Samuel Lemma Kibret

Population changes: Challenges and responses in rural Welenkomi, Central Ethiopia

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Abstract

**POPULATION CHANGES: CHALLENGES AND RESPONSES IN RURAL WELenkOMI, CENTRAL ETHIOPIA**

This article discusses the changes and implications of population growth in Welenkomi area, central Ethiopia. It mainly focuses on the implications of population change on the existing social and economic resources and the strategies taken by the farmers and government in the area. It shows that the average farm size in the area has declined due to the rapid growth of the population. Many landless people have no legal access to land, and hence are compelled to survive by cultivating marginal lands such as steep slopes and stony areas, which accelerates land degradation. As the study revealed, the recent trend is that there has been a change in the demographic behaviour of farmers. The land use change has been characterized by a decline in forest cover while the cultivated area has expanded. Soil degradation and decline in crop production are also major problems for the farmers. People send some of their family members to urban areas to look for other type of jobs. Other people migrate to areas where even members of their own family do not know where they are.

Keywords: population growth, implications, strategies, off-farm activities

Kibret, Samuel Lemma
E-mail: ethiosam2002@yahoo.co.uk
INTRODUCTION

The issue of rapid population growth has remained a hotly debated issue in the world’s social, political and economic affairs ever since the Bucharest conference of 1974. A rapid population growth with slow economic development progress and rampant poverty in the developing world is perceived as a major international challenge. The intricate interplay between population, environment and sustainable development necessitates the evolution of population policies and programs to balance population growth and countries’ capacity to provide for the basic needs of their people.

The general consensus on the significance of interactions between poverty, environment and population growth for sustainable development are indicated by many studies conducted in Ethiopia. Population growth aggravates poverty at both national and household level. At the national level, population growth makes it more difficult to sustain high levels of savings and investments in education, health and other social services that will improve people’s lives and promote further economic growth. At the family level, high fertility reduces the amount of time and resources available for each child. As the poor tend to have large families, they are the ones who suffer more when services cannot match the corresponding growth in family sizes.

In 1971 a socio-economic and nutritional survey of Welenkomi was conducted by Mesfin Woldemariam (Mesfin, 1971). The current study deals with the changes in population and land use in two peasant associations (PAs), namely Bite Ejersalefo and Serwana Debisa in Welenkomi area, which is 70 km west of Addis Ababa, and the part of Dendi Wereda (District), Oromiya Regional State. It ranges in altitude from 2100 to 3000 m a.s.l. and falls within the Dega agroclimatic zone. The area is characterised by slopes ranging from gentle to steep. Most of the area is located in the Awash River basin, while the north consists of tributaries of the river Abay (Blue Nile) and the south consists of the Gibe river basin. There are two major rivers delineating the boundary of the locality, the Huluko in the East and the Jemjem in the West.
The Problem and the Objectives

Arable land is the fundamental economic base for the inhabitants of Welenkomi. As a result of rapid population growth, landholdings are becoming smaller and fragmented. The average size of landholdings has declined, and new households are landless. Consequently, without legal access to land, farmers are forced to use marginal lands. As the marginal lands become unprofitable, the main alternative for the young is to migrate to urban areas. Further, the rapidly growing population coupled with the existing land tenure system has forced the farmers to overuse their soils, with no or little investment that could improve the quality of the land. The feeling of land insecurity due to the existing land tenure system promotes land degradation, with subsequent decline in crop yields and livestock production. The use of archaic technology combined with rapid population growth has also contributed to worsening the quality of the peasants’ lives: peasant households in the region often send family members as labourers to areas with better employment opportunities; pupils leave their schools in search of jobs in better areas in order to help their families; and heads of households also migrate to urban areas. The subsequent result is family disintegration, and some children are becoming street children living a hopeless life. Given the current situation, this study focuses particularly on the farmers in Welenkomi area, based on the objectives stated below.

Study Objectives

The principal objective of this study is to examine the changes and implications of rapid population growth for the resources and the strategies adopted to cope with the problems of rapid population growth.
In line with the general objective, the following specific objectives are addressed:

1. To assess the trends and patterns of population change in the area.
2. To examine the implications of population change on the existing social and economic resources.
3. To appraise the strategies adopted by the farmers and government in the area.

Methodological Approach

The ecological conditions (terrain and accessibility) and population pressure were considered when selecting the sites for fieldwork. From the two PAs, 109 households were selected for a questionnaire survey based on stratified sampling. The sample population was divided into male and female household heads, which in turn were subdivided into agricultural landholders and landless. The number of sample households taken from each of the PAs’ was determined on the basis of their proportion relative to the size of the total number of households in the administrations.

<table>
<thead>
<tr>
<th>Peasant Association</th>
<th>Landholdings</th>
<th>Sex of household heads</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male heads of household</td>
<td>Female heads of household</td>
</tr>
<tr>
<td>Kitchu Bite</td>
<td>Landholder</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Landless</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td>Serwana Debisa</td>
<td>Landholder</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Landless</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>65</td>
<td>44</td>
<td>109</td>
</tr>
</tbody>
</table>

In addition to questionnaires, data were collected from the two selected PAs using the following techniques:

- Key informant interviews were held, including interviews with community leaders and elders.
- Interviews and discussions were held with rural development workers, nurses from Welenkomi Clinic, the principal of the elementary school, administrators of the district, chairmen of the two PAs, the officer from the Rural land Administrative office of the district, as well as street children living in Addis Ababa, and a carpenter originating from the study area.
- Four focus group discussions were held at each PA. The groups were divided into males and females with landholders and landless farmers. This method of data collection has helped to explore the farmers’ attitudes and their responses to rapid population growth and landlessness. Moreover, it allowed getting insight into the existing political, economic, social, and cultural settings of the farmers.
- Personal observations were made to ascertain whether the people actually do rather than what they said they did (Kitchin and Tate, 2000). It was quite important to be in the field during the time when the main farming activities
were taking place, on market days, and during different civic organizations (idir\(^1\), iqub\(^2\)) in order to understand the social settings of the study area.

The Population Debate and Social Change

Although there is a growing recognition of the important linkages between population growth, development and the environment, understanding exactly how these linkages operate is still under debate. Malthusians and Neo-Malthusians argued that population growth negatively affects natural resources and hinders social and economic development (Corbridge, 1995). On the other hand, Boserup (1981) believes that the increase in population pressure contributes to the development of agricultural technology and productivity. Further, the Marxist schools of thought do not see population as a problem in itself, but rather the issue is one of how resources are distributed and used (Mortimore, 1998). The scholars of modernization theory are also optimistic. They argue that developing countries will solve their population problems as they pass through social changes.

The Malthusian view, which states that demographic pressure results in overuse of land and use of marginal lands, is currently the prevailing view in Third World countries, including Ethiopia (Corbridge, 1995). Findlay and Findlay (1987) revealed the poverty and famine disaster of Ethiopia as a classic example of Malthusian situation, where population exceeds available food resources. McCann (1999) has also argued that population growth in the northern part of Ethiopia has affected and changed the natural resource base and landscape.

Population Changes in Welenkomi Area

According to Mesfin (1971), the total population of Welenkomi area in 1971 was 11,928. The 1994 census recorded a total population of 22,175 (11,219 male, 10,956 female) in the locality. By 2003, the area had an estimated total population of 27,581. The increase of 15,653 indicates that the population of the area had doubled within the last three decades (CSA, 1998; 2003).

The population of Dendi Were\(da\) in 2003 was estimated to be 235,350 (ORPO, 2002 with an average growth rate of 2.6% per annum, a decline from 2.7% in the period 1984–1994. The growth rate of Welenkomi area in the period 1994–2003 was calculated to be 2.4% per annum (Fig. 1). Welenkomi area has a total population of 28,354, of which 70% (19,747) live in rural areas, while only 30% reside in the two towns, namely Welenkomi and Ihud Gebeya.

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\(^1\) Community burial associations.
\(^2\) Traditional rotating credit and savings association.
The 1971 study put the rural population at 81.7% (Mesfin 1971), with the two towns, Welenkomi town and Ihud Gebeya, accounting for 18.3% of the total population. In 2003, the rural population of the area had fallen to 70.1%. This change was mainly due to rural-to-urban migration. The rural–urban migration has been induced by various problems, mainly poverty and landlessness.

According to 1994 census, in the rural part of the study area, the mean size of the households was 5.3. The result of the survey also shows the average household size in the two sample areas is 5.1, showing a slight decline over thirty years.

**IMPLICATIONS FOR SOME SOCIAL SERVICES AND ECONOMIC FACTORS**

**Population and Education**

In 1971, the whole Welenkomi area had one government elementary school and 3147 children of school age, ranging between 5 and 14 years. In 2003, there were three elementary schools and 6042 children of school age (7–14). Each school serves children from different PAs in the study area. The number of schoolchildren grew by 48% compared to the findings of Mesfin’s 1971 report. In 1971, the age at which children started school was 5 years, but now it is 7 years. Hence, if children in the age groups of 5 and 6 were added, the difference would be greater.

In 2002, the number of pupils at Gaba Dilbata School was 779, which increased by 196 during the 2003 academic year. In 2003 there were 1184 children of school age (7–14), while the number of registered pupils was 975. It is clear that the increasing population size is creating a pressure on the demand for school facilities. According to the principal, the number of pupils at Gaba Dilbata School is increasing constantly. Shortages of classrooms and teachers are serious problems, which have resulted in up to 130 pupils in each classroom. This profoundly affects the quality of education, both at regional and national level. In 2003 there were 49 school dropouts from Gaba Dilbata School. This figure is high compared to the total number of pupils in the
school. Most of the dropouts are from landless and poor families. According to the principal, the major causes for dropping out of school:

- Parents send their children to other areas to help earn money, e.g. children work as housemaids or herdsmen.
- Most of the female children help their families at home.
- Children take care of their parents when they get sick.

Population and Health

The health care system in Welenkomi is characterised by both limited access and poor quality. There is only one clinic run by the government and this is expected to provide a service for about 30,000 people. The quality of the health service is poor, with most facilities lacking medicines and maintenance. Welenkomi people have to walk more than 10 km to reach the clinic in Welenkomi town.

Changes in Farming Structure

In the rural society of Ethiopia, land is highly valued socially, economically, culturally, and politically since it has formed the basis of sustenance for generations. Land is the primary resource that parents have been using and transferring to their children communally and individually through generations. During the pre-1975 feudal system, farmers used to access land under a tenancy system, whereby they had to pay tribute to the owners of the land (the landlord, church, etc.). However, the 1975 land proclamation put an end to the system, allowing the peasant farmers to have the right to use land up to a maximum of 10 ha per household. Under the land reform of 1975, the farm households were allocated farmland according to their family size, as was the practice in most parts of the country. Nonetheless, statistical correlation between land and family size at the time of this study shows that only 18% of the variation in landholdings is explained by family size.

The continuous increase in the number of rural households leads to continuing demand for farm land. Redistribution may alleviate the problem of landlessness only temporarily, without ending the problem of land shortage and further fragmentation. In addition, the distribution further instils feelings of insecurity among the peasants regarding land use, and hence hesitation in investing in land. Desalegn (1991) stated that frequent redistribution did not only fragment holdings but also exacerbated insecurity, as landholders faced not only decline in the size of their total landholdings but also physical reallocation of redistributed portions of their land.

The distribution of farm sizes among the surveyed households showed that the average holding was 1.8 ha. Taking the average household size of the sample households, the per capita holding was 0.35 ha. There is a high variation in the size of holdings among landholders. Of the 56 sampled respondents who had farm land, the majority (51%) possessed between 2.0 and 2.5 ha of land; only 1.7% of respondents had less than 0.5 ha, 25% had 0.5–1.0 ha, and 5.4% had 1.0–1.5 ha. The unequal distribution of farm land in the area is fuelled by the growing number of landless people. Moreover, among the landholders, 53.6% stated that their agricultural
landholdings had declined. According to 76% of the respondents, the decrease in landholdings was attributed to the increased number of children in their families and in the total population size in the area. Others reported that their landholding size was unchanged (37.5%); they had neither shared out their land to their children nor had gained additional land from others. 8.9% of the respondents who were farmers reported an increase in the size of their holdings. This increase in the size of their farmlands was reported to be due to transference from other family members, mainly when their parents died. The farmers were also asked whether their current holdings were adequate to support their families. 51% of landholders responded that their holdings were insufficient.

In the group discussion sessions, farmers indicated that having no farm land or only a small amount of farm land for cultivation exposes households to food insecurity. For them, small farm land means the impossibility of producing enough food to feed the family and sell as surplus. Moreover, they are also affected by the unfair system of trade exchange. Mizansefaris (local grain traders) control most of the market and the resources of the area. During harvest time, the traders take the products at low prices. The income from sale of grain is not sufficient to support the farmers’ families, so the farmers are forced to enter into unfair agreements with rich farmers or mizansefaris. Such unfair agreements are a great problem in the area. One farmer illustrated how mizansefaris control the land, leading farmers into further poverty:

I borrowed 500 birr from a rich man to pay my debt for fertilizer. I could not pay that money to him. So I signed to give my land for the next two years for the compensation of that money. If I was not poor, I would pay that money. I would not borrow from him and give my land.

In households where land is rented but located at a distance women leave young children unattended for a long time as they spend long hours walking to and from their fields. In the group discussions, the participants said that these long periods of separation between mothers and their children resulted in child neglect, with consequent malnutrition and increased vulnerability to disease.

The question of land redistribution is among the most frequently discussed issues and the one which most people have strong feelings about. Of the respondents, most of the farmers believed that there would be new land redistribution soon. One of the respondents explained this as follows:

During the previous regime officials took more land and the most fertile land for themselves and for their relatives. Some people support the idea of land redistribution but in my opinion the landless and those with little land should be provided with unoccupied, uncultivated land.

Farmers were asked about the future of their children in terms of having farm land. Most of the respondents were waiting for help from the government. The tendency to wait for government help has two implications: the first is that people rely on government handouts instead of having control over their lives; secondly, they leave their children without hope.
Land fragmentation

It was found that 44.6% of the sample respondents in the region held more than two plots at distant places. The survey also showed that farmers operate more than one parcels of land, which can be located long distances apart. On average, the farmers included in the survey cultivated 3.1 plots.

These groups of farmers testified against fragmentation, based on the fact that the spatial dispersion of their plot leads to problems on their farms:

- Time was wasted travelling between plots.
- The fragmented plots consume much labour in protecting against damage caused by wildlife and pests.
- Fragmentation has impacts on technology transfer (extension packages, soil and water conservation activities, etc.).
- Loss of land in when making boundaries and conflicts over access ways.

On the other hand, some respondents whose plots of land are located on steep sloping areas prefer having more plots in different areas than having all their land in one place since this minimizes risks and the effects of hazards.

Increase in the number of landless people

In view of the rural population increase, the absence of new land redistribution in the area, and also the lack of off-farm employment, the landless population is increasing. There is no sector other than agriculture that helps to absorb the rapidly increasing population to earn a livelihood in rural areas. This means that landless people in the area are not able to secure an education for their children.

Of the total 109 respondents, 53 were heads of landless households. Just over half of the respondents (53%) gave the newly formed households following the 1975 land redistribution as the reason for being landless. This indicates that there has been no later land redistribution in the area.. Because farming the marginal lands have become unprofitable and given the scarcity of off-farm activities, the main alternative for the young has been migration to urban centres. From the farmers’ responses, it was evident that most of the landless are young males (76%), females (18%), and widows (6%). This does not mean that females have easy access to farmland. In the traditional society of Ethiopia, property transfer is a right for males, not for females. Traditionally, females have acquired land through marriage, though with the recent amendments in family laws females now have equal access to land. According to one respondent, young men in the study area now marry as a way of accessing farm land.

Changes in land use

The area is characterized by slow socio-economic transformation. Most of the residents are rural people who support their lives through agriculture. The land use changes over the last 30 years have shown the expansion of cultivated land at the
expense of forest and pasture land. Land cover maps of the area for 1971 and 2003 (Maps 2 and 3 respectively) have been derived from the 1971 land use map of the area (Mesfin 1971) and interpretation of the remotely sensed images. For clarity, a brief definition of the various land use types is given in Table 2.

Table 2. Description of the land use identified in the Bite Ejersalefo and Serwana Debisa Peasant Associations.

<table>
<thead>
<tr>
<th>Land use/cover</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scrub- and tree lands</td>
<td>Areas covered with shrubs, bushes and trees, mixed with some grasses.</td>
</tr>
<tr>
<td>Grazing lands</td>
<td>Open grassy areas used for communal grazing, as well as bare land that has very little or no grass cover (exposed rocks) but shown with the same tone on the air photos.</td>
</tr>
<tr>
<td>Croplands</td>
<td>Areas used for crop cultivation annually and for fallow</td>
</tr>
</tbody>
</table>

The 1971 data (Mesfin 1971) show that most of the area (83.5%) was occupied by croplands and fallow land, followed by grazing lands (8.7%). Scrublands accounted for 7% of the study area. In 2003, 93.6% of the total area of the two PAs was covered by crop land. The crop land had increased by 10.1% during the intervening years. Grazing land and scrub covered 4.2% and 0.6% of the total area of the two PAs respectively. Grazing land and scrub land had declined due to the increase in crop land. Settlement accounted for 1.6% in 2003, showing an increase (100%) from 1971. Very little of the tree cover is remaining. The scrub and tree area was formerly under indigenous species, though by 2003 almost all tree cover was of eucalyptus species. There were no areas under fallow at this time. The change in land use compared to the population change seems to be insignificant, since the area was already under the pressure of cultivation, with most of the area was covered by crops.

When the two peasant associations are compared, only a small area of Bite Ejersalefo was under crops in 1971, while most of the area was under pasture and woodlands. Some parts of Bite Ejersalefo consist of steep sloping areas that cannot be tilled. Crop land now dominates the area regardless of the land type, pasture and woodlands have declined to below half their previous sizes, whereas by contrast almost all parts of Serwana Debisa were under cultivation in 1971 and in 2003 (Table 3).

Table 3. Land cover changes in Bite Ejersalefo and Serwana Debisa.

<table>
<thead>
<tr>
<th>Land cover</th>
<th>1971 land use</th>
<th>2003 land use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ha</td>
<td>%</td>
</tr>
<tr>
<td>Croplands</td>
<td>5075.1</td>
<td>83.5</td>
</tr>
<tr>
<td>Scrublands and tree</td>
<td>419.3</td>
<td>7.0</td>
</tr>
<tr>
<td>Grazing lands</td>
<td>525.7</td>
<td>8.7</td>
</tr>
<tr>
<td>Settlement and others</td>
<td>45.5</td>
<td>0.8</td>
</tr>
<tr>
<td>Total</td>
<td>6065.7</td>
<td>1000</td>
</tr>
</tbody>
</table>


1 EROS-1 satellite image from 15 Nov. 2003 scene MBT1-E1164181, geometric resolution 1.7 m.

Soil Erosion and Land Degradation

The growing population has certainly been the most important factor in the observed land cover changes through greater demands imposed on land for cultivation and
settlement and on trees for fuel and construction purposes. Land under little vegetative cover is subject to high surface runoff and has low water retention. Runoff causes sheet erosion to intensify and rills and gullies to widen and deepen. As aforementioned, on the steep slopes of the study area the soils are shallow and exposed to erosion. When explaining the condition in Bite Ejersalefo, the chairman of the Peasant Association said:

Soil erosion is one of our problems. The land as we see now is not covered by any vegetation; there is not even any grass due to overgrazing. People cultivate the land without any care. This has led to the declining fertility of the land.

Changes in Agricultural Production

Table 4 presents the average yields for 1971 and 2000/2001. The crop production shows a decline between 1971 and 2000/2001. Yields have not been increasing to compensate for the reduction in area cultivated per capita and the smaller farm sizes. Given the average farm size of 1.8 hectare for a family of approximately 5 persons, the cereal yields shown in Table 4 (300 kg per hectare) are barely adequate for feeding household members. Further, given current technology and yield levels, most of households that cultivate less than one hectare of land cannot be expected to generate much cash income from farming after meeting their own consumption requirements.

Table 4. Average yield of major crops.

<table>
<thead>
<tr>
<th>Crop type</th>
<th>Yield (kg per ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1971</td>
</tr>
<tr>
<td>Teff</td>
<td>500</td>
</tr>
<tr>
<td>Barley</td>
<td>550</td>
</tr>
<tr>
<td>Wheat</td>
<td>600</td>
</tr>
<tr>
<td>Maize</td>
<td>700</td>
</tr>
<tr>
<td>Sorghum</td>
<td>500</td>
</tr>
<tr>
<td>Pulses</td>
<td>400</td>
</tr>
</tbody>
</table>

The decline in crop production reflects the decline in soil fertility. Agricultural techniques used pre- and post-harvest have remained unchanged, resulting in the reduction in amounts produced. To overcome the decline in soil fertility some farmers use fertilizer but the long-term productivity of the soil is continuing to decline due to land degradation.

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4 Mesfin (1971).
5 Field survey results for Bite Ejersalefo and Serwana Debisa, 2003.
Increasing outputs from the existing agricultural land in the face of increasing pressure on resources is a major challenge for the farmers. They expand agricultural land by cultivating marginal land instead of practicing intensification. Boserup (1981) hypothesized that increasing population pressure leads to adjustment in production that improves the quality and productivity of the land. However, with the current technological development and government policies the increase in production cannot be achieved by farmers.

The use of fertilizers proportionate to the number of farmers is low. According to the development agent from Serwana Debisa, 7240 kg of fertilizer were distributed to 1209 farmers in 2000/2001. Thus, it follows that the use of fertilizer is not progressing as rapidly as desired. According to the participants of group discussion, the reasons for the low rates of fertilizer use are:

- Fertilizer sales are largely financed through credit in the study area. The penalties for all those who fail to repay immediately after harvest may include the sale of assets (e.g. oxen or other animals) or imprisonment by the authorities. Farmers therefore prefer not to take fertilizers because of the loan system.
- Fertilizer credit is expected to be paid regardless of the harvest. There are no clear provisions to help those requesting even the postponement of repayment for the next season. Even with risk of crop failure, credit programs that do not have flexible repayment terms often fail to provide farmers with adequate incentives to use fertilizer.
- Among the main reasons for the declining profitability are the rising fertilizer prices relative to output prices.
- Insufficient infrastructure for transport and lack of storage facilities.

Farmers were also asked about their ownership of livestock. Most (44) of the total respondents with farmland had one or more oxen, whereas 12 of the landholders had none. According to one interviewee, farmers who have no oxen cannot prepare their farms for cropping at the right time. To overcome this problem they use cropsharing, rent or exchange of labour to access oxen. Out of the total number of landless people (53), only 3 farmers had their own oxen, which they rent to supplement their income.

**National Strategies and Their Impacts**

The government has developed strategies to cope with the problems of the increase in population size and its consequences. These government policies and strategies function as a mediator between population growth and natural resources. Fig. 2 shows the policies and strategies of government with cultural and technological factors used as mediator between population and the existing resources. Policies as strategies taken by federal and regional administrative bodies affect the local community directly or indirectly.
Fig. 2. Framework for considering the relationship between population and the environment-mediating factors.

Source: Adapted from MacKellar et al. (1998).

**Rural Welenkomi and Population Policy**

The major objective of the 1993 national population policy (TGE 1993) was not only to reduce population growth but also to improve the quality of life of the population, targeting the basic needs of health, education and nutrition, and also the alleviation of poverty and promotion of the status of women. The policy was formulated in a global view of human development, taking into account the interrelationships between population, agriculture and environment. The policy aimed at helping accelerate demographic transition by extending family planning programmes and by formulating programmes intended to reduce the demand for children.

The policy has the goal of harmonizing the rate of population growth with the country’s capacity to develop and utilize its natural resources for improving the welfare of the people of Ethiopia. Some of the specific objectives indicated in the policy document were reducing the total fertility rate of 7.7 children per woman to approximately 4 per woman by the year 2015, and increasing the prevalence of contraceptive use from 4% (1993) to 44% by the year 2015 (TGE, 1993: 28). However, the question is to what extent are these programmes and strategies are being put into practice. The provision of contraceptives, information and education in the study area is very low.

**Land Reallocation and Insecurity**

The increasing rural population has brought about an increased demand for land resources. The amount of farm land has expanded. Based on this prevailing problem, the Oromiya Regional State Council issued Proclamation 3/2002 (ORPO 2002) to determine the minimum landholding size that can sustain a peasant family, and also to distribute unoccupied land to the new landless settlers and land-deficient families through a detail land inventory and valuation. The federal government has also issued a strategy of resettlement. The question is how long this reallocation and redistribution of land and resettlement continues to be a solution to land scarcity while the population still continues to increase. Planned redistribution of farm land to uninhabited areas involves clearing forests. This creates a problem of land degradation and low agricultural productivity. This land reallocation and redistribution also leads to land fragmentation and land insecurity. Hence, the question of land redistribution is one that most people have strong feelings about.
With regards the land tenure system, while the population factor is recognized as the driving force behind fragmentation, a solution to preventing further fragmentation is sought in ways of securing land tenure, such as through the privatization of land. Many scholars argue that land tenure insecurity and an inappropriate land use system have been responsible for over-ploughing and over-grazing of farm lands in the country. Further, because farm households do not own and hence cannot sell their land, they do not necessarily benefit from any increases in land value. Privatization could help to redress these problems.

If land was under private ownership and the current ethnic-based administration was operational, landless people would be able to buy or acquire land in sparsely populated lowland areas and agriculturally suitable areas. The new ethnic-based administration implicitly restricts the free mobility of the citizens from one part of the country to another since this may lead to ethnic clashes.

The agricultural sector has been given particular emphasis for the overall future transformation of the national economy. The country’s strategy of economic development is Agriculture Development Led Industrialisation (ADLI). According to this strategy, the agriculture sector is expected to generate a surplus, to stimulate aggregate supply and demand, initially in industrial activities linked to agriculture, and subsequently to generate overall economic growth. ADLI focuses on increasing the productivity of the smallholder farms through the use of fertilizers and improved seeds. Yet with the current fragmented farmland and unchanged agricultural technology it is difficult for the strategy to achieve its goals (Berhanu Nega et al., 2002). Small and fragmented farms, poor provision of agricultural inputs, and land insecurity in the study area may not be conducive to the success of ADLI.

**Household Responses to Rural Population Growth**

**Non-farm activities**

Non-farm activities include all kinds of crafts and artisan work, such as making pottery, weaving, woodwork, and other activities such as liquor selling, wood selling, tailoring, commerce, etc. Non-farm activities are quite common as a source of supplementary income in the study area.

Collecting and selling fuel wood is an increasingly important source of non-farm income for the poor in many areas. People make and sell charcoal. This activity has both positive and negative outcomes. The positive side is that it solves the immediate survival problem of landless and poor people by generating income. On the negative side, deforestation continues as people use trees as their raw materials. The area will continue to be prone to deforestation and soil erosion, resulting in land degradation. In turn, this affects the productivity of the land and aggravates poverty.

A few craftsmen in the area produce farm tools such as ploughs and sickles. The farmers confirmed that they have traditionally relied upon these craftsmen for their tools. However, although such craftsmen are valuable to their communities, their social status is traditionally very low. For instance, marriage with the daughter of a blacksmith is not regarded as acceptable in the community. The community views
craftsmen as culturally inferior, mainly because of their craftsmanship knowledge. There is a misconception about portraying the ancestors of the craftsmen as inferior human beings, having the ‘evil eye’, or having close relations to evil spirits or to the devil.

Households with craftsmen are often regarded as outcasts in the community, and traditionally treated with a suspicion that is governed by traditional beliefs. This explanation was supported by a 72-year-old craftsman:

> I got land during the land proclamation of 1975. After two years the members of the community of this kebele [Ejersalefo], took away my land and gave it to others. I was working as a blacksmith in addition to cultivating this land as a farmer. They gave me two choices: one, to continue working as the blacksmith as my ancestors did [which is the expression of despising], or two, to be like them, tilling the land. I chose to be a blacksmith. The income from blacksmithing was better than from cultivating two hectares of land.

**Migration**

From the interview responses it is evident that some of the male heads of households and young people migrate seasonally for temporary work in the coffee-growing area in the western part of the country, and they return back during the summer season to work on their farmland. 29 of the 109 respondents responded that one or two of their family members migrated out to other areas.

The data collected from the destination of the out-migrants shows the rural–urban migration is the main form of migration. Only 2 of the 51 migrants moved locally from these PAs to the neighbouring PAs (rural-to-rural migration). The rest (49) moved to urban centres. The destination of migrants can be grouped into two. The first is internal (i.e. within the study area) towards Ihud Gebeya and Welenkomi town, and involved 5 of the 51 migrants. The second group is external (i.e. out of the study area), and involved 46 migrants. Most of these migrants went to Addis Ababa (21), or to the second preferred destination, Nazret (4). Some of the out-migrants (7) have moved to places unknown for their families. Not all of the rural migrants who move to Addis Ababa succeed in finding a job there. I met a 12-year-old boy from Bite Ejersalefo who was living in Addis Ababa as a street child without any means of help. His landless father left the family, so the son came to Addis Ababa in search of a means of subsistence to support his family.

With the exception of forced migration due to natural calamity and war, in terms of time and space the migrants usually respond to pull and push factors. In the study area, the majority of the respondents said their family members had variously migrated from their place of origin in search of employment opportunities (72.6%), to live with relatives (7.8%), and for better education (3.9%). However, as for the other migrants (15.7%), the respondents did not know why they had left their families. In summary, the form of migration in the study area tends to be both rural-to-rural and rural-to-urban, as well as permanent and temporary migration.
When situations become worse, it is common for people to migrate to another area where they think conditions are better. Migration to urban areas is another possible option, mainly for the young adults. According to an elderly man from Serwana Debisa PA, farmers who move to pick coffee not only bring money to their families but they also bring problems into the area, such as HIV/AIDS. Some members of the families move out to urban centres send money to their families at home, while others may not find jobs at all.

Migration is not only a positive solution to rapid population growth and farm land scarcity but it has also negative sides. Unskilled rural–urban migrants often find that there are limited employment opportunities and that it is difficult, even with determination and hard work, to gain access to any form of economic activity. Escaping rural poverty sometimes leads to them encountering worse conditions, like those of the 12-year-old boy who moved out of Bite Ejersalefo and now lives as a street child in Addis Ababa.

**Tilling marginal lands: short-term solution to long-term degradation**

The greatest risk of land degradation arises when land users do not have a deep feeling for the welfare of the land, not only out of ignorance but also necessitated by reasons of survival. Landless people cultivate marginal lands for survival. One landless man told me that sometimes he tills steep slopes and stony land:

> I had no alternative solution to supporting my little baby and my wife, so I went to Bite Ejersalefo where my relatives have settled. I started to plough a piece of land which is stony and located on a steep slope. It is not occupied by any one. I know it will lose its productivity soon but I will plough it until I find another means.

According to this respondent, he bribes the chairmen of the Peasant Association to allow him to continue to cultivate the marginal land. Thus, the scarcity of land has also exposed landless people to corruption.

**Changes in Household Demographic Behaviour**

People in the study area want smaller families. However, this wish is not sufficiently supported by widely available, good-quality, safe and affordable family planning services, and easier access to them, especially for women. People are still having more children than they want to have. Since family size is dependent on the options people have, the fundamental task confronting family planning is to remove the barriers that separate desirable options from what are regarded as necessary supplies. Family planning methods should therefore be expanded for users. According to Yohannes Kinfu (2001), in Addis Ababa the institutional changes have led to fertility changes below the replacement level through access to educational opportunities and availability of effective methods of birth control.
Conclusion

In general, the study revealed that there has been an increase in the number of landless people due to population growth and unequal distribution of farm land. The average landholding size has also declined over time. The growing human population has undoubtedly been the most important factor to the observed land cover changes through the greater demands it has imposed on land for cultivation and settlement and on trees for fuel and construction purposes. With the increase in population size, farmers are cultivating steep slopes, which is the major cause of soil erosion and land degradation and hence the subsequent decline in productivity. The data from the survey and the response from the interviewees revealed that the main legacy of Malthusian view that higher populations tend to reduce per capita income is applicable to the studied population who practice subsistence agriculture. The data show that population is growing at a more rapid rate than that of resources and food production: farmers have problems in applying modern farm inputs, including fertilizer; the marketing and the credit system discourages them from using fertilizer; there is scarcity of infrastructure services such as transport and modern grain stores; and farmers sell their products at low prices during excess harvest time due to poor marketing.

The study has also shown that at household level people take measures to cope with the problems arising from rapid population growth. The people from the study area migrate to urban centres in search of wage labour, yet at the same time they add pressure to the existing social and economic infrastructure of urban centres. Most of the out-migrants focus on Addis Ababa as their destination, where unemployment is widespread. Others who remain in the locality are forced to use marginal and infertile lands illegally. The opportunity to engage in off-farm activities is very low.

The study has recognized that social and political institutions at local and national level are not playing any significant role in coping with the problems resulting from rapid population growth. The implementation of population policy, with its goals and strategies to bring changes in reducing fertility in the study area, is too slow. With the present demand for services, the locality’s family planning programme cannot be considered successful. In view of the problems in the locality, the government has not worked on the problems as expected and has left society to fend for itself.

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