

**RESETTLEMENT AND SUSTAINABLE FOOD SECURITY: A COMPARATIVE STUDY OF INTER-ZONAL AND INTRA-ZONAL RESETTLEMENT SCHEMES AND HOST COMMUNITIES IN DAWURO ZONE, SOUTHERN NATIONS, NATIONALITIES AND PEOPLES REGION, ETHIOPIA.**

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**ABSTRACT**

This study employs a comparative study approach to assess inter-zonal and intra-zonal resettlement schemes and the host communities in Dawuro Zone, Southern Nations, Nationalities and Peoples Region (SNNPR), Ethiopia, in attaining sustainable food security. Two hundred and fourteen households were selected for study. Survey questionnaires, focus group discussions, key informant interviews and personal observations were employed in data collection. Study results show that the program was voluntary and beneficiaries of the resettlement schemes seem to have improved their food security situation when compared with their areas of origin. However, agricultural production in all areas is still vulnerable to shocks because of reliance on rainfall without complementary irrigation to cushion dry periods. Complementary activities such as off-farm activities to supplement agriculture and enhance sustainable food security situation are poorly developed in all study areas with resettlement schemes being the most affected. The study further shows that while some basic infrastructure facilities such as water pumps were installed to provide clean water, no maintenance contingency measures were ever put in place for their maintenance hence some of them have now been rendered obsolete. Sub-standard, inadequately manned and poorly equipped health facilities are a cause of concern mostly in resettlement schemes where beneficiaries received little help from the authorities to provide such infrastructure. Hence, adequate capacity building efforts should be made a priority. Deforestation is evident as beneficiaries cut trees to satisfy their energy and construction needs. However, it is encouraging to note that mitigatory measures such as planting of trees have been put in place and environmental management programs are currently running which may enhance sustainable food security situation in the area.

**Keywords:** Ethiopia, resettlement, food security, host community, off-farm activities.

**INTRODUCTION AND STATEMENT OF PROBLEM**

Resettlement programs generally involve moving people from their areas of origin to new areas. The relocation may be for example inter-regional / inter-zonal; intra-regional / intra-zonal. Inter-regional / inter-zonal resettlement implies that people are relocated outside their regions / zones while intra-regional and intra-zonal refer to settlement undertaken within the same region /zone Tocha Woreda Food Security Coordination Desk [TWFSKD], 2010). The causes for such relocations tend to vary. These may include giving way to development projects like dam and road construction, political calamity,

industrialization and urbanization, and the attainment of food security (Lawson, 1968; Kalitsi, 2004; Scudder, 1965; Owalepo, 2008; Mberengwa, 2010). Their effects on the affected populations also vary.

In the case of Ethiopia, the issue is about sustainable food security which is the focus of this study. Food security normally exists when all people, at all times have physical and economic access to enough safe and nutritious food to meet their dietary needs (Food and Agricultural Organization [FAO], 2008). The definition focuses on three dimensions of food security - availability, access, and utilization. Availability is achieved when sufficient quantities of food are consistently available through household production, other domestic outputs, commercial, or food assistance. Food access is ensured when households have adequate resources to obtain appropriate foods. Access depends on income available to the household on the distribution of income within the household, and on the price of food. Lastly, utilization is the proper biological use of food, requiring a diet providing sufficient energy and essential nutrients, potable water, and adequate sanitation. Effective food utilization depends on knowledge within the household of food storage and processing techniques, basic principles of nutrition and childcare and cleanliness (**ibid**).

On the other hand, sustainable food security refers to the a situation of 'secure ownership or access to food resources and income earning activities, including reserves and assets to offset risks, to ease shocks and meet all contingencies by all people at all times'(FAO/World Health Organization [WHO], 1992).

The food insecurity situation in Ethiopia is a product of long term effects of rapid population growth, environmental degradation, diminishing land holdings and landlessness. To alleviate this situation, successive governments have been resettling affected populations to relatively fertile and specious areas of the country (Devereux, 2000; Workneh, 2008). The latest resettlement program, which is the focus of this study, was initiated in 2003, and is being implemented in Amhara, Tigray, Oromia and of Southern Nations, Nationalities and Peoples Region (SNNPR) Regional States (Plan for Accelerated and Sustained Development to End Poverty [PASDEP], 2006). It is a hybrid of intermittent similar programs implemented since the late 1950s by successive regimes to find a long term solution to the food security situation in the country (Kassahun, 2005; Dessalegn, 2005; Gebre, 2005).

While the general objective of the program is still the same - to resettle people from overcrowded areas adversely affected by drought and land degradation - the latest program emphasizes voluntary participation of program beneficiaries in the resettlement exercise. This contrasts previous programs where beneficiaries were forcibly resettled in some cases (**ibid**). Besides voluntarism, other principles enshrined in the new program include availing underutilized land in receiving areas, establishment of minimum infrastructure facilities, and consultation with host communities on the new program (New Coalition for Food Security in Ethiopia, 2003).

In SNNPR, the government implemented both inter-zonal and intra-zonal resettlement programs in Dawuro Zone. Inter-zonal beneficiaries were drawn mainly from the eastern part of the Region which was overcrowded and experienced chronic food insecurity and resettled in Essera resettlement scheme, in the eastern part of Dawuro Zone which was deemed sparsely

populated and had relatively fertile soils. On the other hand, intra-zonal resettlers were people who were relocated within the zone. These were resettled at Tocha and Loma resettlement schemes where there is, again, fertile land (Dawuro Zone Food Security Coordination Office (DZFSCO), 2010).

While there have been a lot of studies done on the food security situation in Ethiopia (Devereux, 2000; Dessalegn, 2005; Gebre, 2005), there seems to be a dearth of studies that specifically compare the contribution of inter-zonal, intra- zonal resettlement schemes and host communities in the attainment of sustainable food security. This is the gap that this study wishes to add knowledge on.

This study adopts a comparative approach research design to assess the contribution of both inter-zonal and intra-zonal resettlement programs and the host communities in attaining sustainable food security in Dawuro Zone. The rationale for the selection of Dawuro Zone is the prevalence of both inter- and intra- resettlement schemes in the area (DZFSCO, 2010). Thus the effects of these two resettlement approaches to food security can easily be compared and contrasted with their respective host communities to gain an incite into their contribution to food security.

Thus, the general objective of the study is to assess inter-zonal and intra-zonal resettlement schemes, and the host communities in Dawuro Zone, Ethiopia, in attaining sustainable food security. The specific objectives are therefore to:

- examine the nature of the resettlement programs and host communities.
- assess food status in all study areas before and after the implementation of resettlement program.
- describe the complementary infrastructure in place to facilitate sustainable food security.
- identify challenges being faced in the implementation of the program and the mitigatory measures that are being employed.
- suggest alternative or additional measures that can be instituted to enhance sustainable food security situation in the study areas.

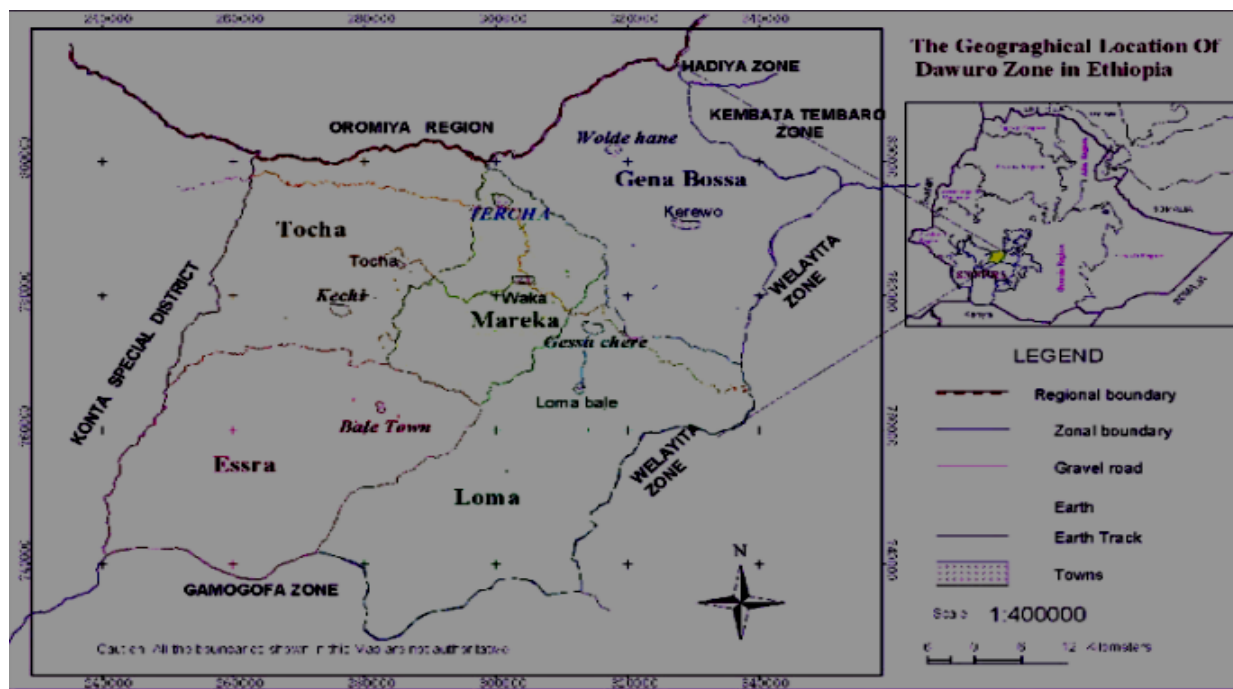
The study is significant in that it adds knowledge to the understanding of the food security situation in different types of resettlement schemes and instructs policy on appropriate remedies that can be instituted to enhance the programs. The study will also provide referral material for further research on the subject matter.

## **DESCRIPTION OF THE STUDY AREA**

Dawuro is one of the 13 zones in SNNPR. It is situated 7° 14' North latitude and 37° 5' East longitude. The Zone has 5 districts (*woredas*): Loma, Mareka, Essera, Gena Bosa and Tocha, its capital, is located about 438 kilometers south West of Addis Ababa. Essera and Tocha districts, which were purposefully selected for study, were resettled with inter-zonal and intra-zonal resettlers respectively (Dawuro Zone Trade and Industry Department, 2010).

Both Essera and Tocha Districts lie in three agro- ecological regions: *Kola* region which is within 500-1500 meters above sea level (masl) and receives 500-1,500milimeters (mm) of rainfall; *Woyina Dega* within 1501-2500 masl and receives

1501-2500 mm; and *Dega* at above 2500 masl and receives more than 2500 mm). The former district hosted inter-zonal resettlers while the later had intra-zonal resettlers (Essera Woreda Agricultural & Rural Development Office [EWARDO], 2010).



**Figure 1: Map Showing the Geographical Location of Dawuro Zone**

**Source: Dawuro Zone Trade and Industry Department (2010).**

The inter-zonal resettlement program was carried out through the collaboration of Federal, Regional and local government levels and resettlers were assisted by the government for one full year with food rations, one ox for drought power and agricultural hand tools. As for the intra-zonal resettlement program, the Zonal government only chipped in by providing agricultural land. The assumption was that settlers in these schemes experienced minimal disturbances from the program, were within areas of their origin and hence could rely on their belongings (*ibid*).

## METHODOLOGY

The study utilizes both quantitative and qualitative data from primary and secondary sources. Both stratified and simple random samplings are employed to select study respondents. The stratified sampling technique has been used to stratify the population into three strata: inter-zonal resettlers, intra-zonal resettlers and host community. About 13% of the households from each of the three strata are selected by using simple random sampling technique. In all, a total of 214 household heads were selected for study from a population of 1642 resettlers (DZFSCO, 2010) and host communities using proportional representation.

A variety of instruments were used for data collection - survey questionnaires, key informants interviews, focus group discussions and personal observations. A structured questionnaire with both open and close ended questions was prepared for the household survey in English and then translated into Amharic language for easy understanding by sample respondents. The questionnaire included information on the demographic characteristics of the respondents; agricultural activities – land ownership, crop farming, livestock ownership; involvement in off-farm activities, infrastructure facilities and environment management. Six enumerators were recruited and an induction exercise was undertaken for them after which the questionnaire was pre-tested.

Three focus group discussions with 8 to 12 members drawn from the study areas were formed. Checklists were prepared and these covered issues such as involvement of households in agricultural and off-farm activities, availability and status of infrastructure facilities and environmental management, among others.

Key informant interviews were conducted with three Food Security Program Coordinators from Dawuro Zone Agriculture and Rural Development Department, Agricultural Development Officers from Essera and Toch and other knowledgeable community members. The in-depth discussions facilitated the triangulation of information obtained from the survey and focus group discussions.

Lastly, direct observations were also employed in the study. Direct observation is an important indicator or mechanism to crosscheck the data gathered through other methods and supports the whole information through eye-witness. It is important as it enables the researcher to relate what happened to areas as a result of resettlement program.

Secondary data for the study were obtained from different sources such as the Dawuro Zone Agriculture and Rural Development Department (DZARDD); Essera Woreda Agriculture and Rural Development Office (EWARDO); Dawuro Zone Food Security Coordination Office (DZFSCO); Tocha Woreda Agriculture and Rural Development Office (TWFSCD); Tocha Woreda Food Security Coordination Desk (TWARD0) and other published sources.

Quantitative data were analyzed using descriptive statistics with the help of Statistical Package for Social Science (SPSS) Version 15. As for qualitative data, open-ended questions were summarized from tape records and diary and analyzed thematically.

## **RESULTS AND DISCUSSIONS**

### **Characteristics of the Respondents**

To recap, a total of 214 respondents were randomly selected from inter-zonal resettlement, intra-zonal resettlement and host community areas for this study based on proportional representation. The summary of the respondents' background information is shown in Table 1.

The survey results show that the majority of respondents (93%) are male while 7% are female an indication that there is a sizable number of female households. Concerning the age composition of respondents, the study shows that 82.9% and 82.8% of intra-zonal resettlement and inter-zonal resettlement areas respectively are in the productive age group hence capable of working on the land. Only 64.3% of the total respondents in host community belong to this category indicating an ageing group.

The study further shows that there are significant differences in the ethnic composition of the study areas. About 74% and 26.5% of total respondents in inter-zonal resettlement area belong to Hadiya and Kambata ethnic groups respectively while the rest of the respondents in both intra-zonal resettlement and host community areas are Dawuro.

Regarding religious affiliations, the majority of the respondents (67.3%) are Protestant followed by Orthodox (31.3%). There were only two (2) Catholics and one (1) respondent who practiced traditional religion in the sample (Table 1). This shows that while the Protestants constitute the majority, there is a relatively strong showing of the Orthodox religion in the study area as well.

**Table 1: Characteristics of respondents**

Attributes	Category	Inter-zonal resettlers		Intra-zonal resettlers		Host community		Total	
		Fr	%	Fr	%	Fr	%	Fr	%
Sex	Male	68	100	67	95.7	64	84.2	199	93.0
	Female	-	-	3	4.3	12	15.8	15	7.0
	<b>Total</b>	<b>68</b>	<b>100</b>	<b>70</b>	<b>100</b>	<b>76</b>	<b>100</b>	<b>214</b>	<b>100.0</b>
	<15	-	-	-	-	-	-	-	-
Age	15-20	-	-	-	-	2	2.6	2	0.9
	21-25	5	7.4	4	5.7	2	2.6	11	5.1
	26-30	19	27.9	8	11.5	9	11.9	36	16.8
	31-35	12	17.6	22	31.4	9	11.9	43	20.1
	36-40	25	36.8	15	21.4	38	50	78	36.5
	41-64	7	10.3	21	30	16	21	44	20.6
	>64	-	-	-	-	-	-	-	-
	<b>Total</b>	<b>68</b>	<b>100</b>	<b>70</b>	<b>100</b>	<b>76</b>	<b>100</b>	<b>214</b>	<b>100</b>
Ethnicity	Kambata	18	26.5	-	-	-	-	18	8.4
	Hadiya	50	73.5	-	-	-	-	50	23.4
	Dawuro	0	0	70	100	76	100	146	68.2
	<b>Total</b>	<b>68</b>	<b>100</b>	<b>70</b>	<b>100</b>	<b>76</b>	<b>100</b>	<b>214</b>	<b>100</b>
Religion	Orthodox	7	10.3	35	50	25	32.9	67	31.3
	Protestant	61	89.7	35	50	48	63.2	144	67.3
	Catholic	-	-	-	-	2	2.6	2	0.9
	Others	-	-	-	-	1	1.3	1	0.5
	<b>Total</b>	<b>68</b>	<b>100</b>	<b>70</b>	<b>100</b>	<b>76</b>	<b>100</b>	<b>214</b>	<b>100</b>
Family size	1-4	10	14.7	11	15.7	35	46.1	56	26.2
	5-8	42	61.8	42	60	34	44.7	118	55.1
	9-12	15	22	17	24.3	6	7.9	38	17.7
	13-16	1	1.5	0	0	1	1.3	2	1.0
	Above 16	-	-	-	-	-	-	-	-
	<b>Total</b>	<b>68</b>	<b>100</b>	<b>70</b>	<b>100</b>	<b>76</b>	<b>100</b>	<b>214</b>	<b>100</b>
Educational status	Illiterate	23	33.8	35	50	44	57.9	102	47.7
	1-4	9	13.2	17	24.3	16	21.1	42	19.6
	5-8	28	41.2	16	22.8	14	18.4	58	27.1
	9-10	8	11.8	2	2.9	1	1.3	11	5.1
	11-12	-	-	-	-	1	1.3	1	0.5
	Above 12	-	-	-	-	-	-	-	-
	<b>Total</b>	<b>68</b>	<b>100</b>	<b>70</b>	<b>100</b>	<b>76</b>	<b>100</b>	<b>214</b>	<b>100</b>

The educational status of respondents is low. About 48% of the total respondents are illiterate i.e. they have never attained any formal education. However, there are variations among the schemes with the highest literacy rate reported in the host community followed by the intra-zonal. None of the respondents attained 12<sup>th</sup> grade and above further emphasizing the

general low level of education in the study area. This may impact the households' ability to acquire new information on how to increase food productivity.

Lastly, the family sizes of respondents are generally large. Survey results indicate that about 73.8% of the total survey respondents have above five members. This is more pronounced in inter-zonal and intra-zonal resettlement schemes with 85.3% with 84.3% respectively while the host community has 53.9%. This may imply that resettlement scheme beneficiaries may not encounter labor problems as their household sizes are large enough.

### **The Nature of the Resettlement Program**

This section focuses on program conscientization, willingness of resettlers to move, beneficiary selection and their perception of the new area. Study results indicate that almost all respondents from inter-zonal and intra-zonal resettlement areas were conscientised of the program well before it was implemented and that only a few 7(9.2%) of the total respondents in host community responded that they had no prior information of the program. This may indicate that information sharing on the resettlement program is high.

On whether the resettlers moved to the new areas voluntarily, 67 (98.5%) and 69 (98.6%) of respondents in inter-zonal and intra-zonal resettlement areas respectively said that they moved voluntarily. Only two respondents reported being coerced to move indicating that movement of resettlers to the new schemes was mostly voluntary. Focus group participants from inter-zonal and intra-zonal schemes corroborated this finding highlighting that the current resettlement program is generally based on consensus decisions of resettlers to be resettled.

The survey results further show that the majority (95.7%) of the inter-zonal and intra-zonal respondents do not want to return to their areas of origin. The few that want to return cite cattle diseases such as *trypanosomiasis* as the major reason for their want to return. A key informant indicated that resettlers were food secure and that others have started accumulating wealth in the area because of improved farm productivity hence they do not dream of returning to their areas of origin. This in a way may suggest some success of the resettlement program in improving the livelihoods of those resettled as the beneficiaries now perceive it to be another biblical Canaan.

Concerning access to social and economic infrastructure such as schools, clinics, veterinary services and safe potable drinking water in the new schemes, 115(83.3%) of respondents in inter-zonal and intra-zonal resettlement areas reported that the new areas are more convenient to access these facilities than their areas of origin. Only a few in inter-zonal and intra-zonal resettlement areas in the peripheral areas indicated otherwise due to the long distances they travel to access the facilities. One of the intra-zonal resettlers had this to say during focus group discussions:

*We are not entirely beneficiaries of some social facilities like veterinary services, safe potable water, market, as we have to walk long distances to access these services. Also the death of our livestock due to trypanosomiasis prevalent in the area has been on the increase.*



It was confirmed during field work that access to safe drinking water, for example, was a problem in some areas. It was highlighted that some of the water pumps were out of use. A key informant revealed that there was no one to repair them and that beneficiaries of resettlement schemes were not trained to maintain them. In cases where such facilities break down, beneficiaries resort to drinking water from unsafe sources such as rivers where they share these sources with animals. However as confirmed in the survey, such cases are few, again indicating some overall improvement in the provision of infrastructure in the new areas.

Socio-economic relationships among different groups, in this case between resettlers and host communities, are important as they enhance assimilation and integration. They may help resettlers to adapt quickly to the new environment and hence reduce frustrations (Cernea, 1999). Table 2 provides a summary of such relationships between resettlers and the host community.

**Table 2: Socio-economic relationships between resettlers and host community**

Relationship area	Inter-zonal resettlers		Intra-zonal resettlers		Host community		Total	
	Better (%)	Poor (%)	Better (%)	Poor (%)	Better (%)	Poor (%)	Better (%)	Poor (%)
Religion	52.9	47.1	95.7	4.3	88.2	11.8	79.4	20.6
Mourning	48.5	51.5	95.7	4.3	72.4	27.6	72.4	27.6
Marriage	10.3	89.7	85.7	14.3	52.6	47.4	50	50
Language	33.8	66.2	98.6	1.4	94.7	5.3	76.6	23.4
Iqquib /iddir	11.8	90.2	97.1	2.9	55.3	44.7	55.1	44.9
Credit service	17.6	82.4	92.9	7.1	73.7	26.3	62.1	37.9
Land share	1.5	98.5	35.7	64.3	59.2	40.8	34.6	65.4

The above Table shows that the majority of respondents in inter-zonal and intra-zonal resettlement areas relate well in religion and bereavement (mourning) than in other socio economic relationships. Survey results further show that respondents in intra-zonal resettlement areas have better relationships with host community in credit services, mourning, language and land sharing compared to those in inter-zonal resettlement areas because of their cultural and language homogeneity compared to those in inter-zonal resettlement areas. Although the relationship in marriage, language, local saving schemes such as *iddir* (informal association through which people assist each other in bereavement, shelter construction) and *iquib*, (an informal association in which local people contribute money weekly that can be <sup>used</sup> by all contributors in turns) among inter-zonal resettlers and host community is low, the respondents are satisfied with the integration progress made so far. This was highlighted during focus group discussions when, for example, one of the participants from the inter-zonal resettlers had this to say:

*All of us are now able to speak the language of local people and our sons have also become fluent in local people's language and are now highly assimilated with them. In addition, we have now started intermarriages regardless of ethnic differences and also now participate in local saving schemes (iddir/iquib).*

Regarding the incidence of conflicts, the majority 205 (95.8%) of the respondents have not experienced them since they moved to the new areas. Only 9 (4.2%) reported having altercations with host community over grazing land further indicating that beneficiaries of resettlement schemes seem to be integrating well with the host community and other resettlers. This aspect was further highlighted during focus group discussions when one of the participants from inter-zonal resettlement had this to say:

*We have not faced personal conflict among ourselves except in cases of boarder disputes when we report to local government officials to demarcate the boarder between the resettlement kebeles (villages) and the host communities. Of course, quarrels emanate from the use of boarder resources such as grazing.*

All in all, it can be safely concluded in this sub-section that adequate conscientization on the program to both beneficiaries of the resettlement schemes and the their related host communities was carried out well by the responsible authorities; that beneficiaries moved voluntarily to their new areas; that beneficiaries of the resettlement schemes have a positive perception of their new areas as they seem to be benefiting from increased agricultural production than from their areas of origin; and that beneficiaries of resettlement schemes seem to be integrating well with the host communities. The above aspects certainly contribute to a sustainable food security situation in the areas.

### **Agricultural Production**

Agricultural production and its related facets are important in assessing food security situation of an area. Landholding size, soil fertility and climatic conditions of an area, among things, have a bearing on the level of agricultural output of a household. These aspects are covered in this section of the study.

### **Landholding Size**

Table 3 shows that none of the study respondents is landless and that all respondents have landholdings of various sizes but are indeed small. Only 17(25%), 7(10%) and 4(5.2%) in inter-zonal resettlement, intra-zonal resettlement and host communities respectively have above two hectares<sup>of</sup> farmland. On the other hand, 13 (18.6%) and 30 (39.5%) of the respondents in intra-zonal resettlement and host community have one and half and below hectares of farm land respectively which is below the threshold stated in the program document (FSCB; 2004). This could be because of more concern given by government bodies to accommodate all people moved from their origin to the new resettlement sites.

**Table 3: Farmland sizes**

Farmland size (ha)	Inter-zonal resettlers		Intra-zonal resettlers		Host community		Gross total	
	Fr	%	Fr	%	Fr	%	Fr	%
0.5-1.0	-	-	-	-	12	15.8	12	5.6
1.1-1.5	-	-	13	18.6	18	23.7	31	14.5
1.6-2.0	51	75	50	71.4	42	55.3	143	66.8
> 2	17	25	7	10	4	5.2	28	13.1
Total	68	100	70	100	76	100	214	100

The study results further reveal that the land distribution exercise did not consider family sizes of the beneficiaries which may have a bearing on the amount of agricultural output and consumption levels. As reported by Masfield (2001), in other areas households with above five family members may fail to attain food security on two hectares of farm land. On the basis of personal observations made during the study period, this may be due to traditional means of production used by household heads and their reliance on rain fed farming system.

### Soil Fertility

Regarding the level of fertility of the landholdings as compared to their areas of origin, the majority of the respondents indicated that their new farm holdings are more fertile than their areas of origin. Only 12 (8.7%) and 1 (0.7%) of the total respondents in intra-zonal resettlement and inter-zonal resettlement areas respectively indicated that the fertility of their farm land is the same or below that of their area of origin. Discussions with key informants and personal observations revealed that indeed most of the beneficiaries had been resettled on relatively fertile lands that had not been used for agricultural purposes before by host communities.

### Climatic Conditions

As for the frequency of crop production, about 86.9% indicated that they are able to produce crops twice per year on their land holdings. However, the remainder (13.1%) produces once per year. This is made possible because the areas bi-modal rainfall. Key informants revealed that the *Woreda* (district) has three main agro-ecological climatic regions: *Kola* which receives 500-1500mm; *Woyina Dega* receives 1500-2500mm; while the *Dega* gets more than 2500mm. While most of the resettlers were settled in lowland *kebeles* which experience *Kola* agro-climatic conditions, the settlements are located in places that receive the upper end of the rainfall regime and also experience bi-modal rainfall hence the ability of most beneficiaries to produce multiple crops per year (EWARD, 2010).

## Crop Production

Survey results indicate that a wide variety of crops is grown in the study areas as a whole and these include food crops such as maize, *teff*, sorghum, *enset*; cash crop - coffee; fruits that include bananas, mangoes and papaya; and vegetables such as green paper, potato and onion. The hectarage under which these are grown varies from crop to crop but is generally small (Table 4).

**Table 4: Farm land devoted to staple crops, cash crops and fruits (in hectares).**

Types of respondent		Maize	<i>Teff</i>	Sorghum	Coffee	Banan a	Mango	Papaya
Inter-zonal resettlers	Average	0.69	0.41	0.34	0.01	0.01	-	0.01
	Minimum	0.10	-	-	-	-	-	-
	Maximum	1.50	1.00	0.60	0.10	0.30	0.01	0.10
Intra-zonal resettlers	Average	0.84	0.14	0.72	0.06	0.06	-	-
	Minimum	0.50	-	-	-	-	-	-
	Maximum	2.00	0.75	1.50	0.25	0.30	0.25	0.01
Host community	Average	0.90	0.20	0.38	0.06	0.08	0.03	-
	Minimum	-	-	-	-	-	-	-
	Maximum	3.00	2.00	2.00	0.50	0.50	0.25	0.15

Maize is the main staple crop grown by all respondents, followed by sorghum, and *teff*. More farmland is allotted to maize production than other staple crops due to its use for consumption more frequently and easier cropping process. While the hectares devoted to maize are generally small in the resettlement schemes, focus group discussions and key informants indicated that beneficiaries of resettlement schemes harvest more maize per unit hectare because their soils are relatively more fertile than those of the host community.

Nevertheless, some people still do not produce enough to feed themselves. Survey results show that a few - 12 (17.6%) in inter-zonal resettlement, 10 (14.3%) in intra-zonal resettlement areas and 8 (10.5%) in host community areas reported shortfalls to satisfy of their consumption requirements from own-farm production. The major reasons given for the shortfalls is that the most of their food crops fell prey to wildlife still rampant in some areas and water logging due to excessive rain in some areas.

Fruits and cash crops are also grown in the areas of study, but the hectarage is small. The absence of mangoes is noticeable in resettlement schemes. This maybe because these are new settlers and it takes a while to establish such plantations. However, during focus group discussions, the main reason given for the low scale of fruits production was that of marketing of the products. Similarly, coffee is grown on a small scale but the reason highlighted by the discussants is the fear of diseases that periodically affect the coffee and households often fail to access pesticides. Key informants also revealed that

little seems to be done in the area of capacity building of the extension service providers hence they are thinly covered on the ground negatively impacting the expansion of coffee growing.

Regarding gardening activities, respondents indicated that they grow *enset*, green paper, potatoes, and onions. These are normally grown in the backyard gardens of the homesteads on a small scale (Figure 2). For example during the previous season, respondents cultivated the average farm land of 0.11ha, 0.27ha and 0.27 ha with *enset* in inter-zonal resettlement, intra-zonal resettlement and host community areas respectively. *Enset* has high potential to resist drought and can be used for consumption in the form of bread (“*kocho*”- in local language) more frequently and sometimes in the form of porridge. It was also observed during field survey that *enset* production is more established in host community areas compared with others because of the longer period residence of the host communities.



**Figure 2: *Enset* grown in the backyard of a host community**

The study also shows that access to credit services has not yet been improved in all areas. Similarly, there has neither been any establishment of alternative sources of water such as irrigation systems, nor any water harvesting activities in place living farmers exposed during poor rain seasons. Putting in place such elements in place will greatly enhance the potential of the areas to realize more crop production.

### **Livestock Production and Apiary**

Livestock, besides their being an indicator of wealth, may also determine the availability of food to households as they provide drought power, meat, milk and by-products such as cheese and butter. Survey results indicate that most of the respondents keep a variety of livestock - cows (97.7%), and oxen (91.6%); ruminants - sheep (60.3%) and goats (52.8%); and poultry (81.8%). Others have also ventured into apiary (49.1%) (Table 5). Only a few respondents in all areas do not have the above assets, an indication that livestock, ruminants and to a lesser extent aviary are important assets in the study areas.

**Table5: Table livestock production after resettlement program (in “TLU” Standard)**

Type of Livestock	Quantity	Inter-Zonal Resettlers		Intra-Zonal Resettlers		Host Community		Total	
		Fr	%	Fr	%	Fr	%	Fr	%
Cow	0	3	4.4	1	1.4	1	1.3	5	2.3
	1-3	50	73.5	50	71.5	41	53.9	14	65.9
	4-6	11	16.2	19	27.1	31	40.8	1	28.5
	7-9	-	-	-	-	1	1.3	61	0.5
	10-12	1	1.5	-	-	-	-	1	0.5
	Above 12	3	4.4	-	-	2	2.7	5	2.3
	<b>Total</b>		<b>68</b>	<b>100</b>	<b>70</b>	<b>100</b>	<b>76</b>	<b>100</b>	<b>214</b>
Ox	0	6	8.8	1	1.4	11	14.5	18	8.4
	1-3	59	86.7	66	94.3	60	78.9	18	86.4
	4-6	1	1.5	1	1.4	4	5.3	5	2.8
	7-9	-	-	-	-	-	-	6	-
	10-12	1	1.5	-	-	-	-	-	0.5
	Above 12	1	1.5	2	2.9	1	1.3	1	1.9
	<b>Total</b>		<b>68</b>	<b>100</b>	<b>70</b>	<b>100</b>	<b>76</b>	<b>100</b>	<b>214</b>
Sheep	0	67	98.5	4	5.7	14	18.4	85	39.7
	1-3	1	1.5	66	94.3	62	81.6	12	60.3
	<b>Total</b>	<b>68</b>	<b>100</b>	<b>70</b>	<b>100</b>	<b>76</b>	<b>100</b>	<b>214</b>	<b>100</b>
Goat	0	14	20.6	18	25.7	69	90.8	10	47.2
	1-3	54	79.4	52	74.3	7	9.2	11	52.8
	<b>Total</b>	<b>68</b>	<b>100</b>	<b>70</b>	<b>100</b>	<b>76</b>	<b>100</b>	<b>214</b>	<b>100</b>
Poultry	0	5	7.4	4	5.7	30	39.5	39	18.2
	1-3	63	92.6	66	94.3	46	60.6	17	81.8
	<b>Total</b>	<b>68</b>	<b>100</b>	<b>70</b>	<b>100</b>	<b>76</b>	<b>100</b>	<b>214</b>	<b>100</b>
Apiary	0	50	73.5	15	21.4	44	57.9	10	50.9
	1-3	18	26.5	55	78.6	32	42.1	5	49.1
	<b>Total</b>	<b>68</b>	<b>100</b>	<b>70</b>	<b>100</b>	<b>76</b>	<b>100</b>	<b>214</b>	<b>100</b>

*Tropical Livestock Unit (TLU) conversion factors used are: Cattle (Cow & Ox) = 0.70; Sheep/ Goat = 0.10; Poultry/Bee hives = 0.01*

Survey results further show that the majority of respondents 66 (94.3%) and 62(81.6%) in intra- zonal resettlement and host community areas respectively keep their livestock on their farmland while 67 (98.5%) of those in inter-zonal resettlement areas keep them on common grazing lands. None of respondents reported instituting special forage facilities to supplement farm grazing.

Both key informants and focus group discussions revealed that the “TLU” of livestock and beehives increased after resettlement. Though the same sources revealed that there is an increase in livestock production (in TLU) in all areas after the resettlement program was implemented, it was observed that the carrying capacity is now over-stretched. Field observations showed evidence of degradation of the grazing lands seemingly aggravated by increased stock. While key informants highlighted the relative increases in livestock production as indications of the positive efforts being made by Government to promote livestock production, the absence of supplementary feeding programs negates the efforts due to the overstretched land carrying capacity. However, according to key informants, incidences of *trypanomiasis* have been greatly curtailed though some areas are still affected.

All in all, the beneficiaries of the resettlement program have experienced an increase in both crop and livestock production in the new areas than was the case in their areas of origin. According to key informants and focus group discussions, some have now accumulated various assets which they never had before in their areas of origin indicating the some of the positive effects of the resettlement program in the attainment of food security as they can sell the assets in bad times.

### **Off-Farm Activities**

In Ethiopia, the current food security policies and “sustainable poverty reduction” strategies acknowledge the importance of off-farm activities to ensure food security (SNNPR Food Security Coordination Office, 2005). Activities such as blacksmithing, cloth weaving, pottery, tannery, petty trades, handicrafts, and other small manual works are considered as potential areas of growth that can link the agriculture to the non- agricultural sector (Tegegene, 1995) and enhance food security.

The involvement of households in off-farm activities in the study areas is very minimal. Survey respondents were asked to indicate income generating off-farm activities they were engaged in. The results show that all areas engage in petty trade but on a small scale. While 1(1.3%), 4 (5.3%) and 17 (22.4%) respondents from the host community indicated their involvement in blacksmithing, pottery, and labor work respectively, none of the respondents from the resettlement areas indicated any participation in such activities (Table 6).



**Table 6: Involvement of households in income generating off-farm activities**

Off-farm activity	Inter-zonal resettlers		Intra-zonal resettlers		Host community		Total	
	Participants		Participants		Participants		Participants	
	Fr	%	Fr	%	Fr	%	Fr	%
Blacksmithing	-	-	-	-	1	1.3	1	0.5
Pottery	-	-	-	-	4	5.3	4	1.9
Other manual work	-	-	-	-	17	22.4	17	7.9
Petty trade	11	16.2	12	17.1	5	6.6	28	13.1

Both focus group discussions and key informant interviews indicated the pre-occupation with agricultural activities and the dearth of skills especially of the resettlers in some of the activities as limiting participation of resettlers. One would have thought that they would engage in tannery activities as the areas produce a lot of skins from livestock!

As for the host community, their relatively low participation in such activities as cloth weaving, tannery, blacksmithing and pottery was highlighted by one focus group participant:

*Those who involve in cloth weaving, pottery, tannery, blacksmithing and labor works are considered by our community as low class people. Families from those who involve in such activities are also not allowed to integrate in marriage with families of others who do not carry out such activities.*

So, cultural factors seem to explain the low participation of study respondents in off-farm activities, a response which seems non-plausible considering that government acknowledges the importance of such strategies in enhancing food security. There is definitely need for further investigation on this issue and it is the impression of the authors that it may be due to lack of advocacy or promotion of the strategies by both authorities. Households might be vulnerable to cash and food deficits when agricultural production falls and this in turn may deter the attempt for sustainable food security in the areas (Fleuret, 1989; Yared, 2001).

### **Food Status**

The ability to access food helps all members of society to obtain sufficient food for healthy living. Food access to households can be improved through agricultural output sales, income from off-farm activities, among others (FAO; 2008). The survey results show that the majority of respondents generate their income from livestock and crop sales. Livestock sales constitute major source of income in the inter-zonal resettlement areas while crop sales dominate intra-zonal resettlement and host community areas. Only a few indicated that they generate income from off-farm activities and none reported receiving remittances from other members of the family working elsewhere hence the dominance of agricultural activities in the study areas. The issue of remittances seems overlooked in follow ups with both focus group discussions and

key informant interviews hence the aspect may have been under reported in this study. Key informant interviews and focus group discussions also revealed that sale of honey also contributes to household income to those who practice activity.

Regarding food utilization, this refers to sufficient energy and nutrient intake by individuals (FAO, 2008). This study evaluated this aspect on the basis of food items consumed during the last year - type of meals and frequency of the meals. No attempt was made to calculate or estimate the average calorific intake per day due to the conversion problems emanating from the wide variety of foods eaten.

Results in Table 4 show that survey respondents reported consuming food crops (maize, *teff*, and sorghum), fruits (mangoes, banana and papaya), vegetables (green paper, onion, potato) and *enset* from their own production during the past year, although the availability tended to vary from area to area (Table 4 above). All respondents commonly consume bread (prepared from maize, *enset*, and *teff*), porridge (prepared from maize, sorghum, and *enset*), *injera*, milk and milk products, fruits, vegetables and cereals.

Coping strategies adopted, i.e. the behavioral changes made at household level to adjust to food shortage were also studied here. These strategies are key to sustained food security because it is the households' adaptability to change and resilience to bounce back from shocks that affect household members' abilities to earn an income or purchase food to meet household's needs. Those who experienced food crop deficits because of the vagaries of the weather and havocs played by wildlife as discussed earlier reported buying on the market to satisfy their requirements. They mostly used money obtained from the sale of their assets, mainly livestock. This fall-back strategy is common in all areas as reported by focus group discussions.

Regarding the frequency of the meals, the majority of the respondents 119 (55.6%) have three meals a day - breakfast, lunch and dinner - while 95 (44.4%) reported having two meals a day (either breakfast and dinner or lunch and dinner). Both key informants and focus group discussions especially from the intra-zonal resettlement revealed that there was a great improvement in this aspect. Some participants related experiences where they would have only one meal or would go without food for a day in their areas of origin where they experienced chronic food shortage. While it might still be argued, as revealed in the focus group discussions, that some resettlement beneficiaries and host communities still go without food for a day at times, such cases are few.

### **Infrastructure Facilities**

The provision of infrastructure facilities such as health institutions, veterinary centers, water pumps, roads and schools in resettlement areas contributes positively to the improvement of livelihoods of the resettled people and food security as well. If such facilities are also accessible to the host communities, they are likely to make them develop a positive attitude on the program, as they also benefit from the use of the facilities. Thus, in a way may foster stability in an area resulting in enhancing food security.

Study results show that health institutions, primary schools, burial places and religious institutions commonly exist in all selected schemes. Other infrastructure such as water pumps for the provision of safe drinking water, veterinary services, all weather roads, telephone services, and electricity have not yet been established in some areas. While some facilities, for example in the inter-zonal resettlements schemes, such as telephone services, second cycle school (grades 5-8) and well equipped health centers can be accessed from the neighboring host area, this is not the case with the intra-zonal schemes where households may be made to travel long distances to access the facilities as highlighted by one participant during focus group discussions:

*We and our sons have to walk long distances to the town of Woreda Administration to access telephone, schooling – grades 5-8 and health center services. In addition, due to absence of veterinary services, our cattle are affected by livestock diseases because of tsetse fly and we are exposed also to water born diseases due to absence of safe drinking water.*

Access to safe drinking water still remains problematic in some resettlement areas. One focus group participant from inter-zonal resettlement schemes had this to say:

*Our spouses walk on foot about 4 hours distance of double trip to fetch drinking water from unprotected river because the water pump established at the time of our relocation broke down after giving service for some time and no repairs have been undertaken yet.*

What seems evident here is that although water pumps may have been provided in the resettlement areas, there still remains the problem of maintaining the facilities. If they break down and are not immediately repaired, households become vulnerable to water borne diseases as they may be forced to draw water from unprotected sources.

It was also observed during field survey period that some of the infrastructure provided in the resettlement schemes is sub-standard. Most of the buildings, for example, health posts in intra-zonal resettlement areas are made of rudimentary materials of pole and mud though with zinc roofs. It was revealed by key informants that these were mostly built by the beneficiaries themselves who provided labor and local materials with the local authorities providing those not found locally. However, the lack of supervision by skilled persons compromised the structures (Figure 3).



**Figure3: A health post in intra-zonal resettlement scheme**

The health posts had inadequate medicines and were reported to be inadequately staffed. The area is prone to malaria and yet malaria tablets/ drugs were not available in one health center visited and that the situation had been like that for the last six months. This lives people vulnerable to malaria.



**Figure 4: A school (for grades 1-4) in an inter-zonal resettlement scheme**

While commendable efforts have been made to provide in the provision of schools in all areas, the facilities are still rudimentary mostly shells, which still need to be completed (Figure 4). Children still walk long distances to access these facilities as provision is still lagging behind.

### **Environmental Management and Rehabilitation**

According to Workneh (2008), environmental degradation is one of the determinant factors of chronic food insecurity because the fertility and productivity of the land is determined by environmental conditions. The resettlement program implementation manual gives due emphasis to the management of the environment while implementing the resettlement program.

To recap, study respondents practice mixed farming, i.e. grow crops and keep livestock. Their farmland holding capacity is low, with about 88% of the respondents eking a living on two hectares or less of land for crop farming. Survey results further show that the grazing carrying capacity is over-stretched and yet there are no alternative forage supplementary programs that have been put in place to boost livestock production. This aspect needs immediate attention before the pastures are degraded beyond redemption.

Concerning sources of fuel, all respondents in all areas reported using forest trees as sources of fuel in their home and also as a source of construction materials. None of respondents in the inter-zonal and intra-zonal resettlement areas reported using other alternatives such as crop residue and animal dung as an energy source that they use. This may be attributed to the existence of plentiful wood in the new areas but may prove unsustainable in the long run without complementary alternative sources of energy in place. Use of both kerosene and forest wood was also reported in all areas by some respondents.

Survey results indicate that the majority of respondents or 35 (50%) and 73 (96.1%) in intra-zonal resettlement and host community areas have been trained in environmental management respectively. Only 24 (35.3%) of those in inter-zonal resettlement areas had been trained at the time of carrying out the survey and the program was on going. The impact of the training program was evidenced by the number of respondents practicing environmental rehabilitation practices. About 54 (79.4%), 52(74.3%) and 71 (93.4%) of the respondents in inter-zonal resettlement, intra-zonal resettlement and host community areas respectively reported participating in different environmental rehabilitation practices like planting trees on hill areas, seedling, water source development in the past year. Encouraging noting is the fact that even in inter-zonal resettlement scheme where not many respondents had been trained in environmental management; still their participatory rate is high as evidenced by the above figures.

Survey results also show variations by area in participation of the respondents in the various activities. For example, in tree planting, host community areas or 69 (90.8%) reported that they participated in tree planting during the last year. Only 28 (40%) and 18 (26.5%) of those in intra-zonal resettlement and inter-zonal resettlement areas involve in new tree plantation.

This may be because deforestation is now more pronounced in host community areas than in the new resettlement schemes. But still, pro-active measures should be instituted in the resettlement areas to avoid land degradation through deforestation. Key informants revealed that environmental awareness campaign radio broadcasts were the order of the day, an aspect that should aggressively be continued until all people are conscientised.

## **CONCLUSION AND RECOMMENDATIONS**

In Ethiopia, the resettlement program was launched to overcome the problem of food insecurity in the country. Evidence from this study show that the current program was voluntary and indeed beneficiaries of the schemes have improved their food security situation than was the case in their areas of origin. Complementary activities such as off-farm activities to supplement their agricultural activities and enhance their food situation are poorly developed in the study areas with resettlement schemes being the biggest culprits. However, to enhance the sustainability of the program, the following suggestions / additional measures are recommended:

- It has been observed that beneficiaries were settled before some basic infrastructure had been put in place. Where such facilities have been provided such as water pumps, no maintenance contingency measures were ever put in place hence some of them are reported to be out of use. Certainly, the local authorities should ensure that these facilities are repaired. In addition, the local authority should ensure that maintenance crews are trained to maintain these and other infrastructure in the schemes. Resettlement scheme beneficiaries can be requested to pay a token levy for the upkeep of the infrastructure.
- Sub-standard, inadequately and poorly equipped health facilities are also highlighted in this study. This is a cause of concern mostly in inter-zonal resettlement schemes where beneficiaries received little help from the authorities to provide such infrastructure. While it is plausible to have beneficiaries contribute their labor, and to some extent skills, in the provision of infrastructure, such activities should be done under the guidance of qualified and skilled persons so as to produce quality work. The local authorities should make sure that quality standards are maintained in all activities done. Efforts should also be made to adequately equip the health centers and that capacity building efforts are carried out to ensure that such facilities are manned by suitably trained personnel.
- It is noted that in the allocation of land to beneficiaries of the resettlement schemes, no consideration was given to family sizes. This aspect should be reconsidered when doing a similar exercise in the future as larger households still remain trapped in the vicious circle of poverty. The family size should be considered while providing farm land to people in new areas for future.
- Study results show that no irrigation facilities of any sort exist in both resettlement areas and the host communities and yet the zone receives moderate rainfall. In this case, all stakeholders should attempt to establish small scale irrigation schemes and develop water harvesting systems in the area. Multi-cropping activities through irrigation will not only improve production in the areas, but also raise household incomes and enhance food security situation in the zones.
- High levels of crop production often require increased levels of conservation of soil, water, and plant nutrients. The resettlement schemes and host community areas should embark on programs of soil protection, land improvement, and land reclamation. The replenishment of nutrients to the soils can be achieved through applying animal manure,

crop residues, in addition to chemical fertilizers.

- The general low level of off-farm activities to complement agricultural activities in the study areas is a cause of concern. Only petty trade seems to permeate through all schemes, though on a small scale. Local government bodies, non-governmental organizations, business and individuals should periodically facilitate the training and advising of resettled farmers and host communities in different off-farm activities that can diversify their income generation sources. In addition, the micro finance institutions should give attention to the resettlement areas and expand the credit and saving services to households.

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