

**CHALLENGES AND OPPORTUNITIES OF VOLUNTARY RESETTLEMENT SCHEMES IN  
ETHIOPIA: A CASE FROM JIRU GAMACHU RESETTLEMENT VILLAGE, NONNO  
DISTRICT, CENTRAL ETHIOPIA**

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**ABSTRACT**

The main objective of this study is to look into the current status of the voluntary rural resettlers in Nonno District with special reference to Jiru Gamachu Resettlement Site. The necessary data were generated both from primary and secondary sources. Field observations, sample household survey, key informant interview and focus group discussion were the principal means of generating data from primary sources. Secondary data were obtained from the offices of Oromiya Food Security Disaster Prevention and Preparedness Commission and different offices in Nonno District. Most of the data were analyzed qualitatively. A quantitative technique known as household food balance model was used to measure the households' per capita dietary energy available. The findings of this study confirm that the resettlers are well successful in adapting to the physical and social environment of the new area. They are well access to basic socio-economic facilities like school, potable water, health service centers, veterinary services and reasonable farmland size. They were able to secure their subsistence food requirements that they had never experienced in their birth places. Over 90 % of the surveyed sample households were obtaining well over the nationally set minimum dietary energy requirement, 2100kcal/day/person. Based on the findings of the study, both short term and long term rural development intervention schemes are recommended for the farther betterment of the lives of the resettlers in Jiru Gamachu site.

Keywords: Resettlement, food insecurity, Jiru Gamachu, Nonno

## INTRODUCTION

Ethiopia has been practicing either planned or spontaneous population resettlement since the Imperial Period, most probably in 1958. The resettlements have been carried out mainly as a response to extreme land degradation, recurrent drought and famine. The resettlement schemes, past and present, are implemented predominantly in the lowlands where population densities are low and unutilized lands are assumed to be found. The recent government sponsored resettlement schemes are more planned than the cases of the previous governments.

Nonno is one of the 20 districts (*woredas*) in West Shewa zone of Oromiya National Region State. According to the 2007 population and housing censuses of Ethiopia, the *woreda's* total population is about 84,193 of which 52% is male. With an estimated total area of 1,249 km<sup>2</sup>, Nonno has a population density of about 68 persons/km<sup>2</sup> (CSA, 2008).

Nonno, in which Jiru Gamachu is located, was selected by the Ethiopian Ministry of Agriculture and Rural Development (MoARD) in 2003 as an area for voluntary resettlement for farmers from overpopulated areas such as *Arsi* and *Hararge* zones of *Oromiya* region. That year this *woreda* became the home for a total of 234 rural voluntary resettler households who have come from the lowland parts of four drought-prone *woredas* in *Arsi* Zone, namely *Marti*, *Ziway-Dugda*, *Dodota-Sire* and *Hitosa*. The following year, this *woreda* was selected again as a resettlement area and became a home for other 1500 rural households who came from drought-prone and severely degraded parts of several *woredas* in *Hararge* Zones of *Oromiya* region. Generally, over 1734 poverty prone rural people resettled in *Nonno* in 2003 and 2004 according to *Oromiya* Regional State Food Security Disaster Prevention and Preparedness Commission.

*Jiru-Gamachu* resettlement village is one of the three resettlement villages in *Nonno woreda* of *Oromiya* National Regional State. It is located at about 1620m above mean sea level.

All the resellers of 2004 have come from six drought-prone *woredas* in Eastern *Hararge* Zone, namely *Baddanno*, *Girawa*, *Gola Oda*, *Jarso*, *Kurfa Challe* and *Meta*. These *woredas*, according to the resettles, are characterized by severe scarcity of farmland, severely degraded, recurrent drought-prone and highly densely populated. One of the *woredas*, *Meta*, had been suffering from recurrent flooding

during raining seasons according to the resettlers. It was to this end that the government was forced to resettle some of the inhabitants, in fact, without meticulous prior planning.

Moreover, the writer tries to look into the rainfall situation of the sending *woredas* compared to the case of other highland parts of Ethiopia. The data of 10 years from National Metrological Service Agency (NMSA) reveals that the sending *woredas* in Eastern *Hararge* are characterized by low and highly variable rainfall. The average annual rainfall during 1997–2006 was found to be 81.99cm and 161.43cm for *Girawa and Jarso woredas*, respectively while it was only 99.92cm for East *Hararge Zone* as a whole. These all are by far lower than the average total annual rainfall for most highland areas of Ethiopia, which is said to be about 140cm (Alemneh, 1990).

Moreover, amount of rainfall in the *woredas* is characterized by fluctuations and periodicity from year to year. The annual coefficients of variation (deviation from the average) during 1997-2006 was computed to be 21% and 36% for *Girawa and Jarso woredas*, respectively while it is 15% for East *Hararge zone* as a whole.

This fluctuating nature of rainfall in amount, no doubt, adversely affects the agricultural practices and the availability of food items. In connection to this, the investigated households in *Jiru Gamachu* confirmed that they had been suffering from the unreliability of rainfall as one of the primary reasons for food grain shortfalls and livestock deaths.

Currently about 234 households are found settled in *Jiru Gamachu* resettlement village. All the settlers came to the area in 2004 through the resettlement scheme carried out by the Ethiopian government in power. At the beginning they were welcomed by the host people. They were lodged in temporarily wood made accommodations for about 15 days and fed by the local people up until they could build their own stronger wood, mud and grass made accommodations within 15 days from their date of arrival. They were supported by the government through two years. The government used to provide them with traditional farm equipment such as sickle, plough, ax, hoe and farm-oxen.

The purpose of this study is, therefore, to assess the success of resettled farm households in one of the settlement sites (villages), *Jiru Gamachu*. More specifically, the study addresses the following four questions:

- What is the current living standard of the resettlers compared to the case when they were in their birth places?
- What is the food security situation of the settlers?
- What is the extent of the households' access to social services, farmland, potable water and veterinary services?
- How do the resettlers live with the host community?

## **THE RESEARCH SITE**

The study site is astronomically located at about 8°25'33" N latitude and 37°26'27" E longitude. Its altitude is about 1600m above mean sea level. It is found at about 215 km from Addis Ababa (the capital of Ethiopia) through the town of Walqite. It is dominated by low plateau land. According to the data from *Nonno Woreda* Agricultural and Rural Development Office, the dominant soil type of the study site is black soils (vertisols). The agricultural experts in the office agree that *Nonno woreda* in general and Jiru-Gamachu village in particular is characterized by excellent type of soil to cultivate variety of crops.

## **LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK**

Resettlement refers to a planned or spontaneous redistribution of phenomena of population. (Piguet, F. and Dechassa, 2004) Conventionally, researchers usually dichotomize resettlement as voluntary and involuntary resettlements (Cernea & Guggenheim 1993 cited in Gebre (2004). Voluntary resettlement can be spontaneous or planned based on source of initiatives for the movement. Spontaneous resettlement happens when people on their own initiatives move to other places where they think they will be more secure in various aspects such as peace, resource ownership and health. Involuntary resettlement, on the other hand, takes place when an external agent imposes it on people in a planned and controlled manner due to external circumstances that force them to do so. The basic reasons for the involuntary resettlement to happen include bad climatic conditions most notably scarcity and variability of rainfall, population pressure, depletion of natural resources like water and farmlands, development-induced factors such as urbanization, infrastructure construction and farmland development, and social conflicts

However, Scot Guggenheim (1994) cited in Gebre (2004) recognized that the distinction of resettlement schemes as voluntary and involuntary is more of theoretical than empirical. Some researchers argue that these two distinct forms of displacement fail to highlight the specific conditions of resettlement. In an attempt to tackle this limitation Gebre (2004) has proposed a modified and more practical conceptual scheme, which identifies four major types of resettlement: voluntary, induced-voluntary, involuntary or forced, and compulsory-voluntary movements. This classification bases on the nature of willingness to move and the causes of displacement.

In this theoretical framework, voluntary resettlement occurs when the migrants have the power to make informed and free relocation decisions and the willingness to leave their original place, whereas involuntary resettlement, also known as compulsory resettlement or forced displacement (Cernea 2000), refers to the forcible uprooting of people from their original place of residence because of natural and/or human induced disasters and/or forces. Induced-voluntary movement takes place when people leave their home place to resettle elsewhere due to deliberate acts of inducements coming from outside agencies. Although the migrants may maintain decision-making power, the facts on the basis of which their decisions are made are provided and analyzed by other agencies. Compulsory-voluntary resettlement occurs when people embrace forced removal out of desperation, and when voluntarily resettled people are denied the right to leave the resettlement area (Gebre 2004).

Unlike the case in the conceptual dichotomy approach, Gebre (2004) argues, the modified conceptual resettlement tool provides a clear practical importance in identifying and taking care of a responsible body for the failure or success of the program. It also helps to identify and address the resettlers' reaction to the program and identify which remedial measure is appropriate for which resettlement type. For instance, Gebre (2004: 107) writes, "*compulsory-voluntary migrants embrace forced resettlement initiatives, while involuntary migrants tend to resist it. Resistance to force resettlement tends to affect the pace and degree of reestablishment in the new environment.*"

The case of population resettlement scheme under discussion in this paper may be described as state-planned though different researchers argue it lacks genuine and full inclusion of the host community, key principles, approaches, implementation arrangements and in-depth planning.

Most resettlement schemes, whichever it is, have been reported to have been failed to meet targets because of acute inappropriate planning, hasty implementation, exclusion of the host (receiving) community, inappropriate selection of the resettlers and site and other multifaceted biophysical and socioeconomic constraints. This holds true in several parts of the world in general and in Ethiopia in particular. (Getachew 1989, Mathur 2000, Gebre 2004 & 2005, Alula 2004, Piguet and Dechassa 2004; Kassahun, 2005, Devereux, S. and Guenther 2007) As a result, resettlers usually face multidimensional risks in the new areas which eventually may lead to complete or partial failure of the scheme. In order to minimize, if not avoid, such risks, one requires conceptual frameworks which are capable of explaining how resettlement may lead to social and economic impoverishments.

Over years, researchers have tried to propose several conceptual frameworks to describe why resettlement usually goes wrong, resettlement processes, risks associated to resettlement schemes, the cumulative impacts of resettlement, and the practical guides to mitigate, if not avoid, resettlement risks. The most notable ones, among others, are Chambers and Nelson's models, which have generalized the experience of voluntary settlers and conceptualized the institutional or organizational dimensions of managed land settlement programs. Scudder-Colson Model was also another such earlier theoretical frameworks distinguishing four stages in human resettlement processes: Requirement, transition, potential development and incorporation or handing over. Scudder-Colson Model focused on socio-cultural systems and resettlers' stress and their specific behavioral reactions in each stage of the resettlement process. In the first or recruitment stage, policy-makers and/or developers formulate development and resettlement plans, often without informing those to be displaced. During the second or transition stage, the targeted people learn about their future resettlement, which stimulates stress in the potential resettlers. The third stage or potential development usually occurs after the resettlers are physically moved and relocated in their new areas. At this stage, it is assumed that resettlers begin the process of rebuilding their economy and social networks. The fourth stage or incorporation refers to the handing over of local production systems and community leadership to a second generation of residents that identifies with and feels at home in the community. This theoretical framework tends to conclude that resettlement is deemed to be successful if and only if it passed through the stages and achieved the fourth resettlement stage successfully (Cernea 2000).

According to de Wet (2004), there are at least two broad approaches as to why things often go wrong in resettlement. These are the ‘inadequate inputs’ approach and the ‘inherent complexity’ approach. In the first approach de Wet argues resettlement goes wrong basically because of lack of appropriate inputs into the program. These include absence or lack of national legal resettlement framework, policies, planning, consultation and monitoring; political unwillingness; inadequate funding and pre-resettlement surveys; and careless implementation of the program. Cernea (2000: 34), quoted in de Wet (2004), argues that these problems “...can be controlled through a policy response that mandates and finances integrated problem resolution”.

Another de Wet (2004)’s approach that gives an insight for the usual unsuccessfulness of resettlement programs seems to have considered only involuntary resettlement. The formulator of this approach, de Wet, called it Inherent Complexity Approach. In this approach, de Wet argues, resettlement fails because of the complex nature of involuntary resettlement which results in a range of problems that cannot be addressed only by the abovementioned kind of inputs. The inherent complexity nature of the involuntary resettlement arises from its basic characteristics including imposed spatial change of resettlers, significant change in the patterns of access to resources, larger and heterogeneous environment, involvement of the people in wider structure, and accelerated socioeconomic changes

As regards to de Wet’s ‘inadequate inputs’ approach, Michael Cernea (2000) has already developed what he called ‘Impoverishment Risks and Reconstruction (IRR)’ Model to help in the analysis and prediction of risks in relation to resettlement. This risk constructed around three core elements: risk, impoverishment and reconstruction. In fact, Cernea’s IRR model emphasizes the case when people move to a new place in a forced and planned manner. According to this model, population displacement may lead to at least eight forms of socioeconomic risks: unemployment, landlessness, social marginalization (social exclusion), homelessness food insecurity, loss of access to common property resources, community disarticulation or disjoin, and faster rate of morbidity. Other researchers, however, seem to expand the IRR model by including other risk variables and losses, such as the loss of access to public services (Mathur 1998 and 1999 cited in Cernea 2000), loss of civil rights (Downing 1996 cited in Cernea 2000), and temporary loss of access to schooling for school-age children (Mahptra 1999 cited in Cernea 2000).

This approach seems to suggest that viably conceived, well planned and implemented resettlement scheme never result in adverse effects both on the resettlers and the host community as well as the environment. It also tends to forward that resettlement goes wrong basically because of lack of proper inputs on appropriate time and place. Cernea's Impoverishment Risks and Reconstruction (IRR) model emphasizes the fact that potential impoverishment risks can be reversed, the resettlers' livelihoods can effectively be reconstructed and nice experiences can be learnt through appropriate planning and deep concern endeavors (Cernea 2000).

Most resettlement related studies in Ethiopia are characterized by a dearth of depth and critical analytical frameworks. No or little researches have done so far that deeply looks into the food security status of the resettlers by applying critical analytical frameworks, and crucial indicators like calorie intake, anthropometric indices, food insecurity measurement indices, coping strategy index and vulnerability analyses. This paper therefore tries to look into the socio-economic and food security status of the resettlers. It also intends to initiate other researchers to apply critical analytical frameworks and indices to look into the real situation of resettlement schemes in the country.

#### **DATA ACQUISITION, SAMPLING AND ANALYSIS TECHNIQUES**

The data used for this study were collected both from primary and secondary sources. Majority of the primary data were collected through field observations, questionnaire, informal in-depth interviews and intensive discussions with the resettler household heads. 120 sample household heads were randomly selected from the resettlement scheme. All the sample household heads filled the questionnaire assisted by trained enumerators. Series of group discussions were also made with the household heads. Administrative officials at *kebele* and *woreda* levels, health extension professionals, local (host) people elders and agricultural development agents have provided crucial information for this study. Secondary data were obtained from the office of Oromiya Food Security Disaster Prevention and Preparedness Commission, Central Statistical Authority and Oromiya Planning and Economic Development Bureau.

The analysis of the data began with the reading and rereading of the field notes in order to organize them effectively. The recorded interviews and discussion information were transcribed, translated and sorted out. Then, in the actual writing up, these materials were described and analyzed. The analysis was made



by making comparisons between and amongst the different information provided by different informants for the study.

The net available food for the households was computed using a modified form of a simple equation known as Household Food Balance Model, originally adapted by Degefa (1996) from FAO Regional Food Balance Model and thenceforth used by different researchers in this field (Eshetu 2000, Mesay 2009). The quantity of food produced was calculated and converted into dietary calorie equivalent based on Ethiopian Health and Nutrition Research Institute (EHNRI)'s food composition table. The calculated calorie was compared against the national average daily caloric requirement for a moderately active adult (2100 kcal) to look into the dietary calorie status of the resettled households in the study area.

## **RESULTS AND DISCUSSIONS**

### **THE CURRENT STATUS OF JIRU GAMACHU RESETTLEMENT VILLAGE**

Related to the success indicators of resettlement Alula P. (2005) writes “*Various stakeholders have differing perspectives on success and failure [of resettlement]. Administrators tend to focus on food self-reliance and remaining in site; whereas settlers mention quality and quantity of food...locals consider adaptation to the area... Indicators need to consider not just food, health, water and education but also economic factors including involvement in agriculture, irrigation, off-farm activities and trade, social factors to do with wellbeing, lack of conflict and integration with local communities, which is a requisite for longer-term sustainability*”. This paper also tries to analyze the success of the resettlers in Jiru Gamachu from the view points of Alula (2005).

#### *(a) Food self-reliance and remaining in the site*

In this regard most resettlers agree that they are producing adequate amount of food crops for their household consumption. Most of them produce maize and sorghum. In fact, teff (*Eragrostis tef*), wheat, beans, chickpeas and peas are also among the food grains produced by the resettlers. Because of lack of any kind of irrigation scheme, no peasant has reported to involve in irrigation activities. Though one of the major headstreams of *Gibe* River is wastefully and continuously flowing at about 3kms southwest of the settlement site, the peasants could not use the river for irrigation just because of lack of technology. A minor *Gibe* tributary named *Warabessa* is also flowing down uselessly nearby the village, which

could have been used for irrigation farming. As a result the agricultural activity of the settlers is totally rain-fed and traditional.

In spite of the aforementioned farming situations, almost all the randomly selected household heads reported to have been producing adequate food grains for their household consumption. They reported to have produced 18.5, 4.5, 3.1 and 1.2 quintals/household of maize, sorghum, pulses and red-pepper on the average in 2008/09 crop year the amount that they replied quite enough for their household consumption for a year. When converted to kilocalorie, this will be about 5,767 kcal/day/person taking the 5.5 average household size as reported by the samples. This figure is by far better than the nationally set minimum acceptable average kilocalorie requirement, 2100kcal/day/person.

**Figure 1: Resettlers' Maize Farm**



*Photo by the writer*

From the above discussions one can learn that the extremely poverty-stricken peasants when they were at their home-woreda are now either food self-reliance or fast approaching to it within its 5 years lifetime. This is why all the household heads selected for the interview and group discussion strongly rejected any kind of attempt to send them back to their home woreda. All of them look happy in their current food adequacy conditions the success of which has been attracting hundreds of “illegal” settlers from the woredas that the prior settlers officially came. One can conclude from this that had the process of rehabilitation been supported by other sustainable development activities such as small scale

irrigation schemes development, the result of the resettlement could have been by far better than the existing situation.

*(b) Adaptation to the area*

Adaptation to the area can be seen in two ways: socio-economic and environmental issues. In its socio-economic aspects resettlement can cause many social impacts, especially if the ethnic and cultural composition of the resettlers is heterogeneous. It can disintegrate the resettlers' social institutions and organizations, which bind their infinite web of relations and interactions in manifolds. It may disrupt the resettlers' production systems and impoverish their livelihood. As a result uncertainties and confusions may happen until painful adaptive adjustments may occur to the new environment. The schemes may be carried out in lowland areas where the climate is completely different from their original homeland. As a result the resettlers may experience difficulties since the new climate is less hospitable that may lead to excessive mortality due to diseases. Hitherto conducted studies on the subject indicate that settlers experience hardships due to changes in environment and hostile relations with indigenous inhabitants particularly the youth who develop negative attitudes as they view resettlers as competitors over the use of natural resources (Dessaiegn, 2003; Ahmed, 2005).

In case of *Jiru-Gamachu* the resettlers reported they have never experienced conflict hardships from the host community. They were rather welcomed and supported by the host community beginning from their first minute of arrival in the site. Recently they established local institutions like *Idir and Iqub* with the indigenous inhabitants. They also began to form marriage links though seldom.

They also began to practice petty trading. Some produce and sale home-made fast foods such as biscuit, some collect and sale firewood to the nearby villagers on the main road, some have small and multipurpose shops where both home-made and industrial outputs such as biscuit, sugar, edible oil, soap and salt are sold, some began establishing cottage industries, some make or repair clothes, some others began to perform even long distance trading as far as the capital of the woreda, *Silk-Amba*. There are also resettlers who have flourmill though very few in numbers. One of the flourmill owners was awarded a gold medal at regional level for his successful accumulation of capital out of which three flourmill machines, over 80,000 ETB (1ETB is currently equivalent to about 13.50 USD) cash receipt,

better house made of corrugated iron sheet, 15 oxen, 20 goats, and over 360 quintals of maize are the major wealth he has accumulated.

**Figure 2: Some Resettlers' Current Houses**



*Photo by the writer*

The issue of environmental adaptation is a subject bearing limited degree of risk. The resettlers have been facing problems though not severe. Though they have access to better health services compared to their origin, they have been suffering from lowland diseases such as malaria. They report that the disease claimed the lives of many resettlers. Many of them state that most of the cash they earn from irrigation schemes and some off-farm activities are spent to cover health service expenses mainly to treat malaria infection. In fact, the government recently established a health station adequate to over 25, 000 inhabitants though not yet well equipped and staffed.

*(c) Integration with host communities*

Osorio Marcelo (2007) states that resettlement planners normally focus on providing assistance only to the resettlers. However, the hosts are also severely affected by the relocation project because more people will use the hosts' resources, compete for job opportunities, and demand social services. If these are not adequate to address the needs of both populations, competition may arise and lead to adverse conflicts between the resettlers and the hosts. Inability to address these concerns may render the

resettlement project a failure. There are usually two critical scenarios when it comes to providing services to the resettlers and the host community. One is the situation when only the resettlers are provided with all the services disregarding the needs of the host community. The other and the worst situation is when the implementers do not provide any social services assuming that the receiving/host community will be able to accommodate the incoming population.

In case of *Jiru-Gamachu* resettlement village both the resettlers and the host community are equally benefiting from the natural resources and infrastructure. Both the community equally benefits from the schools, water wells, animal and human health service centers, market places, communal forest/woodland and natural springs. A notable example here is the fact that both the resettlers and hosts collect firewood from communal woodland in the nearby valley of Gibe headstream just north of the area. As a result almost all the samples from both sides responded that they live together peacefully and utmost friendly manner. The major and common problems for all the residents of the area, however, are inadequate social service provisions and the prevalence of lowland diseases such as malaria, blackleg and trypanosomiasis.

**Figure 3: Modern Health Station**



*Photo by the writer*

*(d) Long term sustainability*

Several research findings reveal that resettlement planning should be comprehensive so that it results in sustainable food security attainment and overall socio-economic development issues (Marcelo, 2007). Particularly, two important aspects are usually recommended for long term sustainability. These are the fact that resettlement sites should not be geographically isolated from its host community so that both the hosts and resettlers share good socio-economic experiences which could serve to promote resettlers' food self-reliance, social integration and environmental adaptation sustainably. The second aspect is that attempts should be made to plan and implement common socio-economic development programs both for the incoming families and the host which holds the promise for successful resettler-host integration in the area. It is only in this regard that the government can mobilizes resettler-host community for the same goal some of which are peace, security, environmental protection and sustainable economic development.

The other, probably the most important aspect, is environmental sustainability. As it is clearly pointed out in the Brundtland Commission (held in 1987) that coined most often-quoted definition of sustainable development as development that "*meets the needs of the present generation without compromising the ability of future generations to meet their own needs.*", most concerned bodies agree that sustainable development is a socio-ecological process characterized by the fulfillment of human needs while maintaining the quality of the natural environment indefinitely. In this regard, during the survey for this study, the researcher has tried to have a glance at the impact of the resettlement on the environment in general and on woodland vegetation in particular. Though it is not the objective of this study to deeply analyze this issue, data from both the resettlers and the host family indicates that the resettlement scheme in the area has severely destroyed the woodland vegetation in the area. Respondents from both sides agree that the dense grasslands and woodland vegetation has been entirely converted to villages, grazing and farmlands mainly because of alarming increase in population along side with the 2003 and 2004 resettlement program.

The other significant aspect of sustainable development is the issue of family planning. Family planning is about balancing the rates of growth of human population and resource. Any development plan disregarding these variables could result in futility in any geographical entity. In this regard it is

frightening to see the average 5.5 household size of *Jiru-Gamachu resettlers*. Some of the respondents for this study are, in fact, well aware of the bad consequence of large family size recalling the bad days they had experienced when they were in their birth places where there was severe scarcity of farmlands and other natural resources owing to rapid population growth.

**Table 1: The Resettlers' Family Size**

<i>Family size</i>	<i>Number of Households</i>	<i>% of households</i>	<i>Average</i>
1 - 3	8	13.3	2.0
4 - 7	30	50.0	5.4
7 - 10	22	36.7	7.0
<b><i>Total</i></b>	<b><i>30</i></b>	<b><i>100</i></b>	<b><i>5.5</i></b>

Source: Field survey

*(e) Food security status*

Food security is a broad and flexible concept, encompassing issues related to access, quantity, quality and sustainability of food supply. Food security as a concept originated only in the mid-1970s in the discussions of international food problems at a time of global food crises. Since then there was a substantive change in definition and concept of food security. The most recent and refined definition of food security is stated as a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary food preferences for an active and healthy life (*FAO, 2001*). This concept of food security has given more attention to households and individuals access to food than its availability at international, national, regional, woreda or kebele levels. Thus increasing food production, supply and sufficiency at broader levels does not necessarily ensure that each and every individual is food securing.

Having this concept in mind I tried to analyze the resettlers' food security status by taking the quantity of major crops that they harvested in 2008/09 crop year. *EHNRI's* food composition table has been used to find the dietary energy equivalent of the household's total crop output within a year.

The single most important indicator of food adequacy level of a community is the per capita dietary energy supply measured in calorie (also called kilocalorie). This is the measure of the average daily food available to each person in a country or region (FAO, 1998). Here, it should be noted that it is usually the average value which is taken into consideration though the amount of calories a person needs depends on the person's sex, age, body build and degree of physical activity. This helps to simplify the complexity that arises while analyzing the available daily dietary energy supply of a community.

The researcher has converted the available food grain supply into calorie equivalent using Ethiopian Health and Nutrition Institute (EHNRI)'s food composition table. The average calorie value per 100 grams of each type of food grain was computed based on the kind of food that the community consumes utmost. This is because the calorie equivalent of the grains varies by the kind of the end product prepared for consumption. For instance, a 100 gram of white *teff* grain produces a dietary energy equivalent to 240.30 kcal when prepared in the form of bread and only 145.00 kcal when it is consumed in the form of *enjera* (tradition pan cake). The researcher has taken the average value of the major end product of each crop for the conversion processes.

All the net available grain quantities were converted into calorie equivalent using the above table. Accordingly, the average daily per capita food energy available for the sample households was found to be about 4,726 kilocalories.

As compared to the nationally accepted minimum daily requirement per person, 2100 kcal/day/person, the calculated dietary calorie equivalent per unit volume of grain for this study is found to be very high. This is, therefore, one of the most important indications of the necessity of resettlement schemes in the country on the one hand and the success of the *Jiru-Gamachu* resettlement sites in the other hand.

It should be noted also that the investigation of the dietary energy available considered all the household members at all age level. But the recommended daily per capita dietary energy value of 2100 kcal has been



for a moderately active adult and not for the children or elderly persons. This means, children and elderly persons require less amount of daily dietary energy than the recommended value for the adult. Hence, the availability of food energy among the investigated households may be better than the one indicated in the table since children constitutes a great proportion of the population in the area.

*(f) Livestock ownership position*

The peasants owned mainly oxen, cow and goat though they are suffering from lowland animal diseases such as trypanosomiasis. The livestock sub-sector determines the living condition of the peasants because it provides them with draught power, food, cash, transportation and dung. However, a significant number of survey respondents had no adequate number of livestock population, which could presumably be one of the major causes of lack of access to adequate food supply.

**Table 2: Oxen and Other Livestock Ownership Position**

Kind of Livestock	Average Possession/household
Oxen	1.0
Cow	1.0
Heifer	0.7
Young ox	0.7
Goat	2.7
Equine	0.4
Chicken	1.6
Total	5.9
Bee colony	0.3

Source: Field survey

Fourth-tenth (40%) of the sample households has no access to the two most important farm animals, ox and cow. Similarly, about 54% of the households had no heifer/calf. In fact, the Overwhelming majority of the peasants (70%) owned goats. Pack-animals (equine) are the scarcest but very important livestock species owned only by 33% of the sample households. On the whole, the total available livestock population per household was found to be 5.9 heads.

**CONCLUDING REMARKS**

The resettlers are well adapted to the new environment in that they have able to secure minimum dietary energy requirement. They are access to social services, adequate farmland, potable water and veterinary services. They are friendly with the host community who has welcomed them and shared resources voluntarily and peacefully.

As it has been underlined in the discussion earlier, oxen ownership plays a critical role in determining the food security situation of the resettlers. Any initiative that would enable the resettlers to own a pair of oxen and take care of their health situation would substantially improve the food security level of the resettlers.

The other critical rural development measures that should be implemented in the area for the sustainable and farther betterment of the living standard of the resettlers include afforestation, increasing the awareness of the community about ecological conservation measures compatible with the agro-climatic zone of the area, family planning, off-farm income generating activities and development of small-scale communal irrigation schemes.

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