and other international NGOs (GDPFSA, 2008). Nuer zone is the most food insecure compared to other zones in the region; hence, people in the zone are now turning their face to depend on relief aid for their sustenance. For example in the last two years 65,387 numbers of people have been receiving emergency food assistance due to different factors constrained livelihood(GDPFSA, 2009). Lare woreda which is selected as a study area is found in Nuer zone and it is the most food deficit in all woreda of the zone. Agriculture is the main livelihood and it is a source of food and income of the woreda. Different local and international NGOs together with the government have been assisting the community for food during crisis, but the intervention could not improve the people livelihood as it is short term assistance. In the year 2009 Livelihood Integration Unit (LIU) a USAID funded project together with UN-WFP, Disaster prevention and food security Agency conducted

a base line survey and found out that the region has three livelihood zones that are Agro pastoral, mixed agriculture, coffee, honey and cereal livelihood zone by considering the geographical condition, production and market situation. Lare woreda was found to be under Agro pastoral livelihood zone in which the main productions are crops, livestock and other supplemented activities. But the livelihood strategies are not studied so far. This study was conducted to understand main livelihood strategies, factor constraining the livelihood and coping strategy, to provide information on how to improve the community's livelihood in sustainable manner.

Gambella National Regional State is one of the least developed regions in all development activities of the country, but it is rich in natural resources. Though the region has diverse natural resource, due to lack of proper utilization of the resources and traditional farming systems, the major proportion of the population suffers from food insecurity. The study borders South Sudan and annually affected by different disasters. In 2009 the total population that relied on emergency food aid was 13,418 and the number of the affected people increased every year due to different constraints that affected their livelihoods. Lare woreda is found in Gambella Agro pastoral livelihood zone in which it depends on livestock and crop production, fishing, and wild food collection (LIU, 2009). This zone has more natural resources compared to others livelihood zones, but different disasters exacerbated the food insecurity problem, forcing most of the people to depend on the food aid and indigenous coping mechanisms to improve their living. As the economy of the study area is based on agriculture different options were used by the people to improve their living during normal and bad year, but could not succeed. Governments and NGO agencies were providing assistance to the community every year but could not bring change to the livelihood of the people. However, no study has been conducted to understand the livelihood strategies and what factors constraining livelihoods as well as the coping mechanisms practiced by the local community. This study was undertaken to fulfill the objectives as shown below:

- To assess the livelihood strategies, factors constraining rural livelihood and coping mechanisms in the study area

Specific objectives

- ❖ To assess the livelihood strategies of different households category in the study area
- ❖ To assess the major factors constraining rural livelihood in the study area
- ❖ To identify indigenous coping mechanisms during threats in the study area

Research questions

1. What are the typical livelihood strategies of households in the study area?
2. What are the major factors constraining rural livelihood?
3. What coping strategies are practiced by the local community during threats?

The purpose of assessing the main livelihood strategies, factors constraining rural livelihood and coping strategies is to seek the patterns that can be acted up on in order to improve the livelihood of the people in the study area. Government and Nongovernmental organizations have been intervening in the area to improve the livelihood of the people, but could not study which livelihood strategies are practiced by households and to be improved. The study also will help stakeholders and government to understand factors constraining livelihoods and community coping strategies to fulfill the gaps during crisis. Understanding local livelihood strategies of the area, the intervention of multi agencies will be effective as soon as the strategies are known in both good and bad years. The study will clearly identify which livelihood activities are important on the production (crop and livestock) and should be improved. It can open the way for other researchers for further study on improving the livelihood of the local community.

The research will assess livelihood strategies, factors constraining rural livelihoods and coping mechanisms that local community practiced during threats in the study area. The focus will be on the main productions in the area which is the food sources and income of the community such as livestock and crop productions. In Lare woreda there are 27 Kebele Administrations (KAs). However, due to limit resources like budget, time and other services. The study will be limited to 6 Kebele Administrations of the woreda. From the selected 6 KAs, 150 households will be selected for household survey and interview.

Literature Review

Concepts and definition of livelihood

The concepts of livelihood is widely used in contemporary writing on poverty and rural development, but it is meaning can often appears elusive either due to vagueness or to different definitions being encountering in different sources. The definition is that livelihood comprises the capabilities, assets (including materials and social assets) and activities required for a means of living or its assets(natural, physical, financial, human and social capital) the activities and access to these(mediated by institutions and social relations)that together determine the living gained by household(Ellis,2000). As such the definition comprises all components and processes involved in the pursuit of livelihood –assets, strategies and activities and mediating factors such as climate, institutions and social relations and outcomes. Briefly one could describe a livelihood as a combination of the resources used and the activities under taken in order to live (DFID, 2000).

Sustainable livelihood framework

The starting point of sustainable livelihood approach is the assets base of the household and the focus is on analyzing how these assets are transformed through contextual structures and processes in to livelihood strategies which result in certain livelihood outcomes.

Household assets → Strategies → Outcome (F .Meehan, 2010)

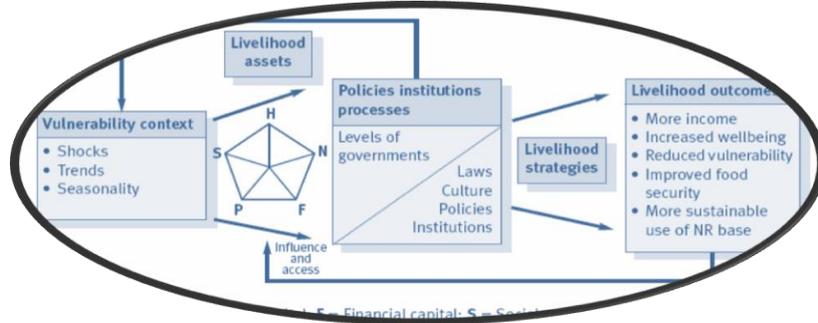


Fig 1: Sustainable livelihood Frame work. *Source: DFID sustainable livelihood guidance sheets*

Assets/endowment

Assets are also called endowment, comprise both tangible and intangible resources which the individual or households owns, control ,make a claim to or use of, they contribute to the livelihood platform the basic building block, with which individual or households under take production engaged in labor markets ,participate in reciprocal exchange. They are classified under physical, natural, financial and social capital (Ellis, 2000).Natural capital refers to land, water and biological resources that are utilized by the people to generate a means of survival. Physical capital it comprises capital create by economic activities such as buildings, irrigation canals, roads, tools machines and used as a means to generate a future flow of income, while human capital refers to the labor available to household it is education, skill and health. Labor (both quality and quantity) is often described as a chief assets possessed by the poor. The number of health and strong working as well as their skills and knowledge are vital to household livelihood adaptation. Financial capital refers to the stock of money to which the household has access, it include savings and access to credits and social capital refers to the community and wiser social claims on which individuals and households can drawn by virtue of belonging to social group, it include risk sharing arrangement and network and public support.

Strategies and activities

Livelihood strategies

The term livelihood strategies are defined as the range and combination of activities and choices that people make in order to achieve their livelihood goals, including productive activities, investment strategies, reproductive choices (DFID, 1999).The livelihood strategies are composed of activities that generate the means of household survival and are the planned activities that men and women under take their livelihoods. Adaptation is a continuous process of changing to livelihood which either enhance existing security or wealth or try to reduce the vulnerability and poverty. Diversification is the process by which rural households construct an increasingly diverse portfolio of activities and assets in order to survive and to improve their standard of living (Ellis, 2000). Mediating factors are social and cultural factors that influence the livelihood and include endogenous and exogenous factors that influence access to livelihood assets.

Livelihood outcome

Livelihood outcomes are the achievements of livelihood strategies, such as more income/cash, increased well-being (example, nonmaterial goods, like self estimate, health status, access to services, sense of inclusion), and reduce vulnerability (example better resilience through increase in assets stratus), improved food security (example increase in financial capital in order to buy food) and a more sustainable use of natural resources (Scones, 1998).

Vulnerability

The vulnerability of household is the extent to which it would be affected by a defined event or risk (shocks and seasonality), whatever the risk of that events are occurring for example a household might be regarded as vulnerable to a defined level of crop failure if this would reduce its income by 50%, even if crop failure in that area were rare. Vulnerability is not the same as poverty and can be reduced through spreading risk, by having greater diversity of activities to reduce degree of exposure to any one risk and greater range of coping options (LIU, 2009).

Materials and methods

Description of the study area

The study was conducted for a period of one year in Lare Woreda in Nuer zone of Gambella National Regional State. It is located in the western part of Gambella Region and bordered with Itang special woreda in the East, Jikawo woreda in the south west and South Sudan Republic in the North. It is around 90 KM away from the regional town, Gambella which is 867KM away from Addis Ababa, capital city of Ethiopia and1140KM away from Hawassa Town, capital city of Southern Nations Nationalities and People Regional State (SNNPRS).

Study Design and Sampling Procedure

The study area is selected purposively and the research was conducted only in six kebeles Administrations of the woreda as it represent the livelihood condition of the Nuer zone, diverse natural resource endowments and livelihood patterns. Total of 150 households were selected for interview based on population settlement of Kebele Administrations in the woreda.

Data source and type

Both secondary and primary data were collected to get the accurate information that can answer the research questions. Qualitative and quantitative data were collected from secondary and primary sources.

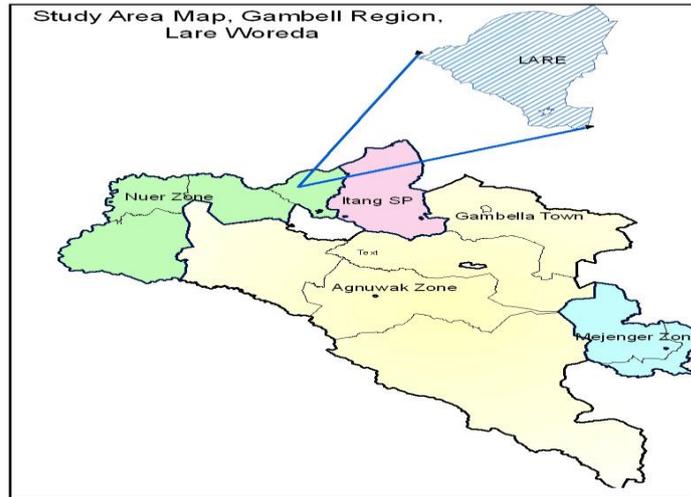


Fig 2: Study woreda map; Source: CSA, 2007

Primary data

Primary data are data required to validate the research questions and were collected from different sources. Such as household survey, key informant interview, focus group discussion, problem analysis, wealth ranking, observation and seasonal calendar. These techniques were used to collect all information regarding livelihood situation of the individual household interviewed in the study area.

Secondary data

The secondary data was collected from different data sources such as government reports (DPFSA, BoARD, BoFED, NMSA), NGOs and UN Agencies in the region. The woreda agriculture office, disaster prevention and food security office reports were collected. This data contributed much for preliminary knowledge essential to support findings of the research in the study area. Published and unpublished documents with related literatures were downloaded from internet. Additionally documents on the rural livelihoods for developing countries were reviewed and backed up the research findings.

Methods of data analysis

Data analysis is the process of linking data that are collected from the fields such as FGD, interview of respondents and key informants, wealth ranking, seasonal calendar and secondary data. Data collected using qualitative approach were categorized into research themes, coded and analyzed qualitatively through description or narrations. The quantitative data collected from the household survey were entered and analyzed using SPSS (Statistical Package for Social Sciences version 16) software. For quantitative data analysis, cross- tabulation, descriptive statistics, such as frequency distribution, percentages, mean, and standard deviation, minimum, maximum were used.

Result and Discussion

Socio-economic of the sample households

This chapter presents the results and discussions of the data obtained from the sample households. It presents household livelihood strategies, factors constraining the livelihoods and coping mechanisms during food shortage. These socio-economic data include household sex, age, education, family size, livestock and cultivated land holding.

Sex and head of household

In the study, sex refers to the biological division between interviewed male and females households. Household head refers to the broad social division between male and female headed households in the sample. Based sample results, it was found that 89(59.3%) were male and 61(40.7%) were female. From 61females interviewed, 5 were male headed households and 56(37.3%) were Female Headed Households (FHH). In terms of household head the male headed household (MHH) were 94(62.7%) and female headed household (FHH) were only 56(37.3%). Gender different influencing livelihood strategies and affects the diversification options of the household livelihoods. Female headed households access resources poorly compared to the male counterpart. This limit the participation of the female/women in other livelihood diversification such as: off and non-farms activities. From the key informant interview women are influenced by the cultural norms.

Table 1: Sex and the household head status

Sex	Frequency	Percent
Male	89	59.3
Female	61	40.7
Total	150	100.0
HH head status		
Male headed household(MHH)	94	62.7
Female headed household(FHH)	56	37.3
Total	150	100.0

Source: Own survey, 2011.

Age of household head

The minimum age was 19 and maximum was 68 from the households interviewed. Based on the age category, three age classes were grouped in to young (19-40), Adult (41-50) and Old (51-68) age groups. Both young and adult age groups again combined and form active age group. The result showed, 85(56.7%) young age group participate in non agricultural activities while only 17(13.3%) for old age groups. This indicates that age category has effects on household food security. This is because the old age group was found to be interested on agriculture sector alone. It implies that in the communities where agriculture is a source of livelihoods, age of the households influence the production of agriculture. The results of the survey indicated that, age of household affects the decision of farmers to diversify activities out of agriculture productions. The participation in non farm and off farm activities by age is shown in the table at appendix.

Educational status of the household heads

Educational status is one of the variables that determine the livelihood strategies of the households. This implies that the educational attainment proves one of the most important determinants of the non farm earning. The results indicated that 63(42%) were found to be illiterate. Due to low level of education in the sample, they do not participate much on other income sources. This forced them to work lonely on agriculture sector which indicated the negative influence of education on the livelihood.

Table 2: Educational statuses of the households

Educational status	Frequency	Percent
Illiterate	63	42.0
Read and write	36	24.0
Grade 1_4	35	23.3
Grade 5_8	9	6.0
Grade 9_10	7	4.7
Total	150	100.0

Source: Own survey, 2011.

Size of the households/family size

In terms of agriculture production, large family is the labour forces for the household. The result showed that the average family size per household was 15 persons. The maximum number of family size was 35 and minimum 2 person per household. The size of sample households is greater than national average which is 5 persons per household. This is because, male headed households practice polygamy marriage form having more than one wives. Culture such as: living together with relatives and their children. As defined in the methodology section, in this study household is defined as people living together and eating from the same pot including relatives at home and excluding children away from home. The study considered not only the household size at the current but also the status of the household size for the last five years if there is an increased, decreased or no change. Out of the total sampled households, the status of the household size in the last five years reported as 124 (82.7%) increased 17(11.3%) decreased and 9(6%) reported no change (Table appendix).

Table 3: Household sizes of the sample households

N	Valid	150
	Missing	0
Mean		13.41
Std. Error of Mean		.476
Std. Deviation		5.832
Range		31
Minimum		4
Maximum		35

Source: Own survey, 2011.

Marital status

Marital status and polygamy culture has great impact on the household Livelihood. In terms of marital status, out of the total sample, 99(66%), 21(14%), 26(17.3%) and 4 (2.7%) found to be married, divorced, widowed/widower and separated respectively. The result indicated that 42(44.6) of male headed households in the sample have more than one wives. The divorced and widowed women group has limited access to livelihood diversification and usually under disadvantageous groups. Due to such cultural practices most of the households are food insecure in some months of the year.

Table 4: Marital status of the households

	Frequency	Percent
Married	99	66.0
Divorced	21	14.0
Widowed or widower	26	17.3
Separated	4	2.7
Total	150	100.0

Source: Own survey, 2011.

Livestock holding

Without applying the tropical livestock unit (TLU) the total livestock's (cattle's, sheep, goats and chicken) in the sample kebeles showed the followings. The minimum livestock holding was 10 and maximum 125 in all kebeles. In the sampled kebeles, the variation in livestock holding also existed between the respondents. In Malow Kebele the minimum was 10 and maximum was 90 numbers of livestock. In Palbol Kebele the minimum was 14 and 125 maximum and the minimum was 22 and 110 maximum for Kutoch. For Koat manchuong the minimum was 28 and maximum 107 and Nipnip was found for minimum to be 26 and maximum 105. Finally the result indicated 35 as minimum and 100 numbers of livestock as maximum for Kech chengkuoth. Livestock holding influences the household choice to agriculture and non agriculture livelihood strategies. This means households with more livestock holding do not diversify to other livelihood activities. On the other hand, households with fewer livestock holding would be forced to diversify the livelihoods in to off and non farms activities to fill the food gaps of their family. Livestock holding was one of the criteria to determine the wealth of the household. All households interviewed have livestock but the number varies between households and kebeles and also between wealth groups. In other word, the number of livestock increase with wealth and family size. Key informant explained that, the selected kebeles have more livestock than others kebeles in the woreda, but due to livestock diseases, cattle raiding by neighboring tribes from south Sudan, conflicts(internal and external) and traditional breeding systems the number of livestock decreases every year.

Wealth status of the household

The wealth status of the household in the study area was primarily determined by livestock holding, size of the household and land cultivated. The key informant and local community characterized the wealth status in the following ways (see the table 5 below)

Table 5: Characteristics of the wealth status by local community

Wealth status	Criteria				
	HH size	Cultivated land/ha	Cattle	Shoats	Chicken
Very poor	4-14	0-0.8	4-10	4-14	2-4
Poor	4-18	0.2-9	5-18	8-18	3-7
Middle	4-24	0.4-1	20-45	20-40	4-8
Rich	10-30	0.5-2	50-80	40-60	10-18

Source: Own survey, 2011.

The study showed the similar criteria and the amount of wealth category explained key informants and local community. The exceptional was livestock holding criteria since it was in the tropical livestock unit (TLU). For the rich wealth groups the range is from 35-89, for middle from 29-35, for poor from 15-28 and 5-14 for very poor households. The analysis showed that 14(9.3%) were rich, 27(18%) middle, 51(34%) poor and 58(38.7%) very poor. It was found that land cultivated increased with wealth reflecting the large household size and labor capacity. All wealth groups cultivated the same crops maize and sorghum. The very poor and poor wealth groups do not have more livestock reflects insufficient money and lack of labor to care for the livestock.

Seasonal calendar

Seasonal calendar is the graph representing how different activities affect each others in different months of the year. There are two main agriculture season Meher that is from June to November and dry season that is from December to May. The consumption year begins in November and ends in October. Maize and sorghum are the main and long cycle crops grown in the area so the planting season of maize is from April to May. Green consumption is in June to July and harvesting is in October to November. It is July to August for sorghum planting season. Livestock birth and milk production taking place in the month of October to November and in heat period is in May and June. May to June and November to December is the wild food collection season. The sale of livestock and its products is observed in May, June, July, December and January which coincide with the food purchasing season. Migration is in the June and December of the year when people move the upland in rainy season and back to the river bank in the dry season.

Livelihood activities and strategies

The major economic activity in the study area is agriculture. These are livestock and crop production. The results revealed that 122(81.3%) of sample depended on livestock and crops productions which classify the community under agro-pastoral. It is the source of food and income of the households, the result is similar to the (LIU, 2008).The annual food and income of the households was from livestock and crop production and productivity and supplemented by other off farm and non farm activities.

Table 6: Source of household food and income

HH economy	Frequency	Percent	Valid Percent
Livestock dependant	24	16.0	16.0
Crop dependant	4	2.7	2.7
Mixed both livestock and crop	122	81.3	81.3
Total	150	100.0	100.0

Source: Own survey, 2011.

In the above table, the food source and income was found to be from livestock and crop production. There were 24 households who depend only on livestock but this does not means that they do not cultivate the crops. It was that they do not cultivate the

crops due to conflict and was IDPs for two years. In the same way, there were 4 households who respond for crop production only but it was explained by focus group that their cattle have been died by livestock diseases for the last two years.

Livestock production

Livestock production is the first important economic activities in the study area followed by crop production. The result indicated that 24(16%) of the sample depend on livestock and 122(81.3%) depend on both livestock and crop. But the livestock has more contribution in the household food basket in comparing with crop. Without applying the tropical livestock unit (TLU) the total livestock's (cattle's, sheep, goats and chicken) in the sample kebeles, it indicated the minimum livestock holding was 10 and maximum 125. In the sampled kebeles, the variation in livestock holding also exist between the respondents. In Malow Kebele the minimum was 10 and maximum was 90 numbers of livestock. In Palbol Kebele the minimum was 14 and 125 maximum and the minimum was 22 and 110 maximum for Kutoch. For Koat manchuong the minimum was 28 and maximum 107 and Nipnip was found for minimum to be 26 and maximum 105. Finally the result indicated 35 as minimum and 100 numbers of livestock as maximum for Kech chengkuoth. Milks, butter, meat, blood, hide and skins are the products from livestock and used as food and income. Skin and hide are used not for sale but as household mattress. In the discussion with focus group and key informants, it was pointed out that livestock are the main household assets and their contribution is very high not only to the household economic, but also to socio-cultural activities. For instance, marriage (wedding), weapons/guns, festivals, gift and remittance and other traditional believe are done by livestock.

The types of livestock in the area are cattle, sheep, goat, and poultry/chicken. The study found the direct proportion of livestock holding to the wealth. Livestock holding was found to influence the engagement of rich wealth groups to the livelihood activities. In terms of wealth status of kebeles by livestock holdings, the total numbers of livestock categorized for each wealth group vary according to the livestock production of each Kebele. Key informant confirmed that, the selected kebeles have more livestock than others kebeles in the woreda. But due to livestock diseases (out break), conflicts (internal and external) and traditional breeding systems the population of livestock declined. All households own livestock but they do not utilize them like using the ox for plow the crop land. There was lack of knowledge on indigenous to plow by oxen and absence of strong agriculture extension services exaggerated the problem.

Crop production

Crop production is the second economic importance to all households in the study area next to livestock production. The result showed 122(81.3%) of the sample depend on both crop and livestock and 4(2.7%) were pure croppers. It is the source of food and income of the households. Crops grown in the area are maize, sorghum, tobacco; sesame, ground nut and vegetables. Maize and sorghum are the major crops grown in the area and are main food crops consumed by the local people. Tobacco is cultivated as cash crop in the area. The common food type for local community is forage /genifo made from maize or sorghum. There are two production seasons in which the high percentage of annual crop production was from Meher (May-Sept) and supported by flood recession farming along the Baro River in dry season (Nov-Feb). The agricultural production is very low due to livelihood constraints such as traditional farming system, natural and man made hazards, culture. The result indicated that, the minimum area cultivated from respondents was 0.2 hectare and maximum 1.5 hectare. The average cultivated area per household was found to be 0.58 hectare (see table 7). In terms of productivity, the result showed the maximum production from 1.5ha was 20 quintals and the average was 11 quintals per half of hectare. As a result of low agricultural production in the area, all respondents do not feed their family for the whole year round. The duration of the household's annual food consumption from own productions vary between the respondents. Only 41(27.4%) feed their family from own production in the duration above four Months and the rest 109(72.6%) below four Months (see table 8).

Table 7: Total cultivated land versus production

		Crop land in hectare	Quantity produced in quintal
N	Valid	150	150
	Missing	0	0
Mean		.5776	11.3533
Std. Error of Mean		.01617	.27206
Std. Deviation		.19799	3.33204
Minimum		.20	4.00
Maximum		1.50	20.00

Source: Own survey, 2011.

Table 8: Duration of household food self-sufficiency from own production

Duration/month	Frequency	Percent	Valid Percent
1-2 months	59	39.3	39.3
3-4 months	50	33.3	33.3
5-6 months	28	18.7	18.7
7-8 months	13	8.7	8.7
Total	150	100.0	100.0

Source: Own survey, 2011.

Natural Resources Base

The study area is known for its relatively ample resources potential such as virgin and fertile land and soils. Perennial water

resources with many rivers, streams, ponds and spring diverse flora and fauna composed of natural vegetation with different tree and grasses species that served as a habitat for several types of wild life. Due to inappropriate natural resource management, wild fire, cutting of forest and deforestation caused the decline in trend of the natural resources base. Climatically the area is humid/hot as a result of this most people are annually suffering from malaria which is common human disease. In the same way severe livestock death was observed due to common livestock disease in the area.

Off farm and non farm activities

Some households in the study area obtain off farms and non farms activities as supplementary income sources to on farm activities. The result showed 85(56.7%) of the young age group in the sample were participate in the off farm and non farm activities. During interview with key informant many households engage in off farm and non farm activities. But their contribution was not much important to household food basket. These activities mostly are always done in the disaster years.

Sustainable Livelihood framework assets

The livelihood capitals are resources/assets that households own to employ livelihood strategies to achieve their livelihood outcomes. Such livelihood capitals are natural, social, financial/economic and physical capitals.

Natural asset

Land is access to all households in the study area and no shortage of land. There is communal grazing land for livestock and no rented land due to access of land to all households. The average cultivated land size result has shown was 0.58 hectare. This is approximately in line with Bureau of agriculture and rural development 0.5 hectare average cultivated land per household (BoARD, 2008). The minimum was 0.2hectare and the maximum was 1.5 hectare. The size of the cultivated land varies between different households in the same Kebele and wealth group. The average cultivated land for rich households was 0.6-1.5ha, middle 0.35-0.9 ha, poor was 0.25-0.8ha. In Malow Kebele the minimum cultivated land size was 0.2 and maximum was 1hectare. In Koat manchuong Kebele, the minimum cultivated land size was 0.5 and maximum 0.9 hectare and Kutoch Kebele it was 0.3ha for minimum and 1.5ha maximum. In Palbol Kebele it was 0.3ha for minimum and 0.9ha maximum and for Kech chengkuoth Kebele the minimum was 0.25ha and 0.9 ha for maximum. It was 0.25ha and 0.75ha minimum and maximum respectively for Nipnip Kebele. The cultivated land size was very small as the results the crop production was low. The main reason was that household in the study area cultivate using traditional hand farming tools and the effect of climate disasters/hazards frequently occurs in the area. Oxen plough, tractors and other farming technologies that increase crop production are not practice. One of the problems observed in the study area was that communal grazing land of the local community transferred to the investors by the regional government and woreda officials, which will have negative effect on pasture land. There is no land policy and land certification is not implemented, so every household freely can extend his/her crop land without limitation. In terms of natural resources existing in the area, all the respondent access natural resources such as forest, water ponds, grazing land, wood land and shrubs. The utilization of the resources varies between the wealth groups. The users of the natural resources products of the sample groups were very poor and poor households. Out of 150 interviewed households 95(63.3) were found to use products from natural resources for different purposes. Some respondents are using natural resources products as additional source of food and income to their family. They also use the resource for building/construction of their local houses. Even though most of the respondents use natural resource products widely, the majority (66.6%) lack knowledge on conservation and management of the natural resources. Severe cutting and deforestation/setting fire to forests were observed in the area. Based on the key informant interview and focus group discussion many households faced problem in their crop production as the trend of the natural resources rapidly changes and deteriorated.

Table 9: Economic important from natural resources and knowledge

Economic importance	Frequency	Percent	Valid Percent
Food	45	30.0	30.0
Income	4	2.7	2.7
Building or construction materials	2	1.3	1.3
Food, income and building or construction materials	95	63.3	63.3
Food and building/construction materials	4	2.7	2.7
Total	150	100.0	100.0
Knowledge			
Yes	51	34.0	34.0
No	99	66.0	66.0
Total	150	100.0	100.0

Source: Own survey, 2011.

Physical asset

Physical capital refers to the developmental activities physically existing in the study environment. These are basic social services (health, educational institutions), infrastructures such as rural roads, electricity, telecommunication, water supply, public transports, markets, agriculture extension services, credits and veterinary services as well. As observed and discussed with key informants and focus groups, the existing of the infrastructure and social services in the sample kebeles were very poor compared to other kebeles. Some services were totally absent and the existing services have poor performance. There is only primary school, no secondary school in the sample kebeles. Children of the respondent households access secondary school in the town of the woreda which is very far. There is lack of health post/centers in the sample kebeles. There is no Hospital in the woreda as whole, only the health post/center. There was inadequate of drugs/medicine in the health post in town (Key informants). There is no clean water because no water schemes constructed in the sample kebeles. Some of them access the hand duck water pumps from the

neighboring kebeles. But they easily access water from Baro River and ponds which is not clean water. As a result most children under 5 including lactating mother and pregnancy are yearly suffering from diarrhea and related water born diseases (key informants interview). In access to all-weather roads was observed. Only one Kebele Palbol has opportunity for the road in the way to south Sudan county Pagak. Lack of public transportation was also increases the problem of accessing the services like health and education in the far distance. There is no electricity and telecommunication in the sample kebeles. Communication problem was observed as the big challenge to the sample community. Veterinary services was not exist in the sample kebeles and it was one cause of sever livestock death reported (DAs discussion). Female households access the grinding mill in the woreda town which is very far. Lack of the above rural infrastructure and basic services have greater impact to the livelihood of the community.

Human asset

Human asset plays a major role in improving the livelihood and food security situation of the nation and it is one of the criteria under human development index. It can be defined as human capabilities which include education, knowledge/skill, and state of health and labor ability. Educational status is the variables that determined the livelihood strategies and diversification of the households.

Based on the sample results educational status was classify in two groups literate groups (write, read, listening and on school in some grades) and illiterate groups (totally not read and write).The literate were 87(58%) which is the combination of read and write, grade 1-4, grade 5-8 and grade 9-10 and illiterate were 63(42%) household heads. the proportion of the literate and illiterates households differs by sex or household heads and kebeles. In terms of household heads, the percentage for educational attainment of female headed household to the male headed household was 24 % (36) which was smaller as compared to 34 % (51) of male counterpart.

Financial/economic asset

Financial capital refers to the stock of money to which the household has access, it include savings and credits. All respondents have no access to any formal institution such as credits and saving. The reason was there were no financial institutions formed by community and the local government in the area. Some households save in terms of livestock. The result showed 10(6.7%) of the sample has informal institution. This informal institution is formed by religious/church women group in Malow Kebele. The study indicated that the main source of cash income was from livestock and livestock products sale, remittances and gifts from relatives living in abroad (USA, Sudan).

Social asset

Social asset refers to the community and wider social claims on which individuals and households can draw by virtue of belonging to social group. It includes risk sharing arrangement and network and public support. During discussion with key informants and different groups in sample kebeles such as community leaders and elders and church leaders (women and men) one of the common issue explained or discussed repeatedly was strong social network between the communities. This social network forced the community to share all activities require for the means of living (livelihoods) without discrimination in terms of wealth. This culture of social life includes sharing of risks and benefits of different households in the same community. It was found to be applicable to all households in the sampled kebeles. These common social activities practiced in study kebeles are below.

- Gift of livestock and livestock products to very poor and poor households during food shortage, wedding, *luom* (engagement of young male to the lady done by cattle), *garri* (Identity of male putting six line on the face as symbol), *thong* (revenge in livestock if some body has killed) and others minor social problems by rich and middle wealth groups.
- Labor contribution of active age groups and large family size on the work of agricultural activities (planting, weeding, harvesting, livestock care) and non agricultural activities such as wild foods collection, fishing and hunting to the widows, elders, sick and female headed households.
- Share of livestock to relatives when the daughter/daughters of some one get married (25 cattle should be given to the wife parents).
- Sharing of remittance incomes (if the some one went to abroad, he/she send the money not only for his/her parents but also for relatives, friends, elders and disadvantageous households in the area) during food shortage/ crop failures, health problem.
- Eating together in group/locally called *Nyuak* and can be determined by age, sex and location (the same age, sex and near to each other/neighbor will be categorized in one group and eat together with no discrimination in terms of wealth, its forbidden for husband and wife to eat together).
- Assistant of rich/middle households to the very poor and poor households by taking their children grow them up to adult stages and support in different household expenditures.
- If your aunt (father/mother sister) gave birth only for girls without boys, she can take you to her home and you can marry a wife for her, all the children you born will be called as her children.

There was no government intervention to improve food security and livelihoods in the woreda for the last five years. In 2010 the resettlement program started and it's under way in some kebeles of the woreda some sampled kebeles were benefited from the program. There was no access to UN Agencies, NGOs and community development projects operating in the area to support the community in improving the livelihood and food security. Only Early Recovery Program/Disaster Risk Reduction program by UNDP budget support implemented in Palbol Kebele and there was income generating activity for women groups under way.

Factors constraining rural livelihoods

The study area was found to be susceptible to both natural and man made disasters together with cultural and traditional systems severely constraining the livelihood of the households. The constraints that affected the household food security condition are discussed below:

Flood

The flood hazard is one of the main constraints to the livelihood of the sample households. Using the score and applicable probability, the results indicated that the score of flood was ranked second with score of 251 frequency next to traditional farming system. In terms of coverage or to what extent the constraint affected the household livelihood, it was third ranking with 142(94.7%). There are two types of floods, flash flood and over flow/back water flow of the rivers. Flash flooding occurs due to high rain fall from neighboring high land area Damidolo. Due to its flat topographic nature and its geographic location close to the neighboring high lands and existence of natural water bodies draining the highland areas increased the degree of the damage. The level of water in the rivers rises up during the rainy season, overflowing the river course. Flooding results in the displacement of many peoples, lose of human and livestock lives, washing away of crops and pasture/grazing lands, damage of infrastructures and basic institutions such as schools and health facilities, disease outbreak water born disease such as Acute Water Diarrhea (AWD), reduction of crop yields, reduction of livestock production and productivity. The frequency and duration of flood increase every year (key informant). According to the secondary data obtained from National Meteorology Service Agency at the region, the flood occurrence and flowering stages of the main crops have the same season, so when the flood occurred, the crops in the flowering stages will be damaged severely and no more production will be expected. The flood was found in the major constrains affecting the household livelihoods.

Erratic rain fall

Erratic rain fall always affect the crops at seedling and flowering stages. It was a climate change hazard since there was no such event happened in this area for the last 20 years but in the last five years, it became the main constraint to household livelihood. The results showed that, the frequency occurring of erratic rain fall ranked fourth in score and percentage with 210 scores and 139 (92.6%) applicable probability. The rain started in the normal scenario with normal distribution and amount. After some months the rain stop and the duration, amount and distribution also became below normal. The crops at different stages (growing, flowering, and seedling) may be damage severe.

Conflict

Conflict was found to be in the major constraints that affect the household livelihoods in the study area. The results showed that it has 166 scored with rank 6th in terms of frequency and 112 (74.7%) applicable probability system which put the rank at 7th by comparing to other major livelihood constraints. The result is inline with the multi agency humanitarian assessment conducted by Government sectors, NGOs and UN-Agencies in the region (GDPFSA, 2010).The root cause is the movement of south Sudan tribes Murley and low Nuer to look for cattle from Nuer in Ethiopia land. This conflict effects results in lose of human and animal lives, raiding of cattle; lose of properties, human injury, destruction of institutions and infrastructures, displacement of many peoples. The selected kebeles found to be vulnerable to the conflict every year (woreda report, 2010). Two type's conflicts can be identified: external or cross border inter-communal or internal conflicts. The frequency and magnitude of the conflict increase every year. During the dry season when the local people migrate with livestock in search of pasture and water along the Baro River which is good season for cattle raiders.

Cross border conflict

The cross border conflict occurs between the local community and migrants from South Sudan on the resources utilization. Such resources are grazing lands, natural water, fishing ponds, streams and territory division. This leads to the cattle looting, killing of humans, kidnapping, and migration. As a result many households were internal displaced people (IDP) in the last years and depend on the food aid for 2-3 months.

Internal or inter-clan conflict

Internal or inter-clan conflict appears between different sub-clans of the households in the study woreda. The cause of the conflict was the communal resources utilization such as grazing land, natural fishing water ponds, lakes and streams. As explained by key informants and GDPFSA 2009 annual report around 500 households were IDP in the study woreda for almost three months due to the inter-communal conflict.

Livestock diseases

As discussed in the introduction part, the livelihood of the study community depends on livestock production with small crop production. It was found to be among the five constraints affecting the livelihood of the sample households. The result indicated the score of livestock disease to be 168 ranked 5th in term of frequency and 133 (88.6%) in terms of coverage. The production and productivity of livestock declined for the last two years due to diseases of livestock. There are different livestock diseases in the study area such as Bovine pasterolosis, Black leg, Anthrax, Trypanosomiasis, Food and Mouth Disease (FMD) and Tran's boundary diseases from South Sudan (Discussion with DAs).

Traditional farming systems

The sampled households' use traditional farming systems such as hoe or hand tool cultivations. The results indicated that traditional farming system is the first and the major constraint with 100% of the sample with score 256. There is no oxen plow and other agricultural farming technological system such as, tractors and irrigation system. Resources are available on the hand of farmers such as oxen and natural source of water but no knowledge. Lack of agricultural extension services is reported by key

informants as the main problem in agricultural production. All households cultivated using hand tool and most of them did not get the access to extension services. As a result of using such systems the average farm size per household was 0.58ha and production was 11 quintal.

Traditional farming tools

The farming tools in the study area are traditional hoe (*pur*), challa (*purmut*), axe (*jiop*), and ploughing set (*jame*) for different agricultural activities such as clearing, digging, cutting, chopping, weeding, harvesting in the fields. These traditional farming tools were not enough for all households.

Crop pests and diseases

Climatically the area is dry/hot which makes crops susceptible to crop pests and diseases. The result showed the crop pest and diseases with scored 125 rank 7th and 114(76%) with rank 6th in term of area coverage. This implies that the impact of crop pests in the household crop production is high and it is in the constraints that affect the household food security and livelihoods. The main pests are locust, grasshopper, army worms, crickets, and earth worms. Annually the crop production has been affected by pests especially the main food crops such as maize and sorghum at all growing stages. The existing of the crop pests in the area leads to reduction of the production and cause household food shortage.

Wild fire or forest fire

In term of natural resources management, wild fire was observed as the major problem on agricultural production. The result indicated that only 94(62.7%) which is the last ranked constraint with score of 97. It does negatively affect the household food security and livelihoods. In 2010, forest fire affected agricultural production of 500 households in the study area (key informants) even though the effect was less in comparing with other constraints.

Cultural norm

The effect of the cultural norms on household livelihood was found to be major constraint next to traditional farming system in term of the problem applicability and it was third after flood in term of frequency. The score showed the total of 217 with rank 3rd but it was found that all households faced the problem (100%). These cultural norms are discussed below:

Traditional division of labor

Generally there is traditional way of labour division between gender lines. This is mostly applicable in agriculture labor activities. In the study area, women do not participate in land preparation, planting and sowing while men counterparts do not participate in weeding and harvesting activities by key informants. This traditional division of labour between genders has effect on sex preference. For instance if your children are females, no body will help you in the male activities outlined above and the same is true if you have only boys. Boys/men keep cattle while girls/women care for household activities such as food preparation, fetching water, milking cows and care for children. Traditional division of labor has negative effect on household livelihoods.

Marriage system by livestock (Kueen ke hok)

Marriage with a payment of bride price is common and the most form of marriage in the local community. As local informants explained, the amount of a typical bride price paid to girl parents in such case is said to be: 20cattle, 5 oxen/bulls and some times cattle's might be substituted by sheep and goats. However, in case of divorce, initiated by either partner, the bride price paid is repaid by girl parents. This form of marriage has negative impact on household livelihood of the boy parent's.

Polygamy among the male headed households (Kueen maan ti nguan)

There exists polygamy among male headed households in the study area. Out of the 94 male headed households in the study, 42 (44.6%) of them are polygamous, when 9 head of households (6%) have four wives, 7 (4.7%) have three wives, and 26 (17.3%) have two wives. On the other hand, 52 (34.7%) head of households have only one wife each. Moreover, in the case of polygamous families, two and more wives frequently share the same residential houses. As community elders explained, a polygamous family is considered as a single unit based on the contextual socio-cultural and economic patterns in the selected kebeles. That is why the number of household size in the study area is beyond the national average. This has negative influence on the household livelihood and food security.

Others cultural practices

There are other cultural practices which have impact to the household food security. For instance if you kill some body, your parent/relatives should paid 60 number of cattle this is locally called *thong*. This has negative impacts to the parents of the killer. When the girl has get married, the bride price cattle paid will be divide to all parents/relative of the girl locally called *daknihok nyal*. It has negative influence on the sex preference since the parents of the boy will loss more livelihood assets. If boy has reach the adult stage, he has to get the fiend which is legal to whole community the parents of the boy can paid cattle its locally called *luum*. It has negative impact to the household livelihood especially for those who have only boys. If man committed adultery, he has to pay 7 cattle to the husband of the women. It s also known for the parent of the boys to paid cattle during the traditional symbol which is putting six line on the male pace locally called *garri*. All the above culture activities have impact on the household livelihood.

Ruok gaan/cattle for children during divorced

If you divorced you wife, you have to pay cattle for each child based on their age and sex. For example if you divorced your wife with two girl and boy for girl 8years and 6 for boy, you have to give 8cows for girl and 12 cows for boy to the wife parents. Since girls are paying one cow per age and for boys two cows per age. It's forbidden for the women/wife to take the children after

divorced. If she has no child all the bride price paid before will be reclaim and pay back. This has effects to the household livelihood of the both parents.

Table 10: Factors constraining households' livelihoods

Constraint	Total score	Rank in terms of frequency	Total from the sample HH	Percent	Rank in terms of coverage
Flood	251	2	142	94.7	3
Erratic rain	210	4	139	92.6	4
Conflict	166	6	112	74.7	7
Livestock disease	168	5	133	88.6	5
Crop pests	125	7	114	76	6
Traditional farming	256	1	150	100	1
Culture	217	3	150	100	2
Wild fire	97	8	94	62.7	8

Source: own survey, 2011.

Coping mechanisms

It was found that, all households use different coping mechanisms as source of income, food and medicine in bad and normal year in the study area. The coping strategies implemented in the woreda were intensification of livestock and products sale, purchase and consumption of cheaper food (Sweet potatoes & cassava) , intensifying the use of wild fruits, roots and leaves .In addition fishing, collection of grasses& fire wood, local labor/wage employment sale, temporary migration to the relatives, gift and remittance, household assets, hunting, cattle blood and bang (early matured crop at bank of the pond in the dry season).These coping mechanisms were found to be practiced by sample households during food shortage but the volume of practice vary in wealth groups

Wild foods (fruits, leaves and roots)

Wild food collection was found to be the main coping mechanisms practiced by all the sample households. The result indicated that the wild food ranked first with 144 (96%) in terms of volume of practice and second with scored 243 in term of frequency next to livestock product sale with 268 scored. The very poor and poor households depend on wild food more than middle and better households. Wild food in the area are: bow (*Ziziphus*), thow (*balanite aegyptiaca*), koat (*Tamarindus indicus*), lew (*Amorphophyllus*), lap (*wild rice*), mare (*Amaranthus spinosus*), nor (*borrassus aethiopicum*), ngop (*Ficussycomous*), kuc (*Mynatraphylla*), keey (*Nymphea*) and ngony (*Pilostigmathonningii*).These wild food are vary in plant type and the part eaten. For example some wild foods are from grasses, trees, shrub, climber and herb plan types. Fruit, leaf, grain and tuber are the eaten parts.

Livestock product sale

The majority of the households practice livestock product sale as the best coping mechanism. The result showed that livestock product sale was in second rank with143 (95.3%) in term of the volume of practice and first with 268 scored in terms of frequency. Since they do not want to sale the livestock thinking for the future breeding (Key informants).These products is milks, butter, cheese, hide and skin which have high contribution to the household food and income during food shortage.

Livestock sale

Livestock sale is practiced mostly by middle and rich wealth groups in the study area. The result indicated the volume of livestock product sale practiced was very small (212 score, 3rd rank and 135 (90%), 3rd rank) in compares with wild food and livestock product sale. When the cash incomes from livestock products sale were not enough to fulfill the volume of food required to be purchased by household they decide to sale their livestock. The middle and rich households have large family size, so they need large amount of food and the price of cereals has reached the maximum peak in hunger seasons which can not be purchased by the income from livestock products sale a lone.

Fishing

Fishing is one of the coping mechanisms in the area practiced by all households in the study area. The result shown that fishing has ranked 4th both scoring and applicable probability with 135 (90%) to what extent do the community practiced the coping mechanism. It is intensifying and is the source of food and income. During hunger season the contribution of fish as the source of food and income for the poor and very poor wealth group increase. The active age group was found to be actively participating in the fishing activities. There are two types of fish dry and wet. The dry fish can stay for long time in the markets while the wet one can take only short period of time in the market.

Migration

Migration is practiced in the area as a coping mechanism since most of the households migrate to their parents/relatives in search of food and income during food shortage. The result indicated that, the score of migration was 142 with rank 5th in terms of frequency and rand 5th with 108 (72%) of the sample. During the hunger seasons the food insecure households are migrating to their relatives in the adjacent woreda for need of food. Migration to other country to search for income is also observed to the sample community.

Fire wood and charcoal sale

Fire wood and charcoal is one of the coping mechanism practices by the local community’s especially very poor and poor households. The result confirmed that, the score of the fire wood and charcoal sale is 131 with 6th rank and 105 (70%) with 6th ranked in terms of area coverage.

Gift and remittance

The study results indicated that, the score of gift was 102 with 7th rank in terms of frequency and coverage. The sample result showed 85(56.6%) practice coping mechanisms. In similar way, the result showed the score of remittance was 90 with 8th rank and 83(55.4%) with rank 8th. Most of the respondents received the gifts from the middle and rich relatives in the same woreda and adjacent woredas during food shortage. Remittances are practiced by those who have relatives out of the Ethiopia. The majority of the respondents have relative in United States of America (USA) or South Sudan.

Hunting, blood and bang

The result indicated that only 20 (13.3) households in the sample practice the coping mechanism. Hunting is rarely practiced by men during food shortage. Cattle blood is usually practiced by the people with more number of livestock during food shortage. It can be done by knife, taking the blood of 5 liters from the fat cow/ox. Bang is the early matured crops planted long water ponds during the dry season and finished at the green stage for consumption.

Table 11: Coping mechanisms of households

Coping mechanism	Total score	Rank in terms of frequency	Total from the sample HH	Percent	Rank in terms of practicing
Livestock sale	212	3	135	90	3
Livestock product sale	268	1	143	95.3	2
Wild food	243	2	144	96	1
Fishing	179	4	135	90	4
Migration	142	5	108	72	5
Fire wood & charcoal sale	131	6	105	70	6
Gift	102	7	85	56.6	7
Remittance	90	8	83	55.4	8
Wage employment	73	9	61	40.7	9
Household asset sale	40	10	34	22.7	10
Hunting, blood, bang	13	11	20	13.3	11

Source: Own survey, 2011.

Conclusion

The economy of the study area was found to be relying on agriculture. The livelihood strategies and activities of the households were agricultural extensification/intensification such as livestock production, crop production, fishing and forest products. Off-farm and non-farm activities and seasonal migration were additionally found to be livelihood strategy. The livelihood of the households has been affected by various constraints such as traditional farming systems, cultural norms, recurrent flooding, conflicts, erratic rain fall, livestock diseases and infestation of crop pests and diseases. Lack of access to market, credits and saving and agricultural extension was also contributed to the main constraints of the agricultural production.

Cultural norms were also found to affect the household’s livelihood assets. Form of marriage, polygamous among male headed households, traditional division of labour and social network were the main cultural activities constraint the household livelihood. Cattle’s are the main livelihood asset which can be provided for any social activity of the local people in the study area. The study found the household size, cultivated crop land, livestock holding and number of wives as the criteria for wealth category. The study further identified that, traditional division of labour, sex, age, wealth; marital status and educational status of the households have influence on the household livelihood or food security. Women were lack access to livelihood resources and are discriminated in some agricultural activities.

Some households have limited access to off and non-farm activities when their age is below or above active age groups. Due to different wealth groups, poor and very poor with rich and middle wealth groups do not participate equally in different livelihood activities. Households have access to different coping mechanisms such as wild food, fruits, roots and leaves collection, livestock products sale, livestock sale, intensifying fishing, migration to relatives/friends, fire wood and charcoal sale, gift and remittance, labour sale and hunting.

The results indicated that, traditional agriculture alone can not afford the households livelihood, so most of the sample households were participating in off-farm and non-farm activities as the additional food source and income of their family. The study result further identified that human capital, physical capital; financial capital, natural capital and social capital were the factors that determine involvement of households in different income generating activities. Based on the observation made which was in line with results, there were no rural infrastructures such as water schemes, rural roads, electricity, telecommunication and public transports. It was showed by the results that no basic social services institutions like health post/centers, hospital and schools in some selected kebeles. There was poor performance for the existing institutions such as primary schools and hand pump in the sample kebeles. Land is access to all households in the study area and no shortage of land. There is communal grazing land for livestock and no rented land due to access of land to all households. There is no land policy such as land certification. Local

people do not use the land properly for agricultural production due to lack of knowledge.. There is lack of management and conservation of the natural resources by the local people

Recommendations

The livelihood strategies and activities of the households were found to be mainly agricultural extensification/intensification, Seasonal migration and off-farm and non-farm activities. Traditional farming systems, cultural norms, flood, conflict, livestock diseases and crop pests were the major factors constraining livelihoods of the households. There were indigenous coping mechanisms practiced in the area by community during food shortage.

To improve the livelihood and food security of the community the livelihood strategies should be improved. Factors constraining the livelihood should be avoided. The crop production should be improved by introducing oxen plow, tractors and irrigation system to the farmers by regional agricultural Bureau. The community has oxen and various source of water which will be easy for irrigation system to be implemented in the area. Improved seed and insecticide should be provided to the farmers to prevent the infestation of the crop pest and diseases .

Livestock production should be improved by introducing new breeding to the pastoral, by regional government and NGOs operating in the area. Training should be provided to the farmers by regional agricultural bureau on livestock breeding, treatment and management, livestock medicine/drugs, veterinary services or animal clinic should be constructed. There has to be close monitoring of livestock diseases and vaccination to prevent the seasonal disease outbreak. Agricultural extension services should be strengthening through different trainings to stake holders at regional and woreda levels. Follow up and close monitoring is needed to avoid the poor relationship between Development Agents (DAs) and farmers to work closely by the regional Agricultural Bureau. Harm full cultural practices such as marriage by cattle's, social living polygamy, and social risk sharing should be avoided by creating awareness to community by local government and community/church elders/leaders.

For the flood and erratic rain fall constraint, regional and woreda government should provide flood/drought resistance crops to the community. Regional government, non governmental organization and peace building projects have to be operated in the area to work closely with the communities in building the peace within the community and between neighbors. The existing indigenous coping mechanisms should be improved because they have more contribution to the household food and income. Excessive livestock sale, permanent migration of whole family, fire wood and charcoal sale, productive asset sale should be avoided by the local community

References

- Berhanu Adenew, 2006: effective Aid for Smallholders' farmers in sub-Saharan Africa: southern civil society perspectives; Canadian food security policy group, Addis Ababa.
- CSA, 2007 Central Statistic Authority population estimate, Ethiopia, Addis Ababa.
- CSA, 2006: Central Statistic Authority population Data, Ethiopia.
- DFID, 1999, 2000, Sustainable Rural Livelihood Guidance Sheets, London, UK.
- Ellis, 2000, Rural Livelihood and Diversity in Developing countries, Oxford University Press.
- F.Meehan, 2010 Sustainable livelihoods: a lecture note to M.Sc Students in Rural Development, Mekele University, Ethiopia.
- Gambella Disaster Prevention and Food Security Agency, 2008,2009 Multi -Agencies assessment report.
- Gambella Disaster Prevention and Food Security Agency Joint 2009 Mid Meher assessment regional report.
- Livelihood Integration Unit (LIU), BeniShangul Gumuz and Gambella Regions livelihood profiles, 2010.
- MOARD,2009, Minister of Agriculture and Rural Development Food Security programme from 2010_2014.
- Scones, 1998, Sustainable Livelihood, a framework for analysis, IDS working paper number 72, Brighton.
- Tesfaye Lemma, 2003 Diversity in livelihoods frame and farmers strategies in Hararghe highlands, eastern Ethiopia University of Pretoria, South Africa.