

**ADDIS ABABA UNIVERSITY- COLLEGE OF DEVELOPMENT
STUDIES (RURAL LIVELIHOOD AND DEVELOPMENT)**

**RESETTLEMENT AS FOOD SECURITY STRATEGY IN
TIGRAY: THE CASE OF RUWASSA RESETTLEMENT SITE**

BY MULUGETA MOGES

**A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE
STUDIES OF ADDIS ABABA UNIVERSITY IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF MASTERS OF ARTS ON DEVELOPMENT
STUDIES (RURAL LIVELIHOOD AND DEVELOPMENT)**

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**Chronic Poverty and Food Security Strategies and Resettlement in
Tigray: The case of Ruwassaa Resettlement Site.**

BY


Mulugeta Moges Kidanu

DEVELOPMENT STUDIES

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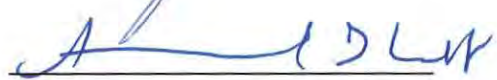
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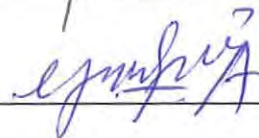

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Acronyms

ACZ: Agro-Climatological Zones

ADLI: Agricultural Development Led Industrialization

CA: Committee on Agriculture

CSA: Central Statistics Authority

DFID: Department for International Development

DPPC: Disaster Prevention and Preparedness Commission

FDRE: Federal Democratic Republic of Ethiopia

FSS: Food Security Strategy

HICE: Household Income Consumption expenditure

MDG: Millennium Development Goals

MOFED: Ministry of Finance and Economic Development

MSF: Medecins Sans Frontieres

NCFSE: New Coalition on Food Security in Ethiopia

NRST-IFSD: National Regional State of Tigray- Integrated Food Security Desk

OARD: Office of Agriculture and Rural Development

PRSP: Poverty Reduction Strategy Paper

REST: Relief Society of Tigray

SAP: Structural Adjustment Program

SDPRP: Sustainable Development of Poverty Reduction Program

SLA: Sustainable Livelihood Approach

SLF: Sustainable Livelihood Framework

UNDP: United Nations Development Programme

UNFAO-WFS: United Nations Food and Agriculture Organization-World Food Summit

UNHCR: United Nations Higher Commissioner for Refugees

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I. INTRODUCTION

1.1 BACKGROUND

Ethiopia experiencing a long history of drought and famine, its governments, from time to time, have been trying to avert the consequent calamities or may be aggravating the situation by formulating different policies and programmes including relocation of the affected people. Historical records show that planned resettlement was undertaken during the imperial regime on the early second-half of the last century as referred by Abdulhamid (1989), and Killion (1994). And later as a strategy of mitigating the effects of overpopulation, land shortage, and degradation of farmland in the northern highlands resettlement was suggested by international agencies such as the World Bank in 1973 (Zolberg1989). After two decades, in 1984/85, a grand resettlement project relocating nearly 600,000 people was set up following the severe drought that struck Ethiopia. (Pankhurst, 1992) The command economy system is believed to have had high commitment to the political ideology denying a necessary attention to the program. Aggravated by man-made and natural disasters, Ethiopia again emerged with another resettlement program under its poverty reduction strategy two decades later.

The economic reform programs which began in 1992/93 were aimed at reframing the command economy to market economy. By making poverty reduction the core objective of the economic transformation, the Ethiopian Government, adopted Agricultural Development Led Industrialization (ADLI) strategy. ADLI formulated in 1994, views agriculture as the driving force of the economy, and argues for investment in agriculture as both a motor for economic growth and a means of ensuring household and national food security. (Devereux 2000) As a result the smallholder farming family was made the focus of economic development with a massive agricultural extension and credit schemes, and expansion of primary education, primary health care, rural water supply and rural roads (FDRE: Sustainable Development and Poverty Reduction Program: 2002). According to Devereux's

analysis of food security in Ethiopia, like most strategy documents, the ADLI is strong on rhetoric but low on detail, and it has been only partially implemented to date.

Nevertheless, the recurrent drought and a change in rainfall pattern including the El Nino years have caused negatively the performance of the agricultural sector. Moreover, a high population density, under-developed water resources, and poor transport infrastructure have handicapped the ability of farmers to produce an adequate food supply for their own consumption and hindered the national grain markets (USAID/OFDA: 2004). As a result of this and other situations, it is evident that the Ethiopian government failed to bring about food security to a desired and satisfactory level at a national and smallholder farming level.

Taking Agricultural Development Led Industrialization (ADLI) as a policy framework Ethiopia's Food Security Strategy (FSS) was reissued in 2002. While ADLI focuses on creating the conditions for the broad national food self sufficiency, FSS was issued with the objective of ensuring food security at a household level. It was in this document that, the relocation to suitable under-utilized area to respond to the problems of highland degradation, population pressure and small farm size, in moisture deficit areas, was reconsidered (FDRE FSS: 2000). In the Sustainable Development and Poverty Reduction Program document of the year 2002 under the sub-title 'Over view of Development Goals, Policies, Strategies, and targets, the *building blocks* are put to depict the interaction of the economic and political processes that built the whole strategy as *four pillars*. These are: ADLI and food security, justice system reform and civil service reform, decentralization and empowerment, and capacity building in public and private sector.¹

¹ The 14 components of the Capacity Building Programme comprise: Civil Service Reform, Tax and customs reform, Urban management reform, ICT for improved service delivery and modernizing government, Civil society capacity building, Construction sector capacity building, Textile and garment capacity building, Development of manufacturing sector, Technical and Vocational Training (Agricultural), Cooperatives development, Higher education reform, and Technical and Vocational Training (non-agricultural).

The GFDRE's objective of reducing food insecure rural households by 10% up to year 2002/03² became a daydream as a result of lack of rainfall. (Interim PRSP: 2000) Overall, the growth record of agriculture in the 1990s revealed no sign of optimism. Response of the agricultural sector to the economic reform and the new extension program is not significant (CSA: As referred by Asmamaw: 2004). This is because; the call for planned and voluntary resettlement was issued first in 2001 rural development policy document in each region (FDRE: 116-123).

Quite discouragingly, the situation in the rural areas worsened and required a humanitarian assistance. Even if the crisis was initially announced in 2002, in August 2003 The GFDRE's DPPC issued an international appeal for emergency food assistance followed by the lack of rainfall in the year 2002. DPPC estimated, 13.2 and 7.2 million Ethiopians were at risk mainly in SNNPR, Tigray, Oromiya, Amhara, Somali and Afar Regions in 2003 and 2004 respectively (USAID/OFDA:2004, World Bank:2007). The need for resettlement was escalated by the emergency situation due to below average *belg* rain (which normally occurs from February through April), and *meher* (which normally fall between June and September) that were delayed and sporadic.

According to the World Bank Implementation Report³, the drought was regarded as the worst in Ethiopia in the last 18 years, and the resulting situation was assessed to have the following critical aspects: The overall food availability balance for the country ...showed the need for nearly 2 million metric tons; The non-food needs of the emergency response at US\$ 76.2 million; and an enormous macroeconomic impact (World Bank: 2007).

² A figure adjustment was made Poverty Reduction Policy Matrix in the 2002 SDPRP of FGDRE-MOFED by simply deleting the figure but the same objective.

³ Implementation Completion and Results Report of the World Bank (IDA-H0280) estimated the national food deficit 2 million, constituting 17% of total requirements, of additional food resources; the revisions in macroeconomic forecasts suggested the following likely impact of the 2002 drought: GDP growth to be reduced by 50% (from 6% to 3% p.a.); inflation rate to increase by 30%; trade deficit to widen by 20%; and public expenditure to grow by 25%, partly as a result of increased imports.

It could be argued that the recurrent drought, low soil fertility and degraded environment and densely populated highland areas, the total percentage of drought/disaster affected rural population for 20 consecutive year's average (1981-2001) at a country level being nearly 10.3 (FSS: 2000); reconsidering the strategy was indispensable.

Besides to the natural causes, it is argued that erroneous government policy caused the impoverishment of the rural households. Farmers' access to fertilizers was undermined by sharp increases in prices during the 1990s, firstly following the devaluation of the Birr in 1993, then by the elimination of fertilizer subsidies and pan-territorial pricing in 1996, and the decontrol of input prices and marketing in 1997 (Carswell et al. 1999 as cited by Devereux: 2000). The Commercial Bank of Ethiopia, the Development Bank and the Bureau of Agriculture all extend input credit to farmers, including in-kind loans ...agricultural extension workers with quotas to fulfill are coercing farmers into taking inputs packages ('models') which many resist, knowing that the seed varieties and fertilizers delivered require high levels of moisture and are not well adapted to Ethiopia's variable rainfall regime (Ayelegn and Shirega 2000:26 as cited by Devereux: 2000). Though the programs have resulted in improved macro-economic performance, they have had a limited impact on the poverty situation at household level. In fact the poverty situation in Ethiopia over the past decade has been exasperated by the Structural Adjustment Program (SAP) and other reform measures as well as by the irregularity of natural conditions, war and other human and environmental factors. (Asmamaw: 2004)

Generally the summary of the causes and consequences of low agricultural performance and the resultant impoverishments and resource depletion of the rural agricultural households has led in the government side to reconsider resettlement as a last resort to mitigate poverty. While it is on the other hand argued that it is the policy intervention that led to the negative results of the rural households and suggesting some other solutions to the rural agricultural problems instead of resettlement taking as a nostrum. The summary, of these arguments fall into two classifications as: the *physical-ecology-cluster* that focuses on the environment and

the political economy that focuses on the policy. Taking both arguments in to consideration, it is possible to narrow the gap through: First, the focus on the outcome of the programme (resettlement); Second, instead of using linear causality of the above models, taking the livelihood framework would be useful that considers almost all factors and the inter-linkage among the physical, political and economic factors on the outcome of the programme.

In the resettlement history of the National Regional State of Tigray there are three organized resettlement campaigns beginning from 1993. In June 1993, approximately 12,000 refugees (returnees from Sudan) were repatriated to the then *Humera Woreda*. According to the study report, by Hammond (1994: 248-61), the first year harvest of this resettlement was a total failure.⁴ This was the first experience of mass resettlement in the Region. The second mass resettlement caused by the Ethio-Eritrean conflict along the border was estimated to constitute 315,000 people including about 60,000 people displaced from Humera town and neighborhood in October-December 1998 and deportees/returnees from Eritrea (Forni: 2000). An unknown number (10,000) of Sudanese seasonal laborers is also present and accounts for the more destitute among the population. The third resettlement programme which is undertaken in 2003 and 2004 is the major concern of this study paper. This resettlement programme is also disaster induced even if there was some preparation before the commencement as claimed by the government.

One common characteristic feature of all three resettlement programmes is that they are *disaster-induced* in the form of man-made and/or natural. The major difference among these three programmes in terms of immediate cause was: The first resettlement (returnees from Sudan) had no choice rather than resettlement because of the 'lack of local integration prospects'. According to the UNHCR Resettlement Handbook, as referred by Kilowoko (2003), resettlement is considered a durable solution, in particular circumstances, for refugees

⁴ Characterized by the absence of land tenure policy, lack of preparation for land allocation, accompanied by crop insects and extremely heavy rain destroying crops, the first harvest was almost a total failure. Further, in this paper, it is explained that there was gender-specific problems associated with distance from resident -to- farming areas and clearing of land for agriculture.

who do not have immediate protection concerns such as those who are resettled for the purpose of family re-union and those lacking local integration prospects. The situation in 1993 resettlement programme of refugees was reported that most of the returnees had left their homes in the highlands in 1984/85, during the worst years of war and famine...and found that the land they had left in the highlands had been redistributed (UNHCR:1994). The second wave of resettlement was conducted for refugees from Eritrea and the locals for security reasons caused by Ethio-Eritrean border conflict. The third which is the main focus of this paper is caused mainly by recurrent droughts that happened for several years and is believed by the government to be a well-planned, organized and borne by the policy as one of the instruments for getting out of poverty.

1.2 STATEMENT OF THE PROBLEM

While the actual resettlement programme at a regional level was launched into action in 2003 the planning and the call for planned and voluntary resettlement was issued first in 2001 rural development policy document in each region (FDRE: 116-123). Followed by the national plan a pre-feasibility study of potential resettlement areas was proposed by the National Regional State of Tigray. The study was conducted by a group of consultants from the Integrated Food Security Desk of the National Regional State of Tigray. The major objective of the pre-feasibility was to gather general information regarding the possibilities of population resettlement that would serve as a basis for the next detailed studies. (NRST-IFSD: 2001)

The pre-feasibility study described the rain-fed suitability of Ruwassa-the case study of this research-as moderately suitable of all its land⁵. Nevertheless, since the area is a virgin area,

⁵ Ruwassa in the pre-feasibility study is described in terms of its potential of having from poor to rich ground water resource, land use and land cover as sparsely cultivated (*Wofri-zemet* – Illegal settlers), rain-fed suitability as 100% moderately suitable covering 174.7², cultivable potential as rich cultivable potential area,

which ever had not been settled, it does not have basic service facilities such as school, clinic, potable water, flour mill, market and other services. (NRST-IFSD: 2001)

After three years of the resettlement through regional radio broadcast (*Dimitsi Woyane*) the implementing agency claimed the successful accomplishment of its implementation and attained the food self-sufficiency of settlers. Researchers mainly for academic purpose have conducted a study in relation to the success and/or failure stories of resettlement schemes in Tigray focusing on different aspects and treating different variables in their queries. Some of these issues, and variables, as portrayed in the *summary of study papers* and others are: *Resettlement and Stakeholder Participation in Decision Making (Gebre: 2005.)*, *Improving Understanding the Dynamics of Resettlement (Assefa: 2005.)*, *Impact on Environment and Host Communities (Assefa:2005.)*. According to Gebre Yintiso (2005), it is said that, the settlers of Humera have passed a decision to resettle after the confirmation of the suitability of the destination area by their representatives (Ibid). However, he claims, there was a minor conflict over land, pasture, and water points with the host communities (Ibid). He finally concludes saying, instead of resettling additional people to meet the official national target (2.2 million people), therefore, the focus should now shift to consolidating the existing schemes and addressing the concerns of the host communities (Ibid).

Moreover, it is reported by Assefa Tolera (2005), that there were an improvement in infrastructure like telephone and health services. On the other hand, Assefa Tolera said while dispossession of land and other natural resources was claimed by the host communities, officials denied there was, rather they argued that the displaced local settlers were illegal settlers on those plots (Ibid).

crops and potential as suitable for sorghum (40qt./ha), sesame (10 qt./ha) and suitable for livestock as cattle being the dominant, followed by goats, donkeys, camels, and beehives

Tihune (2005) claims to have found a gap between the program document and its implementation on the ground. It is put this way:

Regarding the implementation on the ground, the study found that gaps existed in site selection, recruitment of proper target groups, prior preparations, commitment to the host communities, and consistency with the pillars and key principles and approaches set in the programme document. Recommending that attention should be given to those factors that led to the failures of the previous schemes, that due consideration should be given to the consistent implementation of the current program documents, that active participation of the target group be fostered and that consultation with a wide range of stakeholders be undertaken. Based on the findings the author suggests that though resettlement programs could be undertaken to achieve food security, because state-sponsored programmes are complex in their nature, they should be considered as the last option.

According to these three study results while some degree of consistency could be inferred with regard to the settlers and the host communities' situation, it has no direct and strong relation on the food security level or the livelihood situation of the settlers though those factors treated are the requisites. First, it looks that the suggestion never considered food (the basic need directly attached with survival) more valuable and a means than the consistency of programme documents with the implementation on the ground. Second, it simply focused on the gap that prevailed (assuming the gap is discovered) on the process of the implementation, while the programmes outcome is not assessed. Unless the study is: 'the impact of settlers on the environment and host communities'.

The fourth summary report based on the findings of analyses of 11 sites in four regions Pankhurst (2005), suggested that:

'Food security and assistance should take in to account the need to vary and spice the diet and the need for cash for basic necessities. Indicators should look into not just food, health, water, and education but also economic aspects to do with land, labor, and capital and social indicators of adaptation (coping mechanisms and adapting strategies), wellbeing and integration.'
(*Bold and in parenthesis mine*)

This study never indicate any clear and specific situation in the resettlement schemes as long as each regions programmes settlers have a substantial difference in terms of base resources, access, means of livelihood and adapting mechanisms it seems hasty to study it at a macro level.

The humanitarian situation report of settlers disclosed by the multi-agency indicated that 'the resettlement sites in *Tigray* appeared well organized due to planning, the small scale of population movements, and the close distances to main roads and established towns' (USAID/OFDA: 2004). The affirmative humanitarian conditions observed may perhaps be relatively compared with the overall chronic food insecurity in the region. If not, it is reported that there was a much improved crop production in 2003 as compared to 2002. Even though the study is aggregate 'assessment prior to one year is risky, and even after the first harvest it may not be easy to asses that are food secure and self reliant (Pankhurst: 2005). OFDA's situation report also indicated that:

'...chronic food insecurity persists due to recurrent droughts, low soil fertility, increasing population pressure, and asset depletion. Under normal conditions, between 800,000 and 900,000 people in Tigray require food assistance. In 2003, that number climbed to 2.2 million people. In 2004, 1.1 million people are expected to need food assistance with an additional 315,500 people requiring close monitoring.'

Generally, the above reports from the researches conducted could be squeezed in to three main points, first, on the prerequisites of resettlement, second, the care that should be taken with regard to the host communities, and third, on the consolidation of the existing schemes and the reconsideration of the succeeding part of the programme. While the third point focuses on maintaining the status quo, the other two points deal with the planning, preparation, and implementation phase of the resettlement.

On the other hand, the implementation plan of the NCFSE with its four pillars of the resettlement programmes, as claimed by government officials, is different from the previous regime's programmes failure stories. Being characterized, as '*intra-regional-underutilized land, voluntary, backed by discussions with host communities, and proper preparation*'⁴ could perhaps be different from the earlier schemes in its outcome. (NCFSE: 2003b)

Some of these issues, and variables, as portrayed in the *summary of study papers* and others on the resettlement program have not directly addressed the food security or livelihood situation of settlers. Some focus on the process of implementation, others on the prerequisites, and others on the environment and host communities. Thus it would be appropriate to assess what is already achieved by giving more emphasis to the settlers' situation, what ever the cause might be with regard to the direct and indirect causes and effects of the programme as compared to the ultimate objectives of the programme. The livelihood security in general, and the level of food security attained and/or the degree of food insecurity reduced in particular, at a household level will be the major concern of this study paper.

1.3 BASIC RESEARCH QUESTIONS

This study will attempt to answer the degree of food security, access, and vulnerability of settlers at a household level and the gap that exists in between with the programme objectives:

- What is the level and source of income and non-income economic determinants' impact on food insecurity of settlers at a household level?
- What are the factors that affect settler households' level and means of livelihood at a macro and micro level?
- What coping mechanisms and adapting strategies are used by settler households during and after shocks and trends?

1.4 STUDY OBJECTIVES

The objective of this study is to assess the livelihood situation of settlers in *Ruwassa* resettlement site. It has the following three specific objectives:

- To measure the level of income, production, asset ownership, livelihood composition and diversification strategies of households in the resettlement area
- To identify factors those negatively influence the outcomes of settler households at a micro and micro level.
- To record the survival mechanisms in ex-ante and ex-post shocks and trends.

1.5 SIGNIFICANCE OF THE STUDY

The outcome of this research may be helpful in a direct or indirect way to the formulation of macro and micro policy. More specifically, the result of this study is expected to provide:

- Background information for future studies food security and resettlement.
- Policy makers may use as a bases for considering improvement in planning, implementation and follow up of resettlement programmes.
- Moreover, the study may trigger for further research work.

1.6 SCOPE AND LIMITAION OF THE STUDY

Food security in this paper refers to the household's capacity of covering their own food requirements by any means. On the other hand, the livelihood security is more holistic than food security including the livelihood assets, context, livelihood strategies, policies processes and institutions.

The physical scope of the study is mainly focused on the settlers of Ruwassa resettlement site. While the whole resettlement programme by the government covers 23 resettlement sites, this study covers only Ruwassa which is claimed to be the successful resettlement site by the government bodies. Besides, it may not have a scientific justification to assure the reader that the final conclusions out of this paper could be representative and applicable to all households who are resettled in all resettlement sites except Ruwassa. Due to limited human and material resources, the study was restricted to a limited number of settlers.

1.7 ORGANIZATION OF THE THESIS

The thesis comprises five chapters. The first chapter comprises background of the study, statement of the problem, research questions, and objectives of the study, significance of the study and scope and limitation of the study. The second chapter deals with the theoretical and empirical review of literature and the conceptual framework which includes the livelihood assets, livelihood diversification strategies, and vulnerability context and resettlement.

The third chapter deals with the research design and methodology and description of the study area with the description of the demographic and socio-economic availability of settlers in the study area. The fourth chapter deals with the result of the study: analysis of the resettlement condition and the livelihood situation of respondents in the resettlement site.

Summary of the findings, conclusions and policy implications are presented in the last chapter. In addition to these, references, sample questionnaires and interview guidelines are attached to this part of the thesis.

II. LITERATURE REVIEW

2.1 FOOD SECURITY – AN ELEMENT OF LIVELIHOOD SECURITY

Food Security is measured beyond global and national availability of food and is best measured as part of livelihood security or as one element of livelihood security. After a long debate and reconsideration of additional variables to be incorporated, the concern of food, besides quantitative availability, has shifted in to access and distribution (Hoddinott, 1999; Maxwell, 1996).

National policies targeted at food availability at a macro level have failed to bring the desired development outcome. This is because of the narrower assumption of ‘food system’ approach and/or ‘anti-hunger’ approach for a livelihood situation. Nevertheless, the gradual evolution fortunately has resulted in a better conceptualization and gradual specification through resetting policy objectives. This development in thinking of the concept of food security has come to address specifically at a household and individual levels and broadened the variables that should be incorporated in measuring food security. Especially in terms of measuring the social and psychological impacts of food insecurity

The most cited definition of food security puts stress on individual access, in all seasons and all years; and to enough food not only for survival, but also for active participation in society (Maxwell: 2001, Reutlinger: 1985, World Bank: 1986). The above definition incorporates the elements of access (Sen: 1981 as referred by Maxwell: 1996), and sustainability⁶ (Douglas: 1984, Chambers: 1987, 2004), adequacy for an active and healthy life. Besides that, the political economy works of Dreze and Sen (1990) broadening the concept of food security incorporated the acquirement problem. The progress in the number of elements gives

⁶ The sustainability element in this context seems the economic thought according to Douglas (1984) while the ecological, economic, social and institutional are from both Douglas (1984) and Chambers (1988, 2004).

emphasis subjective elements including cultural acceptability of foods and fears of experiencing hunger causing anxiety (Fitchen: 1988, Hamelin: 2002). These and other factors in turn lead us to perceive food insecurity beyond failure of food production ... but as livelihood failure (Devereux & Maxwell: 2001). This is more elaborated by the inclusion of food security as one outcome of sustainable livelihoods (DFID: 2000) or an element of livelihood security.

An 'anti-hunger' or 'anti-poverty' approach argues that people should have sufficient quantity of food and/or enough income to access such quantity. On the other hand, the 'food system approach' expresses a concern with the quality of food that is available. Food holds much more significance to humans than just its nutritional value. Moreover food insecurity should consider the acceptability, availability and the sense of insecurity elements. Thus in order to define food insecurity it needs going beyond both the 'anti-hunger' and the 'food system' approaches.

As a matter of fact the concepts and analytical models used currently focus on the calorie intake to determine the level of nutrition there by food security as 'outcome indicators'. Unfortunately, first, using this method denies or fails to consider household food security as an input to an adequate nutritional level (Maxwell D.: 1996). Food Security is a function of many factors that empower individuals to access nutritionally adequate and safe food in appropriate ways. The factors include employment, education and community variables (Riley and Mook 1995). Good nutrition depends on household food security, adequate health environment, and adequate maternal and child care (UNICEF: 1994). The impact of other direct and indirect variables beyond food consumption is less considered. Despite its being at a global level, a report shows that the number of households that are food insecure decreased globally by about 200 million between the periods 1974-1976 and 1988-1990. At the same time, however, the number of malnourished children actually increased by 16 million (UNICEF, 1998).

Thus 'outcome indicators' in Maxwell and Frankenberger's terminology will limit understanding the inter-active nature of other determinant factors by focusing on the 'linearity' of food security and malnutrition. Therefore 'inferring food security purely from consumption data, can be a tricky undertaking' (Maxwell D.: 1995).

On the other hand, the 'process indicators' those that describe food supply and access do not help in understanding the dynamics affecting intra-household inequities affecting and affected by procurement and distribution of food (Bentley and Pelto 1991 as cited by Maxwell D. 1995). Moreover, household food availability does not show individual entitlement (Sen: 1986). The time dimension of vulnerability and sustainability cannot be inferred, while households could be better off, for the time being as a result of 'coping mechanisms'. Moreover, at the expense of depleting their natural, physical, human and social capital, households and individuals could be in a good status. Household income and income sources and the kinds of food available can also vary by season.

Beyond understanding food supply and access measured through incomes, and food consumption through the level of malnutrition and the diversity of nutrients; a better understanding of the intent of the 'food in-secure' and assessing the degree of 'vulnerability' (Maxwell D.: 1996, Chimhowu and Hulme: 2006), will be essential. It was earlier explained by de Garine (1972) and by Maxwell and Frankenberger (1992), about human intentionality and the subjective judgment of food sufficiency.

The Rome Declaration on World Food Security and the World Food Summit Plan of Action laid the foundations for diverse paths to a common objective - food security, at the individual, household, national, regional and global levels. Food security, best defined by the World Food Summit as:

*... a situation when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life*⁷ (UNFAO-WFS: 1996).

This summit brought back to the centre-stage in the development debate the issue of hunger and food insecurity as both cause and effect of poverty and slow growth (Migotto, M. et. al: 2005).

In selecting indicators to measure the level of food insecurity, the adequacy, accessibility, availability, acceptability, vulnerability and sustainability elements of food security should be considered. This is, first, in order to include the economic, social, cultural, political, and environmental factors that influence the level of food security at a national, individual, and intra-household level. Second, as long as there is no single successful method and indicator that describes the totality of the level of food security analyzing the objective and subjective aspects will be essential by combining methods and 'indicators for greater specificity' (Maxwell S.: 1996).

In summary, the Sustainable Livelihood Framework in place of 'Anti-hunger' or 'anti-poverty' and 'food-system' approaches should be adopted in conceptualizing and operationalizing food security. Using only one research approach over the other underestimates the subjective or objective elements of the livelihood aspects of subjects, thus calling for multiple-method research of both quantitative and qualitative approaches. Indicators should relatively show all the three aspects as: 'process indicators', 'outcome indicators' and, the degree of 'vulnerability to poverty'. The intensification and diversification of livelihood strategies as adapting strategies to long-term trends have to be used to infer the households economic, socio-cultural, and environmental resource base.

⁷ The more inclusive and the currently most cited definition of food security was originally developed by the works of Reutlinger (1995) and later adapted by Food and Agriculture Organization (FAO) of the United Nations (1996) in the Rome Declaration on World Food Security and the World Food Summit Plan of Action.

2.2 CONCEPTUAL AND ANALYTICAL FRAMEWORK - SUSTAINABLE LIVELIHOOD FRAMEWORK

2.2.1 LIVELIHOOD

A livelihood according to Ellis (1998) is conceptualized as “incomes in cash and in kind: as well as the social institutions (kin, family, compound, village) gender relations, property rights required to support and sustain a given standard of living” (Chimhowu and Hulme: 2006). The Concern Worldwide Livelihood Security Policy (2004) traces back to the origin of the concept of Livelihood enshrined in several UN charters (1966, 1986)⁸. The definition by Chambers, R. and G. Conway (1992), captures the broad notion of ‘livelihood’ as enshrined in the UN charter, the concept of natural resource base sustainability added to it.

‘A livelihood comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base.’ (DFID: 1999)

This includes the accessibility of, and benefits derived from, public services like education, health, roads, water, and related infrastructure (Chimhowu and Hulme: 2006), and the capabilities to achieve the full realization of the individual’s right under conditions safeguarding fundamental freedoms and the entitlement to participate in, contribute to, and enjoy all positive aspects of development.

⁸ Article Six of the International Covenant on Economic, Social and Cultural Rights (1966) says, ‘The States Parties to the present Covenant recognize the right to work, which includes the right of everyone to the opportunity to gain his [her] living by work which he[she] freely chooses or accepts, and will take appropriate steps to safeguard this right ... [T]o achieve the full realization of this right shall include technical and vocational guidance and training programmes, policies and techniques to achieve steady economic, social and cultural development and full and productive employment under conditions safeguarding fundamental political and economic freedoms to the individual’. Article One of the Declaration on the Right to Development (1986) states, ‘The right to development is an inalienable human right by virtue of which every human person and all peoples are entitled to participate in, contribute to, and enjoy economic, social, cultural and political development, in which all human rights and fundamental freedoms can be fully realized’.

2.2.2 SUSTAINABLE LIVELIHOOD APPROACH

The Sustainable Livelihood concept pioneered by Robert Chambers brought to stage as a Sustainable Livelihood Approach (SLA) and served to this day in the development and academic research as a conceptual and practical tool. Based on the summary written by the Development Study Group, University of Zurich (SLA: 2002)⁹, indicated that SLA is adaptable to diverse local settings. It can be applied to different extents associated to the development research or project objectives. The report of the Committee on Agriculture (CA) indicated that applications of the rural livelihoods approach had led to success in reducing rural poverty (CA, Rome: 2003)¹⁰. SLA emerged as a means to more effective and relevant poverty reduction by focusing on the livelihoods perspective of the poor, and by applying a set of good development principles which are, *inter alia*: people-centered; participatory; empowering; sustainable; multi-level; in partnership; long-term and flexible (SLA: 2002). Moreover, it is adopted in conceptualizing food security and other agricultural research problems and in engineering community development organizations and activities.¹¹

The core concepts of SLA are:

- Holistic approach describing all geographical, sectoral and social groups, external influences, livelihood strategies, outcomes and stakeholders;
- Development building on strengths, rather than needs;
- Sustainability in environmental, institutional, social and economic systems; and

⁹SLA might serve as an analytical tool for the identification of development priorities ... new activities ... and to find potential beneficiaries or partners in practice (Frank Ellis: 2000, Roger Calow: 2001) ... SLA might be applied in the form of a livelihood analysis to assess how development activities 'fit' with the livelihoods of the poor ... as a checklist or means of structuring ideas (Caroline Ashley: 2000) ... [W]ithin projects or programmes, it can be used to sharpen the focus of monitoring and evaluation systems (Alan Nicol: 2000, Gibbon: 1999)

¹⁰ Impact of Sustainable Livelihoods Approaches on Poverty Reduction (A response of COAG to FAO: 2005)

¹¹ Some works on its application as a conceptual framework: Assessing the Impact of Agricultural Research on Poverty Using Sustainable Livelihood Framework (Michelle Adato, Ruth Menizen-Dick: 2000); Sustainable Livelihoods Approach and Community Development in Practice in Engineering Organizations (Helen Salvestrin: 2006); and The Conceptual Paper by Stephen Devereux: 2000)

- Investigation of macro-micro links, emphasizing the importance of the interactions between macro level policy and institutions and the options of communities and livelihoods;
- Dynamic, flexible development to allow for continual feedback, learning and adaptation of the model;
- People-centered development rather than resources or government-centered.

The typical core concept of SLA is its holistic approach when applied as an analytical framework in assessing the impact of projects and programmes. Especially as compared to the Physical ecology-that focuses on the population pressure, environmental degradation, and drought and the Political economy-that attributes causes to government-failure and/or market failure, the concern-to-the-people rather than the resources they use or the government, makes it more preferable than the rest.¹²

2.2.3 SUSTAINABLE LIVELIHOOD FRAMEWORK-THE CONCEPTUAL FRAMEWORK

The conceptual framework used in this study is adapted from a Sustainable Livelihoods Framework (SLF) of Scoones (1998) and Ellis (2000). The pictorial representation of the Sustainable Livelihood Framework is attached in Annex B.

The conceptual framework that underlies the methodology design is; the 'Sustainable Livelihood Framework'. SLF takes into account the 'resource' or 'capital' most often 'livelihood assets', 'mediating factors', the 'contextual variables', and the viable 'livelihood strategies' and finally the 'livelihood outcome'.

¹² This is based on Stephan Devereux classification of food insecurity analysts in Ethiopia as 'Physical Ecology Clusters' and 'Political Economy Clusters' On Food Insecurity in Ethiopia: A Discussion Paper for DFID: IDS, Sussex October 2000.

In the context of this study, policy intervention is the *causa proxima* of relocating the food insecure segments of the society from almost all woredas of Tigray. It is envisaged, 'as a strategy of responding to the problems of highland degradation, population and small farm size, in moisture deficit areas', to be executed at a regional level and 'resettle farmers in suitable, under-utilized areas' (FDRE-FSS: 2002). This is believed, by the government, first, 'in partial recognition of a reality already occurring on the ground whereby people are spontaneously resettling to unsuitable areas' (FDRE-FSS: 2002). Second, resettlement is considered as a last resort to eradicate poverty and relieve the origins of settlers affected by population pressure, low soil fertility, and recurrent drought.

2.3 LIVELIHOOD ASSETS

The resource according to the livelihood framework of Ellis and Ian Scoones constitutes natural capital, social capital, physical capital, financial capital and human capital, and later added to this cluster is the 'political capital'.

The continuous depletion of livelihood assets of communities and households caused by a combination of short-term and long-term causal factors, manmade and natural, explains the food insecurity situation in Ethiopia. The demarcation, in an attempt to define chronic food insecurity and acute food insecurity, lies in the perception 'as a result of overwhelming poverty indicated by lack of assets'. (FDRE-FSS: 2002)

The main focus of SLF is how people access; use their assets and enhance their livelihoods well-being. The accumulation or depletion of the livelihood assets regulating the production, consumption and procurement determine the wellbeing of the people. The causal relationship is not only with the external factors of SLF to the livelihood assets cluster, but also within the cluster.

The SLF groups assets into the following categories:

Human capital such as skills, knowledge, the ability to labour and good health that allows livelihood objectives to be achieved. This being the means serving to the livelihood objectives, at a practical level going beyond the traditional notion of human capital will be relevant since the need for all such up and down is for the human being. Sen's (1982, 1985) 'capabilities approach'¹³, captures the totality which is based on the assessment of individuals' capabilities to seize opportunities to achieve valuable functioning or states of being to be the best indicator of welfare. (Sugden: 1993, Ranis: 2004) Education (skills and knowledge) affects choices in consumption expenditure, procurement and distribution, productivity, family size, seizing an available opportunity, gender role and diversification of income sources at a household and intra-household level. (Schultz: 2001, DeJong: 2000) Moreover the impact of health status of the productive segment of a given community or household on its effect in productivity is observed in different researches. A higher dependency ratio is also a indicator towards the household average calorie intake, affecting sufficiency thereby malnutrition and health status. The investment on acquiring 'quality children' moderated by the knowledge to limit family size is implicitly the 'sustainability' aspect of human capital.

Social capital includes social networks, claims, associations and social relationships more generally, including consensual norms and relationships of legitimate authority. In almost all rural communities in Ethiopia the social capital is the informal insurance system or 'the key safety nets' (Swift and Hamilton: 2001) among and within institutions (such as *mahbertegna*, *senbete*, *iqub*, *idir*), families, kinships, during bad times either idiosyncratic or common shocks. In this context it is 'on how local people ... cope with adversity' and positively on how people 'make a living' and strengthen their networks.

¹³ The 'capabilities' approach goes much beyond what is conceptualized under the SLF, incorporating a broader array of elements, e.g., freedom, self-respect, security, than what is normally considered as health, education a means to attain livelihood objectives. In capabilities approach the concern is the ultimate human 'well-being,' 'quality of life,' and 'standard of living'.

(Chimhowu and Hulme: 2006) Even during normal circumstances, social capital is the reciprocity in sharing resources (information, financial and material support etc.). In rural Ethiopia lack of financial and material wealth to the worst results 'in exclusion from the social networks as a result of the inability to meet the criteria' such as – *mewacho*, labour reciprocity (as a result of landlessness), failing to provide meals (Devereux: 2000). Moreover, it varies depending on the nature of shock-covariant or idiosyncratic-implying, the social grid is eroded, in rural Ethiopia as a result of 'widespread contraction in resource availability' which is common to all (ibid). It could be argued that, settlers may be at early stage of forming the local networks, unless their alienation from their origin networks forced them to establish a newer one. Though, the 'informal rules' within any given social networks change gradually depending on the 'perceived choice and action,' conversely, the formation of the new social networks might take a long period of time unlike the possible 'forth night change of formal rules'. (Douglas: 1990)

Financial or economic capitals include an available stock and a regular inflow of money, including access to credit. Available stocks comprising cash, bank deposits or liquid assets such as livestock and jewellery, not having liabilities attached and usually independent on third parties. Regular inflows of money comprising labour income, pensions, or other transfers from the state, and remittances, which are mostly dependent on others and need to be reliable. Among the five categories of assets financial capital is 'probably the most versatile as it can be converted into other types of capital or it can be used for direct achievement of livelihood outcomes.' (Kollmair and Gamper: 2002) The development and involvement of microfinance institutions in Ethiopia is a recent phenomenon, moreover 'while NGOs in Ethiopia, like SOS Sahel and REST (in Tigray), have used cash for work and cash for seed programs for some time, using cash for relief is a very recent innovation'. (OFDA: 2004) The importance of financial resources in rural livelihood is enormous. Some of these are: the availability serves as a 'start up working capital,' 'consumption smoothing', 'maintaining once own custom and tradition'. In rural Ethiopia the problems that are associated with lack of savings and inaccessibility of credit

are: limited coverage of micro finance institutions, credit market imperfection (Geda *et.al.*: 2006), short grace period especially during harvest failure (Devereux: 2000), poor targeting (Hulme and Mosley: 1996), and 'limited rural infrastructure' (telecommunication, road transport - the transaction cost associated with it) (Adams and Emebet: 2005), delay in legal and institutional reform to adjust to the needs of the rural community. The lack of access to credit market, as indicated by Geda *et. al.*. (2006), has a negative impact on human capital accumulation. The efforts undertaken by different organizations to some extent have a contribution in enhancing the financial capital and other livelihood assets of the rural dwellers. The reported impacts vary according to the type and areas of intervention these organizations are engaged in. Some of these positive impacts are: 'women empowerment, improving households and children's wellbeing preventing poverty victims from socially unacceptable practices and bringing a local security, enhancing school enrollment and preventing youth and children from migration, optimizing land and labour productivity' (OFDA: 2004). Promoting the livelihood assets, especially natural and physical assets as an integral part of the Cash for Relief (CfR) intervention integrating with EGS¹⁴ environmental and public works projects had a significant impact (OFDA: 2004). The report by Ethiopian Herald dated 4th of January 2008, indicated that 'last year more than 458,000 people have benefited from the development works by participating in food for work programme' in drought prone woredas in collaboration with the United Nations Development Programme (UNDP). On the other hand, some argue that transfers *in kind* or *in-cash* developed a dependency syndrome and a cultural alteration¹⁵. Besides, Devereux (2000) argues that the microfinance institutions in Ethiopia have aggravated rural poverty leading into further destitution. Other researchers in some African countries such as Hulme and Mosley

¹⁴ **Employment Generation Schemes (EGS)** are those public works projects which satisfy the dual objectives of providing assistance to the needy, while at the same time creating/rehabilitating community assets (Adams and Emebet: 2004). The impact of the financial provision along with the public infrastructure and environmental development works could perhaps have a sustainability impact.

¹⁵ The cultural alteration occurred as a result of the cash relief programme which is offered to the women with the perception of better management of income and expenditure by the women than men. With few exceptions, the OFDA report indicated, the targeting of women worked very well, and was one of the reasons why money was not lost through misuse, fraud or corruption. The cash payments to women gave them a prominence and a responsibility for the management of the HH that they had not had before (OFDA: 2004).

(1996)¹⁶ agree with the inefficacy of microfinance institutions in terms of addressing the poorest segment. Quite interestingly Geda *et. al.* (2006), argue that the ‘access to and efficiency of the financial sector’ could play an important role to the rural poor by ‘lessening the financial constraints ... enabling them to invest in a risky but profitable environment’. In the resettlement programmes, the government has promised the settlers to support them *in-cash* and *in-kind*, until their first yield.

Physical capital comprises the basic infrastructure and producer goods (tool and equipment) needed to support livelihoods, such as affordable transport, secure shelter and buildings, adequate water supply and sanitation, clean, affordable energy and access to information. As a result of the lack of access to irrigation facilities, ‘farmers spent long periods of time in non-productive activities, a labour force that could be of use somewhere’ (Kollmair and Gamper: 2002). Unfortunately, most of the physical capitals associated with basic infrastructure require a large public expenditure. According to Devereux (2000) availability of livestock is essential, because first, ‘the household becomes vulnerable during shocks if it has no livestock to be sold’; second, livestock as a ‘reproductive animal allows the household to build up their asset base and emerge from poverty’.

Natural capital or natural resources including the stocks and flows and environmental services available in particular agro-ecological setting that can be used in developing livelihood strategies and buildup the other livelihood resources. In developing countries like Ethiopia the natural capital is an escaping-goat for the majority of the population including the urban people living in major towns and cities putting a pressure on its fast degradation and depletion. As depicted on the GFDRE’s FSS resettlement programme document, landlessness, environmental degradation and population pressure are the facets of over utilization of resources. The settlers’ destination areas are assumed, by the government, as fertile in all aspects, without the existence of any standard set with regard to the suitability of the environment (land, air, water suitability).

¹⁶ As cited by Marcus and Wilkinson. A working paper No. 1 entitled “*Whose Poverty Matters*”

The last but not least important aspect of livelihood assets is the **political capital**, even if it is recently included in some of the livelihood frameworks. Nevertheless, at a practical level, political capital obviously is the development with the accompanying state power formation associated with the availability and entitlement of food and related resources. Political capital includes citizenship, party membership, own ideological/political stand etc. In rural Ethiopia, having one's own stand that tends to deviate, membership to any party in power might have a positive and negative consequence to the extent of affecting one's livelihood- social exclusion or being privileged. As indicated by de Waal, 'the underlying cause of famine in contemporary Africa is a failure of political accountability' (Devereux eds.: 2001).¹⁷ The existing resettlement schemes in Humera are peripheral, near to the international boundaries of Eritrea and Sudan, which may potentially cause conflict and turmoil. In summary, political stability could mean sustained and impartial treatment of citizens, or households, for human security in terms of attaining their livelihood objectives.

2.4 VULNERABILITY CONTEXT

The Vulnerability Context forms the external environment in which people exist and gain importance through direct impacts upon people's asset status (Devereux, 2001). According to Wisner *et. al.*, (2004), 'vulnerability defines the characteristics of person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of hazard (Action Aid International)'. People are more vulnerable if they are more likely to be badly affected by events outside their control.

¹⁷ The referred examples of recent Ethiopian 'war-famines' are: In 1980 the government burnt, bombed, mined 140,000 hectares of land in Tigray; In Eritrea (the then Ethiopia) 10 percent of agricultural land was out of production because of land mines; in 1982 ... isolated Eritrea from food supply from adjacent boundaries, bombed local markets, grain mills; In 1984 the government refused food aid to Eritrea and Tigray causing 400.000 to fled to Sudan.

Vulnerability comprises **Trends** (i.e. demographic trends; resource trends; trends in governance), **Shocks** (i.e. human, livestock or crop health shocks; natural hazards, like floods or earthquakes; economic shocks; conflicts in form of national or international wars) and **Seasonality** (i.e. seasonality of prices, products or employment opportunities) and represents the part of the framework that lies furthest outside stakeholders' control. Not all trends and seasonality must be considered as negative; they can move in favorable directions to a better and secured livelihood of settlers. Trends in new technologies or seasonality of prices could be used as opportunities to secure livelihoods.

Table 2.1 Vulnerability context (Trends, Shocks, and Seasonality)

Trends	Shocks	Seasonality
Resources	Natural	Employment opportunities
Technological	Economic	Price
Demographic	Crop/livestock health	Production
Governance	Conflict	Health
Economic	Human health	Seasonal in-migration and hostilities

Source: Adapted and modified from DFID: 2001b

2.5 POLICIES INSTITUTIONS AND PROCESSES-THE MEDIATING FACTORS

The transforming structures and processes as they were known previously in SL are the policies institutions, and processes that shape the livelihoods. In contrast to the vulnerability context, which relates to the external influences on livelihoods, are internal to community. They include the public and private sectors, policies, legislations, institutions, culture, norms, and power relations including age, gender, class and caste (DFID,2001b), They may be formalized in writing, or may be informal 'rules of the game'.

It is important to define and acknowledge the role that existing policies, institutions and processes play in providing essential goods and services to vulnerable communities, such as access to assets and mitigating adverse and unexpected consequences of activities.

At a national level the key sectoral measures and cross-cutting issues are: Agriculture; Education; Health; HIV/AIDS; Infrastructure; Tourism; Mining; Trade and Industry Development; Urban Development; Regional Development Strategy and Urban-Rural Linkages; Population and Development ; Gender and Development; Addressing the particular needs of children; Governance, Capacity Building and Decentralization; Environment and Development; Pastoralist Livelihoods and Development; Youth and Employment. Out of these the pro-poor sectors that are allocated 43, 42, 50, 57 percent of the total annual government expenditure in 2001/2002, 2002/2003, 2003/2004, 2004/05 respectively are Education, Health, Agriculture and food security, Road, and Water and sanitation. (FDRE, MOFED: 2006)

Each of the successive policy documents of FDRE assumed the poverty reduction as the core policy objective with a strategy that emphasizes the leading role of agriculture; recognizing the role of non-peasant private sector, promoting cooperatives along with micro-finance institutions in rural areas. (FDRE, PRSP: 2000, FDRE, MOFED: 2002) The objective of the government's poverty reduction strategy is to reduce poverty through enhancing rapid economic growth while at the same time maintaining macroeconomic stability. The underlying linkage between the accelerated economic growth and the core policy objective - poverty reduction lies in the four pillars that are built on the strategy (building blocks- ADLI and Food security; Justice and Civil Service Reform; Governance, Decentralization, and Empowerment, and Capacity Building). The four pillars are believed to show the interaction of the economic and political processes. The aggregated policies and strategies guide the overall development with focus on rural agricultural development. The fundamental development objectives of FDRE are to build a free-market economic system in the country,

which will enable: (a) rapid economic development; (b) extrication of the country from food-aid dependence; and (c) the poor be the main beneficiaries from the economic growth. Besides to attaining the overall development objectives, the slow process of policy formulation and lack of proper implementation might hamper meeting the Millennium Development Goal (MDG). The government report, based on the HICE data survey indicated that the Ethiopian economy must grow in real terms by 5.7% per annum until 2015 to attain the MDG of reducing poverty by half. The report further added modest improvements in institutional efficiency can help reduce this growth requirement to about 4.7%. (SDPRP: 2002)

The actors in this comprehensive attack over poverty include the community, the government, the non-governmental organizations (including the civil society and the private business), the donor community, and development partners. The effective orchestration of the policies, institutions and processes determines the livelihoods of the main subjects.

2.6 LIVELIHOOD STRATEGIES

Livelihood strategies are chosen means of living shaped by the existing institutional system at normal context, way of living regulated by the vulnerability context under the existing resources and moderated through the policies, institutions and processes. They have to be understood as a dynamic process in which people combine activities to meet their various needs at different times and on different geographical or economical levels, whereas they may even differ within a household. A changing asset status may further or hinder other strategies depending on the policies and institutions at work.

The availability of proper policies and institutions affecting the accessibility and the use of livelihood assets affect the way households choose from the available strategies and a combination of them. In a rural context, households may construct four main categories of livelihood strategy (Swift and Hamilton: 2001 Eds.).

Livelihood intensification, where the value of output per hectare of land or per animal is increased by the application of more labour, capital or technology.

Livelihood extensification, where more land or animals are brought into production at the same levels of labour, capital or technology.

On the use of intensification vs. extensification approaches to agriculture in relation with the concept of agricultural sustainability, Pretty (Pretty *et. al.*: 2003b) argues that intensification is a better concept than extensification. Agricultural sustainability implies intensification of resources – making better use of existing resources (e.g. land, water, biodiversity etc.) and technologies. For many, the term intensification has come to imply something bad. According to Pretty, the critical question however centres on the ‘type of intensification’. Intensification using natural, social and human capital assets, combined with the use of the best available technologies and inputs (best genotypes and best ecological management) that minimize or eliminate harm to the environment, can be termed ‘sustainable intensification’. (DFID: 2004)

Migration, where people move away from their initial source of livelihood, and seek a living in another livelihood system.

Livelihood diversification, where households diversify their economic activities away from reliance on the primary enterprise (livestock or cropping), typically seeking a wider range of on-and off farm sources of income. The intent behind the livelihood diversification shows whether it is used for its value as a long-term adaptive strategy or because of the vulnerability as a short-term coping mechanism.

2.7 LIVELIHOOD OUTCOMES

Livelihood outcomes, as an outcome of orchestrated use and access of livelihood assets, mediating factors and the livelihood strategies by households and communities, are not only the ultimate objectives of households livelihood security in particular; but also the ultimate

objectives for the government, private organizations and development partners in the form of human security.

In this studies context the livelihood outcomes of settlers are:

- Reduced poverty in the form of increased production and productivity of households
- Reduced vulnerability in the form of the lesser frequency of coping mechanisms of households
- Food Security, in the form of more income, dietary diversity, and dietary frequency of households

SLF and its Relevance for Resettlement

From the above review of the SLF literature, it is obvious that this approach is relevant in formulating, investigating, identifying, and reframing policies and areas of intervention for community development activities under the context of resettlement.

Analyzing resettlement adopting SLF to explore and view the core concepts and underlying principles enshrined within the approach. The major advantages that could help us visualize resettlement context are: First, its holistic feature explores the inter-relatedness of factors as means, context, players, process, plurality of livelihood and outcomes and their impact upon the livelihoods of settlers. Thus, view food security, resource availability and diverse source of income as a means and an end for a secured livelihood or as one element of livelihood security rather than as an end by itself.

Second, its flexibility allows us to investigate the macro-micro links of policies and institutions upon the livelihoods of individual household settlers. Livelihoods are not static but change in response to various internal and external stimuli. This aspect is crucial in understanding livelihoods of resettled households as they move from vulnerable early days of settlement to secure livelihoods (Scudder: 1984, after Chimhowu and Hulme: 2006). This

approach allows more to analyze the resettlement as a policy instrument whether imposed from top-to-bottom or through a participatory people-centered approach in planning, preparation, implementation and the right to return. Third, the focus on risk and vulnerability and the associated 'coping mechanisms' and 'adapting strategies' to cope up with shocks and trends for resettled households allows us explore the subjective elements of 'vulnerability' and 'sustainability'.

2.8 RESETTLEMENT

Resettlement as displacement can be caused and classified in to development-induced, environmental refugees, and economic migrants. Development induced displacees are defined as those who have been forced to leave their place of residence when plans for a large development project such as dam, require the land on which they live (Cernea, 1995; McDowell, 1996). Development induced displacees are usually within their country of nationality. Environmental refugees are broadly defined as people forced to leave their place of residence due to problems in the natural environment, such as long-term depletion of natural resources from which people derive their livelihoods, or environmental disasters (Otunnu, 1992), as cited by Erlichman, 2003. On the other hand, economic migrants are those who are not able or willing to sustain a livelihood in their place of residence and move in order to seek better economic opportunities. At a practical level, the truth may be the overlap and interaction between these categories.

On the other hand, resettlement can be classified on the basis of the sponsor of the programme. It could be spontaneous or planned. According to McMillan and et.al (1998), spontaneous resettlement is criticized for causing the settlers to cultivate the largest area possible, giving little attention to conservation of the new area's soil, forest, and resources. On the other hand, it may have an advantage in acquiring basic infrastructural services from the sponsor if it is planned. The services that could be provided by the sponsoring government could be; surveying and preparing the land, transferring and installing settlers and providing them with initial support, formulating and introducing specific production regimes and input packages, and implementing major

technical innovations such as irrigation and animal traction, roads, warehouses, extension worker housing.

The characteristic feature of a resettlement to name it voluntary or involuntary lies on the process of the decision making to resettle, even though the question of the extent of involuntary versus voluntary resettlement has been and remains controversial. The willingness to resettle or the individual household's decision making to resettle may be used to see the voluntary nature of the resettlement. However some argue that, a disaster induced resettlement programme cannot be said voluntary while there is a limited choice or 'prompted by desperation and lack of choice' (Gebre, 2002).

The success of any resettlement programme lies on the nature of the pre-resettlement physical infrastructural preparation, mental preparation of the settlers; on the manner or the implementation phase of the resettlement; and on the control, follow up and evaluation of the programme. The history of most resettlement sites in Ethiopia is full of after-arrival-dissonance. The unnecessary pledges, promised by state officials, to fulfill the quotas have brought failure of expectations and finally failure of the programmes. These promises that are not fulfilled are the suitability, accessibility, and availability of development infrastructure. Deception beyond the effects of the lack of physical preparation affects the mental readiness of the settlers.

The physical preparation by the sponsor and the willingness of settlers are the necessary conditions for the successful accomplishment of programme objectives, but not sufficient conditions. The proper implementation during and the necessary follow-up after and a proper withdrawal of sponsors are important phases of the whole process.

III. DESCRIPTION OF THE STUDY AREA AND DESIGN OF THE STUDY

3.1 DESCRIPTION OF THE STUDY AREA

3.1.1 BIOPHYSICAL AND SOCIO-ECONOMIC FEATURES

Administrative and Biophysical Setup: Ethiopia ranks as sub-Saharan Africa's second most populous country with a projected 75 million of inhabitants in the mid 2006 (CSA, 2005). According to the current structural setup, the country is divided in to eleven regions: Nine regional states along ethnic line and two urban regions (Addis Ababa and Dire-Dawa City Administration Councils). The Tigray National Regional State is among the nine regions with projected population of 4,334,996 (CSA, 2005). Currently the region is divided in to 6 Zobas (zones) and 46 Woredas (35 rural and 11 urban woredas).

Kafta Humera is one of the 9 rural woredas of the Western Zone, which is divided in to 20 Tabias where the study site-Ruwassa is one of them. It is located at about 1383 kms 620 kms north of Addis Ababa and Mekelle respectively. The Woreda is 85 kms from Eritrean border to the North and 34 kms from Sudan in the West.

The total population of the *Kafta Humera Woreda* by the year 2007 is projected to be 27807 of which females account for 44 percent (CSA, 2007). The settlers are almost entirely Orthodox Tewahdo Christian Believers. But there are a few Moslems and Catholic Christian Believers constituting below 1% of the total number of the settlers. Of the total respondents in Ruwassa resettlement site 74 percent of them are first round settlers and the rest 26 percent are the second round settlers.

The resettlement area ranges in altitude 700 meter above sea level in Ruwassa to about 1500 meter above sea level at the upper catchment around *Adi-awala*. The topography of the study area is plain, and its agro-climatological zone (ACZ) is predominantly covered by *lower Kholla*. The area is known for its mono-modal rainfall pattern that usually rains from July-August. Its rainfall suitability according to the NRST-IFSD report is moderately suitable.

Economic Features of the study area: Agriculture as in any other rural Ethiopia the mainstay of the households' economy. Agriculture in the study area is mainly the mixed farming system of crop farming and livestock farming. The survey indicates that mixed farming is the dominant type of farming system constituting 98% of the total respondents. Besides to that horticulture and beehives are the third and fourth types of farming. Households that are engaged in one of the types the farming activity do not exist.

According to the official records of the Woreda's Office of Agriculture and Rural Development sorghum, maize, haricot bean and sesame are the major cereal and pulse crops and oil seeds.

As will be discussed in the methodology section the discussion held with the key informant groups have defined and categorized the characteristic features of the income groups. The criteria used in wealth ranking for the study area was that (a) the *Haftam* -rich farmer is the one who possessed 15-45 cattle, 30-40 goats, 5-8 camels, and donkeys, able to cover its own food the whole year and lend to others and who cultivates more land than his own. Besides to these factors other wealth possession has been added. The rich is the one who have his own water pump to water the garden that he owns, who have an oil mill and hand dug water-wall, and the one who owns modern and traditional beehives. (b) The medium farmer is who owns 5-15 cattle, 10-30 goats, 1-5 camels, and donkeys, able to depend on its own harvest 8-10 months without purchasing food grains. And other possessions like *Arabia*-animal pulled cart, hand-dug water walls, traditional beehives. (c) The poor or the lower income farmer is a household with cattle below 5, goats below 10, 1 donkey, able to depend on its own for 6-7

months, who works as a laborer for the rich settlers, mostly engages in cutting firewood and charcoal to nearby town *Baeker* and *Setit* for survival purposes.

Table 3.1 The households wealth ranking criteria used in the local setting.

Income group	Higher Income <i>Haftam</i>	Middle Income <i>Maekhelay</i>	Lower Income <i>Dikha</i>
Cattle	15-45	5-15	Less than 5
Camels	4-8	1-3	No
Goats	30-40	10-30	Below 10
Donkey	Yes	Yes	Yes
Cover its own food requirements	The whole year	9-11 months	8-10 months
Lending to others	Yes	Yes and No	No
Water pump	Yes	No	No
Hand dug-water wall	Yes	Some	No
Oil-mill	Yes	No	No
Beehives	Yes	Yes	Yes
Cultivates more than his own	Yes	No	No

Source: House hold Survey

3.1.2 SOCIO-ECONOMIC SERVICE PROVISIONS

All the respondents are situated in one village called Ruwassa where more than 2000 residents dwell. In this village where it is becoming a town exist a health station equipped with three health assistants with a purpose of assessing and reporting the health condition of the settlers. Except in cases of emergencies, through the provision of first aid and seasonal outbreak of diseases the health station do not supply medicine and diagnose by admitting patients. According to the result of the interview with the representative of the health station their purpose of existence is to follow-up the health situation and report to the near by health bureau located 85 kms far and referral cases that need further diagnosis to the nearby *Abera Kahsay Referral Hospital* located in the capital of the zone. Besides to the above purpose it serves as a health post during seasonal outbreak of diseases in the rainy season and after the rainy season.

During the seasonal outbreak of diseases there are other non governmental organizations that provide health services besides to the provision by the government. Some of these organizations are MSF and OSA. There is no any other private sector health services provider except for the seasonal non-governmental organizations.

A veterinary service is provided in the town where it serves a prevention purpose. The center serves another settlement village besides to Ruwassa. It is too far for the animals to get preventive medication because of the nature of livestock free herding system used by the farmers. The livestock are reared in a pastoralist way. They bring them for the purpose of vaccination and for marketing.

There is an elementary school situated at the outskirts of the town which for the time being enrolled students from grade 1-5. The teacher-student ratio of the school is 1:25 the number of students being 196 at the time of survey. According to the researchers observation the school is furnished with sufficient chairs, chalkboards, well-ventilated classrooms and administrative buildings. Besides to that there is a sanitation facility and a supply of potable water for the school community. The nature of the cleanness of the water needs further research.

The households that acquire the credit service from the micro-finance enterprise are households that are included in the agricultural extension package. According to the data acquired from the agricultural bureau of Ruwassa the table below shows an increase in the number of households that took credit from the microfinance institution at the time this study was conducted. However the last three years has shown a declining rate.

The number of female headed households is far greater than the number of male headed households proportionally. While the female headed constitute 5% from the settlers, their involvement in taking credit and being included in the agricultural extension package is more than 10 percent for all years.

Table 3.2 Households included in the agricultural extension package

Year	With Credit		Without Credit		Total	
	Male Headed HH	Female Headed HH	Male Headed HH	Female Headed HH	No.	%
2003/04	-	-	-	-		
2004/05	80	27	231	32	340	100%
2005/06	42	14	43	10	109	100%
2006/07	19	9	99	90	217	100%
2007/08	231	99	101	42	473	100%

Source: Compiled by the author

Besides to the availability of credit under the agricultural extension package there is a provision of modern beehives and the associated training of beekeeping for households. The training is given for 373 households in 3 years time while the provision is limited and distribution is uneven. By comparing the female headed households with the male headed households all the female headed households in the settlement area have taken the training, only 3 percent of them are who are given.

Table 3.3 Households that acquire beekeeping training and service

Year	No. of HH that took training		No. of modern beehives given		Total No. of Households	
	Male Headed HH	Female Headed HH	Male Headed HH	Female Headed HH	Male Headed HH	Female Headed HH
2003/04	-	-	-	-	-	-
2004/05	32	72	13	2	9	1
2005/06	70	40	7	1	5	0
2006/07	130	29	20	2	10	2
2007/08	n.a	n.a	n.a	n.a	n.a	n.a
Total	232	141	40	5	24	3

Source: Compiled by the author

Besides to the health and educational facilities in the town there are small-scale irrigation, natural resource conservation, and home economics experts' one for each service.

At the time of the survey the road was under construction that serves both at rainy and dry season. However, the settlement area was excluded from the major road that connects Gonder and Shire which serves only in the dry season.

3.1.3 SELECTED BACKGROUND CHARACTERISTICS OF THE STUDY POPULATION

In this section the demographic characteristics of respondents- the nature of households, age range, educational level and training, general income status; will be presented as to the result of the survey.

DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Of the total 78 households who participated in the survey 4 (5%) of them were female-headed households while the rest 74 (95%) of them are male-headed households. All of the respondents lie in the age range of 25 to 50, while the mean age of the respondents is 29.

Educational characteristics of the study samples indicates 5 (6%) illiterate, 15 (20%) read and write. 20 (25%) elementary school completed, 27 (34%) junior secondary school completed and 11 (14%) senior secondary school completed. Of the total respondent household heads 10% have been enrolled in different agricultural training programs.

With regard to the origin of the settlers, 90% of them are from Shire highlands as compared to the location of the settlement area. The rest of them are from the eastern highlands of *Hawzien*. Of the total settlers 76 percent of them are resettled in the first round which was undertaken in the 2003, while the rest 24 are in the second round, which was undertaken in the year 2004.

3.2 DESIGN OF THE STUDY

3.2.1 THE STUDY APPROACH

This research has attempted to integrate the use of quantitative and qualitative data. Generally, information has been collected from household survey (randomly selected from the settlers which later resulted in classifying by income groups, gender). Though efforts have been made to combine qualitative and quantitative information from each research subjects, the qualitative data consumes much time in the actual fieldwork as it gives a chance to probe and further classify facts. This is because the vulnerability context as well as the situation of

well-being of the rural residents can be better understood and described through a wide range of discussions and interactions. Both quantitative and qualitative data collection processes are presented below.

3.2.2 HOUSEHOLD SURVEY

The selection process to identify the sample resettlement site and households involved a series of steps.

Step 1: Resettlement site selection: From the 24 resettlement sites, the researcher purposively decided to cover only *Ruwassa*. This is because unlike the other resettlement sites it constitutes settlers that are brought from two different types of agro-ecological zones. It was selected by assuming the agro ecological nature of their origin may have an effect on their destination. Besides it is reported the regional government reports to be the most successful site. However, all the resettlement sites in the Woreda are relatively similar in-terms of socio-economic conditions, technological development, demographic characteristics and cultural backgrounds. Besides to that all the resettlement sites have the same access to transport and market facilities, except in the case of two resettlement sites, namely *Shiglil* and *Aidola*. The two sites were not considered in the pre selection process because of the remoteness of the sites and due to security problems at the time the decision was to be made to conduct this research.

Step 2: Selection of Households: the sampling frame was simply taken from the available list of settlers in the Woreda Office of Agriculture and Rural Development Bureau. The list excluded the returnees to take the samples. This was because of the limitation due to lack of

availability of settlers and the difficulty to trace the returnees. Finally by using simple random sampling from the list the researcher commenced the household survey.

Based on the sample size determined the size of the sample was totally 84 out of 1357 settlers in Ruwassa.

Wealth ranking have been used to determine the income groups to analyze the data. The following steps were used for wealth ranking.

- Using the list of settlers the list of all households at Kushet levels have been prepared.
- Identifying the key informant groups from each Kushet with the help of the Woreda administrators.
- Based on the information acquired through a consensus from the key group informants the settler households have been classified into *Haftam* (rich), *Maekhelay* (medium), and *Dikha* (poor).

Sample households total of 84 household heads that constitute 6 percent of the settler households excluding the returnees were selected for the survey. The proportion of households in respect to their residing Kushet's can be seen in Table 2.1.

Table 3.4 Proportion of sample households by Kushet in Ruwassa

Kushet Code	Number of HH	Number of samples		Valid households	
		No	%	No	%
1	397	28	33.3%	26	33.3%
2	583	28	33.3%	25	32.1%
3	377	28	33.3%	27	35.0%
	1357	84	100%	78*	100%

***The discrepancy of 6 samples is due to unavailability of households**

3.1.1 PARTICIPATORY QUALITATIVE APPROACH

Focus group discussions were held different levels especially with Tabia administrators on the security issues and land administration problems. Interactive discussions were organized on the credit service, government support at the initial level, on the population movements, on the health situation of settlers. The discussions were aimed at eliciting different views and social perceptions of the settlers towards the environment, the government intervention policy and their livelihood situation.

Key informant interview with each of the Kushet's people believed to be representatives other than government appointees, with identified knowledgeable elder groups, development agents have been conducted. It has been conducted with the health assistants, animal health expert; small scale irrigation expert; natural resources expert, bee-keeping expert; and with the school principal. The natural resources expert is responsible for the natural resources, environmental protection and land administration, water supply and rural roads activities.

Direct observation was the basic and fundamental part of the study mainly helped as a source for the questions that triggered discussions. This particularly emphasized the on livelihood assets, the housing situation, the constructions undertaken, the natural resource condition, and household utensils. The difficulty in the grazing land in the border area near to the settlement area was part of the observation.

Case study in-depth interview with household heads on the three kushets in the resettlement area have been carried out. This approach aimed at describing the history of individual settlers and drawing inference from the broad picture of the households' livelihood activities including their life in the past or before resettlement. The chief criterion used to select case study households was households' wealth status. Efforts have been made to include at least one participant from each wealth groups (*Haftam*, *Maekhelay*, and *Dikha*). In order to capture women headed households' views out of the six case studies households, two of them were women headed households. Other selection criterion used besides wealth status of the household includes age and participation in non-farm activities.

3.3 SOURCES OF DATA AND INSTRUMENTS USED

The data were collected from both primary and secondary data sources during the month of February and March 2008. The primary data were collected using a structured and semi-structured questionnaire, focus group discussions, in-depth interviews and observations. University students were employed to administer the interviews using the questionnaires who know the local cultural settings can speak the local language.

However, the enumerators were given intensive training on the data collection tool used, and the detailed contents of the designed questionnaires so that they may understand the intent of

the study. There was a close and an intensive supervision of the interview process to minimize possible errors that might occur during data collection, and personal observations of physical features and other aspects of the study area and individual households.

The questionnaire was designed to obtain information of the following aspects of sample settlers. First, the demographic characteristics of settlers such as age, gender of the household head, origin of the settler, religious affiliation, level of education, marital status, and household size. Second, health status, service and spending; household eating occasions and dietary diversity; households economic (income assets and production) source, composition and diversification status. Third, the questionnaire includes households' perceptions, coping mechanisms, concerns and acceptability in times of food scarcity and availability. Fourth, it covers households' access to agricultural modern technology and micro-finance and finally, it includes good governance, democracy and households' participation in decision-making.

However 6 out of 84 questionnaires addressed were found to be invalid due to incompleteness and unavailability. As a result, 78 cases were used for the analysis.

As far as the secondary data are concerned, various publications of FDRE government documents, Regional food security desk reports, and Disaster Prevention and Preparedness Bureau (DPPB) documents, and the Office of Agriculture and Rural development at all government levels were the major sources of information. Besides, data was gathered from relevant empirical studies and theoretical literature done both in Ethiopia and other African countries. These include government policies, policy and program documents, official statistics, research publications, and progress reports.

3.4 DATA ANALYSIS PROCEDURES

The data gathered from the primary source was analyzed using statistical techniques. The household survey questionnaire was entered and analyzed using SPSS software. In order to attain the stated objectives of the study descriptive statistics like means, percentages, and mode have been used. In order to draw inferences from the data, a comparison between different variables were computed. On the other hand, qualitative descriptive data is compiled and summarized using qualitative data analysis techniques such as tables and case study results displaying box templates.

IV. RESULTS OF THE STUDY

4.1 THE RESETTLEMENT PLANNING RECRUITMENT IMPLEMENTATION AND WITHDRAWAL

Population resettlement, if based on adequate studies, socially accepted, properly planned, implemented, monitored, and evaluated, it would enable to bring rational utilization of resources. It could create favorable conditions for introducing and implementing improved agricultural methods and better resource utilization systems for the betterment of settlers. On the other hand, if necessary preconditions are not fulfilled and the normal procedures are not adhered, it could be disastrous to the overall eco-system. It could cause a lot of environmental degradation and social deterioration. Besides to that the people could lack confidence on the government with the implication of resistance to any kind of intervention.

It is based on this assumption that scholars argue for resettlement programme to be successful a lot should be done on its pre-resettlement phase. The pre-resettlement phase includes the pre-planning, preparation and getting the full consent of settlers to make it voluntary. For analysis purpose this section of the research result is presented in a chronological order as before resettlement, during resettlement and after resettlement. Based on the information acquired from the government representatives, the sustainability of the attained food self-sufficiency and replicability of the resettlement programme will be discussed.

4.1.1 BEFORE RESETTLEMENT

This phase includes both the preparation in the origin and in the destination. The preparation in the destination areas will be presented followed by the process of preparation in the origin.

According to the formal reports of the government documents five studies have been conducted to study the feasibility of the now resettled areas and others in the longer term in general and the existing resettlement sites in particular at a regional level.

These studies include:

- Sherao and Tahtay Adyabo Agricultural development Study (MCE, 2001).
- Tekeze River Basin Integrated Master Plan (NEDECO, 1997).
- Mereb River Basin Integrated Master Plan (NEDECO, 1998).
- Phase One Pre-feasibility Study on the Potential Resettlement Areas-Parts of Western Tigray (NRST-IFSD, 2001).
- Phase Two Pre feasibility Study on the Potential Resettlement Areas-Parts of Western Tigray (NRST-IFSD, 2002).

The last two studies are directly related with the specific study area with the purpose of identifying potential areas for resettlement, assessing the base line data on socio-economic situation, natural resources and other relevant information, indicating possibilities and options for integrating population resettlement program with regional food security objectives and rural development. These two studies include 24 resettlement sites in which Ruwassa is part of it.

According to the pre feasibility study report conducted in the year 2001, the study area was occupied by some illegal settlers as *wofri-zemet*¹⁸. Ruwassa based on the pre-feasibility study result was considered as moderately suitable for rain-fed agriculture. The reason why it was not found to be highly suitable is that, the length of growing period is too short to some crops and high temperature for the requirements of some crops like maize. Thus only sorghum, haricot bean, and sesame are suggested based on the assessment. It is further indicated between 40-80 percent of the yield under optimal conditions can be expected. Inputs or management practices are needed to achieve maximum yields of 80 percent of those under optimal conditions. (NRST-IFSD, 2001)

The recommendation of the result emphasizes on the following points:

- The existing free livestock practices observed in the area should be controlled by changing the attitudes of the highlanders to keep the optimum manageable size of livestock.
- For sustainable development of the areas, detailed resource utilization plans are required in order to use the resources of the area effectively. Care should be taken to the wildlife reserves and vegetation resources, particularly to the incense and gum trees.
- Establishment of small planned town business centres are necessary, integration of smallholder settlement with agricultural investment, and construction of infrastructure from the scratch are some of the comments given.

As part of the before resettlement component it will be important to see the proximate cause that triggered the transfer of settlers or the commencement of the programme. The need for

¹⁸ It refers to the illegal settlers who cultivate the land while residing in some other place mainly in the highlands

resettlement was escalated by the emergency situation due to below average *belq* rain (which normally occurs from February through April), and *meher* (which normally fall between June and September) that were delayed and sporadic. .Even if the crisis was initially announced in 2002, in August 2003 The GFDRE's DPPC issued an international appeal for emergency food assistance followed by the lack of rainfall in the year 2002. Here, it can be observed that the immediate cause for the commencement of the resettlement programme doesn't seem the positive result of the feasibility study. Rather it seems the natural disaster that caused the initiation of the programme unless it coincides.

It can be argued that the first round was conducted based on the planning and the outcome of the study in the resettlement area. This is because of the limited number of households that were resettled in the first round in all resettlement sites. The number of household heads that were resettled in the first round was 7334 with 0.08 members of family for each household. In other words, 6716 settlers were only one with no family. This implies that the family members were not transferred to the resettlement areas. On the contrary, on the case of the second round resettlement the reverse is true. The total number settlers in the second round are 96,000 under 24,000 household heads with an average family size of four.

Finally, the other component of the before-resettlement phase of a planned resettlement programme is the physical preparation-surveying and preparing the land, infrastructure in the potential settlement areas. On the other hand, in the origin, the nature of the decision-making process and the recruitment process are the activities expected before the commencement of transferring the settlers.

However it has been possible to acquire information through interviews conducted through the case histories of two settler farmers.

Generally, as it can be inferred from Ayte F narration is that first, the livelihood situation in his place of origin mainly marked by landlessness has forced him to resettle. The cause is not an institutional factor. Second, his expectation and the performance of the government in the resettlement preparation never match.

4.1.3 AFTER RESETTLEMENT

This part of the resettlement phase the support or aid up to the level of food self-sufficiency, forming formal institutions, establishing social organizations and follow-up depending on the situation. According to the key informant interview, the construction of schools, health station and veterinary clinics was begun simultaneously while transferring the settlers and finished a year after. REST (Relief Society of Tigray) was involved in the support given to the settlers as an initial capital by providing pairs of oxen, and selected seed for the first season. The government supplied food for the first 9 months and withdrew.

According to Ayte F, the amount of wheat given to them was not sufficient to feed the whole family had it not been for the money that they brought with them from their origin. This indicates that the formative period is the important phase of the programme. From the household survey result it is indicated 27 out of 78 households, which constitute 34 percent, are in the poor income category. This number could have been reduced despite the fact that there are some other causes. This is because there is no indication that drought, or crop failure has its contribution to the low income, while those who came in the second round have exceeded the first round settlers.

Based of the interview report with the Regional Resettlement Programme Officer the registration of additional future settlers is on the process. They are expecting a command from

the responsible body to undertake the third phase of the programme. This bureau is not responsible for the already resettled population in the first and second round. This seems the need for expecting another disaster to cause resettlement. It is because there are people who are interested to resettle at this time. Some resettlement experiences from other African countries like Zimbabwe indicates the convergence of the livelihood condition of the planned and supported settlers with the voluntary or spontaneous settlers through the course of time. (Chimhowu and Hulme, 2006) One of the major causes in this African country is untimely withdrawal of government support.

According to the government official report the government claims the attainment of food self-sufficiency. So therefore the things that should be taken into consideration must be the sustainability of the attained food self sufficiency and the replicability of the resettlement programme.

4.2 LIVELIHOOD ASSETS OF HOUSEHOLDS

Livelihood comprises the human capital, physical capital, natural capital, social capital, financial capital, and political capital of settlers. The cumulated outcome of these factors determines the livelihood situation of household settlers.

- **Human capital** comprises skills, knowledge, the ability to labour and good health that allows livelihood objectives to be achieved. Education (skills and knowledge) affects choices in productivity, family size, seizing an available opportunity, and diversification of income sources at a household and intra-household level. (Schultz: 2001, DeJong: 2000) According to the result of the survey as indicated in Table 5.1, the educational status of the majority of household head respondents is literate.

Table 4.1 Educational level of respondents in 2007/08

	Educational Status	Household Head		Total	
		Male	Female	No.	%
1	Illiterate	6	1	7	9%
2	Read and write	4	3	7	9%
3	Elementary School completed	16	0	16	21%
4	Junior Secondary school	21	0	21	27%
5	Senior secondary school	13	0	13	17%
6	High school complete and above	14	0	14	18%
	Total	74	4	78	100%

Source: Household survey

It is the norm in many rural communities that household heads are more influential in decision making process than other members of the family. Decisions to be engaged in activities other than crop and livestock farming is dependent on household heads will. He/She is the one who leads and determines whether to be involved in extra work other than farming. The household head is responsible for the household's financial transactions. The assertion here lies in the fact that education increases access to job opportunities, nutrition and also elevates household decision-making capabilities. Therefore the educational level of the household head is guessed to have a positive association with the level of participating in non-farming portfolios of activities. Since most of the non-farming activities as a source of income prevailing in the study area don't require qualified human labor, the correlation coefficient for level of education is found to be 0.165 with positive direction of relationship. It indicates weak association of the explanatory variable to diversifying activities in the non-farming income stream.

On the other hand, the educational level as a determinant factor for dietary diversity indicates a strong and positive relationship. The correlation coefficient for level of education is found to be

0.547. Level of education is believed to affect the fertility rate there by the family size. As believed by many researchers there are diverse causes for a reduced fertility rate. First education transforms the traditional concepts of considering children as a means of insuring security. The second cause is the awareness on the quality of children than quantity. The result of the survey indicates as the level of education increases the family size declines as indicated by the negative relationship of the family size of households and the level of education.

Table 5.2 Coefficients of level of education in relationship to dietary diversity, family size income of households and non-farming activities

	Dietary diversity	Family size	Total Income of Households	Non-farming activities
Coefficient of level of education	0.547**	-0.583**	0.238*	0.165

Source: Household Survey

**Correlation is significant at the 0.01 level

*Correlation is significant at the 0.05 level

Even if it is not as strong as the correlation coefficient of the dietary diversity and the family size the coefficient of the total income of households indicates a positive relationship. The capability theory asserts that

In this study it has been attempted to explore the health aspect of the human capital however there was no substantial evidence to indicate the status of settlers through the questionnaires addressed. Based on the secondary data obtained from the health station of Ruwassa, the larger percentage of cases belongs to the seasonal labour migrants who came from the central Tigray and Amhara highland areas. Most of the diseases that outbreak during the rainy season and after the rainy season are vector-born and water-born diseases.

Table 5.3 Number of cases treated during and after the rainy season

	Disease type	Number of cases			
		Settlers		Seasonal labour migrants	
		During	After	During	After
1	Vector born diseases	65	169	130	1908
2	Respiratory diseases	10	45	-	112
2	Water born diseases	30	28	-	375
3	Other infections	3	14	9	127
	Total	108	256		2522

Source: The Tabia's Health Center

The impact of the seasonal outbreak of diseases to the settlers is aggravated by the limited capacity of the health station. Unless temporary shelters are made by the non-governmental organizations, the level of contamination will increase. When the seasonal migrants are caught by the disease they sleep where ever they are creating a favorable condition for the dissemination of the disease. For the local settlers it creates sense of insecurity and increases the number of contamination.

In case of the vector born diseases like malaria of all types, mainly falciparum, the local people- the settlers have their own mechanisms of developing resistance to the disease. Some settlers like Ayte A don't consider and mention it as a disease. While responding to the inquiry of the researcher he said:

Box 4.1: The human health effect to the livelihoods of settlers

Case study

Ayte A is the resident of Kushet 3 in Ruwassa resettlement site with his three sons. He was separated from his wife a year ago at the time of this study was conducted. It is presented in his own words as follows:

...malaria is not a disease you know what, you have to eat well, let me tell you, you have to abstain from sex you have to stop even going with your woman, besides you have to eat white onion right then it will flee from you it never approach you.

It is a disease of the foul. A number of my neighbors flee from here to their home (origin) in fear of being attacked by malaria. But had they been here they could have adapted her (malaria). My wife left me a year ago and she never came back she is with her family. I have gone twice to see her. But I am planning to marry here. I am not going to die. I have to. But malaria is simple. And sometimes you have to use zanzera (mosquito net) at your sleeping place when she gets strong. Sometimes she gets strong she kills a lot of people.

- **Social capital** includes social networks, claims, associations and social relationships more generally, including consensual norms and relationships of legitimate authority. In almost all rural communities in Ethiopia the social capital is the informal insurance system or ‘the key safety nets’ (Swift and Hamilton: 2001) among and within institutions (such as-*mahbertegna*, *senbete*, *iqub*, *idir*), families, kinships, during bad times either idiosyncratic or common shocks. In the setting of the settlement in the study area there is no significant difference with that of their origin. The institutions like the *mahbertegna*, *senbete*, *idir*, exist except for the *iqub*.

As the survey indicates 96 % of the respondents answered ‘no’ to the question addressed to them whether they use *iqub* as a saving mechanism. The basic reason for not being involved in *iqub* to the 67% of those who responded ‘no’ is the micro-finance credit is more advantageous than

'iqub'. Some of the advantages according to the responses of subjects is: iqub is by chance unlike the *dedebit fithawi liqahe* (the local micro finance institution in the region). The other reason is, according to the respondents, the micro finance is more liable than iqub.

According to the survey result the financial and material wealth of settlers is better as compared to that of their prior condition except the lower 7 percent of the settlers. The mean annual per capita income of respondent settlers is found to be 3794.00 ETB. This income includes all possible sources of cash from all livelihood activities sold, generally on-farm, off-farm and non-farm activities monetized into cash income based on local market price. Taking the relative poverty line in Ethiopia as a bench mark which was 1075.03,¹⁹ 7 percent of the total respondents earn below this line. A typical settler household in the study area needs an income of 4515.13, since the average family size in the survey is calculated to be 4.2.

In rural Ethiopia lack of financial and material wealth to the worst results 'in exclusion from the social networks as a result of the inability to meet the criteria' such as – *mewacho*, labour reciprocity (as a result of landlessness), failing to provide meals (Devereux: 2000). In the settlers case there is no worst case that shows a financial problem that leads to the social exclusion.

In creating marital relationship it can be said the social network seems at early stage or not yet formed. The settlers even after four years go back to their origin for marriage. Though, the 'informal rules' within any given social networks change gradually depending on the 'perceived choice and action,' conversely, the formation of the new social networks might take a long period of time unlike the possible 'forth night change of formal rules'. (Douglas: 1990) This may be as a result of the limited number of host population. At the same time there seems to exist a significant difference in values.

¹⁹ The Ministry of Finance and Economic Development (MoFED, 2006)

- **Physical capital** comprises the basic infrastructure and producer goods (tool and equipment) needed to support livelihoods, such as affordable transport, secure shelter and buildings, adequate water supply and sanitation, clean, affordable energy and access to information. The success of rural farming activities depend on the material-farm tools and equipments possession of the household. Besides it has a by-product of getting social prestige and status where the materials used in the settlement areas are significant. Besides to the farm tools and equipments, farm machineries such as water pumps and tractors.

The role of farm animals like ox is limited because of the easy access to the farm machineries as a result of the existence of mechanized agricultural investment farms in the study area. As a result, according to the household survey 54 percent of respondent households lease tractors to cultivate their farms. However the use of machineries has no effect on the number of livestock that are kept by the settler respondents. Livestock, especially goats and sheep that are found to be large followed by cattle are kept for fattening purpose. The total number of livestock owned by respondents is indicated in Table 5.5, based on wealth status groups.

On the other hand the case for the rich is different. The rich settlers do not use their cattle for the purpose of plowing. They keep cattle only for milking; the rest is for fattening in the free grazing fields. They do this as the discussion with the elders confirmed first, there will no be enough fodder for all the cattle to keep them at home. Second, they don't want their wealth to be known to the public. As the survey result indicates the ratio of plow possession of the *Haftam*'s is small while it is large for the poor households as indicated by the ratio of plowshare to the number of households in Table 5. 5.

The importance of livestock for both the rich and the poor is significant even though the purposes vary one from the other. It includes reasons such as: for capital accumulation, reproduction, source of food, as a buffer in times of stress and serious shocks, as a sign of

prestige besides to the traction purpose. In the table below the average number of livestock per household possessed by the three wealth status groups is presented.

Table 4.4: Mean livestock owned by the three wealth status groups

	Higher Income (15) ⁿ		Middle Income (34) ⁿ		Lower Income (12)		Total	
	Quantity**	%*	Quantity	%	Quantity	%	Quantity	%
Cattle	35.4	47	15.8	47	5.8	6	1137	100%
Sheep and goat	17.4	24	21.5	65	10.1	11	1113	100%
Traction animals	2.3	31	1.9	56	1.2	13	114	100%
Colonies of bee	0.7	27	0.6	52	0.7	21	39	100%
Total	827		1332		205		2364	

*The percentage is calculated from the total number of the livestock to all income groups.

**The quantity is the average livestock owned by the income group.

Number of livestock was the major factor used in determining the wealth status especially the number of cattle. In wealth ranking as indicated earlier the key informant group has been used to determine the wealth status. A consensus has been reached by the key group informants the number of *tsimad* (pair of oxen) is the major factor in determining whether someone is rich traditionally. The household survey confirmed the same result. The average number of livestock owned by the households in the rich income status households per head - in this case cattle- is found to be 35.4. As portrayed in Table 5.4, this is the largest share of the income group's followed by 15.8 and 5.8 for middle income and lower income status groups respectively.

In the study areas there is a complete transformation of using animals for plowing into using tractors especially for the rich and medium income status household settlers. Even the poor are interested to use tractors for cultivation had it not been for their financial limitation and fear of taking risks. This seems because of the access as a result of the proximity to the mechanized agricultural investment farming zone.

The part of the survey conducted to assess the level of assets owned by respondents includes properties such as water pump, oil mill, water well, etc and farm tools and equipments of settlers. The ratios of farm tools and equipments and other properties that are highly useful to the agricultural activities are presented in Table 5.5. The larger gets the ratio the higher the access to the mentioned tools and equipments and properties.

Table 4.5: The average asset owned by settler households in income groups per household in 2007/2008

Income status of households		Farm tools and equipments						Others			
		Plow share	Cart	Shovel	Wheel barrow	Hack saw	Miran rope	Water wall	Oil mill	Grain store	Water pump
<i>Haftam:</i> Higher Income (15)	Q.	2	8	23	16	5	17	17	15	32	8
	Ratio	(0.13)*	(0.53)	(1.53)	(1.03)	(0.33)	(1.13)	(1.13)	(1.00)	(2.13)	(0.53)
<i>Maekhelyay:</i> Medium Income (36)	Q.	30	13	45	25	15	39	17	15	26	1
	Ratio	(0.83)	(0.36)	(1.25)	(0.69)	(0.42)	(1.08)	(0.47)	(0.42)	(0.72)	(0.02)
<i>Dikha:</i> Lower Income (13)	Q.	14	3	7	5	4	12	3	1	3	-
	Ratio	(1.07)	(0.23)	(0.54)	(0.38)	(0.31)	(0.92)	(0.23)	(0.08)	(0.23)	(0)
Total assets owned and the ratio (64)		46 (0.72)	24 (0.38)	75 (1.17)	46 (0.72)	24 (0.38)	68 (1.06)	37 (0.58)	31 (0.48)	61 (0.95)	9 (0.14)

Source: Household Survey

*The mean asset owned per household is the value indicated in parenthesis

- **Natural capital** or natural resources including the stocks and flows and environmental services available in particular agro-ecological setting that can be used in promoting livelihood situation and buildup the other livelihood resources. Natural capital is the mainstay of the rural agriculture based economy in Ethiopia. The natural capital is the relief system during shocks if not consumed at all especially the forest. The governments major justification for the resettlement was the unutilized natural resource in the now resettlement areas.

According to the observation in the study area by the researcher there is no difference in the life style of the settlers with the life style of their origin. The similarities that are observed are the forest is the source of fire woods for the rural settlers and the near by towns, fattening cattle, dwelling place of traditional bee hiving, house construction, grain store construction, farm tools and equipments, household furniture etc. The only difference is the resource in the study area is not yet completely consumed. The similarity is not only in the life style of the settlers and the rest of rural Ethiopia but also there is no significant difference in the consumption of woods in the three income groups. All the three groups use as indicated in the Table below fire woods for cooking, construction of houses, furniture, farm tools and equipments.

Table 4.6: Use of the nearby forest by income groups

Purpose of use	The Purpose used							
	Higher income (13) ⁿ		Middle income (35)		Lower income (24)		Total	
	Yes	No	Yes	No	Yes	No	no.	%
Fire woods	13	100%	35	100%	24	100%	72	100%
Construction	13	100%	35	100%	24	100%	72	100%
Farm tools equipments	13	100%	35	100%	24	100%	72	100%

Source: Household Survey

The other observation in the study areas is that there are abandoned buildings, grain stores, oil mills that are abandoned in the village. The abandoned constructions in the village belong to the returnees, at the time of the research they were not functional and not yet given to the

voluntary settlers. Based on the information acquired from the *Woreda* administration, these resources belong to the returnees, however they will be given to the voluntary settlers that number 897 households as soon as the returnees come and ask clearance for release. The voluntary settlers are mainly involved in non-farming activities like carpentry, trading, *siwa* and *mess* making (local drinks) and other skill workers that don't directly depend on the natural capital and farming activities.

- **Political capital** includes citizenship, party membership, own ideological/political stand etc. According the case study conducted in the study area, the perception of one of the settlers presented as it is.

Box 4.2: The perception of a settler with regard to the resettlement site

Ayte B is a second round settler who is a head of 7 family members. His age according to his estimation is 47. He has been in to Illubabor for resettlement in the Derg Regime, with his parents. Based on his wealth possession, he is categorized under the rich income status groups. He thinks that he has been used by the government for the purpose of defending the territory in the Sudan border. Presented in his own words to the inquiry presented to him: *We have been deployed while there is a lot of fertile land in the southern part of Tigray and in the eastern part of Tsegedie. It would have been enough for us who are settled here. Here (Ruwassa), it is Berekha (wilderness), it is now where the government started to build the infrastructure, there was nothing. If a problem arises like in the Eritrea, we are the first to die.*

According to the survey result 13% of the household heads are demobilized soldiers in the two last regimes Derg and EPRDF. As indicated in the case history the difficulty that is associated with the border dispute linked with the nature of the free grazing system of the wealthy settlers in the Sudan border could be disastrous for the settlers in the future. This is because of the experience in the last Ethio-Eritrean conflicts rural residents around the territory were the first victims of the conflict.

4.3 HOUSEHOLD INCOME STATUS AND COMPOSITION

In sub-section 5.1.2 the condition of household assets has been discussed in conjunction with the challenges and opportunities that are facing the respondents in improving their livelihood assets and their livelihood condition. In this part firstly, the composition of income of the respondents in terms of the difference in income on years of arrival as first-round and second round will be discussed. Secondly, the comparison of income composition among households using their wealth status as: *Haftam*-rich, *Maekhelay*-Medium, and *Dikha*-poor, will be the center of discussion. As discussed earlier the number of respondents who are resettled in the first round and the second round are 59 and 19 respectively, constituting 76 and 24 percent of the total respondents. Their year of resettlement as 2003 and 2004 has been used to compare their income. On the other hand, the number of households on wealth status is 15, 36, and 27 for rich, medium and poor respectively.

The mean annual per capita income of total respondents is calculated to be 3794.00. According to the survey result, the mean annual per capita income of the total respondents in their wealth group is calculated to be 6090.00 Eth. Birr for the rich, 3575.00 for the medium, and 2814.00 Eth Birr for the poor. In terms of year of resettlement the mean annual per capita income of the first round settlers as indicated in Table 5.7, is 4947 while it is 3345 for the second round settlers. Annual per capita income is calculated as an income generated from the sale of livestock and livestock products, the sale of crop produces, and income from off-farm and non-farm activities. The difference between mean annual per capita income of households in the first round and second round is presented in Table 5.7.

Table 4.7 Mean annual income of respondents based on year of resettlement in 2007/08.

Wealth status	2003 first round		2004 second round		Mean annual per capita income	
	Income	N=59	Income	N=19	Income	78
Haftam-rich (15)	6571.00	12	4169.00	3	6090.00	15
Maekhelay-medium (36)	3775.00	22	3256.00	14	3573.00	36
Dikha-poor (27)	2820.00	25	2739.00	2	2814.00	27
Mean annual per capita income	4947.00	59	3345.00	19	3794	78

Source: Household survey

As indicated in Table 5.7, the mean annual per capita income of total households who are resettled in the year 2004 is less by 23 percent from the settler households in the year 2003. The mean annual per capita income of the first round total settler respondents is 4947 Eth Birr., while it is 3345.00 Eth Birr for the second round settler respondents. This could be as a result of the wealth accumulation effect on the livelihood income improvement of the settler respondents.

The contribution of livelihood activities towards the total income of the respondents in years of arrival in the resettlement area has indicated a significant difference in the composition of income of households. The overall composition of income of households is 84%, 3% and 13% from on-farming activities, off-farming activities and non-farming activities respectively. The on-farming activities are mainly divided into two major groups as crop production and livestock herding constituting 86 and 14 percent respectively. The major contributors for crop production are sorghum, sesame, and maize followed by horticulture. On the other hand, livestock income category includes income from cattle, goat and sheep followed by honey products. The comparison between the first round and the second round settler respondents, as shown in Table 5.8, indicates preponderance of the first over the second round settlers.

Table 4.8. Income composition difference of on farming activities on years of arrival in the resettlement area.

Source of Income	First round 2003		Second round 2004		Total	
	Amount	%	Amount	%	Amount	%
Crop production	3366	81	2388	85	2581	81%
Livestock	581	14	281	10	446	14%
Horticulture	187	4.5	132	4.7	127	4%
Beehives	21	.5	9	.3	33	1%
Total	4155	100 %	2809	100%	3187.00	100%

Source: Household Survey

There is also a difference among the income groups as indicated above. The mean income acquired from the on-farming activities is the major contributor to the total household income constituting 84 percent of the total, crop production taking the lion share. However, while the proportion is 81 percent and 85 percent for the first and second round arrivals, the difference lies on the amount of contribution. The income generated from crop production for the first round settlers exceeds by one-third over the second round settlers. This observed change seems due to the additional land cultivated by the households which are in the first group, that are wealthy. This data is confirmed by the number of respondents under the rich category out of which 87 percent of them are from the first round settlers. The preponderance of the first round settlers over the second round settlers is attributed by the key informants that the first round settlers were highly privileged of different provisions from government and aid organizations. Besides to that the key informant added, their number was not as large as the second round, so they had the access to cultivate more land on their will.

The second major contributor to the households' income in the on-farming activities is income from the sale of livestock like cattle, goat and sheep and their products including

milk and milk products, hides and skin etc. As indicated in table 5.8, the proportion of income from livestock for the first round settler respondents is more than twice the income from livestock for the second round settlers. This difference seems as a result of stock accumulated in the first year of resettlement which made them one step ahead from the second round settlers. The number of livestock owned by the first round settlers is also another indication for its contribution to exceed the second by three-fold, which was discussed in the physical capital section. The reproductive use of the livestock associated with the herding practices of the settlers, which mainly are cattle is also another factor.

The wealth stratification of the survey result indicates as there is a difference in the contribution of activities towards income. The numbers of households from the total respondents under the rich category are 15, while it is 36 and 27 for the medium and the poor constituting 20, 46 and 34 percent of the total respondents. The difference among the three strata households' income composition is shown in Table 5. 9.

The proportion of income from crop production for the rich income group is nearly twice the crop productions contribution for the medium income groups. The proportion of income from the livestock for the poor is greater in proportion and amount from the medium income group. This indicates the stock accumulation of the poor better than the medium income groups, where in the poor the majorities are the first round settlers. As indicated earlier the total respondents in the poor income group is 27. The number of the first round settlers in this income group is 25, which resulted in large income proportion for the poor. There are only two households under the poor category who were resettled in the second round. This further strengthens the pivotal role played by stock accumulation as a result of longer stay in the resettlement area even if it is only one year.

Table 4.9: The income composition of households in income groups

Sources of income	Wealth status						Totals	
	Haftam-rich N=15		Maekhelay- medium N=36		Dikha-poor N=27			
	Amount	%	Amount	%	Amount	%	Amount	%
Crop	4673.00	77%	2490	70%	1975	70%	2732	72%
Livestock	609.00	10%	375	10%	465	14%	455	12%
Off-farm	-		140	4%	259	9%	151	3%
Non-farm	800.00	13%	570	16%	115	7%	455	12%
Total	6090	100%	3575	100%	2814	100%	3794	100%

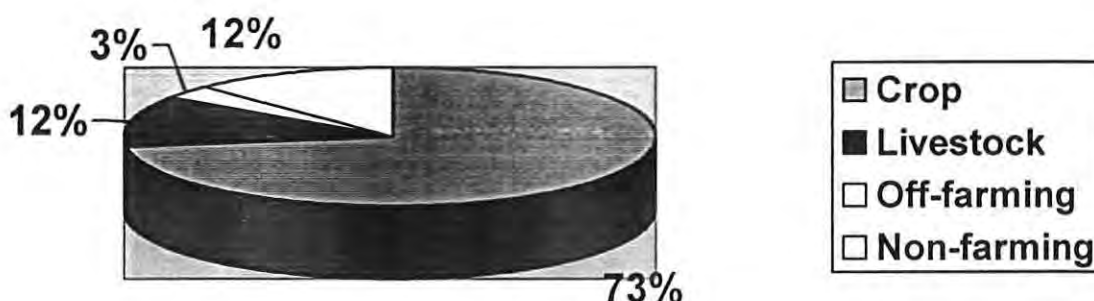
Source: Household survey

As shown above the proportion of income from the off-farm activities is 0 for the rich income categories. The major types of off-farming activities observed in the study area are incense collection and agricultural labour, in which the latter is mainly seasonal. The off-farming activities are the major characteristic features of the medium and the poor income categories. Table 5.9 shows the proportion of income generated from the off-farming activities dominated by the two lower income groups. Especially, for the poor income groups off-farming activities are done for the purpose of covering household food requirements partially. 9 percent of the income for the poor is generated from the off-farming activities, while it is 4 percent for the medium income status groups.

Besides to the off-farming activities settlers are also engaged in additional non-farming activities. Trading is the major non-farming activity registered in the study area. However the specific type of trading in which the three income categories are engaged in differs one from the other. According to my observation the non-farm income from trading is wide and diverse which includes: trading and marketing of grain, animals, petty trading on consumer goods, handicrafts. The trading of consumer goods includes smuggling from the bordering Sudan. The rich income groups are mainly involved in trading agricultural produces by delivering them from the study area to the near by towns

like *Baeker*, *Tirkan*, *Rawyan Humera* and *Shire*. The majority of the medium income groups are involved in supplying fruits and vegetables to the near by towns *Rawyan* and *Baeker*. The equal proportion of income generated from non-farming activities with livestock in the mean annual per capita income of households is indicated in Fig 5.1 below.

Fig 4.1 Income composition of mean annual per capita income of households



Source: Household Survey

Generally, it can be seen that the major source of income for all categories is dependent on the agriculture which is highly dependent on the rain-fed agriculture. This is true not only for the crop production and livestock but also the off-farming and non-farming activities that has a high reliance on the natural resource and on the agricultural trading.

4.4 LIVELIHOOD STRATEGIES

The composition of households income have been discussed in section 5.1.3., in this section the nature of the activities with the challenges and opportunities that are faced by

the respondents will be discussed. Livelihood strategies as indicated by Ian Scoones and Ellis are strategies in response to the deterioration of livelihood conditions for the poor. This can take different forms through diversification, intensification, migration, non-farm and off-farm activities. As used in many conventional researches the major classification of agricultural activities is on-farm, off-farm and non-farm activities. Thus this section is devoted to the discussion of the activities using this classification.

4.4.1 ON-FARM ACTIVITIES

The two major on-farm activities observed based on the household survey in the study area are crop production, livestock herding. The crop production includes cereals, pulses, oil seeds, fruits and vegetables, while the livestock includes cattle, goats and sheep, and beehives. The nature of these agricultural activities in conjunction with the challenges and opportunities will be discussed in this section.

Crop production: As reported from the survey, the size of the amount of crop production in the study area is positively associated with the rich households followed by the medium and the poor households. The output of crop production by households' wealth status is almost similar for the two better income groups- the rich and the medium in terms of yields from own land. Since the rich income groups cultivate additional land and gain more farm produces, the agricultural output is calculated per hectare as shown in Table 5.10 below. The major crop cultivated in the study area is sorghum, followed by sesame and maize. Thus the following calculation is the mean annual agricultural output per hectare.

Table 4.10 Conditions of crop production by households' wealth status.

Wealth status	Output of agricultural produce from own farms and others (in quintal per hectare)					
	Maximum	Minimum	Mean	Mean land cultivated		
				Own farm	Leased	Total
Haftam (N=15)	27.0	12.5	25.0	1.5	1.3	2.8
Maekhelay (N=36)	25.0	10.5	22.5	1.2	0.8	2.0
Dikha (N=27)	23.0	8.5	17.5	0.7	-	0.7
Total	27.0	8.5	21.3	1.1	0.6	1.7

Source: Household survey

The mean annual agricultural output in the study area was found to be 21.3 quintals per hectare per household including own land and land leased from others. The maximum average, i.e. the mean for the Haftam group is greater than from the mean for the Maekhelay income status households. This seems due to the households' time invested in their own farms. Because the Maekhelay income status households like the poor income status households are highly engaged in agricultural labour. This assertion is also strengthened when the mean for the rich is compared with the mean agricultural output of the poor income status households'. The mean land cultivated by the rich households is 2.8 while for the poor is 0.7. There are two major reasons for such a discrepancy, first, besides to the necessity of land for better productivity and improvement of livelihood, the productive labour that is found in a household is a determinant factor for increased productivity. This is indicated in the survey that the majority or 80% female headed households are under the poor income category who leased their lands to the wealthy households, characterized by lack of productive labour in their household. The case study report indicated in Box 5.4, confirms similar situation that is faced by female headed households. Second, the farm distance factor is another factor as reported in the

survey result that 43 percent of households who leased their land are households whose farm is more than 2-3 hrs on foot distance from their residence area.

The mean land size that is cultivated by all respondents is 1.7 hectare. While the average land size distributed to the settler households is 1.5 hectare without the land for horticultural practices, there is a large discrepancy between the rich and the poor. This is due to the lack of capability on the poor households' side to seize opportunities, unlike the rich household status groups. It shows that land is not the only factor for increased production, however there are other factors like: the accessibility and distance of the farm from the residence area; lack of productive labour; financial capital etc., which enhance the productivity of households.

Box 4.3 Shortage of agricultural labour as a cause of lower productivity for female headed households

Case Study

W/o C is the first round settler who lives with her two children aged 9 and 13 in Ruwassa resettlement site. She was divorced because of the disagreement created between them as a result of the poverty situation in their origin 7 years ago. She rents her own allotted land to the people in town year to year on the basis of one-third (*Ribei*) distribution for her. She has tried on the first year of resettlement; unfortunately it was unfruitful unlike the others. She explained the basic problem for the failure is timely preparation, weeding, and harvesting and the over all follow up needed in the farm. She said it is better for her to give the land for the wealthy people in town and go at the time of harvest to share the yield. Besides to the money that she gets from the land she is involved in herding goats that number 12, that are shepherded by the two children.

The production of fruits and vegetables is also the agricultural practice in the study area in spite of the fact that the numbers of the farmers who are involved in it are limited.

Even though meaning of horticulture is somewhat complex and contested for the purpose of this study it includes vegetables and some perennial or permanent fruits.

Generally the number of farmers who cultivate fruits and vegetables from the settlers are totally 80, who have taken land size of 0.25 hectare each in the river banks of Ruwassa. Based on the data obtained from the household survey, only 5 household heads are interviewed. The land that is given to the settlers for fruits and vegetables is based on the request of the interested farmer. When we compare the total population with the farmers engaged in the horticultural farming practice is small which is below 4 percent. The researcher has attempted to investigate the cause. The Tabia's administrator reported that, as the number of farmers who take the land increases the distance of the horticultural farms from the resettlement site got far and far. This is because the farms are dependent on the water from the river which is difficult to use modern irrigation system to use on the sides of the other farms. However, the Tabia's administrator added that, they are giving the land to the rich settlers on the basis of agricultural investment, by increasing the size of the land into one to two hectares. But this is handled by the *Woreda* administration in *Setit Humera*.

The types of vegetable produces are cabbage, tomato, onion, pepper, carrots, lettuce, swiss chard and etc. The type of fruits that are produced perennially are lemon, orange, mango, guava, avocado, papaya and others. As compared to others the households under the survey that has a garden for fruits and vegetables have registered a higher rate of dietary diversity.

There are some challenges for crop production indicated from the survey, the key informants and the Tabia and Woreda administration. According to the information acquired from the key informants, the challenges for improving yield are found to be wastage in harvesting and lack of proper storage after harvesting. The former is due to the cost of labor during the harvest seasons as a result of the shortage of agricultural labour which will be discussed in detail in the vulnerability context of this section later. The second challenge is due to the problem that is faced in lack of proper grain store.

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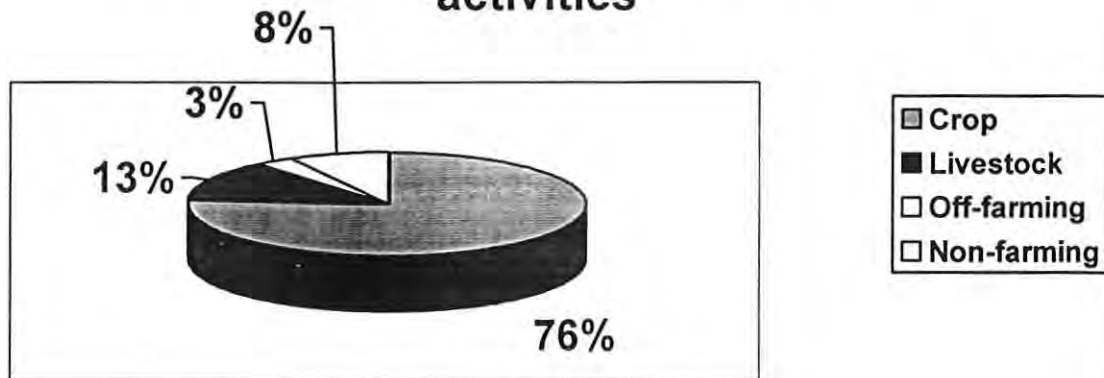
There are some challenges for crop production indicated from the survey, the key informants and the Tabia and Woreda administration. According to the information acquired from the key informants, the challenges for improving yield are found to be wastage in harvesting and lack of proper storage after harvesting. The former is due to the cost of labor during the harvest seasons as a result of the shortage of agricultural labour which will be discussed in detail in the vulnerability context of this section later. The second challenge is due to the problem that is faced in lack of proper grain store.

According to the key informants rodents are the problem because of the nature of the grain store which is traditional.

The use of modern agricultural technology seems in a better condition because of the use of tractors in the study area out of which 54 percent of the respondents reported for using tractors. Besides, the use of pesticides and insecticides in the study area is undertaken by the government through the early warning system, on which the Woreda Agriculture and Rural Development Office is responsible. The exception reported in the study area is the absence of the use of other agricultural technologies like fertilizers. As reported by the key informant groups from the outset of the survey, it is indicated that there is no need of using fertilizers for better productivity because of the fertile nature of the land. According to the official report from the Woreda's Office of Agriculture and Rural Development, it has been indicated that no need or management practices are necessary to yield 70-80 percent. There is no difference in using fertilizers and not using in the amount of yield

Livestock farming: Livestock farming's contribution to the total mean income of households is indicated as the second largest income composition being equal in proportion with the non-farming activities contribution for the mean income per capita of respondents as indicated in Fig. 5.1 is 12% which is equal in proportion with non-farming activities. If we deduct the rich income status households non-farming activities contribution to the mean annual per capita income of households the result would be different as shown in Fig. 5.

Fig 4.2 The income composition without the rich income status households contribution to non-farming activities



This activity which includes cattle, goat and sheep, camels, donkeys, and beehives is mainly characterized as traditional. This is because of the herding practice in the study area which is the traditional free grazing system. Especially, the free livestock grazing and raising system, is dominant for the households with large quantity of cattle for the purpose of fattening.

According to the interview result with the Woreda's Office of Agriculture and Rural Development Bureau representative in Humera, livestock owners do not have any limit of the size of the stock they rear in all resettlement sites. Customarily, the livestock that are kept and fed at home are cattle for milk, plowing, transport and for other domestic use. The rest are kept and raised and fattened in the free range areas. He further added that the habit of feeding livestock at home is almost none except in some case like if the livestock owner's cattle, goats and sheep are small in number. This traditional livestock raising and feeding system seems the challenge for the future and now. It is because there is no any intervention conducted by the government bodies to create awareness on the proper use of the available opportunities on the natural resource.

In rural Ethiopia number of livestock is the major indicator of wealth status and a sign of prestige like in the study area. The survey result confirms the same result the majority of the cattle are owned by the rich income status households. As indicated in the *physical capital* section the comparison among the number of livestock owned by the three wealth status groups is indicative of this trend. The largest average of livestock owned per household is possessed by the rich followed by the medium and poor: 56, 37 and 17 respectively. The number of livestock includes cattle, goat, sheep, donkey, and camel.

Beekeeping is the other agricultural practice in the study area which contributes 1% to the income composition. Bee hiving as indicated in the description of the study area section is at its early stage of production. This is because of the traditional method of beekeeping practiced in the study area. The challenges that are faced in beekeeping, based on the key informants' perceptions and responses they mentioned are: instability of colony, high initial investment cost, poor management, inadequate technical support of extension workers, etc. However, the beekeeping expert in the study area reported that beekeeping will be a promising type of farming practice in the future. This is because; he mentioned, the type of honey produced here in the study area is, highly demanded because of its medicinal use. But he further added the number of modern beehives that they provide and the type of technical and material support that is given to the farmers is not comparative.

4.4.2 OFF-FARM ACTIVITIES

Off-farm activities in many parts of rural Ethiopia refer to selling fire woods, agricultural wage, incense collection as well as charcoal and Safety Net productive public works at large. In this study, based on the key informants and the household survey, the activities under the off-farm activities mainly are, selling fire woods, agricultural labor, and incense collection. The government believes that the settlers have attained a level of food self-sufficiency. Thus the Safety Net program is not functional as a result, in the study area. As the result of the limited engagement of the settlers in off-farm activities, the

respondent households' mean annual per capita income composition is constituted by 3 percent of the off-farming activities.

The major contributor to the off-farming activities income is mainly attributed to agricultural wage labor and incense collection. The contribution of the agricultural wage labour based on the income status group of settler respondents indicates that, it is totally the characteristic feature of the Maekhelyay-medium and the Dikha-poor income status groups. The high degree of involvement of the two income status groups on the off-farming activities seems the major cause for the lower productivity of their own produces and lower rate of cultivation of own land. This is because, the yield per hectare as indicated in Table 5.9, gets lower and lower when we go down from the higher income status groups to the lower income status groups. While the mean crop production per hectare is 25 quintal for the rich income status groups, it is 17.5 quintal per hectare for the poor income status groups, as shown in table 5.7. However, the maximum yield in the high income status groups goes to 27 quintals, while the minimum for the poor income status household is 8.5 quintals per hectare.

The other source of the off-farming activity that is observed in the study area is incense collection. This is done in the protected areas for the wild-life reserve zone, which is legally banned to collect incense without investment license.

4.4.3 NON-FARM ACTIVITIES

According to the survey result, the non-farm activity in the study area is likely to be wide and diverse which includes trading and marketing of grain, livestock, petty trading on consumer goods including contra-band goods from the bordering Sudan. As indicated earlier the proportion of income generated from this activity is equal to the income generated from the livestock products income which is 12 percent each to the total average income. The trading activities differ from one income group to the other based on their capacity of working capital. The major beneficiaries by income group from the non-farming activities are the rich followed by the medium income status groups. The

rich households collect sesame, sorghum and maize and supply it to the whole buyers which are found to the near by towns like Baeker, Rawyan, and Setit Humera. Besides to that, the second major trading activity is livestock trading, on which it is becoming a promising type of business in the study area because of the increased demand for the consumption of meat. One of the major challenges as reported by the key informants is the transportation problem in addition to the distance of markets to take the cattle on foot.

While the major characteristic feature of the medium income group respondents is the trading of the contra-bands, and transporting fruits and vegetables, some of them are engaged in the same trading business with the rich income status groups. 42 percent of the lower income status groups are found to be engaged in petty trading and small business transactions like, retailing consumer goods, brewing local beer (*Siwa*), blacksmithing, traditional hair dressing etc. This is especially true for the female-headed households.

When developing a questionnaire to be addressed to the respondents it was assumed to capture each and every part of the non-farming and source of income as livelihood strategy, including remittances from relatives and other transfers including cash gifts. However, the researchers own observation on the study area seems different to the household survey result. This is because in some households a number of electronic materials including machineries like water pumps, small generators and other modern household utensils have been observed, but never reported on the response to the questionnaire. Thus, the researcher relied on the information from the key informants; as a result, it has been found that there are households that receive gifts from their families in town. Therefore, it is most likely to infer that data on remittance was very much underreported by the respondents.

4.5 VULNERABILITY CONTEXT

It is believed by researchers (Devereux, 2001, Wisner et. al 2004), that vulnerability defines the characteristics of person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of hazard. The degree of the vulnerability depends on the amount of capital accumulated through time by themselves and others including nature. People are more vulnerable if they are more likely to be badly affected by events outside their control. Vulnerability generally, comprises **Trends** (i.e. demographic trends; resource trends; trends in governance), **Shocks** (i.e. human, livestock or crop health shocks; natural hazards, like floods or earthquakes; economic shocks; conflicts in form of national or international wars) and **Seasonality** (i.e. seasonality of prices, products or employment opportunities) and represents the part of the framework that lies furthest outside stakeholders' control.

In the study area three major trends have been observed in relation to the livelihood activities of the respondent settlers. High rate of population movement has been the major feature in the resettlement programme characterized as out-migration and in-migration. Based on the official report of Office of Agriculture and Rural Development in the Woreda, it has been reported that more than 45 percent of the settlers have returned to their origin, while a proportional rate of voluntary settlers are replaced in their place. The carrying capacity of the resettlement area never exceed beyond its potential, based on the estimation of the feasibility study conducted in the year 2001 (NRST-IFSD). However, the effect is more observed on the effect of the population movement on the environment or the natural capital. As indicated earlier, the returnees have caused a lot of damage on the forest due to construction of houses, household equipments, farm tools, clearing for farming activities and other livelihood activities. Based on the researcher's own observation the aforementioned constructions are no yet possessed by the voluntary settlers. Because most of them, didn't take clearance for release to be considered as returnees in their area of origin. The population trend associated with the damage caused by the returnees is aggravated by the slow process of decision making to transfer the ownership of resources and resource use by the government bodies. This is because the

voluntary settlers are causing additional damage to the environment to earn a livelihood, on which most of them are engaged in selling fire woods, making charcoal, and other illegal activities, according to the key informants.

As the survey result indicated in Table 5.10, all of the rich income groups, 60 percent of the medium income groups 20 percent of the poor cultivate their farms by leasing tractors from the agricultural investment farms and other residents who earn a livelihood through this activity. From the total respondents 54 percent of them cultivate their farms using modern agricultural technology. This indicates that there is an alarming change in agricultural technology, which is cause by the existence of large agricultural investment farms. The 100% use of insecticides and pesticides is due to the government’s provision of spraying the farming areas alarmed by the early warning system.

Table 4.10 Households’ usage of modern agricultural technology based on wealth status

Wealth status	Rich (15)		Medium		Poor		Total	
	N	%	N	%	N	%	N	%
Tractors and combiners	15	100%	22	60%	5	20%	42	54%
Fertilizers	-	0%	-	0%	-	0%	-	0%
Pesticides/insecticides	15	100%	36	100%	27	100%	78	100%
Modern grain stores	-	0%	-	0%	-	0%	-	0%
Total	15		36		27		78	

Source: Household Survey

Moreover, the livelihood activities that are observed in the study area are almost all dependent on agricultural activities that rely on rain-fed agriculture. The sustainability of these livelihood activities highly dependent on the resilience of the natural capital implying a higher degree of being exposed to vulnerability with out a substantial transformation into other livelihood activities.

In the vulnerability context shocks include external factors that are associated with the economic, natural and social conditions. According to the survey result, there was no major external factor that affected the livelihood situation of respondents in the resettlement area. However, the future problems that create a sense of insecurity in the study area, based on the information from the focus group discussions inference are: the Ethio-Eritrean border conflict and the border dispute in the grazing areas of the settlers in the bordering Sudan. This problem is sometimes caused by the free grazing system used by the settlers.

Not all seasonality factors and trends are considered to be negative. It is believed by researchers that, trends in new technologies or seasonality factors could be used as opportunities to secure livelihoods. One of the seasonal factors observed in the study area that affects almost all respondent households is the seasonal labour in-migration from the near-by Woreda's and region, including the neighboring country, Sudan in-migrants. The effect of the seasonal labour is different in wealth status groups. For the Rich income status group respondents, the harvest season is a challenging time because of the high competition they face from the agricultural investment farms, mainly for sesame produces. On the other hand, the harvest season is a good time for the poor and medium income status groups to accumulate capital as a result of the stiff competition between the wealthy groups. However, the success of the beneficiary respondents is at the opportunity cost of their time that should be spent on their own farms. In the survey it has been indicated that the yield per hectare and the size of land cultivated shown a significant difference between the income status groups. This seems as a result of their engagement in labour activity in the harvest season.

The challenge that is associated with the harvest season is the human health conditions that worsen as a result of the seasonal labor in-migrants. The case study indicated, diarrhea, respiratory diseases, and malaria are the major cases reported to affect the labour in-migrants. This is due to the less attention given to their health conditions to work and save more during the season. This information has been confirmed by the report from the health assistants in the health center located in Ruwassa.

V. SUMMARY OF FINDINGS, CONCLUSIONS AND POLICY IMPLICATIONS

5.1 SUMMARY OF FINDINGS

The study was conducted with the broad objective of assessing the impact of resettlement on livelihood condition of households in *Ruwassa* resettlement scheme by measuring the level of income, asset ownership, livelihood composition and diversification strategies; identifying factors that negatively influence the livelihood outcomes of settlers at a macro and micro level, recording the survival mechanisms in ex-ante and ex-post shocks and trends.

The research has attempted to integrate the use of quantitative and qualitative data of households at all levels from the resettlement site. Generally, the survey data has been collected from 78 stratified households across every income group and gender and years of resettlement. The participatory qualitative approach on its part employed instruments such as key informants' interview, various level group discussions, direct observations and in-depth interviews from the case study selected households. The frame work used analysis was *livelihood security framework*.

The survey respondents have an average age of 29 years. The minimum and maximum age of household head respondents were 26 and 47 years in which most of the respondents in the survey are in the productive age group. Similarly, the majority of the respondents have attained primary education. The mean household size of the respondents was 4.2. Besides, all of the respondents are engaged in mixed farming- crop and livestock. The settlers are transferred in to *Ruwassa* resettlement site in two rounds in 2003 and 2004 on which, 76 and 24 percent on the first and second round respectively.

The central theme of departure for this study was to explore the food insecurity situation of households in conjunction with the government's intervention through resettlement. Accordingly the following challenges and opportunities with what is attained are identified.

Livelihood assets The level of education of respondents is found to be correlated with the dietary diversity, family size and income of households strongly and positively except for family size that is negatively correlated. The engagement of respondents in non-farming activities is positively correlated but not as stronger as the other factors. The annual morbidity rate is very low and insignificant because of mosquito nets and the spray of pesticides. The major diseases that are registered in the study area are diarrhea and malaria of all types. The social capital seems to be at its early stage. This is because the institutions are not yet well formed like iqub substituted by micro finance institutions. However, the religious institutions like the senbete plays a pivotal role in getting support from the assembly in different ways. Of the major physical capitals, 54 percent of settler's respondents are found to be using tractors to cultivate their farms. There is no household that has no cattle. The average number of cattle per household in income status groups is found to be: 53, 27, and 17 for the Rich, Medium and Poor income status households respectively. This includes all types of livestock such as cattle, goats and sheep, and traction animals. Farm tools and equipments and other properties possession of households is found that each household has its own. The major benefits derived from the livestock and other farm tools and equipments is for reproduction, capital accumulation, as a buffer in times of serious problems, source of food and as a sign of prestige. All of the settler respondents mainly rely on the natural capital indicated by the kind of livelihood activities. 100% of the settler respondents depend on the rain-fed agriculture, use the forest for fire wood collection, as grazing areas of all types of systems, resident and warehouse construction, for making farm tools and equipments, beekeeping and other major activities. A similarity is observed in the use of the natural forest and resource use. With regard to the political capital, based on the perception of the respondents there is a sense of insecurity for them especially, for those who had a military background and are demobilized soldiers.

Income composition: As registered in the survey the source and composition of income is mainly characterized by on farming activities. The mean annual per capita income of all households is found to be 3794.00 Eth. Br. The amount of income as in terms of year of resettlement is 4947.00 Eth. Br and 3345.00 Eth. Br for the first round and second round settlers respectively. The mean annual per capita income in terms of wealth status groups is 6090.00 Eth. Br, 3575.00 Eth. Br and 2814.00 Eth. Br for the *Haftam (rich)*, *Maekhelay (medium)*, and the *Dikha (poor)* respectively.

The composition of income in general is categorized under the on-farming, off-farming, and non-farming activities. The proportion of income generated from on-farm, off-farm and non-farm activities constitutes 84, 3 and 12 percent of the annual income of households respectively.

The composition of income of the on-farming activities is dominated by crop production. The income generated from the crop production for the first round settlers exceeds by nearly one-third over the second round settlers. The same is true for the income generated from the sale of livestock which is greater by more than 100 percent from the second round settlers. The two major source of income in the off-farming activities are agricultural labor and incense collection, on which the former one is dominant. On the other hand, the major income source in the non-farming activities is trading that includes consumer goods petty trading and agricultural produces trading.

Diversification strategies: On the category of the on-farming activities the crop production includes cereals, pulses, oil seeds and fruits and vegetables, the livestock on the other hand includes cattle, goats and sheep and beehives. The major crops cultivated in the study area are sorghum, followed by sesame and maize. The output of crop production by households' wealth status is almost similar for the two better income groups, the rich and the medium, in-terms of yields from own land. The mean annual agricultural output in study area was found to be 21.3 quintals per hectare per household including own land and land leased from others. The maximum average

from own land for the Haftam is greater than the Maekhelay income groups yield per hectare, because of the less time invested in own farms for the Maekhelay income status groups. Besides to that, the mean land size cultivated by the Haftam income status group households is 2.8 hectare per household, while for the poor is 0.7 hectare per household. 80 percent of female headed households are found in the lower income status groups. The two major reasons for such discrepancy are lack of productive labor, working capital. The challenges for improving yield are found to be wastage in harvesting and lack of proper storage after harvesting. The former is due to the cost of labor during the harvest seasons as a result of the shortage of agricultural labor. The second challenge is due to the problem that is faced in lack of proper grain store. Rodents are the problem because of the nature of the grain store which is traditional.

The second major group of agricultural activity in the category of on-farming activities is the livestock farming. The livestock farming which is traditional mainly includes cattle, goat and sheep, camels, donkeys, and beehives. This is because of the herding practice in the study area which is the traditional free grazing system. Especially, the free livestock grazing and raising system, is dominant for the households with large quantity of cattle for the purpose of fattening. Customarily, the livestock that are kept and fed at home are cattle for milk, plowing, transport and for other domestic use. The rest are kept and raised and fattened in the free grazing areas sometimes in the wild life reserve areas. Bee hiving as indicated in the description of the study area section is at its early stage of production. This is because of the traditional method of beekeeping practiced in the study area. The challenges that are faced in beekeeping are instability of colony, high initial investment cost, poor management, inadequate technical support of extension workers.

The off-farm activities mainly are, agricultural labor, selling fire woods, and incense collection. The major contributor to the off-farming activities income is mainly attributed to agricultural wage labor and incense collection. The high degree of involvement of the two income status groups on the off-farming activities seems the major cause for the lower productivity of their own produces and lower rate of cultivation of own land. The trading activities differ from one income group to the

other based on their capacity of working capital. The major beneficiaries by income group from the non-farming activities are the rich followed by the medium income status groups. The rich households collect sesame, sorghum and maize and supply it to the whole buyers which are found to the near by towns like *Baeker*, *Rawyan*, and *Setit Humera*. One of the major challenges as reported by the key informants is the transportation problem in addition to the distance of markets to take the cattle on foot.

Vulnerability context: High rate of population movement has been the major feature in the resettlement programme characterized as out-migration and in-migration. From the total settlers transferred to this site more than 45 percent of them have returned to their origin, while a proportional rate of voluntary settlers are replaced in their place. However, the effect is more observed on the environment or the natural capital. The population trend associated with the damage caused by the returnees is aggravated by the slow process of decision making to transfer the ownership of resources and resource use by the government bodies. Besides, the resettlement site is being changed in to an urban center creating a favorable environment for the voluntary settlers and the poor households to involve themselves in non-farming activities for livelihood diversification. On the other hand, it has a negative impact due to deforestation for construction of resident houses and warehouses. The other major trend observed in the resettlement area is the transformation in the use of modern agricultural technologies. This is as a result of the proximity to the mechanized farming practices in the agricultural investment farms. From the total respondents 54 percent of them cultivate their farms using tractors.

According to the survey result, there was no major external factor-shock that affected the livelihood situation of respondents in the resettlement area, on the year this research was conducted. However, the future problems that create a sense of insecurity in the study area are: the Ethio-Eritrean border conflict and the border dispute in Sudan, in the grazing areas of the settlers. This problem is sometimes caused by the free grazing system used by the settlers.

With regard to the seasonality nature of the vulnerability context in the resettlement site it is observed that health situation and seasonal labour are major phenomenon. The effect of the seasonal labour in the livelihood of the settlers differs in impact in wealth status groups. For the Rich income status group respondents, the harvest season is a challenging time because of the high competition they face from the agricultural investment farms, mainly for sesame produces. On the other hand, the harvest season is a good time for the poor and medium income status groups to accumulate capital as a result of the stiff competition between the wealthy groups. However, the success of the beneficiary respondents is at the opportunity cost of their time that should be spent on their own farms. The health condition before the harvest season and on the rainy season has shown a significant difference on the morbidity rate. However, the impact is mainly high on the seasonal labour migrants than the permanent settler residents. The two major types of disease groups are vector born diseases-malaria of all types, and water born diseases- diarrhea.

Resettlement programmes: There was a study conducted before the commencement of the resettlement programme; even though the resettlement was triggered by the natural disaster-drought in the 2003 and 2004 in the areas of the origin of the settlers. The preparation and the construction of infrastructure were begun with the transferring of the settlers. The nature of the resettlement with regard to the perception of the settlers was they chose to resettle because there is no any other choice presented rather than accept the resettlement. However, the nature of the resettlement was marked by the failure fulfilling the pledges promised by the government. The settlers' expectation didn't match with the expectation of the settlers. This was characterized by the delay in aid, the limited amount of aid, the slow construction of infrastructure, and shorter duration of support of the government to the settlers etc. Moreover, less emphasis was given to the environment during the implementation phase of the programme and after resettlement. This problem is observed on the attitude of settlers and government officials and the practices observed in the resettlement area. Besides to that there is no water and soil conservation practice in the resettlement area, even if it is the common practice in all over the region.

5.2 CONCLUSIONS

Based on the summary of findings aggregated from the household survey and the participatory qualitative results of case studies the following concluding remarks are provided.

As it can be inferred from the condition of the livelihood assets and the socio economic provisions by the government, the settlers who never returned to their origin have registered some changes in different aspects. Some of these changes observed are, all households are food self sufficient, have improved productivity; have accumulated stock. Nevertheless their livelihood still relies highly on the natural capital and the physical capital-land. It can be seen that the major source of income for all categories is dependent on the agriculture which is highly dependent on the rain-fed agriculture. This is true, not only for the crop production and livestock but also the off-farming and non-farming activities that has a high reliance on the natural resource and on the agricultural marketing goods. All agricultural and most non-agricultural activities have a high reliance on the rain-fed agriculture. The natural environment that is being eroded and improperly handled will be a disaster in the future if there is no another intervention. The large majority of the settlers have attained food security at the expense of the other livelihood assets, partially the natural forest.

In general considering the condition of the livelihood assets and the surrounding environment that bases on the natural capital it is difficult to say livelihood is secured. This is because of the deterioration of other livelihood assets and difficulty of its future sustainability. The livelihood security, includes the security of the future of the households, in terms of generations beyond the level of food self sufficiency of the existing generation. By observing the livelihood diversification strategies and the composition of income of households in their income status groups and in the year of resettlement, agricultural labour force in households, accumulated working capital,

increased access to land, are the major factors for wealth difference. It shows that land is not the only factor for increased production, however there are other factors like: the accessibility and distance of the farm from the residence area; lack of productive labour; financial capital etc., which enhance the productivity of households.

There is a fundamental transformation in terms of modern agricultural development technology in the farming practices of settler households. This transformation is mainly observed in the use of tractors, pesticides and insecticides, except the lack of the modern irrigation system in spite of the fact that the land is suitable and there is ample water resource in the area. However, with a high reliance on the natural forest, low level of awareness on the proper use of this resource will have a negative and devastating effect on the total eco-system, which will be aggravated by the high population movement in the resettlement area.

In general, resettlement of the landless from highly degraded zones because of man-made and natural resources can in the short term bring a fundamental change to the chronic poverty situation of households by enhancing the livelihood assets and incomes from on-farm production, creating off-farm and non-farm livelihood activities. Nevertheless, in the long run without proper institutional support, the registered level of security may deteriorate and fail to secure the livelihood of settlers in the future.

5.3 POLICY IMPLICATIONS

The recommendations given here are based on the conclusions derived from the summary of findings. There are three areas of intervention based on the researcher's perspective of the research result and personal observation in the study area.

The first one is integrating the foreign policy and the agricultural development in the resettlement area in general and Ruwassa in particular. The foreign policy formulation especially the relationship between Ethiopia and Eritrea highly affects the future development of the area and the region. The future development prospect in the

agricultural marketing may be affected by the Ethio-Eritrean border conflict as is now indicated in the limited access of markets.

Using resettlement programme as one option food security strategies in the future should consider training on land and other resource use. Besides to that training to the existing settlers should be given in the areas of forage keeping to feed livestock at home, modern beekeeping, water and soil conservation, saving etc will be essential, for most of the challenges that are observed in the area are related with lack of training in the modern agriculture.

Integrating the small holder farmer settlers with the mechanized agricultural investment farms may strengthen the observed transformation of use of modern technology. Thus forming institutions that facilitate issues like transforming settlers into investment activities may help to absorb the observed increased income in some households.

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INDEXES

INDEX A: QUESTIONNAIRES AND INTERVIEW GUIDELINES

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1.4	Origin (Circle using Codes A)	1.4.1 Zones	1 2 3 4 5 6		
		1.4.2 Woredas	1 2 3 4 5 6 7 8 9 10 11 12 13 14		
		1.4.3 Tabias	1 2 3 4 5 6 7 8 9 10 11 12 13 14		
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	Date of visit	First Visit	Second Visit	Third Visit	
1.6	Result Of Interview				
	01=Completed 02=No Competent Person At Home 03=Entire HH Absent For Long Period 04=Entire HH Returned To Origin 05=Postponed 06=Refused 07=Moved To Another Location Permanently 08=Others, Specify On The Result of Interview Column				

Codes A

Zones

Woredas

- 1- Central Zone
- 2- Eastern Zone
- 3- Southern Zone
- 4- Western Zone
- 5- Mekelle
- 6- Others, Specify

Module 2: Household Demographic Status

Respondent: Head of Household

I will ask health related questions to individuals directly unless they are less than 18 years old

HH MID	Name	1	2	3	Age	4	5	6	7		8
		Relation to HH Head	Religious affiliation	Gender		Marital Status	Education	Agri and Non-agri Training	Morbidity		Hospitalized Last 1 Year
									Last 2 Months	Seasonal Morbidity	
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

Codes:

Col. 1: 1=Head
2=Spouse
3=Child
4=Parent
5=Sibling
6=Child-in-law
7=Parent-in-law
8=Adopted
9=Other, Specify _____

Col. 2: Religion
1=Orthodox
2=Moslem
3=Protestant
4=Catholic
5=Others

Col. 3: 1=Male
2=Female
3=Separated
4=Divorced
5=Widowed

Col. 4: 1=Single
2=Married

Col. 5 (Last Completed Unit):
1=Illiterate
2=Literacy and Numeracy
3=Elementary
4=Secondary
5=Secondary* (Including Agri.
And Non-Agri. TVET)

Col. 6: 1=No
2=Yes
Col. 7 and 8: 1=No
2=Yes

Have you had any health problems during the past 2 months? *(The health problem could have started earlier than 2 months).*

1. No (Skip Module 3) 2. Yes (Continue with Module 3)

Have you been hospitalized in the past 12 months?

1. No (Skip Module 3) 2. Yes (Continue with Module 3)

Module 4: Household Eating Occasions and Dietary Diversity

Questions will be addressed to each member of the household individually.

4.1 During the previous 24 hour period, did you consume any food in the following occasions?

ID	Eating Occasions						
	4.1.1 Any food before a morning meal	4.1.2 A morning meal (<i>Kurssi</i>)	4.1.3 Any food between morning and midday meals (<i>Merafedi</i>)	4.1.4 A midday meal (<i>Missah</i>)	4.1.4 Any food between midday and evening meals (<i>Taamot</i>)	4.1.5 An evening meal	4.1.6 Any food after the evening meal
1	0 1	0 1	0 1	0 1	0 1	0 1	0 1
2	0 1	0 1	0 1	0 1	0 1	0 1	0 1
3	0 1	0 1	0 1	0 1	0 1	0 1	0 1
4	0 1	0 1	0 1	0 1	0 1	0 1	0 1
5	0 1	0 1	0 1	0 1	0 1	0 1	0 1
6	0 1	0 1	0 1	0 1	0 1	0 1	0 1
7	0 1	0 1	0 1	0 1	0 1	0 1	0 1
8	0 1	0 1	0 1	0 1	0 1	0 1	0 1
9	0 1	0 1	0 1	0 1	0 1	0 1	0 1
10	0 1	0 1	0 1	0 1	0 1	0 1	0 1

Codes for all Columns will be: 0= No
1= Yes

Module 5: Households Economic (income, assets, and production) Source, Composition and Diversification Status

Questions to be addressed to a head of a household

5.1 What are the sources of income to your household to earn a livelihood, including all households? (Circle Codes)	5.1.1 From Farming activities								5.1.2 From Livestock Production					5.1.3 From Non-agricultural													
	Types of Activities							To tal	Type of Activities					To tal	Type of Activities												Tot al
	1	A1	A2	A3	A4	A5	A6		B1	B2	B3	B4	B5		C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	
2	A1	A2	A3	A4	A5	A6		B1	B2	B3	B4	B5		C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12		
3	A1	A2	A3	A4	A5	A6		B1	B2	B3	B4	B5		C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12		
4	A1	A2	A3	A4	A5	A6		B1	B2	B3	B4	B5		C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12		
5	A1	A2	A3	A4	A5	A6		B1	B2	B3	B4	B5		C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12		
6	A1	A2	A3	A4	A5	A6		B1	B2	B3	B4	B5		C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12		
7	A1	A2	A3	A4	A5	A6		B1	B2	B3	B4	B5		C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12		
8	A1	A2	A3	A4	A5	A6		B1	B2	B3	B4	B5		C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12		
9	A1	A2	A3	A4	A5	A6		B1	B2	B3	B4	B5		C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12		
10	A1	A2	A3	A4	A5	A6		B1	B2	B3	B4	B5		C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12		
Total																											

Codes for 5.1.1 (Crop-Farming):

- A1= Cereals
- A2= Staples
- A3= Sesame
- A4= Cotton
- A5= Fruits
- A6= Vegetables
- A7= Others, specify _____

Codes for 5.1.2 (Livestock Production)

- B1= Sales of Cattle
- B2= Sales of goats and sheep
- B3= Poultry income
- B4= Sales of honey or Bee colony
- B5= Milk and milk products
- B6= Others, specify _____

Codes for 5.1.2 (Non-agri):

- C1= Daily labour
- C2= Trade
- C3= Wood sales
- C4= Transport
- C5= Local drink brewing
- C6= Blacksmithing
- C7= Credit Service
- C8= Incense Collection
- C9= Gold panning
- C10= Carpentry
- C11= Mat-making
- C12= Sewing
- C13= Others, specify _____

Codes for 5.1.4 (Remittances)

- D1= Spouse
- D2= Relatives
- D3= Parents
- D4= Children
- D5=
- D6= Others

Codes for 5.1.5 (Other transfers)

- E1= Cash for work
- E2= Food for work
- E3= Cash gifts
- E4=
- E5=
- E6= Others, specify _____

5.1 What are the sources of income to your household to earn a livelihood, including all households? (Circle)	HHIMD	5.1.4 Remittances							5.1.5 Other transfers					
		Types of remittances						Total	Types of transfers					Total
		1	D1	D2	D3	D4	D5	D6		E1	E2	E3	E4	E5
	2	D1	D2	D3	D4	D5	D6		E1	E2	E3	E4	E5	
	3	D1	D2	D3	D4	D5	D6		E1	E2	E3	E4	E5	
	4	D1	D2	D3	D4	D5	D6		E1	E2	E3	E4	E5	
	5	D1	D2	D3	D4	D5	D6		E1	E2	E3	E4	E5	
	6	D1	D2	D3	D4	D5	D6		E1	E2	E3	E4	E5	
	7	D1	D2	D3	D4	D5	D6		E1	E2	E3	E4	E5	
	8	D1	D2	D3	D4	D5	D6		E1	E2	E3	E4	E5	
	9	D1	D2	D3	D4	D5	D6		E1	E2	E3	E4	E5	
	10	D1	D2	D3	D4	D5	D6		E1	E2	E3	E4	E5	
	Total													

Codes for 5.1.1 (Crop-Farming):

- A1= Cereals
- A2= Staples
- A3= Sesame
- A4= Cotton
- A5= Fruits
- A6= Vegetables
- A7= Others, specify _____

Codes for 5.1.2 (Livestock Production)

- B1= Sales of Cattle
- B2= Sales of goats and sheep
- B3= Poultry income
- B4= Sales of honey or colony of Bee
- B5= Milk and milk products
- B6= Sale of hide and skin
- B7= Others, specify _____

Codes for 5.1.2 (Non-agri):

- C1= Wage labour
- C2= Trade
- C3= Fire wood sales
- C4= Transport
- C5= Local drink brewing
- C6= Blacksmithing
- C7= Credit Service
- C8= Incense Collection
- C9= Gold panning
- C10= Carpentry
- C11= Mat-making
- C12= Sewing
- C13= Others, specify _____

Codes for 5.1.4 (Remittances)

- D1= Spouse
- D2= Relatives
- D3= Parents
- D4= Children
- D5= _____
- D6= Others, specify _____

Codes for 5.1.5 (Other transfers)

- E1= Cash for work
- E2= Food for work
- E3= Cash gifts
- E4= Idir and Equb
- E5= Others, specify _____

5.2 What is the quantity of crop production										5.4 What is the amount of income earned from non-agricultural activities?									
Item	Unit	Land Utilized		Unit Local Price		Yield per local unit		Total	Item	Unit	Seasons				Total				
		Meher	Belg	Meher	Belg	Meher	Belg				I	II	III	IV					
A1									C1										
A2									C2										
A3									C3										
A4									C4										
A5									C5										
A6									C6										
A7									C7										
Total									C8										
									C9										
									C10										
									C11										
									C12										
									C13										
									Total										

5.3 How much is the amount of income earned from livestock production?										5.5 How much is the amount of income received as a remittance and other transfers?									
Item	Unit	Seasons				Total	Item	Unit	Seasons				Total						
		I	II	III	IV				I	II	III	IV							
B1							D1												
B2							D2												
B3							D3												
B4							D4												
B5							D5												
B6							D6												
B7							E1												
Total							E2												
							E3												
							E4												
							E5												
							Total												

5.6 Does the household own the following and other assets? (Check all that apply)

5.6.1 Livestock					5.6.2 Traction and transport animals					5.6.3 Farm tools & equipments					5.6.4 IT equipments					5.6.5 Others				
	Type	Quan.	Quality			Type	Quan.	Quality			Type	Quan.	Quality			Type	Quan.	Quality						
			H	M	P			H	M	P			N	M	O			N	M	O	H	M	L	
A	Steer					Horse					Plough					Radio					Water well			
B	Oxen					Mule					Cart					Television					Water harvest			
C	Cow					Donkey					Shovel										Grazing land			
D	Heifer					Camel					Wheelbarrow										Grain store			
E	Calves										Hacksaw													
F	Goat										Miran-rope													
G	Sheep										Chisel													
H	Poultry																							
I	Colonies of Bees																							
J																								
K																								

Keys for: 5.6.1., 5.6.2., Quality indicates

H= Healthy
M= Moderate
P= Poor (Not healthy)

For 5.6.3., 5.6.4., Quality indicates

N= New (High asset value)
M= Moderate
O= Old (Low asset value)

For 5.6.5.A, Quality indicates

H= High sanitation
M= Moderate
L= Low sanitation

For 5.6.5.B

For 5.6.5.C., Quality indicates

H= High carrying capacity, sufficient, serve long period
M= Moderate
L= Low carrying capacity

Interview Guide

A. Local Perceptions

Ask about local perceptions of “good” or “complete” food, in terms of dietary quality and healthiness as well as taste and tradition. See what counts more—quality or quantity, which can vary between times of food scarcity and availability. See if there is any discrepancy or gap between people’s knowledge about balanced diet and nutrition learnt from popular media, government or NGO intervention and their own perceptions about complete and satisfying food.

- 1. How has your or your family’s ideas about food been influenced by your parents, community, culture, religion, etc.?

- 2. What kinds of food do you take or not take during illnesses, fasting, and rituals? (Hot/cold, etc.)

- 3. What will be your priority if you get enough money?

- 4. What do you generally eat on festivals, such as Fasika, Eid, Harya, weddings, etc.? (Differences in food based on nutritional and health concerns and prestige and other social concerns).

B. Coping strategies in times of food scarcity

- 1. In times of crisis -health, family situation, crop failure, etc. - what did you do? (Coping mechanism)

2. Who helped in times of crisis? Family, friends, religious affiliation, social programs or food aid? (Social capital) _____

3. How did you get help when the shock is idiosyncratic or covariant? (Social capital) _____

4. Social or private services sought/used; why tried or not tried? _____

5. How did you feel about getting help from others? (Social acceptability and perception) _____

6. What words would you have used to describe yourself during that time? (Assessment of one's situation, to let them define their world in their own words) _____

7. What are your worries regarding "not having enough to eat"? Do you think about it all the time? (Anxiety and insecurity) _____

8. When you didn't (or don't) have enough money or resources to pay for everything, what did you do? Did you buy/cook different foods than usual? How did your meals change? _____

9. Have you ever had to choose between buying food and paying for other household expenses, because you didn't have enough money for both? If yes, what did you do? (Do you sell food items grown on your homestead for cash without using them for home consumption?) _____

10. Do you usually have to choose between buying food and buying medicine? What do you do in such a situation? _____

11. What are the situations of those around you who are having difficulty getting enough food? What do they (usually) do? How do you feel about them and their situation? (Indirect investigation)

C. Strategies

1. What are some of the things you do to make sure you always have enough to eat? Do you keep stores of food for the future? (Adapting strategies)

2. Have these things changed over the last few years? What do you think have changed because of the recurrent drought? (A shift in philosophy of life, diversification, intensification)

3. Is what you do to make sure you always have enough to eat different from what others do?

4. Does the community help you in any way? (A change in social role embedded in the community's value)

Concerns

1. What are the things that worry you in everyday life? How does getting enough food compare to these? Are there moments when other things are more important than food? What are those things and at what times?

Module 7: Households access to agricultural modern technology and micro-finance

Questions to be addressed to the head of a Household

7.1 Access and use of fertilizers

7.1.1 Did you use agricultural inputs (fertilizers, insecticides, herbicides) on your crops? (No/Yes)
0. No 1. Yes
(If No to 7.1.1 skip to)

7.1.2 Who provided you the fertilizer?
0. Own purchase 1. The Government 2. An NGO 3. Others, Specify

7.1.3 Was it for free? (No/Yes)
0. No 1. Yes
(If Yes to 7.1.3.a skip to 7.1.4)

7.1.4 Who paid it for you?
0. I, myself from stock 1. I myself through microfinance credit
2. I, myself through informal credit 3. I myself through input credit
4. Other sources, specify

7.1.4 Do you believe that the plot/the crop need any fertilizer?
0. No 1. Yes

7.1.5 If No to 7.1.4 why is the reason?
0. Because the land is so fertile 1. What I produce without fertilizer is enough to my household
2. Because the cost of fertilizer is too expensive 4. Because of fear of credit
5. Other, specify

7.1.6 Have you been consulted about the importance and suitability of the fertilizer by the supplying agency?
0. No 1. Yes
If Yes to 7.1.6 How

7.1.7 If the response to 7.1.4 is 3, does it have any grace period? If yes for how long?

7.1.7 Was there any crop failure after taking the credit? If Yes, How did you manage to repay?

7.1.8 If the response to 7.1.4 is 4, for what any other purpose have you taken a credit from a micro-finance and credit association?

7.1.8 What do you know about the requirements for getting credit/to become a user in the credit association?

0. It is enough to be a registered resident 1. I am expected to be a member of TPLF besides to being registered as a resident 2. It depends upon my prior loyalty of repaying a credit 3. Others, specify _____

7.1.9 Which resource do you think is necessary for your productivity? Would you please rank the most important to least?

	Fertilizer		Land
	Insecticide		Potable water
	Herbicide		Health center
	Micro-finance		School for our children
	Agricultural training		Electric supply
	Non-agricultural training		Local security
	Transport		Other

7.2 Access to Technical and Vocational Education Training

7.2.1 Have you ever taken any agricultural training including how to use fertilizers, insecticides, herbicides, beekeeping, poultry production, breeding of plants/ animals, environmental protection etc? If yes to some of these, would you please explain it to me how important you get it to you?

7.2.2 Have you taken any technical and vocational training different from the agricultural trainings mentioned above? Including manufacturing of mats, sewing, trade and entrepreneurship etc?

7.2.3 If the above both agricultural and non-agricultural trainings are available and one of the members of the household is not taking ask him the reason for not participating.

A question to be addressed to a women headed household

7.2.4 What special affirmative action did you get from any organization? In the form of resource (financial, land, labour, training, any sort of empowerment)

Module 8: Good governance, Democracy and Households participation in decision making,

Pre-settlement

8.1 The knowledge of settlers about their destination areas in the pre-settlement period

8.1.1 What did you know about Ruwassa, before you leave your origin?

8.1.2 What were you informed about the resettlement sites, before you leave your origin?

a. Public services (housing, health, education, road, water etc) and related infrastructure

b. Household utensils and other accommodations

c. Social institutions and property rights (land, natural resources)

8.2 The feature of the choice given to settlers before leaving their origin

8.2.1 Have you had any other opportunity, which you thought was preferable than coming here?

8.2.2 If the response is positive to 8.2.1 What was it and Why for did you came here?

--

8.3 The degree of convergence of the promises by implementers and settlers expectation

8.3.1 Did you get what you were promised/what you expected?

--

8.3.2 What are those things you got satisfied and dissatisfied?

--

8.3.3 What is the worst challenge that you have ever faced here after settlement?

--

8.4 Do you have any local community leaders that discuss on common problems and make a decision besides to the political cadres of TPLF and other administrators?

If so would you please tell me some of your experiences or others in relation to this?

--

What do you suggest for others who are planning to come?

--

