



**Food Security and Resource Access:
A Final Report on the Community Assessments in
South Wello and Oromiya Zones of Amhara Region, Ethiopia.**

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Introduction

This paper examines aspects of severe food insecurity and resource access in 21 sampled communities of South Wollo and Oromiya zones of Amhara Region. The information was collected by a multi-disciplinary team as part of a collaborative research project of the Institute for Development Research (IDR) of Addis Ababa University and the BASIS⁴ Horn of Africa Program. The research team conducted rapid community assessments from April to July 1999, in the midst of widespread and severe crisis culminating from repeated poor harvests and the failure of the year's *belg* rains. These events had significantly enhanced peasant vulnerability to food shortages. The paper presents the perceptions of community members regarding interlinked aspects of production failures and food-insecurity, on the one hand, and resource access and coping strategies, on the other. Its intent is to provide an overview of key conditions and trends, rather than a comprehensive portrait of individual communities or the 1999 food shortage.⁵

These community assessments are part of the IDR/BASIS project entitled "From Household to Region: Factor Market Constraints to Income and Food Security in a Highly Diverse Environment, South Wollo, Ethiopia" (Little and Tegegne 1998). The project addresses theoretical and policy debates about the causes of food insecurity in

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⁵ A more detailed account of the communities is contained in Castro *et al.* 1999.

rural economies, evaluating the role of such key variables as income availability or entitlement, access to resources and the market, agricultural productivity, and drought (for example, see Sen 1981; Cutler 1984; Mesfin 1986; Degefu 1987; Alemneh 1990; de Waal 1991, 1997; Webb 1992). It intends to do so by providing an integrated analysis of the social and economic causes of food insecurity at the intrahousehold, household, community, and regional levels.

The project has three main research components: a regional market center survey led by Tegegne Gebre-Egziabher and Gary Gaile (Gaile et al. 1999); community assessments (to be covered in this paper)(see also Castro et al 1999; and a household and intrahousehold survey to be carried out in 2000-2001. The community assessments are intended to provide socioeconomic and institutional information of both a qualitative and quantitative nature about the South Wello and Oromiya communities to supplement the market and household surveys, as well as to serve as a data base for analysis on their own. The aim is to forge an overall research design that spans the regional to the intrahousehold level.

In the study area, as in much of the northeastern Ethiopian highlands, poor access to resources is widely acknowledged as a major cause of food-insecurity, even though drought brought about a drastic fall in households' production and food supplies in the year of the study. This paper gives particular attention to patterns of peasant access to resources that are important for household food security in the region known as South Wello and Oromiya zone of the Amhara region. It does so within the context of local differences in agroecology and market distance. The paper first looks at facets of peasant access to land and labor that form the basis of food production, including perceptions of availability, constraints, transactions, and recent trends.

Food security also depends on the extent to which households can increase their farm production and diversify their sources of income (ONCCP 1989). Their ability to achieve this can be strengthened by improving their access to agricultural extension which may include items such as training, inputs and credit. The paper provides data on rates of participation in programs providing credit and inputs, types of farmers involved, constraints on participation and the impact on household production.

Non-farm income sources play an important role in strengthening the food security and economic viability of households (Jiggins 1986; Thomas and Leatherman 1990; Chen 1991). The various types of income sources in the region, gender differences in responses, perceived constraints, and changes in the importance and role of such income earning strategies are presented. It also briefly describes the community relations, including local organizations, that support households efforts to accumulate savings.

These relations also serve as a safe-net in hard times, though their ability to do so has its limits, as demonstrated during the 1999 food shortage.

The paper also explores the perceived causes and impact of repeated crop failures on households and communities, including the ways in which people try to cope with such adversity. Research on peasant responses to such threats to their survival has clearly shown that instead of being passive victims, they actively utilize various coping mechanisms that help them meet shortfalls in their food supplies (Campbell 1982; Corbett 1988; Dessalegn 1987, Shipton 1990). The paper documents the mechanisms available to households and the changes that have occurred in their role and efficacy.

The research project had not intended to investigate a particular food insecurity event. Rather, it is concerned with examining the dynamics of food insecurity as a recurrent, chronic phenomenon in South Wello, mindful that dramatic fluctuations in supply and consumption are integral parts of the situation. Nevertheless, this paper is valuable not only for its "snapshot" of conditions and trends regarding agriculture, landholding, labor, marketing, and food security, but also for its depiction of local perceptions and coping strategies during a very troubled time. According to the Disaster Prevention and Preparedness Commission (DPPC 1999), roughly one-third of South Wello required food assistance by May 1999⁶. Both the DPPC and the research team observed that people in South Wello faced a serious situation, with highly vulnerable households already experiencing immense hardships.

Methodology

The social science methods employed in the community assessments combined survey, ethnographic, and rapid rural appraisal techniques, involving key informant and focus group interviews conducted during one-day visits to each community. The research team carried out a field test in two rural communities near Dessie in March 1999 (Castro 1999). The assessment themselves were conducted from April to July 1999, mainly in South Wello zone (for nine weredas), but also in adjacent Oromiya zone (two weredas). These took place during a time of widespread and increasing hunger due to the failure of the belg rains in early 1999.

⁶ The DPPC's previous survey issued in December 1998 had not foreseen the scope and magnitude of the situation. Crop production turned out to be considerably lower than anticipated due to unusually late meher rains, severe frost in some areas, pests, and early harvesting forced on farmers by bad weather. The DPPC also acknowledged underestimating the extent of 1998 belg crop losses in Amhara Region (DPPC 1999: 16-20).

The term community in this study is synonymous with the *kebele* (formerly known as the peasant association), the lowest administrative unit in Ethiopia. *Kebeles* are grouped together to form a wider administrative entity called a *wereda*, which in turn are combined to form a zone. For purposes of the study, the team decided to select two kebeles from each of the nine weredas in South Wello zone, namely Ambassel, Dese Zuriya, Kalu, Kuta Ber, Legambo, Tanta, Tehuledere, Werebabo, and Wereilu. Due to difficult road conditions in Legambo, only one kebele was visited. Four kebeles from two weredas in the adjacent Oromiya Zone with close marketing ties to South Wello also were picked — Bati and Dawa Cheffa. Thus, the team carried out fieldwork in 21 kebeles. In consultation with local officials, the team used purposive sampling to select the communities, trying to differentiate them according to market distance (one kebele in each wereda would be within 10 km of the local market, while the other would be more than 10 km from the market) and agro-ecological setting — highland (called *dega*), midland (*woina dega*), and lowland (*kola*). The 10-km benchmark was useful for distinguishing physical accessibility to markets, though spatial distance was not the only factor at work. The research team also considered road conditions and other logistical issues. The tripartite highland-midland-lowland division is widely recognized in Ethiopia as referring not only to altitude, but also climate and farming systems. The research team also tried to incorporate a range of local food security situations in their selections, for example, asking local officials to take into account whether communities were highly or less drought-prone.

The research team conducted three sets of group interviews in each community during one day visits. The team members recognized the shortcomings and biases of quick, group interviews, but, given their own experience with rapid rural appraisal, they felt that such an approach offered a generally timely and accurate method to accomplish the task at hand. As will be discussed below, the team tried to offset such shortcoming and biases by trying to ensure that a range of local perspectives — official and non-official; male and female; old and young; prosperous and poor — would be heard during the interviews. Given existing logistical, resource, and time constraints, the use of rapid appraisal techniques proved to be a cost-efficient decision.

A "key informant" interview was conducted usually with three to four members of the kebele administration (the chairman, secretary, treasurer, and social sector head were typical participants). The team used a questionnaire that consisted largely of inventory questions regarding the local population, its access to markets and public services, its demographic change, and its experience in addressing food security. Two focus groups interviews — separate men's and women's groups — were carried out in each

community. The focus group questionnaire contained some inventory-oriented questions, but it also sought to elicit local views, perceptions, and aspirations on a range of subjects — agriculture, land, agrarian change, access to inputs and markets, savings patterns, community relations, food security, and coping strategies during times of food shortages. The women's and men's focus groups often differed in the information they provided, reflecting differences in their participation in local economic, social, and cultural affairs.

Officials were asked to select people from different socioeconomic backgrounds (income groups, levels of well-being, female-headed households) and age groups, so that the focus groups could include a range of local views. Each group usually consisted of eight individuals. The team's experience — based on the informant self-reports, their appearance (such as type and quality of clothing), and comments during interviews (including intra-group chatter, remarks, and responses to each other) — indicated that officials generally did a very good job in selecting people from diverse backgrounds, including the poor, middle, and more prosperous community members, as well as female-heads of households and returned "resettlers." Casual conversations with community members who were not interviewed suggested that the information obtained during the interviews was reliable and valid.

The paper discusses the preliminary results of the different interviews with the groups and key informants regarding aspects of food security and resource access. Much of the data was coded and analyzed using SPSS and are included in a series of tables that are discussed. The descriptive statistics in the paper are meant to provide an indication of the prevalence and importance of certain perceptions or occurrences across the region, rather than a statistically valid representation of their actual incidence. The findings presented here represent a 'first cut' at data analyses from the community assessments and additional work on the data will be done later in the year, and a final report of the study will be published.

General Features of Sample Communities

A Statistical Overview

Table 1 presents the distribution of the 21 sample *kebeles* according to various relevant characteristics. With respect to one of the sampling criteria, agro-ecological zone, 6 of the *kebeles* (29%) turned out to be in the *dega* zone, 6 or 29% were *woina dega*, and 9 or 43% were *kolla kebeles*. In terms of distance from a market center, the other sampling criteria, 11 (52%) of the *kebeles* were less than 10 kilometers from a market center, whereas 10 of them (48%) were more than 10 kilometers from a market

center. Furthermore, 12 of the *kebeles* (57%) had been designated as highly drought prone, whereas 9 *kebeles* (43%) were selected which were thought to be either moderately or less drought prone.

The table also shows that 29% of the *kebeles* had an estimated population size of 5000 or less, 38% had an estimated population size of 7000 or less but greater than 5000, and 29% *kebeles* had even larger estimated population sizes, amounting to a maximum of 10, 155. Forty eight percent of the *kebeles* had less than 1500 households, whereas the remaining 52% had numbers of households ranging from 1500 to 5000. The proportion of female-headed households was less than 20% in 33% of the *kebeles*, from 20% to 30% in 29% of the *kebeles*, whereas another 29% of households had proportions of female-headed households ranging from 32% to 43% of total households. The proportion of female-headed households is quite high in other parts of Ethiopia where figures as high as 25% were reported (Dejene 1994). The proportion of female-headed households in the study region appears to be even higher, however. This may be due to factors such as greater marital instability in such a food-insecure area and a high percentage of males involved in labor migration (many of whom have stayed for several years leaving women as 'de facto' heads of households)

The sample *kebeles* were also categorized according to their access to various types of infrastructure such as distance from roads, number of health clinics and retail shops and distances to daily or weekly markets. Thirteen of the *kebeles* (62%) were less than 10 kilometers from an all-weather road, whereas 7 *kebeles* (33%) were found more than 10 kilometers away. There were 3 *kebeles* which were actually more than 40 kilometers away from an all weather road. By contrast, 71% of the *kebeles* were virtually right on a seasonal road. Only 52 percent of the *kebeles* had a health clinic nearby, whereas only 57% had retail shops. By way of characterizing accessibility to local markets, **Table 1** shows that 62% of the *kebeles* were less than 10 kilometers from their main daily market, while 24% were more than 10 kilometers away. As for their distance from a weekly markets, 57% were at a distance of less than 10 kilometers and 38% were more than 10 kilometers away.

Community Organization

The key informants provided information about the religious and ethnic distribution of the population. Muslims composed the largest religious group in nearly all — 19 of 21 — of the sampled communities. In fact, they formed a substantial majority in most places: 15 *kebeles* had more than 90% Muslim populations. All of the sampled communities had active religious entities: mosques, *zawiyas*, and feast groups for

Muslims: and organizations such as *maheber* and *senbete* for Christians. In terms of ethnicity, the South Wello communities were largely Amhara in composition. Only one South Wello *kebele* had a significant Oromo minority (20%), and two communities reported tiny Tigreyan populations. In contrast, the four Oromiya *kebeles* consisted of large Oromo majorities. Two of them possessed sizable (25%-30%) Amhara minorities, and one of them had a small number of Afars.

The focus groups indicated households are tied to one another through kinship, neighborhood, religious, or ethnic ties. Mutual assistance serves to bind together people in networks of reciprocity. Such sharing occurs in a number of forms: farm labor exchange, gifts of cash or food during ceremonial occasions or times of need, lending oxen and other productive items, and helping out whenever it is possible. Such sharing, lending, donating, or assisting has both a seasonal and a daily rhythm. Interviews indicated that people are most generous when they possess the means to act in such a manner — "the good days" in terms of harvests and income become "the good days" in terms of giving and helping. Similarly, hard times erode the ability of people to engage in sharing and self-help. Giving becomes less generous and more focused on one's immediate social network.

Kire, the burial society, operates in all communities, and its membership is generally open to all and widespread. But in a few communities people noted that the poor have difficulties paying their obligatory dues (the same was also said for *senbete* and *maheber*). In a few places *kire* provides an informal forum for dispute resolutions, but nowhere did it play a role in helping households survive times of food shortage. In fact, such organization come under severe stress during hard times, such as the 1999 food shortage. Participation rates drop, as does the capacity of the groups to carry out their functions. People did not identify any other indigenous *kebele*-level organizations.

Interviews indicated that non-governmental organizations were conspicuous by their absence in most communities. Kale Hiwot, the Swedish Philadelphia Church, Red Cross, and World Vision were identified as past or current NGOs in the *kebeles*. For the most part they seemed to make little impression on people. In fact, in a couple of communities people felt manipulated by one of the NGOs, complaining that it had taken pictures of "our starved children" in order to raise donations, yet had failed to provide additional contributions to the community.

Agricultural production

The following section describes the characteristics of agricultural production in the sample communities in terms of types of major crops and perennials, the presence of double cropping, trends in and factors affecting the performance of agricultural production, as well as the availability of irrigation. The communities in the study varied as to whether they maintained single or double cropping in their agricultural production. The two cropping seasons were based on the *belg* or the short rains, extending from January to June and the *Meher* or the long rains, extending from June to January. The study found that 62% of the communities maintained double cropping. Table shows that double cropping was most commonly practiced in the *Woina Dega* zone (80% of the *kebeles*) and least frequently in the *Kolla* zone (44% of *kebeles*). The importance of the cropping seasons also varied in the different zones. In response to inquiries about the major cropping season in their communities, key informants in all the *Kolla* communities stated that the *Meher* season was more important, whereas the *belg* season was thought to be more important in most *Dega* areas (71%) (**Table 2**). The *kebeles* in the *Woina Dega* areas were more equally divided as to the relative importance of the two seasons (60% Meher and 40% Belg).

A wide variety of field crops were planted in the study area including *teff*, sorghum, maize, barley, wheat, millet, oats, horsebeans, peas, chickpeas and lentils. Among these, *teff*, sorghum and maize were most likely to be reported to be the three main crops, *teff* being most frequently reported. The crops that were most frequently reported as sources of cash, on the other hand were *teff*, sorghum and barley. Households also grew a number of garden vegetables including kale, green pepper, onions, potatoes, garlic, tomatoes, sweet potatoes, basil, carrots and beet. The vegetables which were ranked as most important were kale, green peppers and onions.

Only some of the *kebeles* reported crops that were grown exclusively by women. These consisted of condiments, kale, onions and pumpkins, commonly grown in the gardens/backyards which are cultivated mostly by women. Female groups were more likely to report crops grown exclusively by women (38%) as compared to male groups (10%).

The study also revealed that households grow a variety of perennials as well. Eucalyptus trees were the most frequently mentioned perennials (cited by 91% of male and 86% of female groups). Papaya trees, coffee, chat, sugar cane and juniper trees were also reported in at least a fifth of the *kebeles*. Other less frequently mentioned perennial crops were bananas, hops, orange and other fruit trees.

In an attempt to get a sense of long term trends in agricultural production, community groups were asked whether production had increased or decreased in the last ten years. All of the male and female groups reported that agricultural production had decreased in the past ten years. The most frequently mentioned cause of this decline was drought (71.4) (**Table 3**). Also frequently mentioned causes for this decline were pests (57.1%), rust (33.3%), crop disease (28.6%), and frost (23.8%). Other causes, mentioned by less than a fifth of the communities were soil infertility, climatic problems such as irregular and torrential rainfall and hail, use of fertilizer and waterlogging.

One of the most effective means of preventing the negative impact of drought is irrigation. However, only some groups reported the use of irrigation in their communities (43% and 38% of male and female groups). Even in the communities that reported the presence of irrigation practices, it mostly consisted of a small proportion of households utilizing small streams and similar water sources to cultivate perennial crops and vegetables. As a result, lack of water for irrigation was reported as a serious constraint by 81% of male and 71% of female groups.

Access to Resources

Access to Land

Access to adequate amounts of land is clearly one of the most important determinants of household productivity and food security. As in much of Ethiopia, a large number of households in the study area are unable to produce sufficient food because landholdings are limited and unequally distributed. Landholdings ranged in size from .025 hectares to 3 hectares. Average landholdings were .5 hectares or less in 62% of the communities, from .5 hectares to 1 hectare in 19% of the communities and from 1 hectare to 1.5 hectares in 14% of the communities. One can see that landholdings have diminished to very inadequate sizes, especially in light of observations that, given the

agricultural technology of the country, a farm land of about one hectare would be required to meet the food requirements of a household that has five members (Mulat 1998). In short, households in 81% of the communities control an average of less than one hectare of farmland, an amount that is insufficient to meet food requirements even in relatively good rainfall years. Land shortages are further exacerbated by our finding that, on the average, 22% of households in the 21 communities were landless.

There appear to be some differences in access to landholdings among communities in different agroecological zones (**Table 4**). Average landholdings among households who had land was less than .5 ha. in all the *dega kebeles*, in comparison to only 50% of the *kebeles* in the *woina dega* and *kola* zones. Landlessness however, appears to be more prevalent in *woina dega* and *kolla* areas (60% and 44% of *kebeles* reporting more than a 20% landlessness rate, respectively), in comparison to *dega* areas (14%). Communities' distances to market centers also appears to be associated with variable access to land, as 80% of the *kebeles* which were less than 10 km from a market center had average landholdings of less than .5 ha., compared to 50% of the *kebeles* which were more than 10 km away from market centers. Forty six percent of the former had more than 20% of households which were landless as compared to 30% of the latter. The possible disparity in landholdings may arise from higher population density in areas closer to market centers.

The main mechanisms of access to cropland that were frequently mentioned in the group interviews were land redistribution by local officials, sharecropping, rental arrangements and inheritance (**Table 5**). As we can observe from the table, ongoing land redistribution has been the major means of peasant access to land (mentioned by 95 % of both male and female groups). It was also noted by many of the groups that the last land redistributions were carried out in the few years after the change of government in 1991 when land was distributed to landless people (as reported by key informants in 76% of the *kebeles*), returnees from resettlement (67%), returning ex-soldiers (57%), land-poor people (57%), female-headed households (67%), and others (28.6%). Women may typically have received less land than men however, as in the case of one *kebele* where officials stated that women received only half of the amount that men did.

Although land redistributions did succeed in allocating land to landless and land-short households, many community members had fairly negative comments about land redistributions as indicated by comments describing it as ‘a bad and cursed activity’, that it ‘brought drought with it’ or that it was followed by crop failure. One of the most commonly mentioned adverse effects of land redistributions was that it increased land scarcity by reducing overall plot sizes. Other respondents mentioned that land was transferred from households which had the resources, such as oxen and labor, to cultivate their land properly to resource-poor and less productive households. Land redistributions also unfairly favored local officials and disrupted some land transactions like rental arrangements.

Sharecropping is another common means of gaining access to farmland in the region (reported by 92% and 100% of male and female groups, respectively). Sharecropping was mostly carried out between people who lacked the necessary resources like oxen, seed or labor to adequately cultivate their land (particularly women and elderly people) and sharecroppers who had such resources but who needed more land. The parties to the sharecropping arrangement each received half of the harvest.

Land rental was the other, less prevalent means of access to land on the market for peasants who had the cash in hand (mentioned by 29% of male and 10% of female groups). Rental rates ranging from *Birr* 50 to *Birr* 400 per 0.25 ha./annum were mentioned in several *kebeles*. It is notable that it was mostly *kebeles* close to large towns such as Dessie, Kombolcha and Bati that reported the presence of land rental, possibly indicating the greater degree of monetization of transactions in such locations.

Respondents also discussed changes in the land market with respect to trends in the terms and occurrence of transactions (**Table 7**). In the case of sharecropping arrangements, they noted the growing incidence of requests by landowners for cash advances in the form of loans (mentioned by 19% and 14% of male and female groups, respectively). Similarly, landowners were more likely to demand 50 percent of the crop residues from the harvest, which previously belonged to the sharecropper (19% and 5% of male and female groups, respectively). The responses with respect to changes in the incidence of sharecropping were mixed, some groups saying that sharecropping had increased (29% and 5% of male and female groups, respectively), and others claiming

that sharecropping had decreased (19% and 14% of male and female groups, respectively). It is apparent that men were more likely to note changes in sharecropping arrangements. This arises from the greater role of married men in arranging such transactions, although many female-headed households did give out their land to sharecroppers. The variability in trends may be due to various factors such as the restrictive effect of the drought on the land market in some communities, or enhanced availability of land on the market in other communities due to the redistribution of land to poor or female-headed households. These households often had to give out their land to other households because they lacked the resources to adequately cultivate the land. The responses regarding changes in rental rates were similarly mixed, probably due to related reasons. It is worth noting that there were a number of communities that claimed that there were no changes in the terms and incidence of land transactions (24% and 71% of male and female groups, respectively). As noted above, women in male-headed households may be less able to note changes in patterns of transactions because men often took charge of arranging household involvement in such transactions.

Inheritance was the other frequently mentioned means of getting access to land, (mentioned by 70% and 67% of male and female groups, respectively), although its current incidence and importance to young households is not clear given the limited sizes of land available to parent households. In addition to the above modes of access to crop land, communal and borrowed land were mentioned by a few groups, while land sales were not mentioned at all.

In contrast to crop land, there were two important sources of land that could be used for pasture, individual and communal land. **Table 6** shows that in a substantial number of communities, individual plots provided through land redistributions were sources of pasture (81% of male and 66% of female groups). Communal lands as sources of pasture were also mentioned frequently (38% of male and 52% of female groups).

Other important communal resources that were widely utilized in the region were forests or wooded land (48% of *kebeles*) and water from rivers, springs and lakes (reported in 47% of the sample *kebeles*. ‘Communal’ forests and wooded lands had actually become state held and administered resources. Springs and streams are the major sources of water for domestic consumption, livestock and small-scale irrigation.

Although interviews indicated that irrigation had a significantly positive impact on food security, only a limited number of households in 9 out of the 21 communities had access to irrigation. Significant proportions of the groups drew our attention to the lack of water for irrigation (81% and 71% of male and female groups, respectively). Moreover, it was mostly communities in the *woina dega* and *kolla* zones that had some access to irrigation, and *dega* areas appear to be less likely to have access to irrigation. Many communities also reported lack of potable water (76% and 57% of male and female groups, respectively), lack of water for livestock (67% and 52% of male and female groups, respectively) and distant water sources (52 % and 24 % female groups, respectively). Some communities also mentioned conflicts over the use of water for irrigation as a significant constraint on their access to water.

Perceived constraints on land use

In addition to forms of access to land, the various groups were also asked to discuss their perceptions of constraints on their access to and utilization of land (**Table 8**). Land scarcity was one of the most commonly mentioned constraint (mentioned by more than 90% of both male and female groups). This is not surprising given the large proportions of households who were either landless or had very small landholdings. Key informants also indicated that land shortages had recently been greatly exacerbated by increases in the demand for land brought about by population growth due to natural increases, and the return of people from resettlement areas, the military and from places such as Assab port where they had experienced displacement. This group of people had been given either limited amounts of land or no land at all which exacerbated the general level of inequality in landholdings, an outcome which was mentioned as a constraint by one group.

In addition to land scarcity, **Table 8** shows that a substantial number of groups also mentioned soil infertility as a problem (38% of both male and female groups). Low household production that is brought about by land shortages is therefore exacerbated by widespread soil infertility. A number of groups mentioned various constraints on productivity such as soil erosion (14% and 5% of male and female groups, respectively), flooding (14% of both groups) and waterlogging (10% of both groups). Other factors

constraining the utilization and productivity of land such as rugged topography and stoniness were mentioned by some groups as well. Two groups from communities which were located in Weredas on the eastern escarpment of the region revealed that conflict over communal land between Afar pastoralists and Oromo or Amhara peasants had prevented the latter from using such land for cultivation or pasture.

The alienation of valuable communal pastures and forests by government for the purpose of conservation was also mentioned as serious obstacles to their access to resources by a number of groups. They complained that the closing-off of grazing areas seriously limited the amount of feed available for their livestock, restricting them to small individual grazing plots. Similarly, respondents lodged objections against prohibitions on acquiring wood from restricted forests and woodlots, which would have enhanced their ability to withstand periods of severe food insecurity.

Access to Labor

Labor availability is an important determinant of household productivity and food security. Households in the study area utilize three sources of labor for agricultural production: family labor, hired labor and reciprocal labor. Family labor is by far the most important source for the subsistence-oriented households of the region. Discussions with community groups revealed that, because of the limited size of their landholdings and reduced production brought about by the drought, most households had surplus amounts of labor, currently. They explained that this resulted in a significant degree of unemployment and underemployment. High fertility rates, small land holdings, landlessness and drought were thought to be the major factors behind the excessive labor force in the region.

However, significant proportions of households, particularly elderly and female-headed households as well as the sick, experienced severe labor shortages which limited their productive capacity. As a result, many such households were compelled to engage in sharecropping arrangements, thereby getting only half of the grain produced on their land. Furthermore, community groups in the lowland areas of the region noted the adverse impact of malaria on labor productivity. It was also apparent that the widespread food shortages that many households were experiencing left many people too hungry and

weak to engage in the difficult tasks of land preparation and weeding. This was expected to have a negative impact on production levels of the 1999 *meher* season.

A limited number of households in most of the study communities resorted to hired labor to meet some of their labor deficiencies. Respondents in about 70% of the communities reported the presence of wage labor mainly in years of optimal rainfall and satisfactory production levels. In fact, the demand for hired labor may be much stronger during normal seasons. As reported by a group in one *kebele*, 'when the harvest are good, labor is in short supply'. Another *kebele* which was located close to Dessie and which had favorable access to irrigated water was reported to have particularly high levels of wage labor. However, due to disappointing crop conditions in the current year, the demand for labor was low or non-existent in almost all of the study *kebeles*. Groups in about a quarter of the *kebeles* reported the absence of any wage labor at all, probably a result of particularly severe land scarcity and low production levels. More *kebeles* from the *woina dega* and *kolla* *kebeles* (67%) reported the presence of agricultural wage labor in comparison to *dega kebeles* (33%) probably because of greater differentiation and more favorable agricultural conditions in the former areas which allowed some households to hire wage laborers.

Community members agreed that there were distinct differences between households which hired in labor and those who were more likely to hire out members as wage laborers. Households which hire in labor are prosperous in most cases, including those experiencing good harvests, and those who have large holdings, high quality land and oxen, but also those who lack sufficient labor such as families with many small children or children who are attending school. Some of the elderly, who often fall short of labor, are able to employ laborers as well, particularly for cultivation and harvesting purposes. Conversely, households which hire out labor are most likely to be those which produce insufficient food themselves and who therefore need supplementary income in order to meet their needs. They consist of the poor, the landless or land-poor, young heads of households, returnees from resettlement areas, and those without oxen.

Reciprocal labor exchange arrangements are also a widespread source of labor in South Wello and Oromyia zones. Common types of reciprocal labor are known as *wenfel* and *debo*. *Wenfel* refers to an exchange of labor between a few neighboring farmers,

sometimes along with their family members, who work in turns on each other's farms on such tasks such as ploughing, weeding or harvesting. *Debo*, on the other hand, is arranged by an individual farmer who requests the voluntary assistance of other farmers for a work day in order to help him or her complete similar tasks. This is therefore not a proper labor exchange since the host farmer is only obligated to provide lunch for the rest of the participants. Respondents cited the various advantages of engaging in reciprocal labor: to complete tasks in a timely and efficient manner in order to reduce losses and risks; to enhance endurance and to make work more enjoyable; and in the case of *debo*, to provide assistance to households which lack labor, oxen and cash. A large proportion of male and female groups asserted that at least some or most households in their communities engaged in reciprocal labor (**Table 9**).

The community assessments also attempted to document possible changes in the labor market. Decline in the hiring of labor was the most commonly mentioned change in the labor market (47% and 38% of male and female groups, respectively) (**Table 10**). This was attributed to the current drought and poor crop conditions which lowered the demand for labor. The same factors were thought to account for recent decreases in wage levels as well (reported by 24% of male groups and 5% of female groups). Other communities noted more long term rises in wage levels (24% and 19% of male and female groups, respectively). Other changes that were less frequently reported appear to be signs of increasing monetization: shifts from payments in-kind to payments in cash, and increasing replacement of reciprocal labor exchanges by hired labor.

Agricultural Credit

The provision of agricultural credit to subsistence farmers who have minimal amounts of capital or savings can play an important role in promoting the use of modern agricultural inputs and enhancing the productivity of land and labor. As in much of Ethiopia, the availability of farm credit was found to be limited in South Wello and Oromiya zones. Key informant interviews with *kebele* leaders showed that agricultural credit was available in all of the *kebeles* studied although the proportion of households receiving credit was limited and variable. **Table 11** shows that in 67% of the study *kebeles*, only 20% or less of households received loans of any kind; 19% of the *kebeles*

had between 21% to 40% of households which received loans, and only 14% of households had more than 40% of households participating in loan programs. The *kebeles* with high rates of involvement were more likely to be located in the *woina dega* (67 % of *kebeles* having a participation rate of more than 10%) zone as compared to *kebeles* in the *kolla* (56%) and *dega* (33%) zones (**Table 12**), as a result of less favorable agro-climatic conditions in the latter zones which discourage peasants from using fertilizer, the most important object of credit utilization in the area.

A number of institutions were found to provide agricultural credit in the study area. Bekele's (1995) categorization of sources of rural credit in Ethiopia as formal and informal is applicable to our study area. The formal sources of credit for the communities include Woreda Agricultural Offices which have been serving as intermediaries for funds from the Commercial Bank of Ethiopia for almost all the study *kebeles*; the Development Bank of Ethiopia for five *kebeles*, the Amhara Credit and Saving Institution for 13 *kebeles*; and the Ambasel Trading Company for one *kebele*. The informal sources of credit were Rural Service Cooperatives which were mentioned in only one *kebele*, and individual money lenders in 3 *kebeles*. A few NGOs such as World Vision, Kale Hiwot and Concern and also provided credit to a limited number of farmers.

These institutions have been providing credit to farmers either in cash or in-kind in the form of items such as fertilizer, improved seed or livestock. Credit was utilized to acquire the following items (mentioned by either men or women): to purchase fertilizers (81% of *kebeles*), improved seeds (48%), livestock for fattening purposes (76%), farm oxen (57%), chicken (14.2%), farm equipment (1 community: 4.8%); and to finance small scale trading (19%). A group in one *kebele* mentioned the use of credit for the purchase of food items.

Despite the wide range of purposes for which they are offered, the provision and utilization of credit has been constrained by a number of factors. **Table 13** shows that recurrent drought was identified as the major constraint on the utilization of credit, because it prevented the effective use of modern farm inputs purchased through credit such as fertilizers and improved seeds (reported by 29% and 24% of male and female groups, respectively), and by causing physical deterioration or death of livestock purchased for fattening purposes or for draft power which was reported by 29% of the

male and 10% of the female groups, respectively (This accords with the fact that men are responsible for livestock transactions). Informal discussions have revealed that drought has significantly increased indebtedness amongst the peasantry. **Table 13** also shows that factors arising from the low economic status of most farmers such as lack of surplus, lack of assets like livestock and land, and inability to repay loans by some members of groups borrowing funds jointly have also been important in preventing increased involvement in credit programs. Although the table also shows that there is not enough credit to cover everyone's needs, it appears that the poorer segments of the population, who have acute needs for capital resources, find it much more difficult to gain access to credit.

Household Savings

Savings are an important means of ensuring the economic viability and food security for rural households. In response to inquiries as to why they save, community groups were most likely to mention the need for a buffer in time of need (57% and 43% of male and female groups, respectively (**Table 14**). This could be an occasion such as the marrying-off of children which can be a huge drain on household resources. In a related response, the same number of male groups said that they save in order to avert disaster. The attainment of economic growth was an important goal as indicated by community groups which stated that the accumulation of wealth (19% of male groups) and the desire to invest (10%) were some of the reasons for why households saved. Other reasons for saving were related to the need to meet various expenditures such as children's education, housebuilding, payment of taxes and debts, and the purchase of clothes and other consumer goods.

Households in the region used a wide variety of mechanisms for saving (**Table 15**). Some of the most important means of saving consisted of livestock fattening (81% of male and 33% of female groups) and livestock accumulation (38% and 5% of male and female groups, respectively). The other important means of saving was the storage of grain, including the use of underground compartments called *gudguad* (62% of male and 5% of female groups, respectively). This indicates that the introduction of modern storage as the well as the promotion of pesticide use may have a substantial positive

impact on households' savings capacity. The use of community institutions such as burial societies or *kires*, rotating credit groups or the *equb*, and animal share-rearing arrangements for the purpose of saving resources was also reported by a number of groups. Other savings mechanisms that were also mentioned less frequently included loaning out grain with interest, the use of banks and the purchase of property such as gold. The latter two mechanisms in addition to the *equb* were mentioned only by women, that may indicate that these were particularly important to them.

Agricultural Inputs and the Extension Package

An important component of the community assessments was the collection of data on participation in the use of agricultural inputs and the extension package, as well as the impact of and constraints on the use of modern technology such as artificial fertilizers, improved seeds, herbicides and insecticides. Dissemination of agricultural inputs in the study area was carried out by Woreda Agricultural Office and the Ambassel Trading Company, which often operated jointly.

Participation in input use was found to be quite low in most of the *kebeles* in the study. In 57% of the *kebeles* in the study, only 20% of households or less used modern inputs, while another 29% of the *kebeles* had a participation rate between 21% and 40% (**Table 16**). There were locational differences in rates of input utilization, as the proportion of input users was more than 20% in 83% of the *kebeles* in the agroclimatically more favorable *woina dega* areas, in comparison to 17% and 25% of the *kebeles* in the *dega* and *kolla* zones, respectively. The differences probably arise from better fertilizer performance in *woina dega* areas which results in greater adoption rates in that zone. On the other hand, input utilization appears to be inversely associated with distance to a market center to town (56% of the *kebeles* which were greater than 10 km away from a market center had a greater than 20% utilization rate, as compared to 27% of the *kebeles* which were less than 10 km from a market center). The reason for this unexpected difference is not readily apparent, however.

Community members articulated what they thought to be important constraints on input use. Not surprisingly, the drought was the most frequently mentioned factor

limiting increased use of modern inputs (57% and 29% of male and female groups, respectively) (**Table 17**). Many people who acquired inputs through credit were thrown into debt as a result of drought-induced crop failure (mentioned as a constraint by 10% of both male and female groups). They were unable to repay their debt and often wound up impoverished, being left less able to engage in farming as a result. Respondents also frequently complained about pressures to repay loans on their use of fertilizer in such a period of severe food scarcity. The following are a few of the reports on people's attitudes to the input provision program:

- "People are reluctant to borrow because crop failure has left people unable to repay their loans."

- "Drought conditions have undermined the effectiveness of the activities for which farm loans were received. The men complained that the fertilizer does not give good results, yet agricultural officers still make the peasants purchase more of it."

- "...The insistence that farmers repay fertilizer loans, despite serious crop failure, is said to be worsening the local food security situation."

- "Some people have been left poorer and less capable to engage in farming due to severe indebtedness."

- "Now people face what the men called 'the bad effects of credit', the need to repay the loan despite the severe crop failure and their lack of money. The women reported that 'people are very scared of repayment problems. They suggested that the main beneficiaries of the programs so far have been only the sellers of hybrid seed and fertilizer."

- "People strongly complained about indebtedness, forced upon them by the obligatory loans. They also spoke out against the pressures to repay their loans at a time of severe food scarcity. The women were recorded as saying, 'We are crying because of debt payment. Fertilizer loans have been great problems. The women observed that people are weary of taking on any more loans because of the present situation."

A substantial number of communities also thought that the high price of inputs limited their use (24% and 19% of male and female groups, respectively), whereas 14% of the female groups mentioned limited access to cash as a constraint on input use. Other communities mentioned inappropriateness of farmland for input use, crop diseases, excessive rain, unavailability of improved seeds and untimely distribution of seeds as additional factors restricting increased utilization of inputs.

In addition to its regular dissemination of agricultural inputs, Woreda Agricultural Offices have recently started to implement an agricultural extension package program. The program selects farmers who would participate in the program on the basis of criteria

such as ownership of oxen, identifies farm plots on the basis of suitability for input use and demonstration purposes, administers the provision of fertilizer on a credit basis, and offers advice on land preparation, and timing and rates of input applications.

Participation in the package program was also low (**Table 18**). Sixty two percent of the *kebeles* had a participation rate of only 20% or less, 19% of the *kebeles* had between 21% to 40% of households participating, and only 14% had more than 40% of households participating in the package program. Again, participation in the agricultural extension program was higher in the *woina dega* areas (67% of them having a greater than 20% participation rate) as compared to the *dega* (17%) and *kolla* (22%) *kebeles*, whereas greater market distance to a market center surprisingly also appears to be associated with greater participation rates in the Extension Program.

Part of the reason for such low participation rates is that it is still a relatively new program. Another reason could be the perception that, mainly due to the drought, the benefits of participating in the program have either been limited or variable. Consequently, it was quite common to hear peasants complain that participation in the package program had actually hurt them economically, as it was to hear their objections to the undue pressures to use inputs that they said was exerted on them by extension officials. After combining the responses of male and female groups, respondents in only 14% of the communities stated that the package program had resulted in increased yields, groups in 38% of the communities complained about failure of crops planted under the extension program, while another 38% felt that there was no difference in crop performance with or without the package program.

It is therefore apparent that attempts to increase use of modern inputs face serious obstacles such as unreliable rainfall and the resultant poor performance of the technology, discouragingly high prices and the low resource levels of households, as well as unreliable or limited availability of such inputs. These constraints need to be addressed in the form of additional measures such as improved access to irrigated water, subsidization of inputs, better access to credit, improved targeting and distribution services, if we are to see beneficial and sustained growth in the adoption of modern inputs.

Non-Agricultural and Off-Farm Income Earning

In the context of limited household agricultural resources and production, non-agricultural and off-farm income sources can have an important role in strengthening the economic viability and food security of rural households. The types of non-agricultural and off-farm income earning activities mentioned in the group interviews included food for work, sale of firewood and charcoal, urban day labor, spinning yarn, basket work, pottery making and other handicrafts, grain and livestock trading, alcohol brewing, skilled work and migrant labor to the coffee plantations in the western regions of the country, and to the cotton plantations of Asayta in Afar region. Activities such as the sale of firewood, urban day labor, spinning yarn, basket work and alcohol brewing were possible mostly in *kebeles* which were relatively closer to towns. **Table 19** shows that the most frequently mentioned income sources by both the male and female groups were food-for-work, migrant labor and daily wage labor, indicating that employment-based activities were some of the more widely available non-agricultural income sources. Less frequently mentioned but still fairly common activities were spinning yarn, basketwork and the sale of wood, grass and straw. The possibilities of earning income from different sources appear to have some relationship with agroecology and market distance. Daily wage labor seems to be more common in *dega* areas (reported by 67% and 83% of male and female groups in that zone, respectively), whereas migrant labor and food for work were reported more frequently in the *dega* and *kolla* zones. This is likely to arise from a greater need for non-agricultural income in the *dega* and *kolla* areas, which are less favorable to agricultural production in comparison to *woina dega* areas. Opportunities for daily wage labor expand with greater proximity to towns and market centers (**Table 20**). *Kebeles* which were less than 10 km away from a market center were more likely to mention daily wage labor as a source of income in comparison to *kebeles* which were more than 10 km away from a market center (**Table 21**). On the other hand, migrant labor and food-for-work were mentioned more often in *kebeles* that were more than 10 km away from a market center, possibly because of the lack of alternative sources of income. Examples would be women's handicrafts such as spinning yarn and basketwork which were also reported more frequently by women in areas that were closer to towns.

Other activities which were more important to women were alcohol brewing, selling fuelwood and charcoal, food-for-work, grain trading and pottery making. Among such activities, women most often mentioned brewing alcohol (24% of the female groups), spinning yarn (19% of the female groups), and selling fuelwood (19% of the female groups, **Table 22**). Not surprisingly, women were more likely than men to mention most of the income sources important to women. Judging from the responses of men and women in **Tables 19** and **22**, that while migrant labor appears to be more important for men, women were more often mentioned petty trading and handicrafts that they were more likely to engage in.

The community assessments showed however that the availability of non-agricultural and off-farm income sources was limited and variable across different areas of the region, and that the income that households derived from them was not significant. Most of the group interviews indicated that such income sources did not have much of a role in enhancing the food security of households. Although this was because they were limited and less reliable sources of food supply as compared to agriculture, it was apparent that non-agricultural income sources helped many households meet shortfalls in their food requirements, and there were some groups which stated that they did have an important role, at least for some households.

There were significant constraints on people's access to non-agricultural and off-farm income. Interviewees repeatedly pointed out the lack of employment opportunities and the low level of demand for their labor and local products in the rural areas. The lack of any towns nearby and poor transportation was thought to further reduce income-earning opportunities in some areas. Urban jobs were usually not accessible to peasants even in the surrounding areas because of lack of information and competition from urban residents. The prices of local products such as firewood and handicrafts had declined to very low levels mainly because of low demand arising from the poor crop conditions. Enterprises such as grain and livestock trading or handicraft production were often not found to be profitable. Respondents also stated that they commonly lacked the capital that they required to be involved in such activities as trading. Their lack of skills and knowledge also prevented them from engaging in certain types of skilled work or handicraft production.

In terms of the importance of some of these constraints on non-agricultural income earning, greater proportions of the male groups mentioned the low demand for products (14.3%), and their labor (19%), as well as the simple unavailability of income earning options (58%) (**Table 23**). Women were more likely to mention the lack of investment funds (23.8%), the low demand for their products (33%) and their labor (23.8%), and unavailability and intermittent nature of income sources (33.3% and 14.3%, respectively). These constraints are all characteristic of the kinds of activities that women are particularly likely to engage in such as alcohol brewing, spinning yarn, basketwork and firewood sales. It is apparent therefore that the low surplus levels in rural communities in addition to their remoteness from urban centers have resulted in low demand for local products and labor. Also, the lack of startup capital appears to have prevented some households from engaging in non-agricultural activities.

Food for work projects which are often only available only during periods of severe food insecurity and mostly involve only the poorest and most food-insecure households. It was apparent from the interviews that opportunities for engaging in migrant labor have declined in a substantial manner as well. Many state farms have either been shut down or continue to function at low capacity, significantly reducing the amount of employment available to peasants. Other factors that have had a negative impact on the employment opportunities available to peasants are the closing of Assab port and possibly the regionalization policy of the country which may have a restrictive effect on migrant labor. The significant risks associated with migration to remote areas such as disease and malnutrition also discourage peasants from considering such options. Generally, we see that non-agricultural and off-farm income sources, even though important as supplements to household food and cash supplies, are too limited and unreliable to be the basis for significant resource accumulation.

Facets of Food Security in the Region

It was apparent from the interviews that both chronic and acute food-insecurity were common phenomena in South Wello and Oromiya zones. Seasonal food shortages occurred in all of the study *kebeles* starting as early as April and extending to September or October in areas which primarily relied on the *Meher* rains for cultivation, and

stretching from as early as January to as late as August in the *Belg* areas. Key informants in 10 of the 21 *kebeles* (48%) stated that a large number of families in their communities experienced 3 to 4 months of food shortages per year, whereas informants in 9 *kebeles* (43%) said that seasonal food shortages could be as long as 6 to 8 months. Seasonal hunger is therefore a widespread and serious problem in the region, although there is considerable variation in its severity.

Conditions were especially worse in 1999, the year of the study, because the region has been experiencing repeated crop failure and severe threat of hunger for a period ranging from two to seven years in various *kebeles*. Eight of the 21 *kebeles* (38%) had experienced 2 to 3 years of crop failure and severe threat of hunger, whereas 13 or 62% of the *kebeles* had experienced from 4 to 7 years of crop failure. By the time this study was being conducted therefore, households in the region had become very vulnerable because their food supplies and resources had dwindled to extremely low levels as a result of repeated crop failures.

The causes of these crop failures were primarily drought, but also pests, frost, rust, hailstorm and untimely or excessive rainfall. This was underlined by the large numbers of *kebele* officials who thought that drought or untimely rainfall (100%), crop disease (38.1%), frost and hailstorm (33.3%), as well as land shortage were the greatest threats to food security. Land degradation, declining crop yields, lack of oxen, increases in population, seed shortages, disease and inability to double-crop were mentioned in this respect as well.

As we can expect, such failures on the production side were exacerbated by very adverse market conditions which got especially worse in 1999. Grain prices in all the markets of the region soared to some of the highest levels peasants had ever seen. Within the period extending from December to May, prices of sorghum per kilogram rose from Birr 1.25 to Birr 2.00 in some areas, from Birr 0.8 to Birr 1.35 for maize, and from Birr 2.50 to Birr 3.50 for wheat. In some of the smaller markets, the amount of available grain was low and often run out as early as 11:00 a.m. Part of the reason was that grain traders stopped coming to some of the more distant markets because of the lack of effective demand for their marketable grain. On the other hand, livestock prices plummeted to very low levels because of oversaturation of the market as well as the very

poor physical conditions of the animals. For example, oxen which were normally valued at Birr 1000 were being sold at Birr 400 in May of 1999, but prices as low as Birr 100 were common as well. As a result, many peasants found it difficult to sell their animals at all. Similarly, the prices of other products that peasants brought to the market such as wood fell substantially, whereas the prices of items such as salt, sugar and other commodities that they bought from the market increased.

Examples from community assessments in two *kebeles* further illustrate the conditions that people were facing in 1999:

People in Tebasit kebele in Dese Zuriya wereda reported that less food was presently available in local markets compared to past food shortages. Grain prices have been rising, as well as the price of salt, sugar, and other commodities. In contrast, livestock prices have sunk. The men's focus group noted that livestock prices have been largely depressed for five years, and that they dropped steeply since last year. In comparing the present situation to the past, both men and women in Tebasit observed that grain is scarcer. According to the men, in the 1984-5 famine, for example, grain prices were not as high, and there was grain available locally. Today, prices are not only higher, but also at times grain cannot be found in the local market.

In Mariye (Ambassel wereda), the severe food shortages reportedly caused some people to leave the kebele in search of food, work, and relief. The officials stated in April 1999 that whether the rains come or not, relief was urgently needed, or deaths would soon follow. Both focus groups claimed that grain prices had risen considerably, exceeding the levels experienced in the 1984 famine. They also stated that livestock prices had fallen rapidly. The men's focus group emphasized that better conditions existed for livestock in 1984, and that the prices for animals were higher at that time.

In the year of the study therefore, peasants had very low access to grain and other necessary items on the market due to the rise in the prices of such items and their low purchasing power. Most of the groups that were interviewed agreed that such market conditions were worse than those in the famine year of 1984-85, in that grain prices were higher and livestock prices were lower this year. In addition, respondents asserted that there was more grain available on the market in 1984-85, possibly because there were not as many consecutive crop failures then. Possibly for the same reason, the physical conditions of livestock was thought to be better in that year when compared to the

present, which made it easier to sell animals in the previous period. It should be noted however, that peasants in three *kebeles* felt that grain was more expensive and less available, and livestock prices lower in 1984-85 as compared to the present. This may be due to local variations in the comparative performance of agriculture in the two periods.

The combination of repeated crop failures and adverse market conditions have brought about extremely dire conditions for the population of the region in the year of the study. In almost all *kebeles*, respondents mentioned a rise in the occurrence of mortality, hunger, diseases, deaths and forced sale of livestock at low prices, and outmigration. In addition to the immediate physical outcomes for people therefore, widespread impoverishment occurred due to loss of people's wealth in livestock. Although, the adverse agricultural conditions had a disastrous impact on almost all households of the region, the poorest households started to suffer the earliest and most severely. When asked which households were the first to suffer from famine, key informants stated that it was households headed by the elderly and women, those with many children, landless and land-poor households, and those without oxen or other livestock. Other types of households that were mentioned were resettled returnees and those households which did not have access to irrigation.

The severe agricultural conditions had a negative impact on social relationships as well. Invariably, respondents in the study *kebeles* reported a substantial decline in the level of assistance and exchanges occurring between relatives and neighbors. People commonly talked about the ways in which relatives and neighbors previously used to help one another in the form of grain and cash loans and gifts when some faced seasonal shortfalls, loans of oxen and other livestock for cultivation and breeding purposes, adoption of children, labor exchanges and provision of farm employment. Households also used to conduct various types of social ceremonies such as coffee-drinking sessions, weddings and feasts as well. Because of substantial differences in production regimes and seasonal variations in grain supply between agroecological zones, exchanges of various types of grain for planting and consumption purposes between people residing in different zones was an important way in which they fulfilled shortfalls in their requirements. As a direct result of the universal impoverishment associated with repeated crop failure, such exchanges and support mechanisms had now become almost

non-existent. Because almost all households found themselves in very difficult conditions, even close kin were not willing or able to support each other in the present circumstances.

Similarly, various community based organizations such as the burial associations known as *kire*, and religious groups such as the *maheber* and *senbete*, which held periodic feasts on religious holidays saw rapid declines in levels of participation in their activities. *Kires* significantly reduced or eliminated the contributions made by members in the event of a death of a community member, and the religious groups either abandoned or reduced the scale of the feasts that they held.

In the face of such adverse circumstances, peasants stated that they used various coping mechanisms to survive this and similar periods of severe food shortage or famine. The most commonly mentioned coping practices consisted of livestock sales, migration to other areas for work, other types of off-farm employment, sales of wood or charcoal, dismantling wood or corrugated iron from their houses for sale, and relying on relief assistance in the form of food-for-work projects (**Table 24**). Also frequently mentioned by peasants as coping strategies was the progressive reduction in food consumption levels as grain supplies run out, consumption of meat from their livestock, consumption of wild plants. Although both male and female groups frequently mentioned these coping mechanisms, the relative number of male or female groups reporting a particular coping mechanism appeared to be associated with which sex was primarily responsible for utilizing it. Thus, there were a greater proportion of male groups who mentioned livestock sales (90%), migration (52%) and sale of trees (23%). On the other hand, women were more likely than men to list off-farm employment (33%), relief assistance (42%), firewood sales (33%) and reduction of food consumption (52%), consumption of meat from their livestock (24%), although men were equally likely to mention the consumption wild plants (24%). Again, more female groups (33%) mentioned resettlement as a final option in comparison to male groups (19%), although the reason for this is not readily apparent. Most of these practices are therefore ways in which peasants attempt to maximize their income from diverse and mostly non-agricultural sources so as to meet shortfalls in household food supplies. This underlines the critical role of such income sources in enabling farmers to survive periods of food shortage.

The importance of such coping mechanisms can be expected to vary according to agroecology and distance to market centers or town which present varying constraints and opportunities. Thus, off-farm employment, relief assistance, resettlement and sale of firewood were more frequently mentioned in *dega* and *kolla* areas, possibly because such coping mechanisms are more important in less agriculturally productive areas (**Table 25**). Proximity to market centers or towns was also important for such activities as sales of firewood, trees and even materials taken from the walls and roofs of people's houses, which were all more frequently mentioned in *kebeles* that were located less than 10 kilometers from market centers (**Table 26**). On the other hand, migration and various types of off-farm employment were more likely to be reported in *kebeles* which were further away from market centers, possibly because of the limited availability of other sources of income in such locations.

Peasants also mentioned that they resorted to agricultural employment and grain loans from relatives and neighbors as well. These responses came much less frequently however, indicating that the extensive leveling brought about by repeated failure of production had severely restricted opportunities in the countryside. Other less commonly mentioned coping mechanisms were leaving the area to beg for food or to stay with relatives, selling clothes and other household items, selling dung and crop residues, small scale trading, purchasing grain from other areas and relying on remittances from their relatives in the city. Although these could potentially be important sources of food supplies, it appears they may not have been very promising options during such periods of widespread resource deficits.

Although the significance of such coping mechanisms for households' food security was limited, most peasants also agreed that the scope for utilizing these options at present had narrowed considerably as compared to previous times in their lifetime. The most frequently mentioned changes in the accessibility of various coping mechanisms were the declines in the possibilities for livestock sales, migrant work and resettlement, and levels of relief assistance (**Table 27**).

Thus, peasants drew our attention to the relative lack of animals for sale, their stocks having diminished either because of death due to the drought or because they had been forced to repeatedly sell their animals in prior years. The animals that they had

were not worth much because of their poor physical conditions and the oversupply of livestock in the market. Respondents often had more favorable memories of the 1984-85 famine in this respect, claiming that the physical conditions of livestock were better then, making it easier to sell them at the time. Similarly, the prices of the wood that they brought to the market this year were also thought to be much less than in previous times.

Off-farm sources of income were also thought to be more limited than they used to be. There has been a decline in the demand for hired labor probably because there are few households which are in a position to hire others. The demand for migrant labor in places such as Wollega or Asayita also appears to have disappeared. Resettlement, especially government sponsored, was not much of an option any more.

Another change in the coping practices available to households was the weakening of support arrangements between relatives and community members. Forms of assistance such as grain and cash loans which used to be much more common are now virtually absent because most households have become progressively more and more food-insecure in recent years. Although many respondents claimed that the present period of food shortages was comparable to that of 1984-85, food aid was also thought to be much more limited now. Even wild plants that could be consumed were more difficult to find these days.

Overall then, we see a steady decline in the availability of mechanisms that peasants can use to survive such periods of severe food-insecurity. This is a result of both long term decline in the rural economy and the recent stresses brought on by repeated crop failure.

Opinions Regarding Community's Needs And Proposed Solutions

Community members were also asked to express their opinions regarding the needs of their communities. Not surprisingly, the severe food shortages were mentioned most frequently by both male and female groups. In a related comment, shortages of oxen and seed that arose from the substantial losses that households had experienced during the drought were reported in several communities. The need to address the lack of sources of non-agricultural income by expanding employment opportunities was mentioned as well. Other groups reported the poor performance of fertilizers on their

land and complained about being forced to repay the loans that they had used to acquire the fertilizer. Also mentioned were the lack of health centers, grain mills transport and market infrastructure, schools and sources of clean water, as well as the high incidence of malaria, livestock mortality, plant pests and weeds.

The responses of *kebele* officials when they were asked to make suggestions on how to reduce hunger in their communities paralleled the needs identified by community members. Interventions that would directly address food-insecurity, such as the expansion of food-for-work programs (19%), relief (29%), irrigation schemes (29%), employment opportunities (24%) and soil and water conservation activities (19%) were most frequently mentioned (**Table 28**). Other suggestions were also related to food security or productivity, including credit schemes for the purchase of oxen (10%), provision of crop pesticides (10%) and early-maturing crop varieties (5%), and expansion of development activities (14%). A number of groups mentioned the promotion of family planning as well (19%). The suggestions expressed by community members therefore primarily stressed interventions that would strengthen livelihood and food security in their communities.

Summary and Policy Implications

This paper has presented dimensions of food security and resource access that emerged from community assessments that were conducted in South Wello and Oromiya zones of Amhara Region. It is apparent from the respondents' statement that much of the region was facing extremely severe food shortages as a result of repeated production failures that occurred mainly due to drought, but also because of other causes such as crop pests, frost, rust, hailstorm and untimely or excessive rainfall. They also acknowledged that underlying factors such as land shortages and degradation, lack of oxen, population growth and disease were integral aspects of their vulnerability to food insecurity. The impact of low household food supplies were compounded by adverse market conditions: high grain prices and extremely low prices of livestock that drastically reduced peasant access to the market. Respondents favorably compare the market conditions of 1984-85 to the present conditions, pointing out the presence of lower grain prices, higher livestock prices and greater grain availability in the former period. The

reliability of such comparative reports may also be weakened by peasants' inability to determine differences in real prices as opposed to nominal prices, imperfect memories and the possible desire to paint present conditions in the worst light in the hope of getting more assistance. The comparative performance of the market during the two difficult periods is therefore worth investigating further.

The study also documents the severe consequences of production failures on the physical and economic conditions of people including widespread hunger, elevated mortality and morbidity, and tremendous loss of wealth in livestock due to desperation sales and death. Not all households were thought to be equally vulnerable, as respondents pointed out that elderly and female-headed households, the landless and resettled returnees were some of the types of households that were the first to be vulnerable to severe food shortages. Community relations were affected negatively as well, as social support mechanisms and the activities of community-based associations underwent significant decline, also because they could not be sustained in the face of widespread deficits in food supplies.

In addition to natural factors such as drought, the lack of resources is one of the underlying causes of food-insecurity in the region. Landholdings, for instance, are extremely limited, progressively diminishing to sizes that are no longer adequate for household needs. In addition to factors such as soil erosion, flooding and waterlogging, land shortages are an important factor constraining peasant production. The paper has therefore emphasized community perspectives on the significance of various means of access to productive resources such as land and labor. Households' own landholdings and labor resources are still the cornerstone of their food production; and market transactions in land and labor are limited to a small portion of rural households, arising out of a lack of oxen and seed, or land in the case of people who rent-in land.

There are some changes occurring in the market for land and labor: Greater demand for land leading to previously absent requests for cash advances and shares of crop residues, increases in incidence of transactions or rental rates, countered by decreases in incidence of transactions and rental rates in other areas; dampening of the labor market brought about by recent production failures along signs of greater

monetization and gradual rises in wage levels. On the whole, we are presented with a peasantry which is unable to escape food-insecurity as a result of adverse weather conditions, inadequate landholdings, unemployed and under-employed labor, and the limited ('thin') markets in land, labor and capital.

In Ethiopia, the most important strategy adopted to help households experience growth in their agricultural production and income is the provision of agricultural credit and modern inputs. The proportion of farmers accepting credit and inputs in our study area is still quite low, and there are substantial obstacles against expanded adoption. Respondents have pointed out that drought, low resource levels, unprofitability of activities funded by credit, inadequate and untimely availability of credit, and the terms of credit provision such as the high interest rate and short period for repayment were constraints on sustained increases in acceptors of credit. Similarly, some of the main constraints on sustained increases on the use of agricultural inputs were drought, resultant poor performance of inputs and indebtedness, the high prices of inputs, and problems with their distribution.

Non-agricultural and off-farm income earning is the other activity that can strengthen households' food security. In the study area however, we have found that while landholdings are minuscule, non-farm income and employment opportunities also are limited and food-for-work is the main source of non-farm employment. Thus, although many households use non-agricultural income earnings in filling shortfalls in household food supplies, their magnitude and role in serving as a reliable source of security is limited because of the dearth of employment opportunities, low level of demand for local products and labor, unprofitability of many activities, lack of capital and skills, and decline in possibilities for engaging in migrant labor.

Despite its limitations, non-agricultural income earning is one of the important mechanisms by which peasants in the region actively cope with periods of severe food insecurity such as the one that occurred this year. In addition, livestock sales, changes in food habits, relying on social support mechanisms and sale of household items were some of the ways in which peasants attempted to survive such difficult times. It is apparent however, that peasant capacity to deal with such adversity is much weaker presently as compared to previous times. Possibilities for beneficial sales of livestock and local

products, employment and mutual assistance had all declined significantly. The general trend is towards decline in the availability and effectiveness of the options available to peasants as a result of repeated production failures, progressive impoverishment and economic leveling of households, and declines in possibilities for income-earning in other regions.

The expressed opinions of officials and community groups regarding the needs of their communities and interventions that would address food-insecurity conformed with the findings described above. Informants identified severe food-insecurity and associated shortages of seed and oxen that were prevalent during the study period as their most important concerns. The lack of non-agricultural income and the poor performance of fertilizers were also mentioned as other major problems that they were facing. Suggested interventions mainly addressed the identified problems and included expansion of food-for-work and irrigation schemes, employment opportunities and efforts to expand soil and water conservation.

On a methodological note, we believe that the study which used rapid assessment techniques such as key informant and group interviews has succeeded in yielding valuable community level data on conditions of severe food insecurity in the present year that closely paralleled the DPPC's revised appeal for aid, as well as community perceptions of types of and changes in factor transactions and coping practices, constraints on agricultural and non-agricultural activities, credit and input utilization and coping mechanisms. The community assessments also illuminated the impact of agroecology and market distance on access to land, credit and inputs, non-agricultural income and coping strategies. However, household-level data is required in order to produce more definitive data on the impact of interhousehold and locational differences on food security, utilization of inputs and credit, non-agricultural income and coping strategies.

The practice of continually redistributing land as the primary source of access to land has not adequately addressed peasants' need for land, and has brought about tenure-insecurity and diminished landholdings. The introduction of long term leaseholds and

land transactions can help enhance tenure security and also facilitate land transactions which would bring about a more efficient allocation of land and labor resources.

The current landholding situation — characterized by crowded plots in many communities — raises questions about the immediate and long-term ability of agriculture to provide adequate household livelihoods. There is undoubtedly room for technological innovation — incorporating hybrid seeds, chemical fertilizer, or extending irrigation. Policy reforms — in terms of land security, pricing, increased support for infrastructural development (roads, marketing facilities) and so on — may create a more favorable political and economic environment for farmers to intensify their agriculture. Nevertheless, as many of the interviewees observed, people need increased access to off-farm and non-agricultural sources of income. The virtues of food/cash for work or other employment creating schemes for providing additional income to households, poverty alleviation and infrastructural development need to be seriously considered. Increased schooling, specialized training, and other facilities (such as public transport) will enhance their ability to compete for such opportunities. The significant decline in opportunities for migrant labor also needs to be addressed by strengthening and expanding the smallholder cash crop sector and the large irrigated farms in other regions of the country, eliminating legal and political constraints on inter-regional migration and strengthening health facilities where the prevalence of malaria and other infectious diseases is high.

It is apparent that drought has been causing massive loss of rural resources through the death of a tremendous number of cattle, desperation sales of livestock and enhanced expenditures on grain purchases. These developments call for more prompt relief assistance and a greater degree of involvement in the market by government or other agencies in terms of such interventions as purchase and resale schemes for grain and livestock, with a view to minimize the loss of peasant resources due to adverse terms of trade, as well as the provision of animal feed. It would also be highly beneficial to strengthen community and local capacity for grain and seed storage, grain banks, and marketing of local products like trees and handicrafts.

While access to credit can play an important role in strengthening household viability and food security, limited availability of credit and unprofitability of many credit-funded activities have been cited as serious constraints. This calls for a

considerable expansion in the amount of credit available to households and an improvement in support mechanisms having to do with advising peasants, skills training and marketing. There may also be a need to expand the period of time allowed for the repayment of loans. The benefits of credit-based fertilizer provision can also be better realized by encouraging individual initiatives through training rather than a reliance on group quotas. Improved targeting on the basis of regional and local ecological characteristics and household economic status is vital if the use of fertilizers is to have a beneficial, sustainable and cost-effective impact on peasant production. Greater subsidization of inputs and increased involvement of the private sector in their distribution can also play an important role in enhancing peasant access to agricultural technology.

In addition to yield-enhancing technology, agricultural extension should also emphasize the increased cultivation of drought resistant and early maturing crops, as well as root crops and vegetables; better control of flooding and water logging; and improved availability of irrigation. The planting of Eucalyptus trees has had a significant positive impact on household income and ability to cope with food-insecurity. Therefore, strong attempts should be made to further encourage increased household-level planting of trees by strengthening the establishment of community and individual nurseries. This and other initiatives are required to reverse the vicious cycle of poverty and famine that characterizes the South Wello area of Ethiopia

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Table 1. General Features of Sample Communities.

Characteristics of Sample	N	%*
Agro-ecological zone		
Dega	7	33.3
Woina Dega	5	23.8
Kolla	9	42.9
Distance to market center		
Less than 10 km	11	52.4
More than 10 km	10	47.6
Vulnerability to drought prone		
Highly drought prone	12	57.1
Moderately/Less drought prone	9	42.9
Population size	6	28.7
≤ 5000	8	38.4
5001-7000	6	28.8
7001-10,200		
Numbers of households	10	48.0
≤ 1500	11	52.0
1500-5000		
Percent of female-headed hhds	6	29.0
< 20%	7	33.6
20-30%	6	29.0
> 30%		
Distance from all-weather road	13	61.9
< 10 km	7	33.3
> 10 km	15	71.4
Distance from seasonal road	2	9.6
0 km		
5-10 km	13	61.9
Distance from daily market	5	23.8
< 10 km		
> 10 km	12	57.1
Distance from weekly market	8	38.1
< 10 km		
> 10 km		

* Percentages include missing values.

Table 2. Cropping Patterns by Agroecological Zone.

	Agroecological zone					
	Dega		Woina Dega		Kolla	
	N	%	N	%	N	%
Number of Cropping Seasons/Year						
Double Cropping	5	71.4	4	80.0	4	44.4
Single Cropping	2	28.6	1	20.0	5	55.6
Major crop season						
Belg	5	71.4	2	40.0	0	0
Meher	2	28.6	3	60.0	9	100

Table 3. Causes of Declines in Agricultural Production in the Past Ten Years (Proportions of kebeles).

Causes of Decline in Production	N	%
Drought	15	71.4
Pests	12	57.1
Rust	7	33.3
Crop disease	6	28.6
Frost	5	23.8
Soil infertility	3	14.3
Climatic problems	3	14.3
Land scarcity	2	9.5
Use of fertilizer	1	4.8
Waterlogging	1	4.8

Table 4. Average Landholdings and Landlessness by Agroecological Zone and Distance to a Market Center.

Average Landholdings & Landlessness	Agroecological Zone						Market Center			
	Dega		Woina - Dega		Kolla		<10 km		>10 km	
	N	%	N	%	N	%	N	%	N	%
Average size of landholdings	6	100	3	50.0	4	50.0	8	80.0	5	50.0
< .5 ha.	0	0	1	16.7	2	25.0	0	0	3	30.0
> 1 ha.										
Landlessness	1	14.3	3	60.0	4	44.4	5	45.5	3	30.0
> 20%										

Table 5. Means of Access to Crop Land, Percentages of Male and Female Groups Giving Responses. (Multiple Responses Possible)

Means of Access to Crop land	Male Groups		Female Groups	
	N	%	N	%
Land redistribution	20	95.2	20	95.2
Sharecropping	20	95.2	21	100
Inheritance	16	70.2	14	66.7
Rental	6	28.6	2	9.5
Communal lands	1	4.8	2	9.5
Borrowing from family	1	4.8	0	0

Table 6. Means of Access to Pasture Land, Percentages of Male and Female Groups Giving Responses. (Multiple Responses Possible)

Means of Access to Pasture Land	Male Groups		Female Groups	
	N	%	N	%
Land redistribution/Individual plots	17	81.0	14	66.4
Communal land	8	38.1	11	52.4
Sales	4	19.0	4	19.0
Inheritance	2	9.5	2	9.5
Other	2	9.5	4	19.0

Table 7. Changes in Land Transactions, Percentages of Male and Female Groups Giving Responses. (Multiple Responses Possible)

Changes in Land Transactions	Male Groups		Female Groups	
	N	%	N	%
Demands for cash advances	4	19.0	3	14.3
Demands for shares of crop residues	4	19.0	1	4.8
Increases in incidence	6	28.6	1	4.8
Decreases in incidence	4	19.0	3	14.3
Increases in rental rates	2	9.5	2	9.5
Decreases in rental rates	1	4.8	2	9.5
No changes	5	23.8	15	71.4

Table 8. Perceived Constraints Regarding Land, Percentages of Male and Female Groups Giving Responses. (Multiple Responses Possible)

Perceived Constraints Regarding Land	Male Groups		Female Groups	
	N	%	N	%
Land scarcity	20	95.2	19	90.5
Soil infertility	8	38.1	8	38.1
Soil erosion	3	14.3	1	4.8
Flooding	3	14.3	8	14.3
Waterlogging	2	9.5	2	9.5
Uneven topography	1	4.8	2	9.5
Stoniness	1	4.8	1	4.8
Inequality in landholdings	1	4.8	0	0
Alienation of land for projects	0	0	1	4.8

Table 9. Estimated Proportions of Households Engaging in Reciprocal Labor Exchanges, Percentages of Male and Female Groups Giving Responses.

Proportions of Households	Male Groups		Female Groups	
	N	%	N	%
None	1	4.8	2	9.5
Few	2	9.5	4	19.5
Some	11	52.4	11	52.4
Most	7	33.3	4	19.0
Total	21	100	21	100

Table 10. Changes in Ways of Obtaining Labor in the Past 10 Years. Percentages of Male and Female Groups Giving Responses. (Multiple Responses Possible)

Types of Changes in Ways of Obtaining Labor	Male Groups		Female Groups	
	N	%	N	%
Decline in hiring labor	10	47.6	8	38.1
Increases in wage levels	5	23.8	4	19.0
Decreases in wage levels	5	23.8	1	4.8
Change in payments from grain to cash	2	9.5	2	9.5
Changes from reciprocal to hired labor	1	4.8	2	9.5
Increases in hiring labor	0	0	1	4.8

Table 11. Proportions of Households Receiving Agricultural Credit, Percentages of Kebeles. (Based on Key Informant Interviews)

Proportions of Households Receiving Credit	Kebeles	
	N	%
1 - 20	14	66.7
21 - 40	4	19.0
41 - 60	2	9.5
61 - 80	1	4.8
> 80	0	0
Total	21	100

Table 12. Proportion of Households Utilizing Inputs, Credit & Agricultural Extension by Agro-ecological Zone and Distance to a Market Center. Percentages of Kebeles. (Based on Key Informant Interviews)

Utilization of Inputs, Credit & Agri. Extension	Agroecological Zone						Market Distance			
	Dega		Woina Dega		Kolla		<10 km		>10 km	
	N	%	N	%	N	%	N	%	N	%
Proportion of Input Users > 20%	1	16.7	5	83.3	2	25.0	3	27.3	5	55.6
Proportion of Credit Users > 10%	2	33.3	4	66.7	5	55.6	6	60.0	5	50.0
Participants in Ag. Extension > 20%	1	16.7	4	66.7	2	22.2	3	27.3	4	44.4

Table 13. Constraints on Utilization of Agricultural Credit, Percentages of Male and Female Groups Giving Responses. (Multiple Responses Possible)

Constraints on Utilization of Agricultural Credit	Male Groups		Female Groups	
	N	%	N	%
Drought	6	28.6	5	23.8
Credit funded activities not beneficial	6	28.6	2	9.5
Inability to repay loan by members of borrowing group	9	42.8	5	23.8
Insufficient availability of credit	7	33.3	5	23.8
Creditors unwilling to provide credit	2	9.5	3	14.3
Limited purposes of credit provision	3	14.3	0	0
Lack of surplus	2	9.5	3	14.3
Lack of assets	2	9.5	4	19.0
High interest rate	0	0	3	14.3
Short period for repayment	1	4.8	1	4.8
Untimely provision of loan	1	4.8	1	4.8
Reluctance to borrow	0	0	1	4.8

Table 14. Purposes of Savings. Percentage of Male and Female Groups Giving Response. (Multiple Responses Possible)

Purpose of Savings	Male Group		Female Group	
	No.	%	No.	%
As a buffer in times of need	12	57.1	9	42.9
As a buffer in times of disaster	12	57.1	0	0
To accumulate wealth	4	19.0	0	0
For investment	2	9.5	0	0
For housebuilding	0	0	2	9.5
For the purchase of clothes	2	9.5	1	4.8
For the purchase of consumer goods	2	9.5	2	9.5
Children's education	0	0	2	9.5
Payment of taxes	1	4.8	0	0
To improve living conditions	2	9.5	0	0
To pay debt	0	0	1	4.8

Table 15. Savings Mechanisms, Percentages of Male and Female Groups Giving Responses. (Multiple Responses Possible)

Savings Mechanisms	Male Group		Female Group	
	No.	%	No.	%
Fattening livestock	17	81.0	7	33.3
Accumulating livestock	8	38.1	1	4.8
Multi-year storage of grain	13	61.9	4	4.8
Local kire association	2	9.5	1	4.8
Giving out of sheep for share-rearing	1	4.8	0	0
Rotating credit groups (Equb)	0	0	1	1
Loaning grain with interest	1	4.8	0	0
Bank	0	0	1	4.8
Buying property (gold)	0	0	1	4.8

Table 16. Proportion of Households Using Modern Farm Inputs, Percentages of Kebeles. (Based on Key Informant Interviews)

Proportions of Households Using Farm Inputs	Kebeles	
	N	%
None	1	4.8
1 - 20%	12	57.1
21 - 40%	6	28.6
41 - 60%	1	4.8
61 - 80%	1	4.8
> 80	0	0
Total	21	100

Table 17. Constraints on Utilizing Agricultural Inputs, Percentages of Male and Female Groups Giving Responses. (Multiple Responses Possible)

Constraints on Utilizing Agricultural Inputs	Male Groups		Female Groups	
	N	%	N	%
Drought	12	57.1	6	28.6
High price of inputs	5	23.8	4	19.0
Lack of cash	0	0	3	14.3
Indebtedness	2	9.5	2	9.5
Farmland inappropriate for fertilizers	3	14.3	0	0
Crop disease	2	9.5	0	0
Excessive rain	1	4.8	1	4.8
Unavailability of improved seeds	1	4.8	0	0
Untimely input distribution	0	0	1	4.8

Table 18. Proportions of Households Participating in the Extension Package Program, Percentages of *Kebeles*. (Based on Key Informant Interviews)

Proportions of Households Adopting Extension Package	Kebeles	
	N	%
None	1	4.8
1 - 20	13	61.9
21 - 40	4	19.0
41 - 60	2	9.5
61 - 80	1	4.8
> 80	0	0
Total	21	100

Table 19. Non-Agricultural/Off-farm Income Earning Activities, Percentages of Male and Female Groups Giving Responses. (Multiple responses possible)

Non-Agricultural/Off-farm Income Earning Activities	Male Groups		Female Groups	
	N	%	N	%
Daily wage labor	11	52.4	10	47.6
Migrant labor	14	66.7	11	52.4
Food-for-work	14	66.7	13	61.9
Selling wood, grass, straw & charcoal	5	23.8	8	38.1
Grain trading	3	14.3	4	19.0
Spinning yarn	6	28.6	6	28.6
Basketwork	2	9.5	6	28.6
Brewing alcohol	2	9.5	2	9.5
Pottery making	1	4.8	2	9.5
Other handicrafts	2	9.5	3	14.3
Other	1	4.8	2	9.5

Table 20. Non-Agricultural/Off-farm Income Earning by Agroecological Zone. Percentages of Male and Female Groups Giving Responses. (Multiple responses possible)

Non-Agricultural/Off-farm Income Earning Activities	Male Groups						Female Groups					
	Dega		W. Dega		Kolla		Dega		W. Dega		Kolla	
	N	%	N	%	N	%	N	%	N	%	N	%
Daily wage labor	4	66.7	3	50.0	4	44.4	5	83.3	3	50.0	2	22.2
Migrant labor	5	83.3	3	50.0	6	66.7	2	33.3	3	50.0	6	66.7
Food-for-work	5	83.3	3	50.0	6	66.7	5	83.3	3	33.3	6	66.7
Spinning yarn	2	33.3	3	50.0	2	22.2	1	16.7	1	16.7	3	33.3
Pottery	0	0	2	33.3	0	0	0	0	1	16.7	0	0
Basketwork	1	16.7	0	0	1	11.1	2	33.3	3	50.0	1	11.1
Needlework	1	16.7	0	0	0	0	0	0	0	0	0	0
Other handicrafts	1	16.7	1	16.7	0	0	2	33.3	2	33.3	0	0
Grain trading	0	0	2	33.3	3	33.3	0	0	1	16.7	3	33.3
Brewing alcohol	0	0	0	0	3	33.3	0	0	0	0	2	22.2
Charcoal making and selling	0	0	0	0	1	11.1	0	0	0	0	2	22.2
Other	0	0	0	0	0	0	0	0	2	33.3	0	0

Table 21. Non-Agricultural/Off-farm Income Earning by Distance to Market Center. Percentages of Male and Female Groups Giving Responses. (Multiple responses possible)

Non-Agricultural/Off-farm Income Earning Activities	Male Groups				Female Groups			
	Market < 10 km		Market > 10 km		Market < 10 km		Market > 10 km	
	N	%	N	%	N	%	N	%
Daily wage labor	8	72.7	5	50.0	7	63.6	3	30.0
Migrant labor	7	63.6	7	70.0	5	45.5	6	60.0
Food-for-work	6	63.6	7	70.0	5	45.5	9	90.0
Spinning yarn	4	36.4	3	30.0	4	36.4	1	10.0
Pottery	1	9.1	1	10.0	1	9.1	1	10.0
Basketwork	0	0	1	10.0	4	36.4	2	20.0
Needlework	0	0	1	10.0	0	0	0	0
Other handicrafts	1	9.1	1	10.0	2	18.2	2	20.0
Grain trading	2	18.2	1	10.0	2	18.2	2	20.0
Brewing alcohol	0	0	2	20.0	1	9.1	1	10.0
Charcoal making and selling	0	0	0	0	1	9.1	1	10.0
Other	0	0	0	0	1	9.1	1	10.0

Table 22. Non-Agricultural/Off-farm Income Earning Activities Important to Women, Percentages of Male and Female Groups Giving Response. (Multiple responses possible)

Women's Non-Agricultural/Off-farm Income Earning Activities	Male Groups		Female Groups	
	N	%	N	%
Selling wood & charcoal	8	38.1	6	28.6
Spinning yarn	1	4.8	4	19.0
Basketwork	1	4.8	3	14.3
Brewing alcohol	1	4.8	5	23.8
Pottery making	2	9.5	2	9.5
Needlework	1	4.8	3	14.3
Grain trading	2	9.5	3	14.3
Food for work	0	0	2	9.5
Other	0	0	3	14.3

Table 23. Problems in Obtaining Non-Agricultural/Off-farm Income, Percentages of Male and Female Groups Giving Responses. (Multiple responses possible)

Problems Obtaining Non - Agricultural/Off-farm Income	Male Groups		Female Groups	
	N	%	N	%
Lack of opportunities	12	57.1	7	33.3
Low demand for products	3	14.3	7	33.3
Low demand for labor	4	19.0	5	23.8
Inability to compete with urban residents	4	19.0	2	9.5
Poverty/Lack of funds	1	4.8	6	28.6
Income is intermittent	0	0	3	14.3
Lack of transport/too distant	2	9.5	5	23.8
Health-related problems	2	9.5	2	9.5
Lack of skills & experience	1	4.8	1	4.8
Termination of state farms	1	4.8	0	0
Decline in opportunities for migrant labor	0	0	1	4.8
Other	2	9.5	2	9.5

Table 24. Coping Practices Helpful in Surviving Severe Food Shortage or Famine, Percentages of Male and Female Groups Giving Responses. (Multiple responses possible)

Coping Practices	Male Groups		Female Groups	
	N	%	N	%
Livestock sales	19	90.0	15	71.4
Off-farm employment	5	23.8	7	33.3
Migration	11	52.4	7	33.3
Relief Assistance	6	28.6	9	42.9
Resettlement	4	19.0	7	33.3
Sale of firewood	4	19.0	7	33.3
Sale of trees	5	23.8	3	14.3
Sale of wood & corrugated iron from walls and roof of house	6	28.6	6	28.6
Reducing consumption/ changing food habits	8	38.1	11	52.4
Consumption of meat from livestock	3	14.3	5	23.8
Consuming wild plants	5	23.8	5	23.8
Agricultural employment	1	4.8	1	4.8
Sale of grass & crop remains	2	9.5	1	4.8
Sale of household items	0	0	1	4.8
Sale of agricultural equipment	0	0	1	4.8
Relying on grain loans				
Purchasing cheaper grains from other areas	0	0	1	4.8

Table 27. Changes in Coping Practices Within Lifetime, Percentages of Male and Female Groups. (Multiple Responses Possible)

Changes in Coping Practices	Male Groups		Female Groups	
	N	%	N	%
Easier to sell livestock previously	7	33.3	5	23.8
Greater availability of relief assistance previously	7	33.3	6	28.6
Greater possibilities for migrant work previously	6	28.6	6	28.6
Absence of resettlement programs at present	3	14.3	5	23.8
More employment previously	1	4.8	1	4.8
Decline in demand for firewood	1	4.8	2	9.5
Decline in mutual assistance	1	4.8	2	9.5
All coping practices have deteriorated	3	14.3	4	19.0

Table 28. Suggestions on Ways of Reducing Hunger, Percentages of Kebeles. (Based on Key Informant Interviews)

Suggestions on Ways of Reducing Hunger	Percentages of Kebeles	
Expanding food aid	6	28.6
Expanding food for work programs	4	10.0
Initiating irrigation schemes	6	28.6
Expanding employment opportunities	5	23.8
Soil and water conservation	4	19.0
Expanding use of family planning	4	19.0
Credit for purchase of oxen	2	9.5
Provision of pesticides and early-maturing crops	2	14.3
Expanding development activities	3	14.3
Increase involvement of entrepreneurs	2	9.5
Enhancing access to education	1	4.8
Other	3	14.3