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**ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
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**DIMENSIONS AND DETERMINANTS OF POVERTY AMONG
RURAL HOUSEHOLDS:**

THE CASE OF ITANG SPECIAL DISTRICT IN GAMBELLA, ETHIOPIA



By Abebe Zewdu

May 2011
Addis Ababa

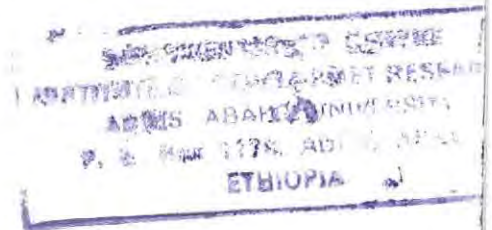
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Title

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Declaration

This thesis is my original work and has not been presented for a degree in any other University and that all sources of materials used for the thesis have been duly acknowledged.

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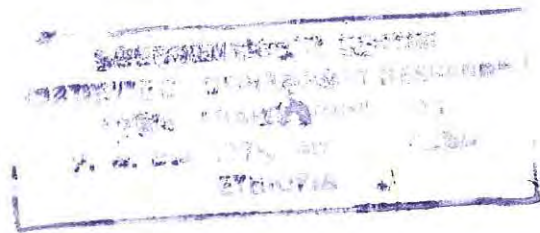
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DEDICATION:
**This Thesis is Dedicated to the Voiceless-Rural Poor in
Ethiopia**



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List of Acronyms

AAU	Addis Ababa University
ADLI	Agricultural Development Led Industrialization
AESE	Agricultural Economics Society of Ethiopia
AEU	Adult Equivalent Unit
BoFED	Bureau of Finance and Economic Development
CBN	Cost of Basic Needs
CDS	College of Development Studies
CSA	Central Statistical Authority
DCM	Drought Cycle Management
DFID	UK Department for International Development
DPPA	Disaster Prevention and Preparedness Agency
DRR	Disaster Risk Reduction
EEA	Ethiopia Economic Association
EPI	Expanded Program for Immunizations
ESDP	Education Sector Development Program
FAO	Food And Agriculture Organization
FDRE	Federal Democratic Republic of Ethiopia
FGDs	Focus Group Discussion
FGT	Foster-Greer- Thorbecke
FHHs	Female Headed Households
FSP	Food Security Programs
GDP	Growth Domestic Product
GNP	Growth National Product

GoE	Government of Ethiopia
GPNRS	Gambella Peoples' National Regional State
GTP	Growth and Transformation Plan of GoE (2010/11-1214/15)
Ha	Hectare
HDI	Human Development Index
HICES	Household Income and Consumption Expenditure Survey
ICT	Information and Communications Technology
IDPs	Internally Displaced Peoples
IDR	Institute of Development Research of Addis Ababa University
IGA	Income Generation Activity
ILO	International Labor Organization
IMF	International Monetary Fund
KII	Key Informant Interview
mal	Metre Above Sea level
MDGs	Millennium Development Goals
MoA	Ministry of Agriculture
MoFED	Ministry of Finance and Economic Development
MSF	Medicine San Frontiers
NCFSE	New Coalition on Food Security in Ethiopia
NGOs	Non-Governmental Organizations'
PADETES	Participatory Demonstration Training and extension System
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
PPP	Purchasing Power Parity

PRA	Participatory Rural Appraisal
PSNP	Productive Safety Net Programme
SDPRP	Sustainable Development and Poverty Reduction Program
SNNPR	Southern Nations, Nationalities and Peoples Regional State
SPRP	Sustainable Poverty Reduction Strategy Papers
SPSS	Statistical Package for Social Sciences
TLU	Tropical Livestock Unit
UNDP	United Nations Development programme
UNHCR	United Nations High Commissioner for Refugees
USD	United States Dollar
WB	World Bank
WFP	The United Nations World Food Programme
WMS	Welfare Monitoring Survey

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Dimensions and Determinants of Poverty among Rural Households: The Case of Itang Special District in Gambella, Ethiopia

Abstract

The current paper was designed to study the dimensions and determinants of rural household poverty in Itang special district of Gambella National Regional State of Western Ethiopia. Rural household poverty is usually determined by socio-economic, demographic, institutional and natural factors including vulnerabilities to disaster risks.

The study focuses on features and factors determining household poverty in three rural kebeles, where the Annuak and Nuer ethnic groups reside. A total of 89 households drawn from Itang kir, Pukumu and Badel Kebele Administrations were involved in the study. The methodology employed in this study includes descriptive statistics and explanatory analysis based on the data collected through qualitative and quantitative methods. In particular, household survey, focus group discussion as well as key informant interview were used as part of collecting primary information. The Cost of Basic Needs approach was employed to set a poverty line. Besides, the Foster Greek Thorbecke method of poverty indices was employed to find out the level, incidence and severity of poverty among the poor and non-poor categories of the study households.

This study showed the absolute poverty line of the households is Birr 1662.65 with the food poverty line of Birr 1334.96. Based on the findings, the total head count index is 0.438 which means 43.8 percent of the sampled households fall under the poverty line. It also indicated that the per capita consumption expenditure distribution, non-food expenditure per AEU of sample households, educational, age and sex of sampled household heads varied for poor and non-poor at less than 1% statistical level. There is a significant differences in poverty level among the poor and non poor sampled households in terms of factors such as the size of cultivated land, remittances, asset possession, income from off-farm and/or livestock. On the contrary, the poor study households have relatively low average family size, low dependency ratio and fewer hours of walking distance to market as compared to the non-poor; and thus the findings do not support the assumption stated in the research hypotheses. Based on the logit regression model out put, the study revealed that the total households' income was significant at less than 1% probability level. Household size and household head age were found to be significant at less than 5 % while remittance and distance to the markets were significant at less than 10 % probability level. The remaining two variables, namely overall dependency ratio and access to extension service were not statistically significant.

Meanwhile, the current study found out that recurring hazards such as inter ethnic conflict and floods which quickly turned in to disaster and subsequently incapacitates households' resilience and contributes in keeping the study households and communities under the vicious cycle of poverty. Practices of social obligations like excessive dowry payment, sharing of household resource as well as alcoholism and disruptions of social cultural assets caused from a myriad of internal and external factors were found disincentive for saving and investment thereby contributes its own share in exacerbating the overall living conditions.

This paper concludes by proposing a range of short-term and long-term intervention options to reduce poverty among poor households. Among others, the study highlights the need to consider policy and programs that seeks to address the structural causes of poverty and its vulnerabilities to attain food self sufficiency at household level thereby ultimately reduce poverty and its manifestations among the population in the study district.

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CHAPTER ONE: INTRODUCTION

1.1 Background

Poverty is the most challenging and pressing public concern in many developing countries. It has become top on the agenda of world leaders. With its dynamic and multi-dimensional causes and features, poverty has become more difficult to reduce. As such international communities, governments and donors have given it due attention more than ever. And yet the significant majority living in the vicious circle of poverty is from Sub-Saharan African nations including Ethiopia (United Nations, 2009).

Poverty and hunger remains endemic in Ethiopia where its people are still struggling to go out of poverty trap. In 2003, the country ranked 153 out of 154 nations in GDP per capita. (World Bank, 2005). The 2007 census result put the population at 73.9 million out of which 31 million are poor. About 8 millions of the poor are identified as the poorest among the poor (Degefa, 2010).

Despite reports of MoFED (2010) in the decline in the proportion of population below the poverty line from 38.7% in 2004/05 to 29.2 % in 2009/2010; the absolute number of people falling in to the quagmire of poverty has increased. Rather there seems no as such significant reduction in poverty by 2009/10. According to Getnet (2010) the actual number of people living in poverty has increased from year to year. Furthermore, the severity, incidence and depth of poverty seem beyond control. This shows that the majority of Ethiopians are still living below the poverty line and rural poverty constitutes the major form of poverty.

The nation being agrarian and its huge share in the economy; agriculture has a direct bearing in other sectors including poverty reduction. According to World Bank (2005), a decade of 4.1% agricultural growth would reduce the current poverty head count index by about one third and with out this it is unlikely for Ethiopia to meet the MDG.

On the other hand, the Ethiopian agriculture is characterized by structural constraints such as fragmented and small size of holding, subsistent nature and rain-fed agriculture. Due to this and a myriad of other factors, the sector has failed to bring fulfill even its primary task of feeding the nation, as the country suffers from annual food deficit. For instance, around

2.8 million people are estimated for emergency food aid for 2011 (MoA, 2010). It is also the rural people, who make agriculture as their livelihoods, are heavily suffering from chronic poverty and destitution. Hence, poverty and food poverty in particular continue to be widespread.

In recent times, the share of agriculture has showed reasonable decline; and its contribution from GDP has declined from 51.7% in 1997/98 to 42.3% in 2008/09 with a fall of 9.1% (Getnet, 2010). This growth is, however, contentious due to irregularities in the data, Dercon and Hill (2010) argued that the recent yield expansion recorded by CSA is of a scale that suggests Ethiopia is experiencing the fastest green revolution in history. The extent of growth attained the escalation of domestic food prices well above the world prices, coupled with low change in input use leads to question the data base on agriculture.

Meanwhile, experiences in the country showed that the recurrent food insecurity caused from heavy reliance on rain fed agriculture has been quickly turned into famine, which, in turn perpetuates the vicious cycle of poverty at household level. It is a country frequently hit by disasters mainly famine and drought and thus faces subsequent food short falls which in turn aggravates poverty conditions. The Human Development Index of the UNDP stated that the predicted poverty with no drought risk can only put 33.1 % of the Ethiopian population in poverty, a decline from 47.3 % of population in the case of possible impact of drought risk (2008).

Meanwhile, the MDGs Report of Ethiopia (2011) indicates that climate variability in the country, especially those related to floods and drought could be potential threats to the achievement of Goal 1 of MDG. Particularly Ethiopian agriculture is extremely sensitive to unpredictable climate variations. With one of the world's highest rates of rainfall variability, farming in Ethiopia is unpredictable (World Bank, 2010). It is apparent that this situation can compromise the achievements in poverty reduction and other welfare indicators such as children education, nutrition and health coverage. In fact the nation encountered around fifteen disasters during the period from 1996-2010 (FAO, 2010).

There is a strong relationship between chronic food insecurity and poverty in the sense that food poverty is the outcome of chronic destitution. Chronic poverty leads households and nations to various forms of vulnerabilities and reduces their capacities to resilient to shocks and disasters.

In response to the reduction of widespread chronic poverty and attaining development, the government of Ethiopia in collaboration with donor communities took joint initiatives. Among others, the ADLI, the Interim SPRP; SPRP; MDG; PASDEP; and very recently the GTP; and other crosscutting national policies and strategies are the major ones with the goals of bringing rapid and sustainable growth and reduction in households' poverty through increased food security and improved basic social services.

Despite recent year's claims of overall growth attainment in the country, the country has not yet reduced poverty. Efforts to achieve food security and reduce overall poverty are still the nation's greatest challenge. This is partly due to the fact that the root causes and features of poverty are multifaceted and complex; its panacea is so elusive and requires multidimensional analysis and diagnosis. A thoroughly analyzed and well designed pro poor development policy and programs based on improved and deeper understanding of poverty and livelihoods contexts could be one way out of poverty notably food poverty.

1.2 Statement of the Problem

Ethiopia emerges as an equal, but equally poor society as compared to other sub Saharan nations (World Bank, 2005). For instance, the actual number of poor population in the country increased from 25.6 million in 1995/96 to 27.5 million in 2004/05 (the later excludes the poor from Gambella region where there is no HICE survey carried out since 1999/00).(MoFED, 2008). The nation's poverty and chronic food security for the last four decades, has made the country to depend on external food assistance.

Meanwhile, the Gambella region has experienced 41.8 % (in 1995/96) and 54.6 % level of rural poverty (in1999/00) showing tremendous increment in poor people from 65,170 to 106,555 for the same period (MoFED, 2008). During this period the national average has slight declined from 47% to 45% for rural population. This might already have declined to about 32 % in 2009/10 (MoFED, 2010).

In 1990, the region had 61.8 % total food head count while the national average was 41.1 % which is the highest among all regions but Afar. This is an increase by 87.84 % of number of poor people from 1995/96 (32.9 %) for the region while the national figure showed a decline by 12.55 % for the same period (MoFED, 2002).

The poverty and livelihood situation in the region is not an exception to Itang, the study district. The study communities are highly vulnerable to food insecurity and mostly depend on relief handouts as coping mechanisms. In 2006 alone, out of the total 30,950 flood victims in the region, 12,250 (i.e. 40 %) were from the study district. Of the total 37,100 food aid beneficiaries of Gambella region identified for 2011, 6,307 (17%) of them are from the study district of the region (MoA, 2010). Besides, chronic food insecurity that extends at normal time up to five-month period is common in the district (UN, 1998).

The low agricultural productivity and production resulting from backward farming practices coupled with households motivations to work and value for wealth accumulation or dis-accumulation, are considered to be as the main impediments for less socio-economic development of the region in general and the district in particular. Undeniably, apart from poor farming practices, poor social and physical infrastructures as well as maladministration which are supposed to contribute to communities' vulnerabilities to different disaster risks such as floods and inter ethnic conflict thereby play a significant role in aggravating the vicious circle of poverty destitution. The different livelihood strategies followed by the Anywaa and Nuer communities has also led to competing diverse interests on access to and control over natural resources notably water and land.

Given the continued rates of food insecurity and severity of poverty in Gambella region in general and the study district in particular, area focused and context specific poverty studies that take into account the socio cultural, economic, geographic and demographic particularities will help to better identify most vulnerable so as to target interventions.

So far no adequate scientific study has been conducted to capture the dimensions and determinants of rural poverty in the Gambella region in general and Itang district in particular. The 2004/05 national HICE survey were not carried out in Gambella and policies and programmes designed would not reflect the realities at the ground; whilst an in depth area-focused local level study is lacking.

On the other hand, the researcher felt that the poverty level of the population under study is intolerable though it is complex and elusive to understand the overall situations. Due to recurrent conflict and insecurity, unchecked immigration of population from South Sudan, unskilled human capital and its resultant effect in low socio-economic performance put the region one of the worst, least developed and marginalized one. Despite its enormous

natural resources potential such as land for water for agriculture, the majority of the region's population lives in abject poverty and malaises of livelihoods.

Precarious food shortage, very limited or inexistence of infrastructure and social services, marginalization, environmental problems like moisture stress, floods as well as conflict; and its related negative outcomes and generally poverty has become the picture of the region for the last two to three decades (Tsegahun, 2007, Dereje F, 2004). Despite many faced problems of chronic food shortage on annual basis, live in uncertain and insecure environment and above in depth of poverty and rudimentary way of life prevailed in the area, there is no any attempt made in the area to study the issues related to poverty.

Therefore, a multi dimensional analysis of rural poverty focusing on sets of endowments, capabilities and vulnerability to disaster risks requires an in depth area-focused research. An improved understanding of the current situations with regard to constraints and opportunities will pave the way for strategic lessening of rural poverty in the study areas. Accordingly, this study has been conducted with the main aims of measuring poverty in Itang community and examining the relationship between poverty and different socio-economic characteristics among the community under study.

1.3 Objectives of the Study

The objective of the study is to assess the overall poverty, challenges or vulnerability faced and responses followed by the study households of Itang special district. Specifically it aims to:-

- ▶ determine the incidence, depth and severity of household poverty in Itang area,
- ▶ identify the determinants of rural poverty in the district,
- ▶ to identify the hazard, vulnerabilities and available coping strategies employed by the study households.

1.4 Significance of the Study

This study, which attempted to assess the main determinants and characteristics of rural poverty among selected households in Itang special district, is expected to contribute to knowledge of poverty from area specific and local context in study area in particular and the region in general. Furthermore, it will possibly to play a role in policy and practices

change aimed at improving the overall living standard of sedentary farming and agro-pastoral societies.

1.5 Scope and Limitations of the Study

The study was carried out in Itang special district in Gambella Regional State of southwest Ethiopia. However, owing to time and resource constraint, the study was conducted in three selected *Kebeles* of Itang special district. Households are unit of analysis in this study. Even if the problems of poverty are multi-dimensional and dynamic, this study emphasized mostly on issues and analyses at the level of households by taking 'snap-shot' at a particular period of time based on cross-sectional data. Notwithstanding useful, such study does not capture the complex and dynamic nature of rural poverty.

Whilst the researcher has tried to supplement with up to date information on the non-income poverty indicators and other vulnerability factors affecting the study communities; the original data of household survey were initially collected in 2008 and supplemented in 2011; coupled with the need for comprehensive data to come up at reliable findings is one of the major limitations of the study subject and area. Meanwhile, in order to avoid major gaps in the data, the researcher put efforts capturing the new developments in the study kebeles through field observations, key informant interviews, focus group discussion as well as review of recent secondary sources. During data analysis, the researcher encountered some missing values that are useful to get more reliable information. Some vague answers are omitted not to draw wrong conclusions.

1.6 Organization of the Paper

The study was organized in to six chapters. The first chapter dealt with the introduction, background about Gambella and its livelihoods, statement of the problem, objectives, research questions; significance, scope and limitations of the study.

The second part of the paper was about the theoretical and empirical literatures including basic conceptual and measurement issues related to the subject of the study available in Ethiopia and other countries. The third part discusses on methodological issues employed. The interpretations of the findings and analysis presented under chapter four and five. The final section draws concluding remarks and possible policy and program implications.

CHAPTER TWO: REVIEW OF THE LITERATURE

2.1 CONCEPTUAL AND THEORETICAL LITERATURE

Different international organizations developed explanation to poverty. Among others is the International Labor Organization (1944) which stated that "Poverty anywhere is a threat to prosperity everywhere." On the other hand, in its World Development Report of 1948-1949, the World Bank defined poverty based on the per capita income of individuals in comparison with USD; and world poverty by means of comparative statistics. In addition, industrialized countries believed that mere economic growth would be a panacea for poverty (David, 1994).

However, at the end of the 1960s, the economic growth based on modernization development perspective western world did not bring better living standard for the people of the third World. Absolute poverty-as living lower than a certain minimum level-became clear that per capita income was not good indication of the living conditions of people who were not part of a money economy. This had called for a reorientation of poverty in terms of quality of life. A person who has few assets and no regular source of income, and who therefore, struggles to meet his or her basic needs (and the needs of any dependants), is normally considered poor.

On the other hand, according to the World Bank and others, there are two definitional problems (1) the failure or difficulty in setting the minimum basic needs essential for survival coupled with the evolving of absolute and relative conception of poverty; and (2) the information chosen to illustrate the existence of poverty and to differentiate between groups of poor people as it is also embedded with value and politics and subjected to change.

Generally, poverty has a multi-dimensional facet; and is characterized not only by income status of households or per capita food production, but also by other non-monetary social dimensions like inadequate food and calorie intake and lack of access to health, nutrition, education, water supply and sanitations. Thus, poverty in general could be defined as to include all dimensions of the hardship people face (World Bank, 1994) in different income and employment categories and under varying contextual settings.

2.1.1 Conceptual and Measurement Issues in Rural Poverty

A clear understanding of the concept of poverty is an essential element to better explore its underlying causes and dimensions at household level. In order to understand poverty, it is also important to understand not just who is poor, and along what dimensions, but also why they are poor. Thus, the physical, policy and social environments are framed to show that the household poverty issues cannot be seen in isolation from broader factors. There are a number of conceptual approaches used in defining poverty. Among these, the two major are Absolute poverty and Relative poverty.

Absolute poverty (also known as extreme poverty) refers to quantification of the number of people below a poverty threshold, the line, which, is all nations of the world, are subjected to the same standards for meaningful comparisons. This poverty threshold is independent of time and place, which means, the same in different countries. The measure looks only at the individual's power to consume, and it is independent of any changes in income distribution. Absolute poverty can only be measured when all consumed goods and services are counted and when PPP-exchange rates are used. In this case, an individual can be considered as poor when some basic needs are unmet (Getahun, 2003).

The poverty line, on the other hand, is the minimum level of income deemed necessary to achieve an adequate standard of living or to maintain a tolerable life. Determining the poverty line is usually done by finding the total cost of all the essential resources that an average human adult consumes in one year. The World Bank on the other set \$1 a day uses as poverty threshold (World Bank, 1990).

Relative Poverty, on the other hand, measures inequality which does not classify individuals or families as "poor" by comparing them to a fixed cut-off point, but rather by comparing them to others in the population under study. If a society gets a more equal income distribution, relative poverty will fall.

2.1.2. Other Forms of Explanations about Poverty

The explanation of poverty can also be grouped under five categories. This classification is mostly followed by social scientists like sociologists and Anthropologists. The first approach accords much emphasis individual responsibility for one's own state of poverty.

It is due to individual action or inaction for creating poverty. However, this kind of assumption based on the rational choice theory whereby individuals control their own fate and action; and are therefore the cause of their own poverty may not be sound as others argued the important role poverty play in contemporary global society.

The second theory attaches the possible explanation to culture where by poverty is created by over transmission of generation of values, beliefs, norms, life view and skills held by individually. In order to explain poverty most social scientists particularly sociologists developed a concept of “culture of poverty” and the effect of place of poverty. This is to refer that the reasonable adaptation of poor to circumstances, but the culture can be changed by changing the conditions- i.e. the culturally available and politically opportune was of explaining poverty. It tends to focus on external (to the individual) explanation of poverty such as place of residence, class, ethnicity, race, economic power structure, and related contextual variables.

The third perspective to explain the cause of poverty revolves around social, economic and political distortions and discrimination. Here a researcher deals with not to the individual but to the socio economic and political factors that limits people’s opportunities and resources that would enable to escape out of poverty. For instance individual lack of job mean he/she would loss confidence, motivation to work and depression.

The geographical or location proximity to services, dis-investment, urban-rural linkages, core-periphery, access to natural resources, diffusion to innovation etc is the fourth methods of explaining poverty. The last approach uses all the first four unit of analyses and come with eclectic model. The analysis process at this stage starts from the individuals and communities as caught in cycle of opportunities and constraints and explores the vulnerabilities and opportunities and the efforts of researchers and practitioners should to break the trap of poverty (Ted, 2006).

These group sees poverty as seen not only as a shortfalls of the needs of individuals or households to command economic resources where most economists concerned, but also the capabilities such resources give to individuals to fully participate in a society (Sen, 2000). These individual capabilities are inputs to enhance participation in every milieu and thus makes them functioning for meaningful well being. Hence much emphasis is

being given to factors which inhibits social, economic and political participations and thereby reduces human capabilities and increase level of poverty.

Philippa (2004) analyses qualitative approaches in understanding the nature and degree of multi-dimensionality of income and other capability deprivation. The categories of *always poor*, *usually poor*, *churning poor*, *occasionally poor*, and *never poor* are used to classify households and to describe poverty transitions and processes. According to Philippa, conventional poverty analyses have tended to rely on cross-sectional data but this is not possible when the focus is on long-lasting poverty, which can be established retrospectively. There are also methodological problems around how to deal with premature deaths and with life course and inter-generational poverty.

With regard to measurement, Hulme and Shepherd argue that the assets and asset change must play a larger role in poverty and vulnerability analyses. They suggest that the length of deprivation episode is likely to correlate with its severity and with the number of dimensions involved. There are problems in establishing the current global incidence of chronic poverty at individual level. The HDI combine measures of GDP, life expectancy and literacy applied at national level.

Sen (2000) sees poverty as capability deprivations in terms of lives people actually lead and the freedoms they actually have. Expansion in human capabilities leads to increase in productivities and earning power thereby contributes in enriching human lives and in making human deprivations more rare or less acute (2000). Although poverty analysis from both income and capability perspective enables to show variations among households; the latter is more valuable as it generates opportunities and power relations information based on gender, age, location (proneness to floods, conflict or drought) among members with a household which would be converted to functioning .

Sen (2000) argued that poverty analysis from the perspective of capability deprivation instead of income deprivations enables one to see variations among family members as for example relative deprivation in income may lead to absolute deprivation in terms of capabilities mostly in affluent societies or nations.

Poverty as capability inadequacy is the necessary condition and income deprivation is a sufficient one as the latter is detrimental to be more productive and earn better income. In other words, if one has access to better education and health care which could improve

quality of life; it also increases person's ability to earn income and be free from income poverty. The same author concluded the fact that in order to understand the cause and nature of poverty; the analysis should begin from expanding capabilities (i.e person's freedom to achieve alternative functionings or real opportunities) to '*functionings or actual achievements*' through an increase in productivities and earning power (Sen, 2000).

2.2. REVIEW OF MAJOR EMPIRICAL STUDIES ON POVERTY IN ETHIOPIA

The two major poverty/welfare related nationwide government lead major studies in Ethiopia are the Welfare Monitoring (WM) and Household Income and Consumption Expenditure (HICE) surveys. The WMS of the country that bases the poverty line on consumption of the normative 2200 kcal per adult found out that 50 % of its population is living in food poverty 55 % from rural areas (MEDaC, 1999/00). The same survey revealed that the nation spent 52.5% on food, 18.4% on housing and household goods and services and 13.9 % consumption expenditures (FDRE, 2002).

The study of HICE (1999/00) and WM (2000) surveys carried out by the CSA reaffirmed that poverty in Ethiopia is highly related with the size and composition of households, literacy level of the household heads, dependency ratio, asset ownership and occupations and a host of other intuitional factors that provide access to public services (FDRE, 2000).

Poverty related studies in the country found out that education and health has played a pivotal role in reducing poverty. Ethiopia with over 77 million populations the majority still is illiterate and subjected to different health problems. In 2004, only 27 % of the population read and write and the disparity among the rural and urban are 72 and 22 %s respectively ((MoFED, 2002). The variation is also very significant between men and Women. For example the 2004 DHS revealed 57.5 % and 22.8% of literacy among men and Women in Gambella Region respectively, (Macro International Inc. 2008). This shows that both poverty and education has symmetric relationship.

The health condition of households has also impact on individual well being and his/her potential productivity. According to the health information survey about 27 % of the rural population reported sickness and only 19% for urban areas (FDRE: 2002:12). The 1999 WM survey asserts that more than two-third of the respondents reported they neither seek

nor get medical treatment at all. The prevalence of chronic malnutrition reached 57 % by 1999/00 and stunting constitute 31.3 % during the same year (FDRE, 2002).

Shelter is also another aspect that shows the welfare of individuals. Here the number of rooms, family size, use of latrines and quality of the house determines its acceptable standard. The WM survey 1999/00 has indicated that 85 % of the households in Ethiopia live in very low quality houses made of wood and mud walls with thatched grasses and only 17 % use latrines (FDRE, 2000).

Household asset possession can also determine the level of poverty. Particularly the productive assets can help households to build their capacity to resilience to shocks and potential vulnerabilities. Household properties such as bed, radio etc could also be considered as indicator of welfare conditions depending on the local context of the study area. Due to the long-standing chronic famine and subsequent food insecurity and thus destitution has lead significant rural households with very low asset possessions. Ownership of livelihood or productive assets such as land holdings, cattle populations, other means of income diversification become another key determinant of welfare.

In Ethiopia, the major livelihood options being practiced in rural areas includes farming, livestock, and mixed farming as well as off farm economic activities. Other coping strategies such as hunting and gathering, fishing and apiculture also practiced in different pocket areas of the country mainly in the lowlands. Another study indicated that the type of crops (either stable or cash) produced by households and size of land cultivated have a tendency of affecting poverty significantly. Farming assets such drought power has significant effect in reducing poverty through the attainment of household food security and productive asset building.

Labor migration, remittances and small scale trading are also other survival mechanism to augment household subsistence. According to the findings of HICE Survey of 1999/00 own agricultural activities in rural areas and wage and salaries and over time payments in urban areas are the major sources of income in Ethiopia. The off-farm activities in rural households tend to determine the poverty level as it supplements subsistence. Rural people usually engaged on such activities mostly at times of shocks and they consider it as strategies coping with the risks. Stephen (2000) showed that an engagement of households in off-farm activities increase the probability of poverty at household level by 11 %. This

is partly because the rural off farm activities are not promising and not viable choices for people to follow.

The distance to education and health centers, and water supply points, road network, power supply has an impact on the over all wellbeing of individuals and households. The findings of the national survey reported that over 25% of the rural population in Ethiopia walks an average of six kms for primary schooling. The distance is even more for secondary education. The same also holds true for health and water supply services. For instance, only 15 % of the rural communities receive potable water. Nevertheless, there has been an improvements gained in service sector provision mainly on education and health albeit further investigation still needed whether the expected services and facilities are there or not. This is because the set up of centers and reduced in distance does not guarantee the availability of and utilization of the standard services.

On the other hand, the rural and urban industrial linkage has great importance on technology transfer, market facilitation, resource movements crucial for balanced growth between the rural/agriculture and urban/manufacturing sector. The proximity of villages to urban centers has also paramount importance in explaining poverty though studies in Ethiopia revealed the insignificant impact of urban centers on rural poverty reduction owing to the fact that urbanization is low in the country (FDRE, 2000).

It is obvious that source power is one of the major problems of Ethiopia. Rural households use fuel wood for cooking and other purposes. A study showed that well over 68 % of the households in the country use fuel-wood as source of energy and less than 1 % utilizes electricity for household cooking consumption. This implies that there is still great pressure on the already fragile deteriorated environment.

In recent days poverty related assessments has become a subject of study among academicians, executives and NGOs. The analysis of poverty is still a complex subject that requires further multi dimensional assessments both at micro and macro levels.

The HICE surveys mainly furnishes nation wide comprehensive information on sources and levels of house hold income, trend and patterns of expenditure, level of consumption assets of households and demographic characteristics. On other hand, the WM survey findings complements availability of indicators of changes in welfare via providing information on social dimensions of poverty. The 1995/96 HICE survey found out that the

country per capita income was \$167 and of these the rural comprises \$157 and 60% of the house hold income reported spent on food and the average daily calorie intake was 1954 which is below the normative standard.

The studies carried out by Dercon and Krishnan (1998), 2000, and Dercon (2000 & 2001) are another sources of poverty data in Ethiopia. Despite the limited sample size they used because of its drawbacks of lack of representation for wider area purpose as Dercon himself mentioned, their analysis of poverty was thorough and careful. It highlighted the existence of diverse experiences across the sample village that indicates the need for careful study of poverty among regions and communities to elicit the impact of different poverty policies.

Another research by Philippa(2000) commissioned by the DFID commented the need for mapping out of areas or population groups which identifies declining, stationary as well as improving in poverty situations. Fitsum and Stein (2003) on their study of poverty in Tigray, Ethiopia concluded that in spite of the 5 % increase between 1997-00, the incidence of poverty in the region has largely remained the same. Fitsum and Stein (2003) also found out that human capital resource, physical asset endowments in terms of family size and livestock holdings have inverse relation with poverty. Household labor access to services seems to have no significant effect on welfare of households while factors such as political instability or risk and weather conditions like irrigation have negative correlation with poverty reduction. Another study carried out by Woldehana and Alemu (2000) using the 1999/00 sample households of HICE survey indicates that the incidence of poverty has remained unchanged albeit there was significant reduction in intensity and inequality of poverty.

Desalegn R and Aklilu (2003) in their study of rural poverty in Ethiopia commission by World Bank coined three concepts to describe the vicious chronic state of poverty in Ethiopia: (a) terminologies that indicates no future (e.g. “life is hand to mouth; we envy the dead”); (b).terminologies related to hopelessness and desperation ; and (c) hunger and food insecurity (“we live on coffee; we eat when we have the means and go to bed hunger when we do not”).

It is fair to conclude that poverty in Ethiopia is widespread, chronic and is continued with greater magnitude. As chronic food insecurity and poverty are highly interrelated, the

success on the former could reduce poverty. However, the various efforts of Ethiopia in achieving food security at household level; to reduce food poverty and poverty as a whole are still a daunting challenge. Hence, rural poverty will even worse with the failure of food security. The long-standing coping mechanisms of rural communities seem that, there will be no longer work because of productive asset depletion and is of course resulted from several decades of drought and thus famine, and other factors.

Despite the on going studies and radical and incremental policies of Ethiopia, poverty will continue to be a subject of discussions and debates among the academicians, development practitioners, policy makers in the fight against poverty. The 1999/00 HICE survey estimated 84.5 % of the total population while the level of poverty was about 90 %. However, the same survey and others found out certain improvements have been registered in non-income social dimensions of welfare such as nutrition, literacy and primary school education participation. Based on the WM survey results there seem declining in poverty in some areas and at sometimes increasing absolute poverty in different areas at the same or different times(CSA, 2004).

2.3 LIVELIHOODS AND POVERTY IN THE GAMBELLA REGION

The region of Gambella, with 34,063 square kms size, being flat and humid, is also rich in major perennial navigable as well as irrigable rivers. The annual population growth rate of Gambella Region is exceptionally highest in the country with 4.1 while the national average is 2.6. Meanwhile, a total of ten livelihoods identified based on communities' common means of living, market access and cultural practices. These livelihood zones comprises farming and livestock rearing, fishing, beekeeping, or a combination of farming mixed with livestock, or with fishing or beekeeping and/or livestock mixed with farming or fishing. Hunting and gathering are also practiced as means of living (Tsegahun, 2007).

In 2007, the region has 63,692 housing units where 44,612 belong to rural residents. Of the total rural housing units, 97.8 % reported to be made up with wood and mud thatched with grass or wood only; 10 % with corrugated sheet, 59 % with having single room; and 82 % of the units do not have toilet facility. Fuel wood use for cooking comprises 83 % while over 66 % of the rural housing unit uses unprotected water sources and rivers (CSA, August 2010). According to the 2005 Demographic and Health Survey, around 44 % of the rural population falls under the lowest wealth quintile in terms of household assets

such as bicycles and radios and characteristics of the household including access to water and sanitation facilities. On the contrary women malnutrition is among highest category.

From 2002/03 to 2004/05 cereal production decreased by 58 %, which is a sharp decline as compared to the three consecutive years of 1998-2001 whereas 11% increment was observed. The increment of population in need of food aid from year to year, coupled with reduction in agricultural productivity and production, indicates the severity and widespread rural poverty in the region.

Meanwhile, annual report of the region showed that some of the basic non-income poverty indicators such as literacy, health, water services show improvement at least in terms of coverage. The same source reported that the primary school education and health services coverage for region were 106% and 73.16 %, respectively in 2004 though the quality of data can be questioned (GNRS, 2006). Again the quality and equitable distribution of the services at regional level needs further investigation as these indicators of welfare does not necessary substantiate improvement in poverty reduction at household levels.

2.4. ANALYTICAL FRAMEWORK

2.4.1 MEASURING POVERTY INDICES

In measuring the poverty level three interrelated concepts appears in literatures. These are firstly poverty as to whether households or individuals have enough resources or abilities to meet their needs. Secondly, inequality in the distribution of income, consumption or other attributes across the population and lastly actual and potential vulnerabilities to risks to fall in to the trap of poverty.

2.4.2 MEASURING POVERTY CONDITIONS

The manifestations of poverty includes issues like individual capabilities to meet daily needs via comparing income or consumption, education and other factors with the predefined poverty line, following the income monetary and non monetary distribution and inequality and finally assesses if there is any individual or household vulnerabilities.

The next step is estimating poverty line for the study area. To do this one has to follow the following three steps: selecting the relevant dimensions and welfare indicators, a poverty line to group the population of concern as poor or not poor and lastly and an aggregate

poverty measures. As indicated by Getahun (2002) there are three approaches to set poverty line: Calorie Intake (*when poverty line is set as the minimum 2200 calorie requirement for survival*); Food Energy Intake (*the level of per capita consumption at which people are expected to meet their predetermined calorie intake*) and Cost of Basic Needs (*the poverty line set based on the basket of food stuffs consumed by the poor*). The food energy intake method of measuring absolute poverty where the poverty lines are set by computing the level of consumption or income at which households are expected to satisfy the international standard of nutritional requirements of 2,200 kcal (Foster, Greer and Thorbecke, 1986).

However, each of the methods has their own merit and demerits in analyzing determinants and dimensions of poverty. The first method considered poverty in terms of malnutrition and not the cost of earning calorie necessity thus unlikely to expose destitution. On the other hand, the food-energy-intake tool is relatively better as it goes beyond from the definition of mere nutritional concept to inclusion of monetary values.

The cost of basic needs approach is better among the rest as it includes the normative calorie intake, the food basket as valued by the local market and its room for allowance of non food component share of the budget expenditure of households. Due to its representativeness, consistency in poverty threshold across regions or areas and its inclusion of monetary value and suitability for modification, the cost of basic need method is better among the three (Getahun, 2002).

2.2.2 Measuring Vulnerability: It refers to the main dimensions of wellbeing of an individual or household in terms of existing or potential exposure to risk likely being poor. This is so because it affects people's behavior on investment, production pattern, coping strategies and perceptions of their own living conditions (Getahun, 2002). The disaster risk reduction analytical framework comprises of hazard, vulnerability and capacity assessment will be used to analyze possible disaster risk. In this case vulnerabilities of study households to disaster risk can ranges from socio cultural, economic and political factors to environmental and demographic issues.

2.4.3 AGGREGATE MEASURE OF POVERTY

It is apparent that poverty is measured in terms of poverty line. Poverty line, on the other hand, can be constructed based on the definitions and a host of factors such as preference,

prices, etc. Once the poverty line is set in accordance with the definition (mostly the absolute poverty) then the next step is constructing the aggregate poverty indices. These include the Head count, the Poverty Gap and the Squared Poverty Gap indices. The measures are defined for $\alpha \geq 0$, and α is a measure of the sensitivity of the index to poverty. The parameter α determines the weight given to the severity of poverty.

The Head Count Index (P₀) synonymous with the Incidence of Poverty: This is an aggregate poverty measure computed by using information about poverty status based on poverty threshold. It is the ratio of the number of the poor to the total population in any given area. Headcount index is defined as the proportion of the population whose measured standard of living is less than the poverty line though this index does not capture differences among the poor. It is the share of the population that can not afford to buy a basket of goods (food and basic non food items).

The mathematical model of head count index (P₀):

$$P_0 = q/n \dots\dots\dots (1)$$

Where: P₀ is the head count Index result,

q: is the number of people earning an income below the poverty line, and

n: is the total number of individuals in the community.

The Poverty Gap Index (P₁) or Depth of Poverty: is the average share of the minimum standard of living the poor is lacking. It measures the extent to an individual is below the predefined poverty line or the gap or total shortfall of income that would be needed to bring the poor the minimum level of living. In other words, it estimates the total resources needed to bring all the poor to the level of the poverty line or used to renormalize the income gap of those household who are beneath the poverty line.

Therefore, Poverty Gap Index computed as follows:

$$P_1 = \sum_{i=1}^q (Z-Y_i) \dots\dots\dots (2)$$

Where: P₁= poverty gap index

Y= the income of individual 'i'

Z= the poverty line

For P = 1, each poor person is weighted by his/her distance to the poverty line, (z - yi), relative to z. The poverty gap index (P₁) measures the distance to the poverty line for the average poor person and indicates the depth or gap of poverty, which is, the difference

between the poverty line and the mean income of the poor expressed as percentage of the poverty line.

Poverty Severity or Squared Poverty Gap Index: As the poverty gap Index (P1) has a draw back being insensitive to the distribution of income among the poor the Squared Poverty Gap (P2) Index deals with the measurement of severity of poverty through squaring and averaging the gap between the expenditure of the poor so that a larger weight given (Getahun, 2002). By doing so the index can measure the degree of inequality even among the poor themselves implying that income distribution can lower the poverty index. This takes in to account not only the distance separating the poor from the poverty line (the poverty gap) but also the inequality among the poor- that is- more weight is placed on those households further away from the poverty line.

$$P_2 = \frac{1}{n} \sum_{i=1}^q \left[\frac{z-y_i}{z} \right]^2 \dots\dots\dots (3)$$

Where, P_2 = Squared Poverty index

z = poverty line

y_i = income level

n = Population number

q = is the number of poor

2 = is the weight attached to the severity of the poor

If income is transferred from the poor to the least poor, the poverty gap index can be unaffected. In other words, it measures the mean of the individual poverty gaps raised to a power reflecting society's valuation of different degrees of poverty.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 DESCRIPTION OF THE STUDFY AREA

3.1.1 PHYSICAL LOCATION AND DEMOGRAPHICS

The Gambella Peoples' National Regional State is located in the western tip of Ethiopia bordering with the Sudan in the West, South and North, the state of Southern Nations, Nationalities and Peoples' in the South and East; and with the state of Oromia in the North and East. It is inhabited by five 'indigenous' peoples: *Anywaa* (also known as *Annuak*) *Nuer*, *Mejenger* and *Opo* and other ethnic groups from other parts of the country. The region is composed of three administrative zones namely Anywaa, Nuer and Mejenger; and Itang special district, further divided in to 12 districts.

Based on the 2007 Population and Housing Census of the region has an estimated total population of 306,916 (147,237 females) where Nuer constitutes 143189 (46.65%) followed by Anywaa with 64,959 population (21.17 %), Mejenger with 12,277 (4 %), *Opo* with 990 (0.32 %) and *Komo* with a population of only 224 (0.07 %). An estimated 75 % of the population of the region lives in rural areas which below the national proportion (nearly 84 %). In 2007, the region has 65,445 households out of which the 45,855 are rural residents with an average family size of 4.6. 90.3% of the population belongs to Christianity of all denominations while 4.9 and 3.8 % belong to Islam and traditional belief, respectively (CSA, 2007).

The study focuses on Itang special district which is further divided in to 21 kebeles, is one of the twelve districts of the Gambella Region. It is situated in the North-central part of the region bordering with Oromia in the North, Gambella Zuria district in the East, Abobo in the South, Jikaw and Lare districts in the West. It lies between 8°00'N to 8°30'N and 34°00'E to 35°15'E.

In 2007 the district has an estimated total population of 35,307 (17,527 females). It has a rural population of 29,352 (83 %) with total area size of 2051km² and its population density is 17.2 persons per square kms which is higher than the regional average. The study district has 6555 households with 5134 households from rural areas (CSA, 2010). More than 85 % of the population of the district is rural, and its livelihoods system can be put under the farming but mixed with fishing and livestock rearing zonation (Tsegahun, 2007).

Itang is also home to all ethnic groups except Mejenjer, who are considered as native to the region. Anywaa, who constitute the majority, live in eleven out of the twenty one, followed by the Nuer who inhabits seven of the kebeles. With in the last two decades, the town of Itang has undergone both positive and negative significant changes in political, demographic, socio economic arenas. Until 1991, it had hosted over 300,000 Sudanese refugees, and then serves as the capital of zone two administrations, followed by its down fall to a kebele administrative status under Alwerop-Openo district in Anywaa zone in 2002 and lastly as capital of Itang special district. This repeated reshuffling was due to inter-ethnic conflict aroused from competition over pasture, water and fertile lands among the original settler, Anywaa and the relatively new comer Nuer (Dereje F, 2002).

Itang was the centre of second economic boom next to Gambella town due to its relatively better infrastructures and abundant refugee assistance from the western countries that attracted many traders to the area.

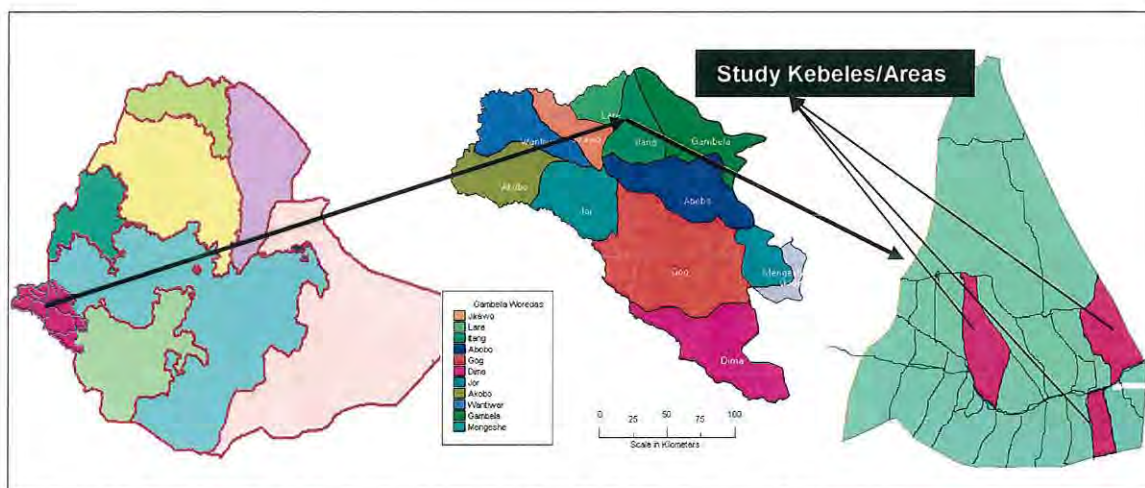


Figure 1: Administrative Map of Itang special district and study Areas/Kebeles

Apart from the recurrent food deficit and weakening of the existing coping mechanisms of its households, Itang district is also characterized by one of the most disaster prone area in the region, where recurrent conflict, displacement, and recurrent flood risks common events. The district entertains frequent clashes and conflicts and there by displacement of population and instability for the last two decades. Its capital, Itang town, once considered as the second economic boom in the region next to Gambella town; had hosted over 300,000 Sudanese refugees before 1991 and has experienced great environmental degradation. Kurimoto reported that in January 1991 Itang was as one of the largest refugee camp in the world. Eight years ago, over seventeen thousand Nuer IDPs from

Akobo district in the region were temporarily resettled in the district; and over 1600 Sudanese foreigners (CSA, 2007) are still resides. The rudimentary livelihoods practices; poor or non existent infrastructure; population pressure coupled with conflict over natural resources and maladministration with its predicament exacerbates the welfare of the population. The issues of stability and mass displacement among its residents characterized by sense of tension and insecurity and related factors seem to continue to be high in agenda of regional authorities.

The current study households are drawn from *Itang-kir* and *Pukumu kebeles* (predominantly inhabited by the *Anywaa*) and *Badiel* (exclusively a *Nuer* settlement) with a total population of 1825; 1345; and 2739 respectively. All the sample kebeles located along the Baro River with reasonable distance. *Itang-kir* kebeles is situated near the capital Itang and the former refugee settlement where as Pukumu and Badel are found in the East and West tip of the district along the Baro respectively.

Of the ten livelihoods zones of identified in the region, the Anywaa ethnic groups in Itang district including two of the study communities namely *Itangkir* and *Pukumu* kebeles represent the farming mixed with fishing as means of living where livestock rearing is practiced with limited extent. The livestock rearing livelihoods system embraces the Nuers and the remaining study kebele, *Badiel* is also under this category where animal husbandry is the main source of living while fishing and rudimentary farming contributes in smaller extent.

In general, the study district was chosen for three reasons: firstly it is prone to food insecurity; inter ethnic conflicts, distress displacement and floods risks; secondly the micro and meso level factors assumed to explain the extent and main features rural household poverty are neither assessed with the application of existing methods of measurement nor addressed; and finally the district is one the least developed in all aspects and its significant population rely on food aid for survival on annual basis though it is endowed with natural resources: ample arable land, water for irrigation and fishing etc. It is in line with these facts that the study has been conducted with the aims of measuring poverty and assessing its relationship with non income welfare indicators among study communities.

3.1.2 CONDITIONS OF BASIC OF SOCIAL SERVICE

Health Service: There has been one health center jointly run by the regional government and MSF Swiss in the capital Itang; and the services rendered in the center is considered quite good. The center is also used as Tuberculosis treatment village. The district has also two clinics and three health posts. The health posts are available in two of the sample kebeles but *Itangkir* though the facilities are very low in *Badiel* and it does not function in *Pukumu* at the time of the data collection. This was partly due to shortage of essential drugs and other medical supplies, lack of professionals and to a limited extent insecurity, which led inhabitants to go far away from the kebele to Itang town to get the service. During the field visit the researcher has learnt that out of the three kebeles, only one health extension worker deployed; and no health, nutrition and sanitation awareness education as well as routine EPI programmes.

Meanwhile, malnutrition in the form of *Kwashiorkor*, *marasmus* and iron deficiency anemia is reported as a case of both morbidity and mortality in the region. Dechassa (1997) identified malnutrition; anemia and malaria were as the major causes of morbidity and mortality in the region.

Education: Education mainly functional literacy is a key indicator of human capital, and a key asset determining household ability to access higher return activities and escape poverty. Itang district has a literacy rate of 51.6 %, which is lower than the regional average of 58 % in 2006 (GPRS, 2007).

Housing: By any standard, the housing conditions of the study district in general and study kebele respondents is said to be extremely poor. Usually most households has single room hut constructed with wood and mud. In most cases, the size of a household hut cannot exceed 1.5 meters radius and its length of 1.75 meters and certain households share living space with their animals. On the other hand, no household live in roofed with corrugated iron sheet. Rather all respondents live in huts with thatched roofed and in any way it cannot long last for more than two years.

Source of Household Energy: Almost all of the households use fuel wood for cooking and around 80 % for lighting. Only 15 and 6 %s of the respondents use kerosene and candle for lighting respectively. The rest depend on firewood both for lighting and for cooking purpose. Charcoal is not used and produced by the study communities.

3.3 SAMPLE SIZE DETERMINATION

Of the total twenty one kebeles, the Anywaa reside predominately in eleven of them followed by Nuer who occupy seven kebeles, the remaining three inhabited by shifting cultivators of *Opo* and *Komo* and the capital, *Itang*. Therefore, the researcher employed multi-stage cluster sampling where the cluster was formed along ethnic lines. Initially stratification of all kebeles based on their ethnic groups was done. This is primarily due to the fact that each of the ethnic groups widely practices different livelihoods mostly competes each other. The settlement pattern of all the kebeles in the district is also mutually exclusive and the stratification of the whole community along ethnic lines and kebeles too avoids possible exclusion errors.

Based on the proportional quota sampling techniques, two kebeles from Anywaa community and one kebele from Nuer community with a total of three kebeles were selected for the study. This is based on the number of kebeles predominately inhabited by either of the ethnic groups. The selection of kebeles from each stratum was done through simple random sampling from the list of kebeles inhabited by both Anywaa and Nuer ethnic groups. In each of the first strata (i.e-ethnic groups), kebeles were chosen as the primary sampling unit (PSU) and then thirty households from each sample kebele with 90 households' (one was missed) interviewees were drawn based on random sampling from the list of each kebele heads of households.

Due to limited resources; the survey did not construct its own kebeles population list, but instead relied upon existing population data particularly lists used for food aid provision at the local level for selection of sample households.

3.4 METHODS OF DATA COLLECTION AND INSTRUMENTS

The study employed both qualitative and quantitative methods of data collection. In addition, it utilized both primary and secondary data.

Household Survey

In order to generate information at household level, household level survey was undertaken using semi-structured interview. Prior to conducting the interview, pre-test of the interview schedule was undertaken and accordingly revision was made and finalized. Four enumerators were recruited based on their proficiency in communicating using local language, educational background, and prior exposure to similar works. Training was

given to enumerators on the content of the schedule and procedures to follow while conducting interview. In total 89 households were administered in the survey, of which 60 of them from *Anywaa* and the remaining 29 were from *Nuer* ethnic group.

Focus Group Discussion

Focus group discussion on selected discussion themes such as general welfare conditions, vulnerability to disaster risks and coping strategies employed by the study communities was conducted. Community members, representing both men and women of the community and various age and ethnic groups and who, especially, are active participants in the socio-economic and development affairs of the study area were the major targets of the focus group discussion.

The focus group discussions were employed to collect information on poor and non-poor households. The questions that were posed to both categories of households were factors for a household to become poor or non-poor, socio-cultural practices, demographic, institutional (both formal and informal), existing opportunities and resources. Similar discussion was also entertained to supplement information on basic causes and dimensions of poverty among the study population. The impact of inter ethnic conflict, IDPs influxes, floods, the settlement pattern and its associated risks in the study district were explored.

Key Informants' Interviews

A key informant interview of households believed to have diverse welfare status was selected in all proposed study kebeles with the support of kebele and opinion leaders, and development agents. A thorough interview and discussion was made with both poor and non-poor as well as with development agents and experts of the Agriculture and Rural Development office. Checklist was prepared to guide and facilitate the interview and focus group discussion as well. On some sensitive issues, an interview was made with key informants like religious and local leaders and elders. This session notably helped the researchers to elicit information about inter ethnic conflict, the people's perception to asset accumulation or dis-accumulation; poverty and other issues pertaining to the subject. Therefore, both the FDG and KII used semi-structured and open-ended checklists so as to generate relevant data from sample households. Both structured and semi-structured questionnaires were administered to key officials of relevant government offices at all levels. The FDG in particular consists of a group of twelve people comprises of five women and seven men drawn from all lifestyles were selected from each ethnic group and

meeting held for half day per group. Besides, informant interview meetings were carried out with district officials to discuss efforts made so far in poverty reduction at local level.

Observation

The researcher also tried systematically to observe the practices of men and women community members during his stay in the field. For this, he made a transect-walk and informal discussion with community members drawn from all walks of lives. In addition to this, some nearby markets were visited to have comparison price information on expenses of the very common consumption items that were needed in expenditure price in calculating food poverty indices. The researcher's own personal observation and experience in selected sample kebeles and whole district was used for triangulation, and interesting observations helped a lot to develop this discussion part.

Secondary data Sources

Secondary data relevant to the research work were collected from relevant regional and district offices of the agriculture and rural development. Various literatures and research findings dealing with poverty and related matters on Ethiopia and other countries as well as published documents of CSA were consulted.

3.5 METHODS OF DATA ANALYSIS

As the type and methods of data collection are both quantitative and qualitative in nature, the analysis is also entails both descriptive and quantitative using basic statistical methods.

The study uses the Foster-Greer- Thorbecke (FGT) measure to address the dimensions of poverty among the study households. Three types of poverty indices: the head count, poverty gap and poverty severity were computed based the FGT model of poverty measure, as discussed in chapter two. The mathematical expression of the model is as follows

$$P_{\alpha}(y; z) = \frac{1}{n} \sum_{i=1}^q \left(\frac{g_i}{z} \right)^{\alpha}$$

Where,

z = poverty line; g_i = income level,
 q = is the number of poor, n = number of population or households and
 α = is the weight attached to the severity of the poor.



In order to analyze the status and main features of poverty, **FGT** model and The Cost of Basic Needs (**CBN**) approach to set the poverty line and mathematical calculations to construct the aggregate poverty indices for the study area were employed.

At the beginning, the researcher has set a poverty line based on the cost of basic needs approach. The result that was found from the Cost of Basic Needs method is compared with the regional poverty line identified by previous studies of CSA through computing the yearly inflation for both the region and then the district. The cost of basic needs approach comprises of food and non-food items consumption expenditures of a household based on the current prevailing local market prices of goods and services is employed to set a poverty line among the study population. A quantity of bundle of food basket of a household is determined in such a way that it meets the standard 2,200 kilo calorie requirements (i.e- in the case of Ethiopia); and valued at local market prices for comparison among the study population of the district.

Although poverty has several dimensions, the current study utilized income, consumption expenditure, non-income welfare indicators as well as vulnerabilities to disaster risks so as to reach at the overall poverty situations of the area. Based on the household survey data, socio economic characteristics of sampled households were described with respect to poverty and/or welfare. The qualitative methods are used to analyze information collected from key informants as well as focus group discussion through narrative descriptions.

In order to find out the typical features of rural household poverty in the study district, the FGT poverty measure that was introduced by (Foster, Greer, and Thorbecke, 1984) as well as qualitative descriptions of characteristics and/or variables pertaining to households of the study is used for interpretation and analyses. In the FGT poverty measure, the first step taken is distinguishing the poor and non-poor. In order to classify the sampled population in to poor and non poor groups, poverty line which is a cut off point, is required to be drawn to have single measuring unit in poverty analysis.

The poverty line, which is obtained by quantifying the various indicators of well being is used as the yardstick starting point for poverty analysis in assessing welfare and determining who is poor and is not. People are counted as poor when their measured standard of living (generally in either income or consumption) is below poverty line, otherwise non-poor (Rath, 1996). Accordingly, three poverty measures identified by

Foster et'al (1984) are employed. These include Head count index; the Poverty Gap index; and Severity index or the Squared Poverty Gap index (FRDE, 1999).

In order to identify the main determinants of poverty among the study population logit regression model was used. The model is fitted to estimate the strength of the relationship of each factor with poverty when the other variables are controlled. The relationships between the dependent and independent variables were tested first through a systematic observation of the type of relationship between variables within each of the hypotheses pertaining to the determinants of household poverty.

Accordingly, in the model, the dependent variable i.e.- household poverty in the survey data takes value of 1 if a household is poor and 0 for non poor with the aims to avoid the probability of the variables being fall in other category. Specification of the model is as follows.

$$P_i = \frac{e^{Z_i}}{1 + e^{Z_i}} \quad p_i \text{ is 1 with the probability the household is poor; 0, otherwise.}$$

$$Z_i = a_0 + \sum a_i X_i + u_i, \dots i=1,2,\dots,n \dots \dots \dots (2)$$

- n* = the number of explanatory variables; *a₀* = intercept term
- a_i* = the coefficient of explanatory variables. *u_i* = disturbance term
- X_i* = explanatory variables such as age, family size

Once the survey data is fed in to SPSS 13 version, the different analytical techniques applied were descriptive statistics (such as percentages, frequencies, mean and standard deviations). Ranking and average rating were used to find out households perception of poverty and/or being poor and types of conflict encountered, respectively. Mean comparison methods (independent sample t-test and χ^2) used to test potential power of the continuous and discrete variables that influence the chance for being poor or non poor among households in the study area, correlation analysis were employed to assess the existence and magnitude of associations between the independent variables, and logistic regression model was employed to determine the likelihood of households to fall in to a vicious cycle of poverty.

With the help of focus group discussion through use of different PRA tools such as seasonal and resource mapping, historical and/or time line trend analysis; the researcher has tried to explore communities perception of poverty , socio cultural values, belief and institutional factors, believed to have contributed for the well being of communities under study were thoroughly analyzed. The same communities were also assessed potential hazards they are facing, their vulnerabilities and capacities exist and gap to address the formers. Standard disaster risk reduction assessment and analysis sheet were used for the study. The Disaster Risk Reduction Assessment framework was also used depending on the need for additional primary data on some qualitative issues such as main hazards, vulnerabilities and coping capacities of communities.

3.6 RESEARCH HYPOTHESES; AND EXPLANATORY VARIABLES AND EXPECTED SIGNS

Hypotheses of explanatory variables affecting the household poverty as well as dimensions are perquisites to address the research questions and thereby the objectives stated above.

A host of socio-economic, environmental, political and demographic explanatory variables and other household characteristics are supposed to affect household poverty in the study area. The major explanatory variables expected to influence positively or negatively on the household opportunities, capabilities and vulnerabilities to be under poverty trap or not include: household size, sex, educational level and age of the household head, dependency ratio, size of cultivated land, income generated from Livestock ownership, total food aid, distance to nearest market, access to basic social services, asset possession, remittances, non-agricultural income source, inter ethnic conflict, and flood risks.

In order to find reasonable responses for the aforementioned research questions, a set of appropriate working hypotheses is required. From the general nature of these research questions and experiences in most other social science as well as poverty related studies, the following research hypotheses are chosen for the current research.

Family size of Households: this variable refers to the size of household members converted in adult equivalent (Annex 6). The expectation is that as the family size

increases the probability of the household poverty would also increase. The existence of large number of family members with limited resources could affect the food security status of the household.

Sex of the Family Head: as remarkable number of researches conducted indicates that, Female Headed Households (FHHs) are more vulnerable to labor shortage and lacks resources to sustain their families than male counterparts. Therefore, male-headed households are less likely to be in the trap of poverty than female-headed households are.

Educational level of the Household Head: According to a study of World Bank (2005), there is a strong correlation between educational level achievements and poverty, with the marginal returns to education positive and high. Therefore, it is assumed that that the level of education of the head of household determines the income of his/her family and thus the better the educational level of the household head, the higher the chance to be in a better economic position.

Productive Age of Household Head: rural households mostly base their subsistence on agriculture. The older the household head, the more experience he/she has in the respective livelihood choices. Moreover, as their maturity grows up, older persons are more risk averters, and mostly intensify and diversify their subsistence; and thus the chance for such household to be poor is less.

Dependency Ratio: Household members aged below 15 and above 64 are considered as dependents. These groups are supposed to be economically inactive. The Poverty Reduction Policy document indicated that a one-unit increase in dependency, households' probability of falling in to poverty would increase by 31 % (FDRE, 2002). Hence, it is hypothesized that high dependency ratio and the probability to fall in poverty trap are positively related. Therefore, a family with relatively higher number of dependents would increase household poverty.

Size of Cultivated land: This variable represents the total size of cultivated land owned by a household in hectare. As the cultivated land size increases, provided other associated production factors remain normal, the likelihood that the holder gets more output is high. It is hypothesized that farmers who have larger cultivated land are more likely to be food secure than those with smaller area.

Income generated from Livestock Ownership: Households who possess certain livestock size and generate certain income from livestock and livestock products are expected to be less vulnerable to poverty. Furthermore, livestock are closely linked to the social and cultural lives of farmers/pastoralists for whom animal ownership ensures varying degrees of sustainable farming and economic stability. Hence, the higher the value of income generated from livestock sale, the higher will be the probability to break out of the poverty cycle.

Total food aid: food aid is one of the coping mechanisms to food insecurity in the study area. Food aid can develop a dependency behavior among households, which in turn will reduce farmers' motivation towards food self-sufficiency. Therefore, food aid is expected to exacerbate household poverty trap.

Distance to Nearest Market: Proximity to market centers measured in kilometers generates access to additional income by providing off-farm or non-farm employment opportunities such as frequent access for sale and purchase, pity trade, casual labor, easy access to inputs and transport. It is, therefore, expected that households nearer to market center have better chance to escape from poverty than those who are away from it.

Access to basic social services: proximity to various social services like education, health and veterinary centers, road, extension services, credit facilities etc create direct and indirect effect on welfare of households. Hence, it is hypothesized that access to social services and welfare are positively related to promotion of capabilities of individuals which in turn has higher probability to move out of poverty.

Asset possession: this variable represents the amount of material asset a household possesses estimated in birr. The assumption is that a household with sufficient asset possession is supposed to have a better opportunity to escape poverty trap. The volatility and productivity of assets which may go beyond the physical aspect determines ones welfare conditions (Getahun, 2003).

Remittances: During personal observation of the researcher, it was identified that reasonable number of households in the study area have income from remittances. The expectation is that having relative economic support from abroad and within the country would positively related to the well being of the people.

Non-Agricultural Income Generating Activities (IGAs): This represents the total amount of income (in birr) the head of household or any other members in the family

earned other than farming and livestock rearing activities with in the year. In order to be a relatively well to do, rural people needs to have multiple livelihood strategies (Pearce *et al.*, 1996). Hence, it expected that the availability of off-farm/non-farm income is positively associated with reducing household poverty.

Inter Ethnic Conflicts: There is a strong association between conflict and multi dimensional poverty. It is apparent that conflict aggravates households' vulnerability to poverty through loss of lives and livelihoods, undermines law and order; causes social and cultural erosion and dislocation (UN, 2009). Hence, it is expected that existence of conflict in the area increases to the household poverty and has positive association with it.

Flood Risks: Flood is a hazard then become a disaster when people's capacity to cope diminishes. The disaster in turn causes loss of life and depletes the asset base of households and communities (Degefa, 2010). Despite the fact that floods in Gambella are important for recession farming and to avoid moisture stress; it's frequent occurrence and existing settlement pattern causes loss of live, displacement of population, damage of public and private properties; and forced them to rely on food aid. Hence, the flood (both river and flash) in Gambella believed to have exacerbated the poverty of communities.

CHAPTER FOUR: DIMENSIONS AND DETERMINANTS OF RURAL HOUSEHOLDS POVERTY

This chapter presents the various measurements, salient features and determinants of poverty among the study households in Itang district. Based on the application of the measure of poverty indices, descriptive statistics and logit regression model and subsequent analyses; the findings are provided and discussed in the following sections.

4.1 DIMENSIONS OF POVERTY

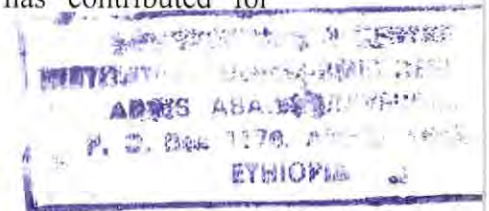
4.1.1. The Socio Economic and Demographic Features of Households

The study focuses on 89 households drawn from *Itang kir*, *Pukumu* and *Badiel kebeles* of Anywaa and Nuer communities. The administrative boundaries of each kebeles have been delineated along ethnic lines. The Anywaa who inhabits both *Itangkir* and *Pukumu kebeles* practice riverside farming supplemented with fishing, hunting and gathering. Where as the *Nuer* who resides in *Badiel* kebele followed primarily livestock rearing mixed with farming in wet season.

The study area is known for its fertile land, abundance of water and grazing for livestock with reasonable forest coverage mainly in Anywaa settlements. Due to concentration of river side settlement of Anywaa which is attached to their livelihoods coupled with the east ward pressure of Nuer in search of water and grazing has contributed for demographic change in the district.

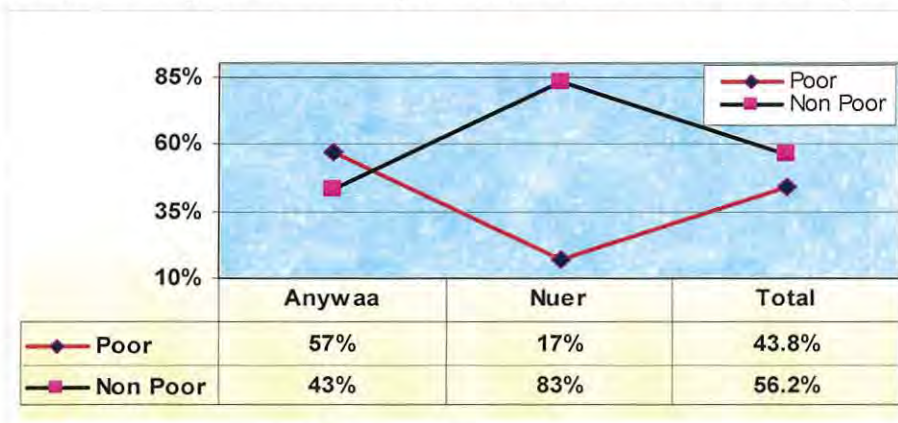
4.1.1.1 Ethnic Composition of the Study Households

The two study community consists of Anywaa and Nuer followed different livelihoods strategies. The Anywaa makes their living out of riverside cultivation mostly twice a year through the rain fed and flood recession along the Baro river while the Nuer rear livestock in huge number which requires vast grazing areas and water. This contradictory livelihoods bases triggered by inter ethnic conflict aroused from both internal and external factors exacerbates and complicates the situation among the study population. The study shows that poverty is high among the Anywaa than the Nuer Households where the former constitute 87 % of the poor category of the study. Figure 2 shows level of poverty among the two ethnic groups. The chi squared value of 13.245 showed that there is



significant relationship between ethnicity of household head and poverty 1% probability.

Figure 2: Relationship between Ethnicity of the Head of Household and Poverty level



Source: Own Computation, 2008

The majority 88 % of the respondents were followers of Christianity where Protestantism constitute over 81% followed by catholic with 7%; and the remaining 12% of the households are belongs to traditional religion. However, the introduction of modern religion to the study is relatively a recent phenomenon and their impact on dictating the way of life if the study population is seems insignificant. 84% of the study households have married followed by 9% of widowed households.

Socio-economic and demographic characteristics of households are investigated with the help of poverty analysis. The computed poverty line is used to analyze these characteristics of households. Mean household size, Dependency ratio, sex, productive age and educational level of head of the household, and other determinant variables and dimensions expected to have both positive and/or negative impacts on the poverty status of sampled rural households are analyzed here under. Accordingly, the mean household size, productive age of the household, sex, educational level found be to positively contributed to the chance of households to escape out of poverty while the other variables such as dependency ratio has no statistically significant relationship with poverty.

4.1.1.2 The Mean Household Size

According to the 2007 CSA, Gambella has an average of 4.6 persons per household and 5.0 persons per household for rural Gambella, which is regarded as high. The mean household size of the study area, according to the survey statistics, is found to be 6.22 persons per household. It is a demographic factor for contributing to the prevalence of

poverty at large. The average household size for the poor and non poor households for the poor and non poor households with respect to poverty status is indicated in Table 1.

Table 1: The Relationship between Poverty Status and Average Household Size

Poverty Status	Poor (n=39)	Non poor (n=50)	Total (n=89)
Total	239	316	554
Mean of Household size	6.13	6.32	6.22
SD	1.20	0.935	1.05

Source: Own Computation from Survey, 2008.

According to the findings computed from the survey and summarized in Table1, the average household sizes of the sampled area for poor and non-poor households are 6.13 and 6.32 persons respectively. It shows that the mean household size of the poor category is smaller than the non-poor category. This is inconsistent with the claims by Getachew (2002) that revealed poorer households in rural areas have larger family size than the non poor. Although the two means are much greater than the country's as well as the region's mean household indices, it is found difficult to conclude that the hypothesis 'higher family size is supposed to have direct relationship with being poor and the increase poverty status of the households'. The analysis of t-test showed that there is no significant difference between poor and non poor in terms of household family size.

Table 2: The Relationship between Family Size and Income

Description	Mean	SD
Family Size	7.4	2.01
Household Income	2466	5144

Correlation =0.246 is significant at less than 5%.

This shows that both family size and income shows certain significant positive relationship. On the other hand, the researcher has observed personally that, usually those households who have better economic conditions are able to pay dowry to marry more than two wives, and these may be the case for finding smaller family size for poor households instead. In other words, adults who are asset or income poor in the study communities are unable to pay the dowry may delay his marriage time and is unlikely to go for polygamy thus limits his chance of having more family number.

Meanwhile, women in the study communities are the main producers of subsistence. Women in both communities are responsible for collecting and/or coking food, farming, cutting of grass for hut construction. They have both productive and reproductive roles.

Once men married to a woman, the latter is the one who primary responsible for taking care of children and domestic chores including feeding of family members.

Children also engaged in various activities including fishing, hunting and gathering thereby supplements the daily subsistence of the family. Both Women and Children also play important role in livestock keeping, hut construction and by and large considered as the main asset who constitute the significant part of household labor. This result is more or less consistent with the findings of Tsegahun (2007) who confirmed the fact that better off households are normally large because they are both polygamous and extended while the poor households are small with five people on average.

4.1.1.3 Dependency Ratio by Poverty Status

Gambella region's average dependency ratio is around 119.3 % (Tsegahun, 2007) while the total dependency ratio for our sampled population (N=554) is calculated as 91.1%. On the other hand, the dependency ratio based on the sampled households' poverty line is calculated as 87.1% for the poor and 95.1% for non-poor households. Table 3 shows the summary of the number of each age group with poverty status of the survey population.

Table 3: The Relationship between Poverty status and Dependency ratio

Age Category of Study Population	Poor	Non poor	Total
Under age 15	102	152	254
Between age 15-64	124	165	289
Above Age 64	6	5	11
Total	232	322	554
Dependency ratio	0.871	0.951	0.917

Source: Own Computation, 2008

As one can simply deduce about dependency ratio, the economically inactive proportion of the entire population, a higher dependency rate was observed on the economically active part of the population. In the sampled area, both group of households, exhibited slightly different dependency ratios. However, based on the researcher's prior assumption; the analysis of the survey result does not enough to prove the hypothesis that those families with relatively higher number of dependents would increase household poverty, which means no significant difference was observed between the two groups. The analysis of t-test also showed that there is no significant difference between poor and non poor in terms of dependency ratio.

However, other social and demographic factors may affect the findings of households. The researcher tried to trace other factors and found some suggestions. For example, poor households are familiar to give their children for adoption and sending them as a source of income (child labor). Here, the researcher suggest others who are involved in poverty and related studies to further investigate the probability of the current finding that poor households to have smaller dependency ratio in communities like in Itang, as it is characterized in few pastoral and agro pastoral areas. As an overview paper for Pastoralism and Poverty Reduction in East Africa, indicated most non-poor households have more than two wives, have more extended family size, and as a result, have more dependent children than poor households.

4.1.1.4 Mean Productive Age of Household Head and Poverty Line

The mean productive age of household heads of the survey area is calculated as 45 years with minimum and maximum ages of 25 and 80, respectively. As indicated in Table 4, the mean productive age of poor and non poor households is around 43.5 and 45.6 years respectively. This shows that the poor households are relatively led by younger persons than the non-poor households. This result is agreed with the assumption that, the older the productive age of the household head, the lesser the probability to fall in to poverty trap.

It also indicates that the mean productive age of the poor is lower than the mean productive age of the non-poor at less than 10% significant level of the assumption. From this it is fair to conclude that the lesser the mean productive age of the survey household heads, the more chance to have greater proportion of households fallen under poverty line. Table 4 shows the mean age of the poor and non poor head of households.

Table 4: Poverty Status by Mean Productive Age of Household Heads

Productive Age	Poverty Status					
	Poor	%	Non poor	%	Total	%
<26	1	2.5	-		1	1.1
26-30	10	25.6	2	4	12	13.8
31-35	2	5.2	7	14	9	10.1
36-40	4	10.3	11	22	15	16.8
41-45	5	12.8	15	30	20	22.4
46-50	6	15.4	9	18	15	16.8
51-55	3	7.7	-		3	3.4
56-64	3	7.7	1	2	4	4.5
>65	5	12.8	5	10	10	11.1
MEAN	43.5		45.6		45	
SD	14.27		11.22		12.58	

Source: Own Computation, 2008. *t*-value -2.096 It is significant at less than 10% .

4.1.1.5 Sex of Household Head and Poverty status

As can be seen from Table 5, out of 89 counts of the household heads, 24 (27%) households are led by females and 65 (73%) households by males. With respect to poverty status, 16 female-headed households are categorized under poor and only 8 Female headed households are belong to non-poor category. When we compare the proportions of female-headed households to poverty status, the proportion of poor FHHs doubles the non-poor FHHs. In other words, of the sampled households (89), the poor FHHs comprise 18% while the non-poor FHHs are only 9 %.

Based on the findings, it can be agreed with the assumption set as, male headed households are less likely to be in the trap of poverty as 27% female headed households have 41 % share of being under the poverty line when we compare 73 % male headed households have only 59 % share of being under the poverty threshold. Using Simple mathematical transformation of statistical inferences, it is found that female headed households are 1.87 times vulnerable for being poor than male headed households of sampled population. This shows the degree of feminization poverty and the negative effect it has on women and their families.

Table 5: Sex of Household Head and Poverty Status

Sex of Head of HHs		Poverty status		Total
		Poor	Non Poor	
Male	No. of Respondents	23	42	65
	% of Total Male	59.0%	84.0%	73.0%
Female	No. of Respondents	16	8	24
	% of Total Female	41.0%	16.0%	27.0%
Total	No of Respondents	39	50	89
	% of Total	100.0%	100.0%	100.0%

Source: Cross Tabulation from the Survey, 2008

4.1.1.6 Educational Level of Household Head

Educational level of household determines the exposure of an individual with the outside world. It is linked with other socio-cultural and demographic factors either positively or negatively. However, the purpose of survey is limited to income poverty. Table 6 shows that the total household heads illiteracy rate was 43.8%. The proportion of illiterate households among the poor category comprises 46% while the non poor illiterate accounts 42 %. This implies that lower educational status aggravates the probability of the poor households falling under poverty line.

Table 6: Relationship between Education Level of Household Head and Poverty Status

Education status	Poverty status				Total		
	Poor	%	Non poor	%		%	
Illiterate	18	46%	21	42%	39	44%	$\chi^2 = 10.21$
Read and write	0	0%	1	2%	1	1%	
Grade 1-8	18	46%	18	36%	36	40%	
Grade 9-12	2	5%	6	12%	8	9%	
12+	1	3%	4	8%	5	6%	
Total	39	100%	50	100%	89	100%	
SD	3.5		4.14		3.83		

Source: Own computation Result, 2008. Chi square significant at less than 5%.

The result from chi square computation showed that there is significant relationship ($P < 0.05$) in educational level of heads of households vis- a- vis level of poverty. From the analysis of the results obtained, both the poor and non-poor household heads exhibited high level of illiteracy, and we can deduce that education (formal or non-formal) is one of the most determining factors to declare poverty elimination and food security in general.

According to FDG held with community members where most of them are dropped out from grade-1 and grade-2, because they were unable to continue their education to the higher levels. In general, the expansion of missionary education was also believed to have contributed for relatively good education level for non-poor household's heads.

4.1.2 THE POVERTY LINE

In order to set the poverty line for the study population; defining and selecting a basket of food items consumed by the poor is necessary. This basket of food is determined in such a way that the given food basket meets a predetermined level of minimum calories requirement. The average prevailing market prices of those food items considered in the basket will be taken. The non food expenditure consistent with the poor's spending pattern will be adjusted so as to get the total expenditure in Ethiopian Birr that enables individuals to meet the required standard kcal per adult per day serves as cut off point to differentiate the poor from non poor households of a given area (Getachew, A.2002).

From the data available in the survey and some constant figures taken from literatures, the food poverty line of the sample area is found to be Birr 1334.96 as referred in Table 7. The non- food expenditure component is also computed using the average food share of

the lowest income quartile households which is estimated to be 24.5 %. The figure is used to estimate the allowance of the non-food expenditure; and found ETB 327.69 with the total poverty line of Birr 1662.65.

Based on 1999/00 CSA HICE result projection (similar survey not conducted in Gambella for year 2004/05), the per capital income in Gambella reported to have increased by 5% per annum and then by proxy the per capita income of the population of Itang has expected to reach ETB 1823 in 2008 from 1234 in 1999/00. This shows decline in consumption expenditure trend from the period 1999/00 through 2008 among the study district partly due to insecurity, recurrent flood, moisture stress and displacement of communities for a decade since 2000. The security situation in the last couple of years increases peoples' vulnerabilities to poor living conditions through undermine their productivity and production as well as low or inexistence of basic social services.

Table 7: Food Consumption of the Lowest Income Quartile and Value of Food Poverty

Food Item	Mean kcal per kg(Lt)	kg consumed /adult/day	kcal/day/ adult	Kcal %	Mean price/kg(Lt) (Birr)[1]	Value of poverty line/year	Expenditure %
Cereals	3470	0.48753	1691.71	76.90	2.60	462.67	34.66
Milk	850	0.28485	244.97	11.13	2.10	218.34	16.36
Sugar	1780	0.07942	141.37	6.43	10.10	292.78	21.93
Butter & Oil	8120	0.00548	44.49	2.02	22.12	44.24	3.31
Meat & Fish	1970	0.03288	64.77	2.94	21.60	259.23	19.42
Tea leaf	1190	0.00329	3.91	0.18	45.28	54.37	4.07
Salt	1780	0.00493	8.78	0.40	1.85	3.33	0.25
Total			2200	100		1334.96	100.00

Source: Own Computation and some figures like the average kcal per kg Lt) are extracted from Poverty Profile of Ethiopia, MoFED 1999/2000 and used as baseline data for other computations.

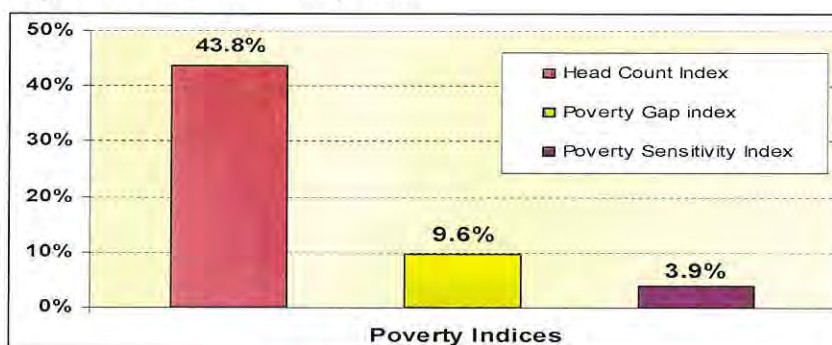
4.1. 3 THE POVERTY INDICES

The poverty line is used to estimate the poverty indices in the survey area. Likewise, the poverty indices are calculated using FGT approach and estimated to be 0.438, 0.096 and 0.039 as head count index, poverty gap index and poverty sensitivity index, respectively. These are summarized in Figure 2. The analysis of poverty indices from the survey result reveals the extent of poverty of the study area. Accordingly, the head count index¹ as ($\alpha=0$) indicates about 43.8 % of the sampled population in Itang district are fallen under

¹The 'poverty headcount' is the percentage share of the population living below the poverty line. In this study 43.8 percent of the population is classified as 'poor'

absolute poverty line. This is very close to the national index, i.e. 44.2 % in 2007/8 of HDI of Ethiopia; but higher than the national average projection of 32.7 % in 2007/08 by GoE (MoFED, 2010).

Figure 3: Absolute Poverty Indices



Source: Own Computation, 2008

This proportion implies of the percentage of the sampled population who is unable to meet the required minimum amount of calorie per person per day. In other words, this proportion of households does not fulfill the minimum amount of income (ETB 1662.65) to satisfy the minimum calorie requirement per adult equivalent/ day.

The poverty gap index ($\alpha=1$) which captures the total proportional shortfall (i.e., the difference between per capita food expenditures and food poverty line and then divided by the food poverty line) is 9.6 %. This means the poor on average requires an estimated 159 birr to up lift themselves above the poverty line. The figure tells us that the percentage of total consumption needed to bring the entire population to above the poverty line or the minimum level of living. It indicates the percentage of income deficit the poor faces so as to uplift the poor from the poverty line. If one simply add up the difference between the expenditure measure and poverty line for all those who are below, then he/she simply gets the total money required to eliminate poverty. In similar fashion, the Squared Poverty Gap Index($\alpha=2$) in consumption expenditure, which aims to measure the severity of poverty, shows that 3.9 % of the sampled population falls below the poverty line implying severe degree of inequality among the lowest quartile population.

The findings of the poverty indices are more or less close to the national average and but far below the regional figures. Based on the 1999/00 Household Income and Consumption Expenditure (HICE) findings, there was significant variation in calorie intake per person in Gambella. The annual expenditure per capita at country level is found to be birr 1222.5

while the annual average of all payments (the sum of household consumption expenditure and non-consumption expenditure) per person is birr 1411.8. 92.8 % of the population in Gambella earned below 750 birr per month, which is the least in the country next to Tigray region. Similarly, the per capita expenditure ranges from 1080 in SNNPR to 2477 birr in Addis Ababa while Gambella comprises an estimated 1333 birr (MoFED, 2002).

Based on the 1995/96 nation wide HICE & WM survey, about 33% of the rural population of the region did not meet their food needs and the figure increased to 62% in 1999/00 with 88 % increment. However, when one compares the above figure with the national average, the level of food poverty is even more serious in the region. Over 95.1 % of the households in the region including the study districts faces food deficit at any point in time in a given year (Tsegahun, 2007).

Meanwhile, participants in the focus group discussion were asked to proportionally rank the different categories of wealth status in their respective societies and put the very poor, poor, medium and rich household wealth status. The major criteria employed for proportional wealth ranking includes size of cultivated land, amount of produce from farm as well as the number of livestock owned per each household.

Accordingly, over 60 % and 35 % of the Anywaa and Nuer communities were grouped as poor; respectively while 35% and 50% middle wealth status and the remaining proportion accounts for better off wealth status. On average the poor households own 1 ha of land, nil to three cattle and usually produce maize and sorghum though hardly sufficient to meet their annual food consumption. The middle wealth status households own up to 3 ha of land (only a small size is cultivable); 5 to 20 cattle and up to 15 shoats and produces certain cash crops and fruits in addition to the grain mentioned above.

The better off households or those considered as rich holds 3 to 5 ha of land, produced both cash and grain for consumption, owns above 20 cattle and/or shoats with a relatively higher number of family size and those practicing polygamous marriage. Conditions, where a household head, has relatively good interaction with outsiders and get access to other means of support from relatives also fall under this category of wealth ranking.

4.1.4 Consumption Expenditure of Households

The result extracted from the survey indicates that, the average consumption expenditure of the sampled household of the target area is estimated to be around ETB 1662.65. The

minimum and maximum values are, ETB 585 and 9220, respectively, with very high gulf of disparity i.e., Birr 8635. Table 8 and 9 show the statistical analysis of expenditure.

Table 8: Consumption Expenditure of Sampled Households.

Birr/AE	Poor (n=39)		Non Poor (n=50)		Total (n=89)	
	No	%	No	%	No	%
Less than 600	1	2.564			1	1.11
600-1200	12	30.770			12	13.51
1201-1662.65	26	66.666			26	29.21
1662.66-2400			12	24	12	13.51
2401-3000			11	22	11	12.41
3001-3600			6	12	6	6.71
3601-4200			5	10	5	5.61
4201-4800			5	10	5	5.61
4801-5400			5	10	5	5.61
Greater than 5400			6	12	6	6.71
Average (Birr)	1300.410		3569.88		2575.35	
SD (Birr)	318.063		1600.25		1658.87	

Source: Survey Result, 2008. t value -8.716. It is significant at less than 1%.

From the analysis of the survey result, the real per capita consumption expenditure means of poor and non-poor categories are 1300.41 and 3569.88 respectively; and the statistical hypothesis that the two means are significant 1% probability level is accepted.

Table 9: Per Capita Consumption Expenditure distribution of poor and non-poor households

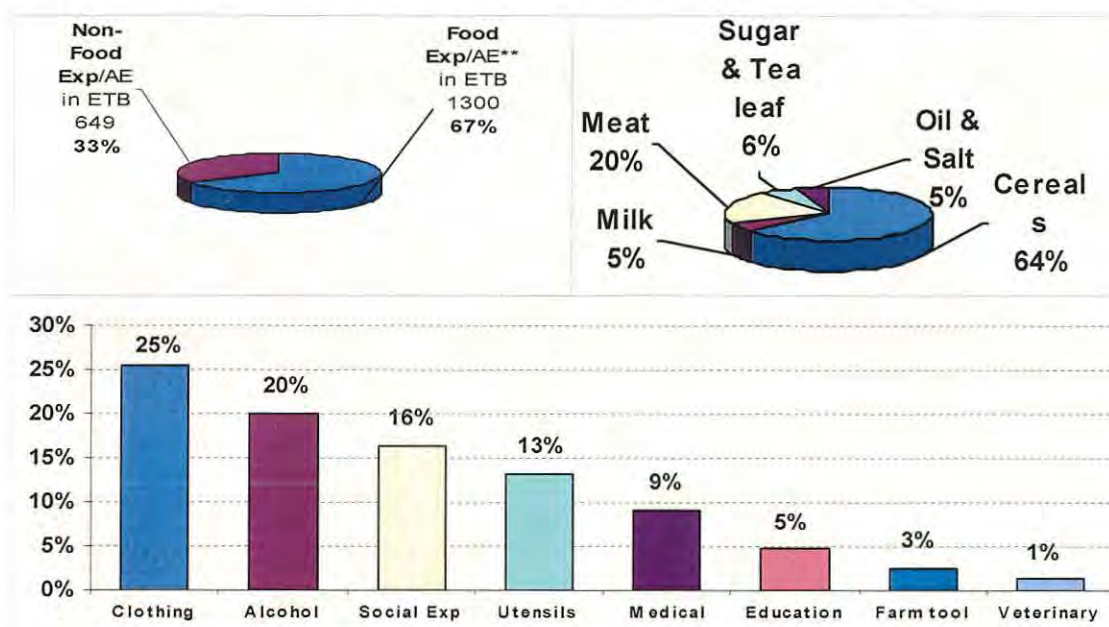
Birr/HHs	Poor (n=39)		Non poor (n=50)		Total (n=89)	
	Frequency	%	Frequency	%	Frequency	%
Less than 150	1	2.56	1	2	2	2.25
151-350	20	51.28	14	28	34	38.20
351-550	8	20.52	7	14	15	16.85
551-750	6	15.39	2	4	8	4.49
951-1350	1	2.56	5	10	6	4.49
1351-1550	2	5.13	3	6	5	3.38
1551-1750	1	2.56	4	8	5	3.38
Above 1750	0	0	14	28	14	5.62
Mean	485.2051	Total:100	1135.68	Total:100	848.5056	Total:100
SD	377.1951		892.0679		782.3497	

Source: Own Computation, 2008. t value -4.263. It is significant at less than 1%.

The analysis also revealed that the proportion of poor households decline as the per capita consumption expenditure increases. This indicates the contribution of consumption expenditure on poverty status. The analysis showed that there are significant differences between the means of the per capita consumption expenditure at less than 1 % probability level.

Meanwhile, the study households spent over 67% of its expenditure on food items while the remaining 33% for non food items. As it is the case in many other communities, the poor study households spent over 64 % of its food related expenses on cereals and allotted very low amount for fat and oils. On the contrary, the study households accorded high value to expenses for social obligation such as for dowry payment as well as for feast preparation. Figure 4 indicated that households spent unprecedented cost on local alcohol and tobacco which comprises 20% of the non food expenditure proportion while costs earmarked for productive activities such as purchase of farm tools as well as seeking for basic social investment found to be negligible among the study households.

Figure 4: Food and Non-Food Expenditure per AEU of the Study Households



Source: Own Computation, 2008. Adult Equivalent Unit conversion factor is annexed.

4.1.5 OTHER INCOME AND CONSUMPTION INDICATORS OF POVERTY

4.1.5.1 Total Food Aid

In order to analyze the impact of food aid on poverty status on the given target area, it is imperative to examine the result of cross tabulation of cereals. For other aid categories i.e. pulse, vegetable oil and blended food categories, the valid statistics is not sound for analysis purpose and simply indicated for the sake of convenience. As indicated in Table 10, the researcher has found 65 sound counts of those who gave information about food aid on cereals, out of 89 households. According to the data gathered on cereals food aid, 30 poor households and 35 non-poor households are analyzed by poverty line.

The mean total cereals food aid is estimated as 21.64 kg per household per a given time (may be quarter, semester or year) where as the poor and non poor households have a mean total cereals food aid 20.67kg and 22.42kg, respectively. The figures indicated that, the non-poor households have received relatively more food aid than the poor households have. According to the result, it is hardly found to accept the assumption that food aid is expected to exacerbate household poverty trap, and in contrary non-poor households have the chance to get advantage of food aid. This could be attributed to the common problem of needy beneficiary targeting for food aid mainly in agro pastoral and pastoral communities in Ethiopia where clan leaders play greater role in selection and distribution process.

Table 10: Food Aid by Poverty Status

Food Cereals Aid in kg	Category of poverty status		Total
	Poor	Non Poor	
Less than 10 kg	3	2	5
Between 10 and 20kg	7	5	12
Between 20 and 30kg	20	28	48
Total	30	35	65
Mean	20.67	22.42	21.64
SD	6.67	5.53	6.1

Source: Own computation Survey, 2008.

4.1.5.2. Remittances and Poverty Status

Remittance is considered as one of the means of coming out of poverty through supplementing the household income. In countries like Ethiopia, parents are supported by their kids financially to fill the gap they have. When we come to our survey result, from the sample households 38 respondents were replied that, they are supported by their relatives, friends and children. Of the total respondents who received remittance; 13 (34%) and 25 (66%) respondents were belongs to the poor and non poor categories, respectively.

Table 11 reveals that the average financial support for the poor households is found Birr 944, whereas that of the non-poor households is Birr 2,412 and the total average is supposed to be Birr 1,890. The minimum and maximum support in Birr is 50 and 5,400 respectively.

Table 11: The Relationship between of Remittance and Poverty Status

Remittance in Birr	Poverty status of households		Total
	Poor (frequency)	Non poor (frequency)	
<100-500	4	2	6
Between 501-1000	4	3	7
Between 1001-1500	3	3	6
Between 1501-2000	2	6	8
2001-3600	-	6	6
>3601	-	5	5
Mean	944	2412	1890
SD	614	1711	1578

Source: Own Computation, 2008.

t value -2.77. It is significant at less than 5%.

These figures support the assumption: the expectation of having relative economic support would positively to the wellbeing of the household at less than 5% statistical level. This means, the poor households had received less economic support than the non-poor households had.

4.1.5.3 Distance to Nearest Market

Out of 60 households' respondents, 22 are from poor households and the remaining 38 are from the non-poor households. As indicated in Table 12, the average time for the nearest market is estimated as 1.675 hours as 1.25 hrs for poor and 1.9 hrs for the non-poor households.

According to this result, the non-poor households traveled much distance to reach the nearest market center than the poor households. This implies that proximity to the nearest market does not affect poverty status of the community within the time set i.e. 1.675 hr.

Table12: Distance to the Nearest Market and Poverty Status

Distance from the Nearest Market in hr	Poverty Status		Total
	Poor	Non Poor	
1 hr and Less	14	6	20
2hrs	5	25	30
2- 3hrs	2	7	9
4hrs and Above	1	0	1
Total	22	38	60
Mean hr	1.25	1.89	1.675
SD	0.56	0.29	0.44

Source: Own Computation from Survey Result, 2008

Due to this result, the research hypothesis where households nearer to market center have the chance to escape from household poverty than those who are away from it, cannot be

proven by the survey result. For this particular survey case, other factors that are not identified may affect poverty status by limiting the capacities of the poor households not to participate actively in the market system. The higher proportion of the poor households are from the Anywaa ethnic group where they have at least closer proximity to Itang and Akedo markets while the Nuer who is living in the western tip of the district does not have as such market access with closer distance as compared to the former.

4.1.5.4 Asset Possession of Households

The frequency table that indicated the ownership of own house shows, the kind of house the households under study have. Accordingly, from 77 households those responded correctly for the question “what type of house do you have?” all of them mentioned their houses are made of thatched roofed.

On the other hand, the valid households’ response are analyzed based on their poverty status and the answer they gave is summarized in Table 13. According to the results, 21(27%) households (12 poor and 9 non poor) possess sleeping bed made of wooden, three (4%) households have tables/chairs, only two (3%) households with a radio and 24 (31%) households have different articulates such as water container, blanket and tools for hunting etc. It also epitomizes the fact that the study population is apparently disconnected from the outside world for market and information use.

Except wooden bed as common for both groups, non-poor households possess more properties than the poor households, and the result supports the hypothetical assumption of possessing with sufficient assets by households is an opportunity to escape from poverty trap. 12 (16%) households who belong to the poor category claimed to have none. Almost all interviewed households have got a hut though the quality and size differs from one household to another.

In a rural context, be it in a purely pastoral context and an agro- pastoral context of like this, livestock is an important asset. As it will be discussed in section 2.2.11, livestock possession along with its herd size is addressed as direct indicator of poverty status. This result can be an evidence for the hypothesis set in the assumption part. Therefore, the kind and quality of asset can be an indicator of wealth status; and non-poor households have better asset accumulation.

Table 13: Asset Possession and Poverty Status of Households

Asset Type	Poverty Status of Valid		
	Poor	Non Poor	Total
Bed (Wooden)	12	9	21
Tables and chair	1	2	3
Radio	0	2	2
Others (Water container, blanket, tools to fish and farm tools)	6	18	24
Multiple response(HHs owning more than one HHs Asset	1	14	7
Households claimed nothing at all but hut	12	0	12
Thatched roofed house	32	45	77
Total	32	45	77

Source: Own Computation, 2008

Respondents were also asked to list type of household assets they would like to have but not owned currently. Accordingly, almost the majority of Anywaa wishes to have cattle, farm tools, chicken and shoats in their order of priority while the Nuers replied food aid, farm tools and skills, household utensils, blanket for their household members. Very few Anywaa also mentioned fishing net and equipment to make local *Araki* to generate income out of it. 13 households wish to have house roofed with corrugated iron sheet.

Meanwhile, 29 (48%) households from Anywaa and 20 (69%) from Nuer described their respective community as poor. 52% of Anywaa respondents and 21% households from Nuer declared that their community is very poor. Only three household respondents from Nuer reported that their community members are relatively rich and no respondent of this category of response from Anywaa community. Of the total cases only three of them claimed that they are rich. The other 51 and 35 self declared survey respondents consider themselves in relation to poverty as poor and very poor, respectively.

4.1.5.5 Income from Off-farm Activities

From the survey household heads, 19 respondents were volunteered to mention, the income they have got in a year other than agricultural activities and livestock rearing. The income includes fishing, petty trade, daily labor and charcoal/wood selling. According to the data, the calculated means for the poor and non-poor households are Birr 616 and 1079 and Birr 871 for total households respectively. Based these means it is possible to depict that the poor households have received lesser amount of income from the above-mentioned non-farm income generating activities. The result obtained here supported the assumption that; the higher the income from off-farm activities, the greater chance to

escape from poverty trap and it is statistically significant at less than 5% level. Table 14 summarizes the results hereunder.

Table 14: Off farm Income of Study Households

Off Farm Income (Birr)	Poverty status		
	Poor	Non poor	Total
Less than 500	17	15	32
501-1000	6	7	13
1001-2000	2	6	8
Above 2001	2	5	7
Mean	616	1079	871
SD	840	1235	1091

Source: Own Computation from Survey, 2008. *t* value -3.282. It is significant at less than 5% .

4.1.5.6 Size of Cultivated Land

The cultivable land holding size of the target households is calculated as 1.41 ha per household. According to the poverty line, the poor households have an average land size of 0.84 ha whereas the non-poor households have an average land size of 1.65 ha. On the other hand, the average cultivated land of the households under the survey is estimated as 0.46 ha while the poor and non-poor households have an average cultivated land of 0.25 & 0.62 ha, respectively. Table 15 indicates the average cultivated land size among the poor and non poor survey households.

Table 15: Average Land Size of Survey Households

Average Cultivated land in ha	Poverty status				Total	
	Poor		Non-poor		<i>f</i>	<i>Size</i>
	<i>f</i>	<i>Size</i>	<i>f</i>	<i>Size</i>		
Less than 0.1	5	0	1	0	6	0
0.1-0.2	9	1.3	--	-	9	1.3
0.25	15	3.75	8	2	23	5.75
0.3	2	0.6	1	0.3	3	0.9
0.5	8	4	20	10	28	14
0.6-1.0	-	-	19	17.10.6	19	17.1
1.5	-	-	1	1.5	1	1.5
Total	39	9.65	50	30.9	89	40.55
Average cultivated land	0.25		0.62		0.46	
Cultivable land ²	0.84		1.65		1.41	

Source: Own Computation from Survey, 2008. *t* value 2.933. It is significant at less than 5%.

² While the cultivable land is illustrated as different land types that can be cultivable and has already held by households as wet, rain feed, irrigable, and so on but not cultivated yet. Here, the writer would like to remind the readers of this paper to consider land size is as determined by estimation due to unfamiliar nature of modern measurements.

As to the computed data in both cultivable and cultivated land size, the non-poor households have a better land size, which is estimated by a two fold than the poor households have. Although the quality and productivity of a land differs in soil type, fertility, accessibility and its topography, land size has significant effect on the income of each household. As we have put in our assumption part of this paper, those households who possess relatively better-cultivated land have the chance to produce better amount of products, can secure foodstuffs for their family, and can be free from poverty trap. Without lose of generality, the data summary depicts this fact and the result found by this research supports the set assumption and, one can conclude that, under such conditions, the lesser the size of cultivated land, the higher the probability to fall under poverty line.

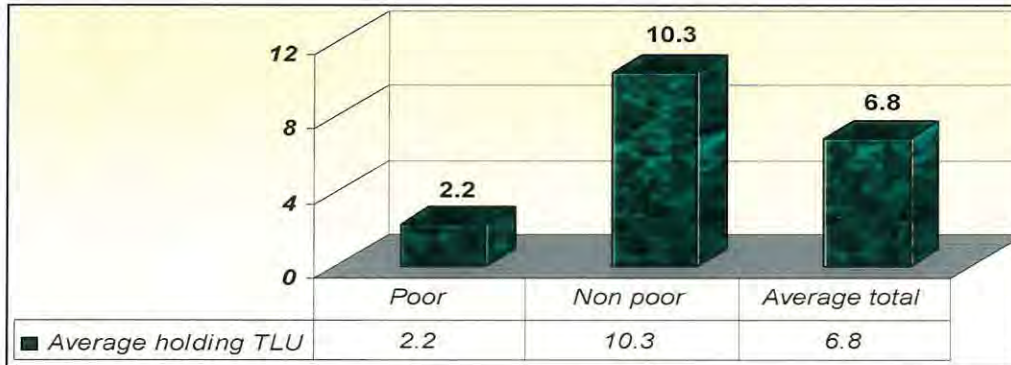
There has been impediments in accessing fertile riverine lands and pasture and the poor households lacks those land and unable to produce crops and permanent fruits. Those households with relatively better off assets and income have better traditional power and manage to access those fertile lands. The Nuer, on the other hand, has difficulties in accessing more farm lands as this is determined by the influence of the clan and households power to get access to natural resources. The non poor households are mostly from wealthier clans and have well to do extended families and relatives who can share resources commonly. Only the non poor households who can access improved farming, fishing and hunting tools and are better utilize the natural resources and thereby higher probability to escape out of poverty. In general, subsistence economy is the nature of livelihoods the study area. As the major constraint to improve the agricultural productivity is land size mainly for riverside cultivation it seems plausible to conclude that both farming extensification and intensification notably in river side cultivation is inevitable.

4.1.5.7 Livestock Income and Poverty

As can be seen from Figure 5, the mean livestock possession of households under the study is about 6.8 heads. The same data depicts the poor and non-poor households have an average livestock size of 2.2 and 10.3 TLU/AEU (Tropical Livestock Unit per Adult Equivalent Unit in annex 7), respectively. These figures show there is remarkable difference between the means livestock size of the poor and non-poor households. From the data obtained, those households that possess high livestock number have better chance to escape the poverty trap where as the smaller the livestock size widen the probability of

falling under poverty line. More sound analysis is done by investigating the income generated from the sale of livestock and its products.

Figure 5: Average livestock holdings of poor and non-poor households



Source: Own Computation, 2008

Households who possess certain livestock size and generate income from livestock and livestock products are expected to be less vulnerable to poverty. Since, households with larger livestock size produce and sell more milk, milk products and use for direct consumption, particularly during food crisis, owners could have more probability to escape from poverty. The livestock sale is also used as the major coping strategy during famine and seasonal food shortage. Based on this assumption, Table 16 tells whether we agree with the set assumption or not. The income generated from the sale of livestock and livestock products of the poor and non-poor households are varies each other.

The average income generated from livestock & livestock products for the poor households is found Birr 1938 is much less than that of the non-poor households Birr 2862. Although the number of the respondents is only 30 (which is the smallest number for statistically tested) from the total household, heads, this result agrees with the set assumption above. The t-test statistic confirms that there is a significant difference between the two means of household groups at 1% probability level

Table 16: Income from Sale of Livestock, Livestock Products and Poverty

Income of Sale of Livestock & Livestock Products	Poverty Status		
	Poor	Non poor	Total
Less than 1000	1	3	4
Between 1001-2000	2	7	9
Above 2000	4	13	17
Mean	1938	2862	2642
SD	828	2038	1149

Source: Own Computation, 2008

t value -7.863. It is significant at less than 1%.

4.1.6 Non-Income and Consumption Expenditure Indicators of Poverty

The dimensions of poverty are also many and varied. They manifest themselves in or are characterized by malnutrition, illiteracy, diseases, squalid surroundings, high infant and maternal mortality, poor housing, low life expectancy etc as to be beneath any reasonable definition of human decency.

4.1.6.1 Access to Social Services

Availability, access to and interest to use of social services like education, health center, roads, and extension and credit services determine different dimensions of poverty and less access to these and other services indicate the severity of non-income poverty in a certain society. In order to get general highlight on such social services the researcher chose some indicators like availability, access and interest to use the service or not. For example, access to credit service is analyzed for poor and non-poor households.

According to the survey result, access to credit is not provided at all. Out of 36 respondents, only one household head has credit service to expend the money to buy improved seed. Other households are filling the gap of their demand to credit by lending money among one another. Four households were familiar in borrowing money from local lenders.

Extension service is also found at infancy stage. As indicated in Table 17, the number of the households that were receiving any form of extension services is only 15 out of 77 (and 62 households responded not using extension service at all).

Table 17: Households Who Received Any Extension and Veterinary Services. $n=89$

Response	Extension Services			Veterinary Services		
	Frequency	%	Cumulative in %	Frequency	%	Cumulative in %
Yes	15	19.5	19.5	37	60%	60%
No	62	80.5	100.0	25	40%	100%
Total	77	100.0		62	100%	

Source: Own Computation, 2008

Among these households, 14 are in the non-poor category of poverty status and their average annual income (i.e. estimated by adding all income types by converting into monetary value) is (Birr 5,853), and it is found better than most of the average annual income of the non-poor households (Birr 5,144) in the study area (Table 18). This

comparative result may point out the effects of agricultural extension service as well as ways in addressing food security and poverty reduction in general. On the other hand, there is significant difference between the mean income of poor and non poor households at less than 1% probability level.

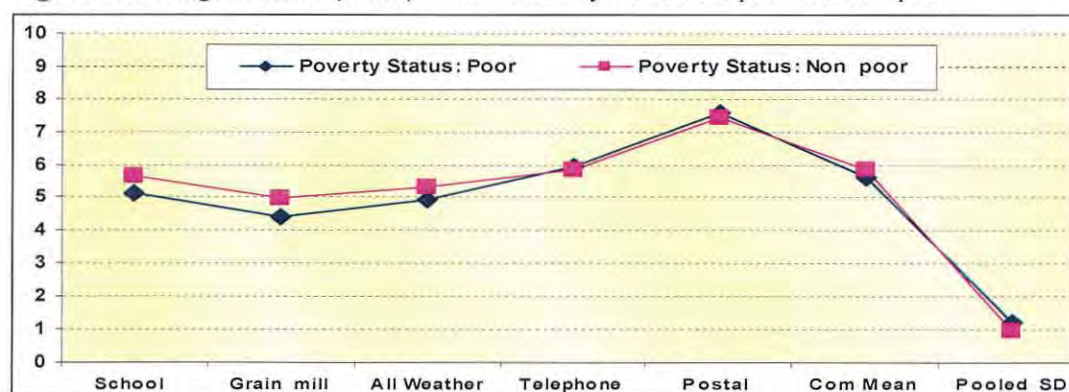
Table 18: Income Distribution and Poverty Status with Extension Service Users

Income in Birr	Poverty status		
	Poor	Non poor	Extension service users (n=14)
Mean	2466	5144	5853
SD	1952	3504	2184

Source: Own computation, 2008. t value -4.099. It is significant at less than 1%.

As the summary of average distance to reach, different social services for the poor and non-poor households (Figure 6) indicated both categories have equal chance to use the provided services.

Figure 6: Average distance (in km) from the nearby service for poor and non-poor



Source: Own Computation, 2011

The mean of averages of distance to reach the services for poor and non poor households do not tell us there is significant different to support the assumption: the nearer the service, the higher the probability to escape from the trap of poverty. This result indicated that, there are other cases (statistically called disturbances) rather than the proximity to social services, to use the provided services effectively for all group of the community. For example, proximity to towns may affect the saving culture of certain community members and provoking the probability of falling under poverty line.

Remoteness from and isolation both in terms of geographical and basic socio-economic services are the salient features of the study communities; and exemplifies their sheer

disconnect from the rest of the world. In fact, the significant majority of the population lives in the same district as they are born, without having moved.

With respect to health and health related services and facilities, data are summarized in Table 19 and analyzed in frequency distribution by SPSS program and the following results were displayed. According to this case summary, from the total households who gave valid answers, 77.5% said that they have human health facilities in their community while 11.2% do not have. According to the figures, reasonable proportion of the target households has at least one of the aforementioned facilities within a reasonable distance in the district. Health post is chosen as the leading health facility and it covered 41.6% while health center is the least (7%).

Table 19: Summary of Health and Sanitation of Households

Types of Health Service/Facilities	Response in No. and %			
	Yes	%	No	%
Availability of human health facility	69	77.5	10	11.2
Occurrence of sickness in the HH	56	62.9	17	19.1
Latrine possession	16	18	62	69.7
Occurrence of death in the family in last year	20	22.5	43	48.3
Water for Humans & Livestock Consumption	38	42.7	26	29.2

Source: Own Computation from Survey, 2011

Respondents of the study were also asked the nearest available health institute and 69.7% replied that they have access with tin their respective kebeles while the 10% of them usually go to woreda to get the treatment. Of the total respondents 7.9 % access health services at health center in the woreda capital; 20.2% at clinic and the majority 41.6% gained the same services at health post located with in their locality.

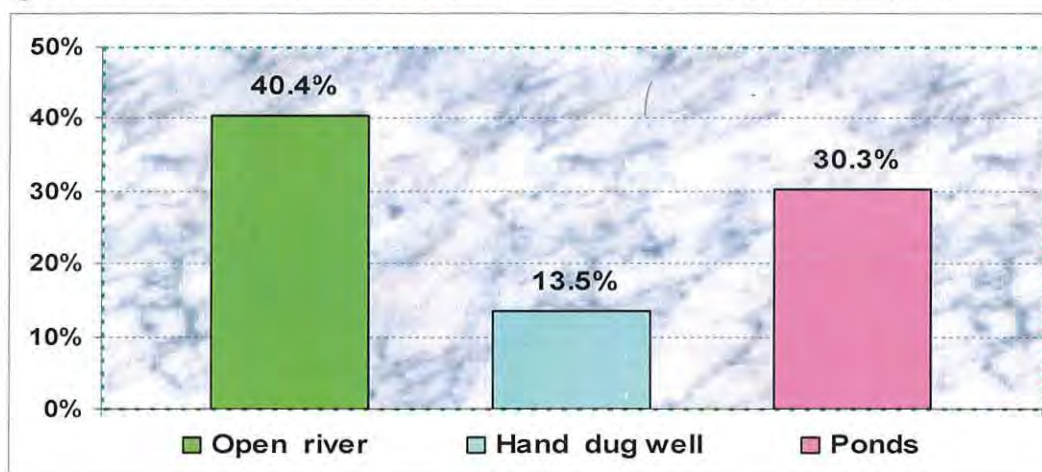
The study also tries to see how a household manages their sick members nearly 63% of the households' encountered occurrences of sickness in their household in last year. Accordingly, the study and found out that over 54% of the respondents claimed to seek for health professional support in modern facilities while over 9% go to traditional healers. This shows that the study communities have good health seeking behaviour where significant proportion of the population prefers to visit modern health facilities for

treatment support though the regular availability of the services have not been reliable during the study period.

The study also explores the possible water sources for both human and livestock consumption. Having settlement also the Baro river and depend for both livelihoods and socio cultural practices, the Anywaa seems accorded indispensable value to the river water. The Nuer uses the river during the dry season and ponds and small streams in wet season. Figure 7 shows the major sources of water where the study population use for both human and livestock consumption on permanent basis.

With respect to water and sanitation coverage, about 40.4% of households is using open river water, 30.3% from ponds and 13.5 % hand dug wells used for both for human and livestock consumptions and 77.5% of the households responded as they have separated the water sources for the use of humans and livestock.

Figure 7: Shows Main Water Sources for both Human and Livestock Consumption.



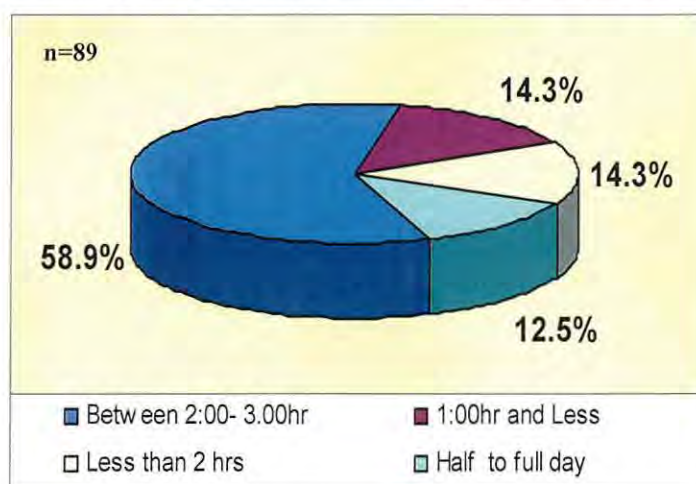
Source: Own Survey Data, 2008

On the other hand, only 18 % of the survey households have latrine and the remaining 69.7% do not have any form of latrine and they are used their backyards, the nearby forests and other places for their excretion.

In general, the data obtained on the different social services as such as access to health service are quite good even as compared to regional figures. Over 28.6 % of the respondents claimed that they spent less than 2 hours to travel to health centers while the

majority 58.9 % expected to walk in two to three hours and 12.5% spent half to a day to get modern health services.

Figure 8: Percentage of Respondents and Time Spent to Access Health Services



Source: Own Computation, 2008

In general, over 87.5% of the respondents need to travel between one to three hours to reach at the nearest health facilities. However, it is clear that these figures do not guarantee availability to the health treatment mostly due to mal functionings.

4.2. DETERMINANTS OF POVERTY

In addition to the basic descriptive statistics, the logistic regression model was employed to identify the determinants of household poverty. The variables included in the model were tested for the existence of multi-collinearity, if any. Contingency coefficient and variance inflation factor was used for multi-collinearity test of discrete and continuous variables, respectively. Contingency coefficient value ranges between 0 and 1, and as a rule of thumb variable with contingency coefficient below 0.75 shows weak association and value above it indicates strong association of variables. The contingency coefficient for the discrete variables included in the model was less than 0.75 that didn't suggest multi-collinearity to be a serious concern.

As a common practice continuous variable having variance inflation factor of less than 10 are believed to have no multi-collinearity and those with VIF of above 10 are subjected to the problem and should be excluded from the model. The computational results of the

variance inflation factor confirmed the non-existence of association between the variables and were included in the model.

Table 20: Maximum Likelihood Estimates of the Logit Model

Variables	Coefficient	Wald - statistics	Odds ratio	Significance Level
HSZE	0.413	15.528**	1.512	
HHAGE	1.797	4.572**	6.033	
TOTINC	-0.147	18.625***	0.863	
REMMIT	-0.008	3.276	0.992	
DISMKT	-0.862	3.248*	0.422	
DEPNDRTO	-0.156	0.262	0.855	
ACCEXT	-0.296	0.527	0.744	
Constant	0.563			
Model Pearson Chi-square			66.673**	
-2 Log likelihood			206.653	
Sensitivity- correctly predicted poor group			69.8	
Specificity- correctly predicted non poor			78.9	
% correctly predicted (Count R2) based on 0.5 cut value			75	

*** significant at less than 1% probability level

** significant at less than 5% probability level

* significant at less than 10% probability level

Source: Model Output, 2011

The likelihood ratio has a chi – square distribution and it is used for assessing the significance of logistic regression. Model chi – square provides the usual significance test for a logistic model i.e. it tests the null hypothesis that none of the independents are linearly related to the log odds of the dependent. It is an overall model test which doesn't assure every independent is significant. The result is significant at less than 5 % probability level revealing that the null hypothesis that none of the independents are linearly related to the log odds of the dependent is rejected.

Additionally, goodness of fit in logistic regression analysis is measured by count R2 which works on the principle that if the predicted probability of the event is greater than 0.50 the event will occur otherwise the event will not occur. The model result shows the correctly predicted % of sample household is 75 % which is greater than 0.50. The sensitivity, correctly predicted poor is 69.8 % and that of specificity, correctly predicted non poor is 78.9 %. This indicates that the model has estimated the non - poor and poor correctly.

From the analysis of the result it is possible to summarize the following significant independent variables. Seven independent variables that are hypothesized to have influence on household poverty in the study area were included in the model, of which four were found to be statistically significant even though the level of statistical significance for the independent variables included in the model was different for individual variable and the sign of the significant parameters were as expected. The model output revealed that household total income (TOTINC) was significant at less than 1% probability level. Household size (HSZE) and household head age (HHAGE) were found to be significant at less than 5 % probability level. Remittance (REMMIT) and distance to the markets (DISMKT) were significant at less than 10 % probability level. The remaining two variables, namely overall dependency ratio (DEPNDRTO) and access to extension service (ACCEXT) were not statistically significant. In light of the above summarized model results possible explanation for each significant independent variable are given consecutively as follows:

Household size (HSZE): Given the strong positive relationship between household size and poverty, it is not surprising that the estimated parameters are positive and significant. This positive relationship shows that the odds ratio in favor of the probability of being poor increase with increase in household size. Other things remaining equal, the odds ratio in favor of poverty increases by a factor of 1.512 as household size increases by one. The possible reason is that with existing high rate of unemployment and less employment opportunity coupled with low rate of payment, an additional household member shares the limited resources that lead the household to become poor.

Age of household head (HHAGE): Age of household head is significant at less than 5 % probability level and positively related with household poverty. The result is in line with a priori expectations. Other things being equal, the odds ratio in favor of poverty increases by a factor of 6.033 as the household head age increases. Possible reason is that as the household age increases, the absence of employment opportunity and high addiction to stimulants prevailed in the study area impacts the household to become poor.

Total household income (TOTINC): The survey result showed a negative relation between total household income and poverty and the coefficient is highly significant at less than one % probability level. The odds ratio in favor of poverty, holding other variables constant, decreases by a factor of 0.863 as total income increases by one Birr.

The result corresponds with the prior expectation and the possible explanation is that income determines purchasing power of the household with the prevailing price so that those households having higher income are less likely to become poor than low income households.

Household distance from market (DISMRK): The results of the survey revealed that the variable under consideration is negatively related and significant at less than 10 % probability level with poverty. Holding other things constant, the odds ratio in favor of poverty decreases by a factor of 0.422 as a household has access to markets. The possible explanation is that access to markets gives the household an opportunity to be involved in income generating activities and procure their basic needs at reasonable prices arose from the competitiveness of the actors.

The result obtained is consistent with studies done by Getahun (2003), World Bank (2005), and Aschalew (2006). They found out that having better income, higher educational level of head of Households, proximity to market as well as age at first marriage of the head of the household in one way or another have significant effect in explaining the determining factor for poverty. In general, the econometric result provides important evidence pertaining to variables which should be considered and given emphasis during interventions in order to overcome the problem of poverty in the study area.

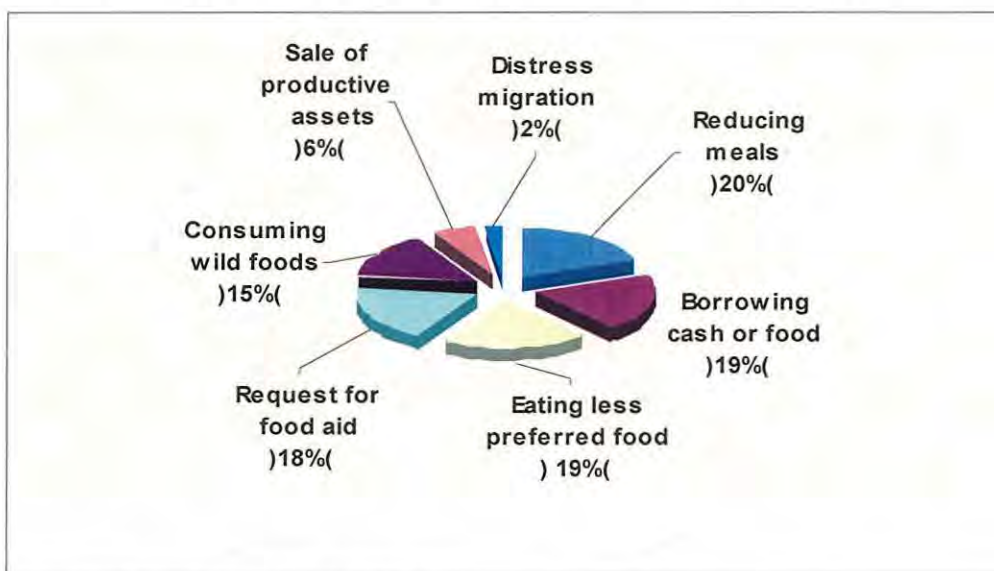
4.3. COPING STRATEGIES EMPLOYED BY THE STUDY HOUSEHOLDS

Coping strategies are temporary mechanisms that households use at times of food shortages and/or during crises. Hence, identifying these strategies would to consider poverty reduction initiatives that households can easily adopt and sustain in the future. Accordingly, households who were unable to meet their families' food requirement or other needs were asked about the possible strategies they used during crises.

Based on the result of the survey, respondents replied that they have used the following major coping strategies in their order of importance: reduce size and/or number of meals (94.4%); borrow cash or food from neighbors/relatives (94%); eat less preferred and less expensive foods (93.3%) followed by request government for food aid (89%) and consumption of wild foods (74%). On the other hand, distress migration, sale of livestock

or farm tools (28%) were found the least employed ones. Figure 9 shows households coping strategies to the problems of food during crises.

Figure 9: Major Coping Strategies Adopted by the Study Households During Crises



Source: Own Survey Data, 2008.

The coping strategies used by the respondents were analyzed based the criteria proposed by Frankenberger (1992) which includes three categories: (1) strategies that do not involve disinvestment showing modest vulnerability; 2) strategies with high disinvestment leading to greater households' vulnerability; and 3) a situation where households sell their productive assets and start permanent migration. In this regard, the majority of study households fall under category one where their vulnerability is fair and this can reversed through longer term development initiatives.

CHAPTER FIVE: DISASTER RISKS AND VULNERABILITIES TO POVERTY

This chapter deals with assessment and analysis of poverty and other vulnerability factors among the study population based on data generated through FDG and KII. In order to explore the study households' disaster risks, Disaster Risk Reduction (DRR) analytical framework were used. This DRR comprises of characterization of hazard followed by assessments of various forms of vulnerabilities and capacities to address the impacts of disaster and disaster risks.

5.1 Inter Ethnic Conflicts

The presence of peace and stability is vital for normal socio-economic activities of any society. This state of being is measured in different ways. However, in our case, it can be measured in comparison by identifying conflict, its incidence level, its prospective causes and effects as well as its state of happening. Timeline analysis was used to identify the incidence, time of occurrences; the causes; and effects and level of conflict resolution.

The participants of FGDs were asked to trace conflicts that have been occurring in the last 25 years and three kinds of conflicts within that target communities were found out followed by putting the duration and frequency of conflicts. Accordingly, the community members gave their level of agreement by scaling it from 'strongly agree' to 'strongly disagree'. The researcher used coding to identify each level of agreement and the major findings are summarized in Table 21.

The intra-ethnic conflict between the two ethnic groups has been serious problem in less than ten years time. But the causes for the problem traced back to the years before. Loss of human life, displacement and livestock raid were the main effects of the stated time. The state of the conflict is still unsolved and there is probability of reoccurrence of ethnic conflict between the Anywaa and the Nuer people (Annex 10).

The second type of identified conflict was the conflict that occurred between the Sudanese refugees and the local people. It was very common with in the period 10 to 20 years. Its main causes were access to and control over existing resources and violation that undertook against the hosts by the refugees. Breakdown of the socio-cultural structures, mass displacement, and depletion of natural resources and shortage of form/grazing land

were the principal effects of the period. With the evacuation of the refugees, the then conflict was resolved.

The third type of conflict that has been identified by the community members was the conflict that happened between the highlanders and the local community. It was very common conflict between the years of 5 to 20 in the area. Its main causes were claim over urban economic activities like trade and employment opportunities by the local people. It resulted in devastating loss of life, destructions of properties and distrust among each other. Until the time of the data collection Community members did not think the conflict was resolved.

Table 21: Summary of the Timeline Analysis for Conflict between different groups

Conflict	Timeline and Its Frequency of Response	Degree of Agreement			
		SA*	A	DA	SDA
Between Anywaa & Nuer	Frequency in less than 10 yrs	7	8	2	3
	Frequency in over 10 yrs	2	6	2	10
Between refugees/IDPs & hosting communities	Frequency in less than 10 yrs	15	0	0	1
	Frequency in over 10 yrs	0	3	4	9
Between 'highlanders' & indigenous community	Frequency in less than 10 yrs	4	1	0	0
	Frequency in over 10 yrs	3	2	5	0
Total		31	20	13	23

Source: Own FGD Results Summary- of Annex 10

*SA- Strongly Agree; A= Agree; DA= Disagree; SDA= Strongly Disagree

Due to the aforementioned conflicts, the local people was unstable for those long period of time and all community members agreed that their poverty level became worse and worst over time. Due to these conflicts, some households were left without husbands, fathers and sons and urged to be headed by mothers and sometimes grandmothers. Women were forced to rise up their kids alone. Some of the families had lost their lifetime assets and got very difficult to recover.

This timeline analysis supports the assumption we set as 'the higher the probability of the occurrences of incidences and instability, the more the chance fallen under poverty line'. All these all mentioned by the FGDs are supposed to be the main determinants of poverty and some of them were explained in this research in previous sections.

Meanwhile, the a significant number of interviewed households of Anywaa in *Itangkir* and *Pukumu* cited then the adverse impacts of the then Itang refugee camp which had hosted over 300,000 refugees who fled from the war throne South Sudan. Before the set

up of Itang refugee camp, the livelihoods of Anywaa was elementary and heavily dependent on the abundant natural resources to make their living out of fishing, farming along river, building and gathering. The local hosting Anywaa while remembering those old good days before, claimed to have lost their stable livelihoods and unable to meet their dietary meals. The refugee settlement brought tremendous fauna and flora. Although no official figure deforestation was so huge.

Further more, the then foreign aid to refugees were abundant and extremely cheap even as compared to other parts of the country (Kurimoto, 2005). The aid, on the one hand, discourages the Anywaa not to produce and paves ways to depend on the cheap commodities rendered to refugees. However, this has also brought about grievance among Anywaa for being excluded and marginalized from the refugee aid while their neighbors Nuer whose ethnicity are similar to the refugees enjoy the aid.

According to Kurimoto (2005) at that time, the Anywaa buy a quintal of maize was ETB 20 to 25 from refugees and this has discouraged to maintain their livelihoods productivity. Rather the Anywaa seemed passive consumers while refugees and highlander traders were successful in using the opportunities of the then economic boom in Itang. In fact little is still known about investing on business among the Anywaa. The same author said that even the little income earned mostly spent in buying expensive goods such as jeans , sneakers and watches and radios as well as for drinking and dowry payments.

The then international aid for refugees in Itang coupled with subsequent east ward movement of the Nuers even from South Sudan has ignited grievances among the hosting Anywaa community. Kurimoto concluded that the Anywaa developed their imagined concern over the neglect and marginalization from external aid. The persistent Nuer population pressure and its associated negative effects such as loss of lives and properties due to conflict, instability, tension, and an environment of mistrust has worsened the over all living conditions of the study communities.

5.2. Flood Disaster Risks

Although flood is directly related with the life of most of the households living along the riverside, it displaces significant number of inhabitants and damaged their crops, huts and other infrastructures almost every two years, which adversely affected the welfare of the households. During FDG, the researcher tried to identify the impact of recurrent flood risk

in the life and livelihoods of the study households, and all group members agreed that its negative impact is more significant than its benefits.

Table 22 shows, 88 respondents were responded about their perception of flash and river flood risks and their impact with the welfare of households under study. Likewise, 36.4% of the respondents replied as the flood claims lives of community members and seriously damages livelihoods and properties, more than 17 % said it is the cause for displacement, around 24 % responded it as the cause of starvation and human health problem while 4.5% respondents consider it as causes of disease outbreak and shortage of pasture. Only 8% of the respondents perceived the flood risk as main source of twice cultivation in a year, while 10 % agreed with both the negative and positive impacts.

From the analysis of Table 22, it is clear that flood risks affect the welfare of households negatively. These negative effects have direct relation with production and productivity of agriculture and accumulation of household assets. Due to complete or partial damage of crops, most of over-flooded fields cease or reduce the expected product and as a result, those households negatively affected are exposed to food shortage. As a result, they are forced to buy food items from market by incurring themselves for extra cost (the cost they must cover from their stock). From these consequences, one can simply infer that food insecurity due to flood risk can contribute its negative role for some people to be trapped in state of poverty. It has also been stated that floods also damages pasture and limits potential grazing areas particularly for Nuer communities.

Table 22: Respondents Perception of flood risks and Its Impact on Households' Welfare

Impacts of Flood Risks	Frequency	Valid %
Crops and properties damaged	32	36.36
Displaced from settlement	15	17.05
Cultivation of twice a year hindered	7	7.95
Shortage of pasture encountered	2	2.27
Disease outbreak and death of animals	2	2.27
Starvation and human health problems	21	23.86
All (Multiple Responses)	9	10.23
Total	88	100.00

Source: Frequency Distribution Table of the Survey Result, 2008

Only 18 % of the respondents perceived the flood as an advantage for them to farm twice year. Over 82 percent of study households reported that floods brings damage properties and loss of lives. The major adverse impact comprises of 36.3% of the cases are damage

of crops and properties while human problems including starvation caused from the flood disaster accounts 24% of the respondents.

The finding from the discussion with selected community members, on the one hand, showed that recurrent flood has brought tremendous negative impact on the livelihoods of the communities under study. All the study kebeles are vulnerable to flooding annually. The flooding causes deterioration of livelihoods of farming and livestock. At times of flooding crops damaged, many parts of the villages covered with water, huts submerged, and no safer place even for residence. All farming areas used to report covered by the flooding on annual basis.

The recurrent flooding has become even more serious in the last five years and initially the trend were on ten years interval but now its seems that the worst case of trends. In 2010, over 12,353 (27%) and 8,200 (32%) population of Itang district were affected and temporarily displaced due to flood, respectively. The 68 % the crop damaged and 94 % shoats death reported due to flood were also from the study district which shows its proneness to disaster risk (Gambella DPPB, 2010).

The settlement pattern of inhabitants of the district is concentrated along the riverside embankment. Except two of the kebeles of Itang district all are located along the Baro River. The main pre-occupation of these communities along the riverbank is farming and fishing, and no as such vegetable gardening. Some of the farmers along the river have fruits of Mango, which lasts for two to three months. Few inhabitants also reported that, their subsistence is being supplemented by hunting and gathering by going far distant from the riverbank. Even though, the remaining kebeles are situated a bit far from the riverbank their livelihoods still depends on the river. Those people, who live far way from the river mainly the Nuer, depend on livestock with a significant proportion of farming engagement. However, the livestock with mixed farming based Nuer community also used to come to the vicinity of the river searching for water and grazing land.

However, the current riverbank settlement pattern causes superficial land shortage, crippling the study households for intensification, and thereby increases food production to close the food poverty. Furthermore, as the study population exposed to recurrent flood, significant amount of riverside cultivated land and crops are damaged annually. The congested settlement also subjected the communities for frequent fire danger as it was the

case in the study kebeles, for example *Itang kir*, there where certain residents who left the village over a decade ago and formed another settlement relatively far from the Baro.

Health risks aggravated by the recurrent flood are more serious along riverside and this in turn, reduce the capacity of household labor and implicates in low subsistence level. Due to its prolonged and frequent occurrence the asset and livelihood bases of the communities have been deteriorated and their resilience to shocks diminished through time.

5.3. Socio-cultural Factors and Poverty

Based on separate focus group discussion and key informant interview; the cognitive knowledge of the community towards their perception and factors contributing to the perpetuation of and/or mitigation of poverty was dealt thoroughly. Both Anywaa and Nuer communities gave their meaning and perceptions of poverty in almost similar ways.

Among the study communities, poverty is seen primarily as inability to pay dowry payment and thus those unable to get married are considered as the poorest of the poor. It is also lack of income, cattle, employment opportunities in urban centers; and food for consumption and those with no larger extend family relatives and clan size. The incapability to prepare feast at times of rituals and periodic occasions to the wider public Anywaa community leader may lead to termination of his leadership.

Table 23: Description of Wealth Status among Study Households

Ultra Poor	Poor	Medium	Better Off
<ul style="list-style-type: none"> -No livestock at all; and/or landless -Excessively rely on wild foods; -Physically weak, aged with no support of relatives 	<ul style="list-style-type: none"> -Very few livestock -Small size cultivated land; -No permanent crops -Lack of access to riverside land; -Frequently engaged on hunting & gathering - Engaged on handcraft - Local alcohol making - FHH no relative support; - Rely on borrowing 	<ul style="list-style-type: none"> -Have reasonable number of livestock -Diversified income source - large size cultivated land -Fairly engaged on hunting and gathering - sent children school -afford to pay dowry -having good interaction with outsiders 	<ul style="list-style-type: none"> -Large livestock size -Large size of cultivated land& harvest; - Permanent crops - Traditional leaders, and those engaged on superstitious - Ability to support others -Characterized by polygamy

Source: Own Summary Based on the FGD, 20/11

A few relatively affluent households found on the top of the pyramid in both communities. This category of households usually comprises of traditional chiefs, spiritual leaders and households with extended family size with greater size of farmlands and livestock population. The size of household members mainly of males and thus ethnic size is also

considered as source of physical security in keeping the cattle mostly for Nuers and protecting territories of the villages which, in turn, contributes for better well-being.

Although the livestock owned by a household is a critical factor for the level of status of the owner, its number differs in each of communities. The *Nuer* being an agro-pastoral has higher number of livestock in medium and rich categories as compared to *Anywaa*. Particularly those who has spiritual skills have higher chance of accumulating wealth through gifts in the form of livestock from other community members. On the other hand, the *Anywaa* being predominantly engaged on farming has relatively better cultivated land and harvest as compared to the *Nuer*.

On the other hand, the poor households tend to have less labor force. They are the least beneficiaries from fishing and hunting livelihoods strategies as the poor households lack the equipments needed to diversify their subsistence in fishing and hunting. In both *Anywaa* and *Nuer*, polygamy is considered as sign of better wealth status as it is only those who manage to pay the required dowry payment in respective communities. In other words, having more than one wife is also another indicator a household being rich as marriage in both communities requires payment in the form of cash or cattle to the family of bride. Apart from the marriage ceremonies, *Anywaa* celebrates other holidays with excessive feast. This feast led them to spendthrift though it is this kind of practices which is highly valued and appreciated by the members of the society.

Most FDG participants agreed that an individual is considered poor if he/she can not work due to physical disability, or health problem; and lacks property inheritance or no support from kinship. Another important proxy indicator of wealth is the number of girls in the household. This is because of the fact that girls could be exchanged for cattle or cash in the form dowry for marriage. In both communities' property inheritance and/or support from relatives is expected among the youth as it is through this system that individuals can pay their dowry payment.

Among the *Anywaa* land ownership usually determined by village chief; and newly married groom should request those leaders to access land for farming. In fact land for cultivation is not a problem for *Anywaas* rather the addiction to alcohol and locally processed tobacco that makes many of the economically active men and women to be seen as idle and thus unable to feed themselves and their family members through out the year.

The Anywaa is known for their tales and traditional stories which are handed over from generation and generation.

Various studies (Monika, 2007; Bayleyegni T., 2009) showed that the folklores and cultural belief systems of Anywaa communities preaches their younger generation about sharing of ones resources and eating together and encourages and appreciates members who prepare periodic feasts as much as they can. It also advocates subtle and witty behaviour of individuals to utilize the resources of other societal members who are considered as greedy and has selfish interest. Elders socialize children to communally eat but not as such in working together. This socialization processes inculcated in the minds of the younger generation encourages communal eating and sharing of other resources together and undermines individualistic way of life including accumulation of wealth for ultimate saving and potential investment. The societal norm appreciates one to utilize the resources of greedy individuals and accorded little or no chance for asset appropriation.

On the other hand, the Anywaa has a good notion of forming a just traditional leadership system (Bayleyegni, 2009). Some of the criteria to deport their leaders, the Anywaa uses negligence of feeding his people by preparing feasts at least three times annually and showing greediness in which both is considered as violation of societal norms. According to Bayleyegn (2009), in non-respect of these norms will lead to willingly or forcibly remove leaders from their power; and his off springs will be transformed to the *Wantong*³ section of the Anywaa community. This also supports the assumption that sharing of ones own resources and behavior of generosity molded the Anywaa identity. In deed the name *Anywaa* it self refers as eat together; and to live in ones original area where the Anywaa considered as ancestral land. On the other hand, there is belief that no body ought to be in power for very long time unless he is exceptionally talented and wealthy (Bayleyegni, 2009). This could be due to the fact that the community put huge emphasis on festivities and expects their leaders to do to the same invitation for the public.

In fact there is no separation of economic, political and religious institutions among the study communities. The traditional chief of Anywaa usually decides the utilization of communal resources and his term in office determined by the type and amount of feasts prepared which is of course dependent on his wealth status. Some time the Anywaa chief

³*Wantog* means the lowest section of Anywaa society deprived of legitimate claims to be descendants of the noble lineage of the divine ancestor of who shape the Anywaa world view.

gives his daughter to the Nuer in exchange for cattle so that he can meet the demands of his community fellows. There are times where the Nuer provides cattle for Anywaa so as to access pasture and water in the later lands. It is this kind of mutual exchange of cattle for pasture and water as well; as inter ethnic marriage benefits both groups. This reciprocity helps the relatively poor *Anywaa* households to accumulate wealth and a means of distributing wealth though it is primarily spent on festivities.

Meanwhile, among the Nuers leaders are elected based on their personal qualities. One who possesses ritual power, being from the dominant clan (i.e the original groups of settlers of an area); being courageous enough and militant are the preferred criteria to elect a leader. According to Evans-Prichard (cited in Dereje, 2004) , leaders of Nuers are usually born out of war and migration and helping community to access natural resources and ensure integration of other members.

According to Bayleyegn (2009) the community established their mythology based on what they considered as their divine cultural hero, called *Ochudho*, and believed to be the first king of Anywaa. This myth culture hero's teachings, conducts and actions were adapted as rules, laws and norms of Anywaa and there by forms their collective identity. As the culture hero, *Ochudho* was seen as a divine power, and then the kings and village chiefs of Anywaa are also considered as divine. The formation and set of Anywaas collective identity is shaped through the divine order through their myth cultural hero and the societal norms; and rules are not the outcomes of social processes and are static.

Anywaa community is communal and sees earth or what they refer to as ancestral land and mere territoriality as central to that explains their life view, value orientations, and above all their very existence. The relation of earth with human is very intimate but the earth needs to be respected as it is the site of their ancestors hence transcends human existence. It is the notion of land ownership and territoriality that explains the *Anywaa* world view. They believe on external life on earth and consider it as one's heaven. Earth is the foundation of human existence; hence land is tremendously emotional in *Anywaa* imagination. According to Dereje (2004) the Anywaa conception of territoriality gives community members true existential and use right which is defended by the power of nature. It is enough to put claims on once occupied territories, even without repossessing it. Nuer recognize possession, which implies use right. Accordingly, if you do not use it,

does not belong to you. In this discourse ultimate ownership of natural resources is bestowed to the supernatural. Hence the ultimate reality for them is to maintain the land with lesser interventionist approach; and fully depend on it for their subsistence.

In short, *Anywaa*'s limited mobility due to their strong attachment to ones ancestral original home land coupled their emphasis on territoriality with mere ownership instead of effective occupation as well as utilization (as it is the case among Nuers) has adversely affected peoples opportunities to maximize their asset accumulation and to ensure integration with outside for economic, knowledge, skills and technology transfer that would improve living standards. This aspect of huge emphasis accorded on sharing of private resources with community members and the notion of territoriality seems the guiding principles and norms followed by all societal members since time immemorial and has played significant role in wealth accumulation and/or dis-accumulation.

CHAPTER SIX: SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1. SUMMARY

This study has been undertaken in three rural kebeles of *Itang* district namely *Itang kir*, *Pukumu* and *Badiel* in Gambella Region. The first two kebeles are inhabited by *Anywaa* ethnic group, while the last is by the *Nuer*. The focus of this study was identifying dimensions and determinants of rural poverty and other factors of vulnerability for being poor within those kebeles. These were done first by randomly selected 90 cases of households (later one case was missed) for this study into poor and non-poor households. This was followed by a thorough examination on the incidence, depth and severity of poverty within that specific community was conducted. Based on these indices of poverty, the social, economic, demographic and other related features were investigated and the food and non-food poverty line identified for further analysis of poverty dimensions and determinants among the study households.

The data collected through both qualitative and quantitative methods initially in February to April 2008 and supplemented in April 2011 were discussed and analyzed, using descriptive exploratory data analysis methods. Attempt was also made to explore necessary data and information that reveal the general set of the sampled community through the household survey and focus group discussions, key informant interviews and other participatory data gathering methods.

With the application of FGT method, the absolute poverty line, which is the combination of food and non food poverty expenditure, was calculated based on CBN and found Birr 1,662.65. Similarly, the poverty indices were calculated in accordance with the poverty line; and found 0.438, 0.096 and 0.039 as incidence of poverty, poverty gap and poverty severity indices, respectively. The consumption expenditure of sampled households varied for poor and non-poor households at 1% statistical level.

Similarly, the per capita consumption expenditure per AEU ; mean productive age, sex and educational level of head of households, size of cultivated land, remittances, asset possession ,income from off-farm activities and livestock for poor and non-poor households in all circumstances, had significant difference at less than 1% statistical level and these characteristics supported the assumptions made in the previous chapters.

In other round, certain human action and inaction such as inter ethnic conflict and recurring flood disaster, were found detrimental in the overall wellbeing of the study households and others in the area.

On the other hand, this survey found some of the determinants not supporting the assumptions made in the research hypothesis and these include mean household size, dependency ratio, distance to nearest market and access to extension services. According to the survey result, the poor households of the survey area has also less dependency ratio, less average hours of travel to the nearest market, and has smaller family members than the non-poor households.

In general, it has been observed that the dimensions and determinants of poverty are wide and complex. The study reaffirmed that poverty poses greater challenge on the wellbeing of people in different ways, situations and characteristics. It is apparent that, households found under poverty line differ from the average and non poor households in many distinct ways such as access to social services, rural credit, extension services, asset possession, number of livestock unit and vulnerabilities to flood and conflict disasters.. Better understanding and analysis of these socio economic and demographic features and determinants comprehend an important and essential starting entry point and are key element for policy formulation and appropriate poverty reduction initiatives.

6.2. CONCLUSION

The finding of the study revealed that poverty in Itang special district is determined by myriad of factors. These factors range from individual and household characteristics and capabilities the one hand; to sets of opportunities and constraints on the other hand. The dimensions of poverty among the sampled households were also many and varied. They manifest themselves in or are characterized by malnutrition, illiteracy, high morbidity and mortality, squalid surroundings, poor housing, etc as to be lower than any reasonable definition of wellbeing.

Poverty and being poor in the study population has fallen in three main aspects of determinants and dimensions. The first and most important aspect for being poor or non-poor (and supported by many literatures) is the income aspect. This aspect incorporates most of the determinants of poverty that were indicated in the hypothesis part and

discussed in chapter four. These are factors that directly limit the income level where given household can earn within a certain period. In addition, size of cultivated land, income generated from the sale of livestock and livestock products, asset possession, remittances, and income generated from other non-agriculture activities are cases in point. In all such factors, the poor households of the survey population exhibited relatively lesser amount of income and/or assets when we compare with the non-poor households. This result supports all the findings set by previous researchers.

The second most important aspect comprises the social and demographic factors which determine a particular household for being poor or non-poor. Household size, age and sex of family head, dependency ratio, education level of household head, access to basic social services, and proximity to the nearest market are included. Although the researcher drew different assumptions by examining other researchers' experiences and literatures, this particular study has revealed some interesting results (as indicated in the discussion part). Here, it is important to conclude that, these dimensions have their own specific and combined effect in aggravating or reducing the number of household heads being trapped under poverty line.

The third and most important aspect of the determinants and dimensions of poverty identified by this study is categorized under disaster risks and their negative impacts on community's wellbeing. Inter ethnic conflict and disaster risks like recurrent floods directly or indirectly affects the wellbeing of households, increases their vulnerabilities to poor living conditions and have contributed a lot for being poor or non poor.

6.3. RECCOMENDATIONS

Although the monetary aspects of dimensions and determinants of poverty has strongly influenced by determining the financial and other resource endowment; the most important factors, however, is households capabilities and opportunities to earn more income and get out of the vicious cycle of poverty. The other impeding factor is the disaster risks which make households vulnerable to poverty are also crucial while dealing with poverty reduction in the framework of sustainable development. Therefore, in order to reduce their impact on poor households' and protect the non-poor households from falling below poverty line the followings can be forwarded as policy and practices implications of the study.

- Most of non-poor households are engaged in more than two livelihood options. As it is known, income diversification can pull a certain percentage of poor households up above poverty line. As poverty gap index of the survey households indicates, if all other factors remain unchanged, an increase of 9.6% of total consumption in income or expenditure, which is an estimated birr 159.6, implies that the shortfall needed to fill the gap or renormalize the poverty situations of entire population to be out of food poverty line. Therefore, livelihoods diversification can uplift the poor above the poverty line.
- The situation of poverty is going from bad to worse regardless of the figure stated in poverty indices. Most households in the study are engaged in hand to mouth subsistence economy that primarily caused from old farm implements and input to increase productivity. Hence, interventions aim to enhance the poor households' access to basic productive tools and resources would enable them to utilize the available livelihoods options such as fishing, farming in riverine lands.
- The survey confirmed female-headed households are 1.87 times vulnerable to poverty than their male counterparts; which supports the idea of 'feminization poverty' among the study population. Women, being the overburdened with reproductive, productive and community roles among the study communities are highly subjected to poverty conditions. Considering their substantial roles in taking care of family members notably in socializing children; in making family subsistence and other productive works and contribution in peace building and conflict resolution, program that involves women will have paramount importance. Hence, initiative that targets, recognizes and enhance women roles in the subsistence economy of the study households and that can ease their work burden such as provision of basic social services would play significant role in reducing the gap in gender disparity.
- Effort should be made to provide basic social services such as education and health. These services are important in increasing the human capability and in changing the lives of the poor. Strong social sector programmes that are capable of changing the livelihood system of the vulnerable groups should be taken in to account. Policies of different sectors need to focus on reducing people's capability deprivation through investments on social and local political development. This in turn will help poor households to earn more income and enhance their purchasing power to get out of food poverty.

- Successive inter ethnic conflict mostly arises from access to and over control of resources is found to be the main impediments for the study population mainly for Anywaa whose livelihoods depends much on the natural resources base; not to lead stabilized life. The adverse effects of conflict such as loss of lives, properties and ones land used for settlement and livelihoods deteriorates the overall living conditions of the sampled households. These conflicts and contradictions also hindered the effective utilization of existing resources. Peace building, conflict resolution and good governance initiatives would be important to keep the development momentum of the district. The underlying vulnerabilities to recurrent flood disasters need to be addressed through long-term development efforts and measures. In this regard, the region and the district should formulate flood risk reduction policies and programme.

- Poverty reduction strategies need to target specific group of societies and their local contexts. In area like Itang, very genuine and careful analysis of determinants and features of poverty and related issues are required so as to identify who to benefit, what and how.

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Annex 1: Instruments-Household Survey Questionnaire

PART ONE: Identification of Particulars

1. 1. Location: District _____ Peasant Association Name _____ Village _____
 1. 2. Enumerator's name _____ Signature _____ Date of Interview _____

PART TWO: Socio-Economic and Demographic Characteristics of the Households

2.1. Please fill the table below about household socio-economic and demographic features

S/ N	Name of HH members	Age	Relationship to HH head	Sex (M/F)	Marital Status	Age at 1st Marriage	Education status		Religion	Ethnicity	Occupation	Income HH earned
	2	3	4	5	6	7	8	9	10	11	12	13
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

Codes for 04: 1.Head, 2.Spouse, 3. Child, 4. Parent, 5. Grandchild, 6. Brother/sister, 7. Other relatives, 8. Not related

Codes for 06: 1. Single 2. Married, 3. Divorced, 4. Widowed

Codes for 08: 1. Illiterate, 2. Read and write, 3. 1-6, 4. Grade 7-8, 5. Grade 9-12, 6. above 12 grade

Codes for 09: Reasons for illiteracy and/or if there are people currently stopped attendance; 1. No access school 2. Lack of money
 3: Do not want/ no interest, 4: to help family, 5: Old age, 6: Others (specify) _____.

Codes for 10: 1: Protestant, 2:Catholic, 3: Traditional Belief, 4:Islam, 5: others _____

Codes for 11: 1: Annuak, 2: Nuer, 3. Others (specify) _____

Codes for 12: 1: Farming, 2: Livestock rearing, 3:Fishery, 4: Mixed farming, 5: student, 6: Housewife, 7: Incapacitated due to illness;
 8: Petty trading, 9: Regular wage labour, 10. Others (specify) _____,

2.2. Who is the breadwinner in the household? _____ (insert code from Q2. code 4)

2.3. Does the household breadwinner have off-farm employment? 1. Yes 2. No

2.4. What has been the amount of production from main livelihood in the past one year?
 1. Increased 2. Decreased 3. Same

2.5. If the answer to Q 2.4 is “decreased”, what were the reasons?

2.6. Is there any one of the household members left the village? 1. Yes _____ 2. No

2.7. If the answer for Q 2.6 is ‘yes,’ what were the reasons?

1. Employment in gov’t or NGOs, 2. Casual labor
 3. Education/training 4. For trading
 5. To live with relatives in town 6. others (specify) _____

Part Three: House Hold Income And Expenditure

3.1. State the income that the household generating from the following sources:

S/ N	Income Source	How much income did the HH receive during		How has each income sources changed during last 12 months 1. Increased 2. Decreased 3. Same	Annual Amount of Income in ETB
		Last month	Last 12 months		
1	Sale of own crop produce				
2	Sale of livestock				
3	Sale of fish				
4	Sale of household assets				
5	Wage of the Head				
6	Wage of spouse/children				
7	Sale of vegetables				
8	Sale of fruits				
9	Petty trade				
10	Remittances				
11	Sale of honey				
12	Sale of fuel wood/charcoal				
13	Sale of contractual farming				
14	Others(_____)				
	Total				

3.2 Out of the main sources of income identified above, what are the main three sources in their order of importance? (Please enter the numbers from the list above.)

1. _____, 2. _____, 3. _____

3.3. What are the types of food items mostly eaten in your family? (Multiple answers possible)

1. Maize/Sorghum 2. Milk & Milk products 3. Fruits including wild plants
5. Root crops 6. Fish 8. Others (specify) _____.

3.4 What was the consumption of each of the food items in your family for the last 12 months? (Indicate the quantity for and value for one-year period).

Food Expense Category	Unit	Annual food intake/Consumption by household			Expenditure Sources 1. Own produce 2. Purchase 3. Huntung & gathering 4. Gifts/Remitances 5. Borrowing, 6. food aid	
		Annual quantity	Annual value (in birr)			
			Per week	Per mont		Per year
Sorghum	quintal					
Maize	quintal					
Wheat	quintal					
Milk & milk products	Liter					
Fish	Kg					
Meat	Kg					
Sugar	Kg					
Salt	Kg					
Oil	liter					
Butter	Liters					
Coffee	Kg					
Tea	Gm					
Chicken	No.					
Pulse	Kg					
Fruits	Kento					
Vegetables	Kento					
Root crops such as potatoes, yam	Kento					
Honey	Kg					
Tobacco	Gm					
Local drinks	Liters					
Others _____						
Total						

Indicate the type and amount of expenditures of the household for non-food items during the year 2007.

Non food Items Expense Category	Amount of expenditure in Quantity	Annual Expenditure (in Birr)	Expenditure sources 1. Own produce 2. Purchase 3. Huntung and gathering 4. Gifts/Remitances
Clothing			
Medical/ health care fee			
Transport cost			

House utensils			
Soap			
Kerosene (lamp fuel)			
Purchase of farm tools			
Purchase of seeds			
Veterinary services			
Social obligations (feast, dowery, etc)			
Others (miscellaneous)			

3.6. What income/expenditure do you consider to be absolutely minimal, in that you could not make ends meet with any less? _____ (in birr per month).

Part Four: Coping Strategies Employed by the Households

4.1. Have you ever resorted to the below mechanisms in cases of sever food crises? *Please do read out all answer choices to the respondents!*

No	Type of response to crises	How often do you do this?			
		Every year	Most years	During crises Only	Never
1	Sale farm equipments				
2	Sale of livestock including Sheep & Goat				
3	Selling a higher number of livestock than usual to generate cash to be able to buy food				
4	Eat less preferred and less expensive foods				
5	Reduce size and/or number of meals				
6	Consumed immature crops such as green maize or unripe foods				
7	Borrow cash or food from neighbors/relatives				
8	Request government for food aid				
9	Reduced and no expenditure for social services (education , health etc of family members)				
10	Unusual sale household equipment/properties				
11	Distress migration to find work				
12	Sale fire wood and/or charcoal				
13	Postponing wedding and other ceremonies				
14	Consumption of wild foods(tubers, roots)				
15	Others, Specify _____				

4.2. Please identify and rank the first three by order of importance:

1. _____ 2. _____ 3. _____

4.3. Has the household poverty improved or deteriorated in the past one year?

1. Improved 2. Worsened 3. Remain Unchanged

4.4. If there were worsening of household poverty, what would be the main reason for the increase? *(Multiple answers possible; please circle)*

1. Sold assets to buy food
2. Migration of the labor force
3. Sold assets to cover ceremonies
4. Natural disaster (flood, drought, hail, etc.)

5. Conflict and displacement 5. Deaths of livestock 8. Other (specify): ____.

4.5. How many full meals did you have yesterday? _____ meals.

4.6. How many times are you used to eat per day in most of the year's time?

1. Once 2. Twice 3. Three times 4. As obtained 5. More than 3 times

4.7. If the answer for Q. 3.5 is number 1 or 2, what is the reason? _____

4.8. Over the last seven days, how often did you eat the types of food listed below?

	Food Items	Frequency of eating this food	Main source(s)
1	Porridge made from Cereals		
2	Fish (fresh or dried)		
3	Root crops		
4	Leafy vegetables including, cabbage and pumpkins		
5	Fruits (not wild fruits)		
6	Wild foods (tubers, fruits, roots, leaves...)		
7	Milk and/or milk products		
8	Nuts, pulses (groundnuts, lentils...)		
9	Meat (chicken, beef, cattle) and Eggs		
11	Sugar and/or honey		
12	Oil, fats and butter		
13	Others		

Main Source Codes: 1 = Own production 2 = Purchase 3 = Hunting/gathering/fishing 4 = Gift
5 = Food assistance 6 = Borrowed 7 = casual labour earned 8 = Barter

4.9. How much do you produce during the following years (in quintal per annum)?

1) Good harvest year. _____ 2) Normal harvest year ____ 3) Poor harvest year? _____.

4.10. What are the constraints for not having enough food for these months of the year?

1) Minimum rainfall 2) Lack of early maturing variety 3. Conflict/displacement
4) Lack of plough oxen 5. Flood/water logging 6. No extension services
7. No improved tools) 8. Others (specify)_____.

4.11. If there were any damage to your crop or livestock in last year, specify the type of crops/livestock lost and the extent of loss in the following table.

S/N	Type of crops	Area planted	Expected production in 2007 in Quintal	Actual Production In Qtl in 2007	Causes of loss
1					
2					

3					
---	--	--	--	--	--

Codes for causes of loss: 1. flood 2. Conflict, 3. Stealing 4. Pests and wild animals, 5. Erratic rain fall

4.12. Please indicate the type and number of livestock you have?

S/N	Cow	Ox	Heifer	Bull	Equines	Sheep	Goat	Poultry	No of Dead	Cause of loss
1										
2										
3										

4.13. If relief food aid has been distributed, what were the quantity and type of food you received during the year 2006/7?

Cereals ___kg Veg Oil ___liters Pulse ___kg Blended food ___kg

Part Five: Human Health, Water and Sanitation

5.1. Do you have human health facilities in your community? 1. Yes 2. No

5.2. If yes, where is the nearest health facility in your local community?

1. Within the kebeles 2. Woreda 3. Not available 4. Unknown

5.3. If the answer is "yes" what kinds of health facilities are available in your community?

1. Health center 2 Clinic 3. Health post

5.4. How many hours do you take to travel to get the health services? _____ hrs.

5.5. Do you have any latrine facilities? 1. Yes----- 2. No-----

5.6. How do you travel to health facility during medical service is needed?

1. On foot 2. By animals 3. By bus 4. Other, specify_____.

5.7. Has any one in your home been seriously sick during the last one year?

1. Yes 2. No

5.8. If yes, how many of your family members were got sick? _____

5.9. What were the diseases that affected your family?

5.10. How did you manage helping the sick person?

1. Did nothing 2. Took to traditional healer 3. Took to health facility
4. Bought drugs from the shop 5. Others (specify) _____

5.11. Who helps your wife/ wives during delivery?

1. Relatives/Neighbor 2. TBA, 3. CHA
4. Health Assistant 7. Other, specify_____.

5.12 Did you face any death in the last one year? 1. Yes 2. No

5.13. If yes, indicate the age, sex and reasons for the death.

Name Person died	Age	Sex	Causes of death

5.14. Do you have drinking water in your village? (*Multiple answers possible*)

1. Open river/springs 2. Hand dug wells 3. Ponds 4. Others (specify) _____

5.15. How far do you have to travel to fetch water? _____ Km.

5.16. Is the water source for human and livestock different? 1. Yes 2. No

Part Six: Flooding, Conflict and Displacement Issues

6.1. What do you understand by flooding? (*Multiple answers possible*)

1. Damage of crops on farm
2. Displacement from settlement
3. Cultivation of twice a year
4. Shortage of pasture and water
5. Destruction of properties
6. Death of animals
7. Food shortage/starvation
8. Animal and human disease outbreak
9. Curses from God
10. Others (specify) _____.

6.2. Which were the flood years you remember? State the years. _____

6.3. What has happened to your family and properties during each of crises periods?

1. Food shortage /starvation
2. Death of family members
3. Death of animals
4. Human disease outbreak
5. Animal disease outbreak
6. Migration
7. Crop damage
8. Good harvest
9. Others _____

6.4. Did you migrate during the last flood period? 1. Yes 2. No

6.5. If yes, where did you go? _____ and for how long? _____ (in months).

6.6. Have you lost any of your household assets during the last flood period?

1. Yes
2. No

6.7. Was there any conflict and instability in your village during the last five years?

1. Yes
2. No

6.8. If yes, please indicate types of assets damaged and lost.

S/N	Type of Assets lost/ damaged	Causes		Extent of damage or lost		
		1. Conflict	2. Flood	High,	Medium	& Low
1						
2						

6.9. Do you have a traditional flood risk management methods? 1. Yes 2. No

6.10 Of which of the following social obligations do you participate in?

Traditional organization	Participate		Otherwise	Formal organization	Participate		Otherwise
	Member	Committee			Member	Com mittee	
				PA			
				Cooperatives			
Others, specify				Others, specify			

6.11. Who is primarily responsible for farming and livestock management issues in HHs?

Areas of Responsibilities	Male	Female	Joint action
Farming			
Livestock rearing			
Selling of crops			
Selling of livestock			
Fishing			
Others			

6.12. Do you have your own land? _____ 1. Yes 2. No

6.13. If yes, what is the size of the cultivable land? _____. In addition, what is the land that is actually being cultivated? _____ (in hectares)

6.13. For what purpose you are using your land. _____.

6.14. If the answer that given for Q 7.12 is 'no', who is the owner of the land in your locality?

1. Clan leaders 2. Government 3. Community 4. No body owns 5. Don't know

6.15. Do you have permanent living place? _____ 1) Yes 2. No

6.16. Have you ever encountered conflict with the neighboring ethnic groups?

1. Yes 2. No

6.17. If yes, what was the cause for the conflict? (*Multiple answers are possible*)

- 1) Controlling over farmlands 2) Controlling over watering points
 3. for controlling over pasture lands 4) safeguarding the ethnic/clans territory
 5. For expanding the territory 6. Others (specify) _____

6.18. What were the impacts of those conflicts in your life? (*Multiple responses are possible*)

1. Loss of human life. 2. Loss of livestock 3. Loss of crops
 4. Loss in household assets 5. Others specify _____

6.19. Has the conflict been resolved? 1. Yes 2.No

6.20. Had the presence of refugees brought about benefits to your communities? 1. Yes 2. No

- 6.21. If the answer to above is “yes,” what were the major benefits?
1. Infrastructure development
 2. Employment opportunities
 3. Livelihood improved
 4. Cultural exchange & knowledge sharing
 5. Education
 - 6 Others _____.

- 6.22. If the answer to Q 7.21 is “No” what were the negative impacts?

1. Poverty
2. Environmental Degradation
3. Less agricultural production
4. Conflict and instability
5. Others (specify) _____.

- 6.23. Was there any discussion of poverty reduction strategy in your communities?

1. Yes
2. No

- 6.24. If yes, have you ever been participated in the consultation process? 1. Yes 2 No.

- 6.25. Have ever been involved in any community affairs in your kebele? 1. Yes 2. No

Part Seven: Market and Credit

- 7.1. Is there a nearby market place to buy foodstuffs and non-food items (clothes and the like) for your household consumption? _____ 1. Yes 2. No

- 7.2 If the answer to Q 8.1 is “yes” what is average market distance you traveled to nearest market from your home, measured in hours of walk? _____

- 1) ½ hr
- 2) 1 hr
- 3) 2hrs
- 5) 2- 3hrs
- 6) 4hrs
- 7) > 4hrs

- 7.3. What means of transportation do you use to take your produce to the market?

- 1) Traditional boat
- 2) Vehicles
- 3) Human
- 4) Other. specify

- 7.4. If you sell or buy commodities do you get reasonable prices during the last one year?

1. Yes
2. No

- 7.5. If no, what are the reasons? (Multiple answers are possible)

1. Lack of access to potential markets
2. Lower or no demand
3. . To settle debts
5. Social obligations (wedding, bride, funeral, etc.)
4. To pay tax
7. To meet family requirements/sharing
8. Others (specify) _____

- 7.6. Did you have access to rural credit during the last couple of years?

1. Yes
2. No

- 7.7. If yes, for what purpose(s)?

- 7.8. What were the sources of credit? _____

1. Relative /friend
2. Local money lender
3. government
4. NGOs
5. Others (specify) _____.

Part Eight: Access To Services

- 8.1. Do you receive any sort of extension services to improve your farming? 1. Yes 2. No
- 8.2. If the answer is "yes" what other inputs do you use? _____
1). Improved seed 2). Improved breeds 3) Chemicals 4) Others specify
- 8.3. Do you get veterinary services for your animals?
1. Yes 2. Sometimes 3. No
- 8.4. How far do you travel to get to the nearest school in your vicinity? _____ Km
- 8.5. How far do you travel to get the services of grain mill? _____ Km
- 8.6. How far do you travel to get the services of all weather roads? _____ Km
- 8.7. How far do you travel to get the services of telephone? _____ km
- 8.8. How far do you travel to get the services of post office? _____ km

Part Nine: Household Assets

- 9.1. Do you have your own house? 1. Yes 2. No
- 9.2. If yes, what type of house? 1. Thatched roofed 2. Plastic roofed 3. Iron sheet roofed house 4. Others (specify) _____.
- 9.3. Does any one of the household currently own any of the following items? (*Multiple responses is possible*)
1. Bed (Wooden/metal) 2. Tables and chair 3. Radio
4. Lump/ gas stove 5. Others -----
- 9.4. How do you describe your community in relation to poverty?
1. Rich 2. Poor 3. Very poor
- 9.5. Do you consider your self to be?
1. A rich person? 2. A poor person? 3. A very poor person?
- 9.6. Give answer for your answer to Q 10.6
- 9.7. What do you think of the main causes of the poverty situations in your household?
- 9.8. In your opinion, what should be done in order to improve the livelihood of the study population in Itang special woreda?

THANK YOU VERY MUCH FOR YOUR TIME AND PATIENCE!

Annex- 2 Instruments: Interview guides & Check list for Key Informant interviews & FGDs

3.1 Interview Guide for Key Informants Interview

I. Water Supply

Water is the water supply coverage for the year 2007? _____.

Year	Rural	Urban	Total	Remark
1997				
2006				
2007				
Average/Mean				

What is the average distance (hours in travel) to access potable water in the woreda? _____.

How many water source structures constructed in the woreda? _____.

II. Education and related Infrastructures

Primary School Education Coverage at Regional and Woreda level (Itang)

Year	Itang			Remark
	Rural	Urban	Total	
1997				
2004				
2006				
2007				

Total No. of Schools In Itang Woreda

Year	Primary	Secondary
2006		
2007		

What is literacy rate coverage in the Woreda? _____.

What is primary School Enrollement rates for the year 2006 and 2007 _____ & _____.

What is average rural distance in hours for access to education services for the year 2006/07 for Itang Sp woreda? _____

III. Health and related Issues

What are the most prevalent common morbidity and causes of What is the number of available health Institutions?

Year	Health Centers	Clinics	Health posts	Out reach posts
2004				
2005				
2006				
2007				

What is the average distance for Itang woreda rural communities to access health services? _____.

Total number of health professionals at Itang Woreda:

Itang Sp: MD _____ HO _____ Nurses _____
H/Assistants _____ HEW _____

How do you evaluate the quality and coverage of health services in the woreda?

IV. Agriculture and related Issues

Is extension package implemented in the woreda and if Yes how many farmers engaged on so far and what are the types of services catered for the farmers?

What is the amount of production in quintal and crop damaged in ha in the woreda in 2006/07?

How the woreda sees the current settlement pattern and river side cultivation in increasing Agricultural productivity and production?

What was the merit and demerits of the former refugee camp on the livelihood situations of the communities in the woreda.

- 7. In your opinion what factors contributes to household poverty among Anywaa society?**
- 8. What determines for an Anywaa to accumulate or dis-accumulate assets or properties or wealth?**
- Social factors:
 - Cultural factors (*belief, values, norms; customs, traditions*):
 - Institutional factors:
 - Environmental factors:
 - Political factors:
 - Demographic factors:
 - Economic Factors:
- 9. In Anywaa community, Who decides the over all management and utilization of natural resources; settelement areas, grazing areas, farming, celebration of traditional holidays, conflict management, development interventions, livestock management and sell etc at household and community levels?**
- 10. What are the traditional self help associations or mechanism being used by community in Anywaa?**

I thank you very much in advance!

Annex- 3: Profile of FGD and Key Informant Interviewees

S/N	Name	Organization
1	Tsedeke Kebede	Regional Rural and Agri Bureau
2	Taidor	Regional Rural and Agri Bureau
3	Okello Owitit	Regional DPPB office
4	Omod Ojulu	Itang woreda Administration
5	Ukkom Oballa	Itang Woreda DPPB Desk
6	Bekagn Omod	Itang Woreda Council office
6	Oman Omod	Itang Woreda Water and mines office
7	Kong Reit	Regional DPPB Bureau
8	Yemane Tesfaye	Itang Woreda Rural and Agri office
9	Seid Mohammed	Regional DPPB office
10	Tatek W/gebriel	WFP Gambella
11	Aerom Mekuria	Regional Investment office
12	Feleke Asfir	Regional DPPB office
13	Adamu Tamrat	Itang Woreda Health office
14	Melaku Assefa	Regional Environmental Protection Authority
15	Alemayehu Teshom	Rural and Agriculture office
16	Selamsew Tesfaye	PACT Gambella
17	Girma kebede	ZOA Gambella
Community Members Who participated in FGD and KII		
18	Omod Ulok	Anywaa Community member
19	Ujulu Akway	Anywaa Community member
20	Agwa Ujulu	Anywaa Community member
21	Okello Akway	Anywaa Community member
22	Ariet Simon	Anywaa Community member
23	Opiew Omod	Anywaa Community member
24	Olero Okello	Anywaa Community member
25	Aballa Okow	Anywaa Community member
26	Mary kong	Nuer Community Member
27	Sara Chaunkoth	Nuer Community Member
28	Rebeca James	Nuer Community Member
29	Okidi Omod	Anywaa Community member
30	Kong Riet	Nuer Community Member
31	Thiang Yer	Nuer Community Member
32	Keth Michael	Nuer Community Member
33	Mary gatch	Nuer Community Member
34	Hanna Wantow	Nuer Community Member
35	Ariet Oballa	Anywaa Community member
36	James Pur	Nuer Community Member

Annex- 4: Number of Population and Head HHs by Kebele (CSA, 2007)

S/N	Name of Kebele	Total Population	No. of Household Heads	Ethnic groups
1	Itang Town kebele 01	5958	1432	All
2	Achuwa	3930	572	Annuak
3	Adima	354	53	Annuak
4	Adong	494	105	Annuak
5	Ajuwi	516	94	Annuak
6	Alleha	551	101	Annuak
7	Awagni	490	100	Annuak
8	Badiel	2828	527	Nuer
9	Biljackok	695	103	Nuer
10	Birhane-selam	102	25	Annuak
11	Dirong	2925	478	Nuer
12	Ebago	663	125	Annuak
13	Elliya	1090	214	Annuak
14	Itang-kir	2260	403	Annuak
15	Akura	768	139	Annuak
16	Wanke	1494	359	Opo & Komo
17	Pilwal	2509	457	Nuer
18	Puldeng	1330	225	Nuer
19	Pukumu	3097	490	Annuak
20	Waar	2074	313	Nuer
21	Waatgach	1558	263	Nuer
Total		35,686	6578	

Sampled Kebele

Annex -5: List of kebeles in Itang displaced due to conflict

No.	Name of kebele from which person was displaced	Woreda	Number of people displaced
1	Itang 01 Town	Itang	300
2	Itang Kir	"	160
3	Pignman	"	500
4	Ignuan	"	641
5	Pu-hol	"	309
6	Pino	"	440
7	Ou-walo	"	390
8	Pukedi	"	574
9	Agnela	"	607
10	Pugnwa	"	687
11	Cham	"	579
12	Gniquali	"	500
13	It-yet	"	495
14	Pignno	"	359
15	Putak	"	486
16	Ilikirageto	"	355
17	Edeni	"	643
18	Pu-Jowo	"	226
19	Emede	"	467
	Grand Total		8,780

Annex- 6 Adult Equivalent Conversion Factors

Year of age	Men	Women
0-1	0.33	0.33
1-2	0.46	0.46
2-3	0.54	0.54
3-5	0.62	0.62
5-7	0.74	0.70
7-10	0.84	0.72
10-12	0.88	0.78
12-14	0.96	0.84
14-16	1.06	0.86
16-18	1.14	0.86
18-30	1.04	0.80
30-60	1.00	0.82
60 plus	0.84	0.74

Source: AESE, 2006

Annex 7: Conversion Factors Used to Estimate Tropical Livestock Unit (TLU)

<u>Animal category</u>	<u>Tropical Livestock Unit (TLU)</u>
Calf	0.25
Donkey (young)	0.35
Weaned calf	0.34
Camel	1.25
Heifer	0.75
Shoat (adult)	0.13
Cow and Ox	1.0
Shoat (young)	0.06
Horse	1.1
Donkey (adult)	0.7
Chicken	0.013

Source: Storck, et al., 1991.

Annex 8: Disaster Risk Reduction Assessment and Analysis Sheet

I. Hazard Characterization Sheet

Hazard Type _____

NATURE	ELEMENT	ANALYTICAL DESCRIPTION OF HAZARD	EXPOSURE VARIABLE	
			How it affects me?	How it affects my community?
Cause/Origin				
Force				
Warning signs and Signals				
Forewarning				
Speed of onset				
Frequency				
Period of Occurrence				
Duration				

II. Vulnerability Assessment Sheet

HAZARD PROFILE	ELEMENT AT RISK	DESCRIBE LOCATION OF ELEMENT AT RISK IN RELATION TO HAZARD	GRADES			WHY THE ELEMENT AT RISK IS IN THAT LOCATION?
			High	Medium	Low	

III. Capacity Assessment Sheet

CAPACITIES ADDRESSING HAZARD			
	Existing	Required	Gaps
Hazard Prevention Measures			
Hazard Mitigation Measures			
Individual 'Survivability' Consider Age & Gender	During the Hazard Event		
	Before the Hazard Event		
Community Readness	During the Hazard Event		
	Before the Hazard Event		

Source: Adapted from Cordaid, 2011

Annex 9: Food and Non-Food Expenditure per AEU of Households**

Expenditure Category in Birr	Poor (n=39)		Non poor (n=50)	
	Mean	SD	Mean	SD
Food expenditure/AE	1300.41	318.06	3612.92	1609.58
Cereals	955.64	109.57	2602.26	1161.68
Milk	68.33	321.00	272.98	321.00
Meat	369.54	457.63	645.72	561.98
Sugar	56.72	57.69	105.84	143.33
Salt	65.73	79.10	115.92	313.24
Edible oil butter	14.39	39.93	240.88	202.03
Tea leaves	57.15	80.30	82.02	208.88
Non Food Expenditure/AE	649.95	305.80	1275.58	763.28
Clothing	165.13	133.56	280.08	188.00
Medical	59.08	47.85	191.62	224.88
Education	31.39	43.40	85.88	157.25
Transport	30.21	33.09	125.58	285.86
Purchase of House utensils	27.03	62.96	143.64	178.83
Soap	59.51	55.48	103.34	99.25
Purchase of farm tools	16.64	18.10	31.84	61.50
Veterinary service	8.23	18.03	35.48	60.50
Local alcohol and Tobacco	130.00	205.78	152.32	213.15
Social expenses	107.62	295.33	90.05	216.90
Lighting	15.11	38.40	35.75	67.50

Source: Own Computation, 2008.

Annex 10: Inter Ethnic Conflicts- Causes, Trend and Impact Analysis

Major phenomena of Conflict –causes and effects& post effect trends	Responses over timeline			
	Before 20 Years	10-20 Years	5-10 years	Less than 5 Years
1. Conflict between Annuak and Nuer	1	2	4	4
1.1 Possible cause of conflict				
Control over farm/pasture land	1	2	3	3
Demarcation of administrative units & boundaries along ethnic lines	1	3	3	3
Control over political power	1	3	4	3
1.2 Possible effects of conflict				
Loss of human life	1	3	4	3
Displacement	1	3	4	4
Break down of socio-economic and cultural structure	1	3	3	2
Looting of cattle or properties	1	3	4	3
1.3 Has the state of conflicts resolved?	1	1	1	2
2. Conflict between hosting communities and refugees	4	4	1	1
2.1 Possible causes				
Access and control over resources	4	4	1	1
Violence against the host	4	4	1	1
2.2 Possible effects				
Breakdown of socio economic structure	4	4	3	3
Displacement	4	4	2	1
Depletion of Natural resource and scarcity	4	4	3	3
Local settlement/reintegration	1	4	2	1
Shortage of farm land	4	4	2	1
3. Conflict between highlanders and indigenous groups	2	4	3	2
3.1 Causes				
Control over the economic activities	2	4	4	2
Employment opportunities	2	4	4	2
3.2 Effect				
Loss of human life	1	4	3	2
Distraction of properties	1	4	4	2
3.3 Has the state of conflict resolved?	3	1	2	3

Remark: The numerical values given under each time with corresponding variables denote the degree of agreement the respondents set. 1-denotes strongly disagree, 2-disagree, 3-agree and 4-strongly agree.

Source: FGD, Itang District in April 2008 and March 2011