

Strengthening Emergency Response Abilities

SERA Project

Vulnerability Profile: SUMMARY

Sekota Woreda (district)

W. Hamra Zone

Amhara Region

2000

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A. SUMMARY OF MAJOR FINDINGS

1. Introduction

In June 1997, the Disaster Prevention and Preparedness Commission of the Federal Democratic Republic of Ethiopia hosted a national workshop entitled “Vulnerability in Ethiopia: From Disaster to Development”. Based on the recommendations of the workshop, DPPC designed a project called “Strengthening Emergency Response Abilities” (SERA) and obtained funding from USAID. The goal of SERA project is to contribute to the reduction of vulnerability.

To meet this challenge, the Disaster Prevention and Preparedness Commission of the Amhara National Regional State has started development of vulnerability profiles as of July 1999 and selected the most vulnerable 25 weredas for this activity. This work is part of the pilot phase of development of vulnerability profiles that has been restricted to four weredas – Sekota, Ziqualla, Ebinat and Tach Gayint.

1.1 Key concepts and method

Food security is defined as “access to enough food for a healthy life, always, and absence of undue fear of lack of food”. Vulnerability analysis stresses the fact that security is an important dimension of welfare, and that stability of access to food is as important to food security as the level of access. Vulnerability is concerned with the measurement and characterization of the probability – *likelihood* – of a fall in consumption/income below some acceptable level in the *future*. Vulnerability and poverty/food insecurity are often used interchangeably because vulnerable groups are likely to belong to the population below the poverty line.

A vulnerability map/profile used to estimate parameters of vulnerability should describe hazards, degree of defenselessness against hazards, and the difficulties faced in coping with them. The main objective of the vulnerability profile is to identify areas and population groups that are vulnerable to particular hazards/risks and the causal factors for such vulnerability.

One can measure food security at the country, region, community, household, or individual level. However, food security at its most basic involves access to food by all *individuals* and needs to be monitored at the level closest to consumption by individuals – at the household or individual level. Measuring food security at this level requires intensive household surveys. Accordingly, a household survey was the primary source of the data used in this profile.

Data from the household survey and secondary sources have gaps that make a profile based entirely on them incomplete. We also need qualitative data regarding subjective perception of members of the community. Key-informant interviews and community group discussions can identify and measure these efficiently and effectively than information from household surveys. Hence, RRA is one more source of data since different sources serve in triangulation and thoroughness

1.2 Sampling

Both probability and non-probability sampling techniques were used based on the nature of the instruments for primary data collection. The subjects of key-informant interviews and participants in community group discussions were selected using purposive sampling techniques.

Sample households for household and individual survey were selected based on multi-stage, stratified sampling technique. Households were stratified by agro-ecological zone of the *kebeles* they live in to enhance the precision of our estimates. The sampling frame of the household survey is made up of a list of households in each sample *kebele* and its sub-unit *got*.

Eight *kebeles* and about eight hundred households were included in the sample from Sekota wereda. Key informants totaling 120, 15 from each *kebele*, were selected and eight community groups were formed for focus group discussions.

The response rate for the household survey was about 97 percent. About 86 percent of the women and 96 percent of the children in the surveyed households were available for anthropometric measurement.

1.3 The study area

Sekota is located between $12^{\circ}23^1$ and $13^{\circ}16^1$ north latitudes, and $38^{\circ}44^1$ and $39^{\circ}21^1$ east longitudes. It extends for about 98 kilometers in the north-south direction and about 67 kilometers in the east-west direction and it has a compact shape, and has an area of 3058 km². It is located in the eastern part of Wag Himra Administrative zone, and shares borders with Ziqualla wereda (in the west), Dehana wereda (in the south and southwest), Tigray National Regional State (in the north and east), North Wello Zone (in the south).

Most of the wereda is lowland with an average elevation less than 2000 meters. The southern, southeastern, and the south-central parts of the wereda have medium elevation while the northern, northeastern and the central parts from the lower areas of the wereda. Altitude decreases as one moves from the southwestern part to the north and east directions.

A quarter of the wereda has slope less than 2 percent and 37 percent of the wereda has slope more than 30 percent; both areas are uncultivable. Only a third of the wereda land has a slope that is suitable for cultivation of crops. Only a third of the wereda land has a slope that is suitable for cultivation of crops.

2. Disaster history

Wag Himra zone has suffered frequent and serious disasters in the 20th century. Wag Himra seriously suffered and is suffering from successive drought-induced famine. Furthermore, the episodes of drought that occur tend to be severe. The zone still suffers from recurrent drought that immediately follows before the wounds of past successive ones heal. People have exhausted all their assets, and neither GO nor NGOs were able to exercise sustainable development interventions in the zone.

Human epidemics constitute a major hazard in Sekota because of the low level of environmental or individual hygiene and preventive public health services. In 1997/98 malaria was at the top of the list followed by helmentiasis, diarrhea, and RTI.

Crop diseases and invasion of pests are also the major disasters that affected the lives of peasants in Sekota for long. The average time for pest invasion in the sample PAs showed great variation. Information on veterinary services suggests that external parasites and infectious livestock diseases are widespread.

High population growth rate combined with backward technologies results in undue pressure on natural resources and lead to chronic vulnerability. Population growth rate in Sekota was 2.7 percent. Agricultural density of the wereda, defined as persons per

square-kilometer of cultivated land, increased from 274 in 1999 to 280 in 2000. Dependency ratio is 109 percent.

The rate of soil erosion in Sekota is very high. The rate of soil loss ranges from 6 to 100 tons per hectare per year. More than 88 percent of the households acknowledged the presence of some level of erosion.

The depletion of firewood has currently led to the extraction of roots of former vegetation cover, which in turn critically affects the soil since it disintegrates the already fragile layers. Sekota has been virtually stripped of vegetation, and shortage of grazing and increasing fuel wood scarcity are concerns related to vulnerability to food insecurity in the wereda. Moreover, reforestation is very minimal.

Shortage of grazing is the most widespread problem as reported by 75 percent of the households in the study. Intensive use of pasture and vegetation for a very long time and repeated occurrence of drought has contributed significantly to the loss of grazing resources in the wereda. All grazing areas belong to the peasant association, thus all households are using communal grazing grounds and the capacity of these areas to support large number of livestock all round is limited.

3. Demographic Characteristics

The results of the 1994 population and housing census show that the population of Sekota was 130,229. Crude population density was about 43 persons per/km² in 1994. There is however great variation among the PAs. The density ranged from 7.8 persons per km² in Emba Adego PA to 107 persons per km² in Fikre Selam PA.

Average household size is 4.2. The proportion of the population engaged in productive activities is low not only due to high dependency ratios, but also due to low rates of labor force participation. About 71 percent of household members aged 10 years and above are economically active. About 21.5 percent of the population in this age group is not economically active due to health-related reasons (including disability).

About 95 percent of the female heads and only 5.8 percent of the male heads, who were once married, did not manage to retain their marriage currently

Total fertility rate is estimated to be 7.1. The infant mortality rate is found to be 145, while child mortality is estimated to be 84 per 1000 live births. The expectation of life at birth is estimated to be 47 years for females and 45 years for males. About 17 percent of the population in 1994 was migrants.

Illiteracy computed from our survey data was 89.3 percent (83.0 percent for males and 95.3 percent for females). The 1994 census estimated gross enrollment ratio in Sekota wereda to be 19.3 percent (12.3 percent for females and 26.1 percent for males). In 1998/99, there were 27 first-cycle elementary schools, 10 second-cycle schools and one secondary school. Enrollment rate of children aged between 7 and 14 was 14.6 in 1998/99. The efforts made by the government to expand access to primary education by building more schools did not have large pay-offs because of low rates of utilization of schools.

4. Crop Production

The major crops grown in the wereda are *teff*, wheat, sorghum, barely and peas. These five major crops account for more than 60 percent of the annual cropland. Erratic and low level of rainfall account for large portion of year-to-year variation in area of land

cultivated as well as productivity. Per capita output covers only 39.6 percent of the annual requirement of a person or about five months' food requirements. As a result, the life of a large majority of households is dominated by concerns of food availability. A large proportion of the households are dependent on supplements of relief food for at least six months a year. Average per capita food deficit among female-headed households was 73 percent in 1998 and 76 percent in 1999, compared to 52 percent in 1998 and 56 percent in 1999 among male-headed households.

About 16 percent of the land in the wereda is cultivated. The low share of cultivated land is the result of topography, soil fertility, and climatic conditions that make most of the wereda unsuitable for crop cultivation and animal rearing.

Data from the household survey suggests that average landholding size is 0.81 hectares. Households that own no land account for about 8.3 percent of the total households in the sample, and those with less than half a hectare constitute 28.7 percent. In addition to the continuous decline in land size, there has been increasing fragmentation of land. Survey data shows that 69 percent of sample households cultivated two or more plots of land. Nearly 9 percent of plots are perceived as fertile while 57 percent are considered as infertile plots.

Survey data indicates that 43.4 percent of sample households own no oxen and, keeping other factors constant, are highly vulnerable to food insecurity. Including households with only one ox, 78.9 percent of sample households face shortage of oxen. Households with no oxen account for 28 percent and 85 percent of male- and female-headed sample households, respectively. The share of households with no ox is 53 percent in *dega*, 45 percent in *weina-dega*, and 38 percent in *kolla* AEZ.

Shortage of rain; lack of oxen; shortage of land, labor and seed; lack of farm implements and lack of money to overcome these problems are the major problems reported. As the result of these problems, about 89 percent reported that they have been exposed to famine, 64 percent to food insecurity and 61 percent to poverty.

5. Assets, non-farm Income and coping strategies

The livestock population (excluding chicken) in 1991 was 274,758. Goats account for 36 percent of the livestock population and equines account for 11 percent. On average, a household has 0.81 oxen, 0.76 cows, 0.7 equines, and 3.42 goats and sheep.

Only 8 housing units have corrugated iron sheets for their roofs. More than 98 percent of the housing units have no windows.

The amount of income households earned is very small: 29 percent of the households earned no income at all while those who have earned any on average earned Birr 129.85. The share of agricultural sources of income is 34 percent (Birr 65.73) and that of the non-agricultural sources is 66 percent (Birr 127.12). About half of the households reported that they have earned an average of Birr 149.43 from sales of crops, livestock or renting land.

About half of the households earned an average of Birr 253.75 from various off/non farm activities and sources such as gift and remittance. Only 8 percent of the households received an average of Birr 169.30 either in the form of gift or remittance from relatives living else where in the country. There is a considerable variation by gender of head and AEZ: male-headed households and households in *kolla* AEZ have earned relatively more than others.

The criteria for ranking households in terms of wealth, except for the number of beehives, relate to livestock: number of oxen, number of sheep and goats, number of 'other' livestock.

The most prevalent mechanisms for coping with food insecurity were decreasing the number of meals per day and decreasing the quantity of meals, which are in fact not coping in the real sense of the strategy. The other prevalent coping mechanisms were borrowing food or money, sale of livestock, eating wild food, participation in food-for-work and employment-generation schemes, and not eating food during some days. Food aid is one of the important coping mechanisms used in the wereda.

6. Health and Nutrition

The number of health facilities increased from five (four clinics and one health station) in 1994/95 to fourteen in 1998/99: with the construction of one hospital, four clinics and four health posts. Five PAs have a clinic each, one PA has a health post, and two (Bella and Selam Sefer) have none. Many health facilities are functioning below capacity or not at all because of shortage of health personnel.

Only 4.8 percent of rural households have access to clean potable water supply and only 8.3 percent for both rural and urban household had access to clear water.

The survey results show that 73.8 percent of children were moderately stunted while 51.2 percent were severely stunted. The weight-for-height figures show that 10 percent of children are wasted and about 2.4 percent are severely wasted. About 56 percent of the surveyed children are underweight and about a quarter are severely underweight. Results of the survey show that breastfeeding is a universal practice.

The prevalence of stunting among women was 9.7 percent. Overall mean height was 153.8 cm, 150.7 cm for adolescents and 154.5 cm for other age groups. The prevalence of chronic undernutrition was highest for women in the age-group 15-19 years and in *kolla* AEZ. The mean MUAC for women in the sample, 21.8 centimeters, is below the cut-off point. About 68.8 percent of the women in the sample have MAUC less than the cut of point (22.5 centimeters).

About 49 percent of the women reported having been sick during the two-week recall period, and about 44 percent of them sought medical advice/treatment. The place where treatment is sought shows high dependence on traditional medicine (49.7 percent).

Among the 317 women who had given birth in the three years before the survey, only 12.3 percent received some forms of ANC service and 3.5 received two shots of tetanus toxoid injection (TTI).

About 17.1 percent of the children had vaccination cards, 17.9 percent are vaccinated against TB, 17.9 percent against polio and 16.2 percent against measles. Only 1.7 percent of the children were fully vaccinated..

About 48 percent of the children were reported ill in the two weeks prior to the survey. Fever, diarrhea, cough and vomiting are the most common symptoms.

7. Economic, social and institutional infrastructure

Cultivated land covered by the agricultural extension program amounted to only 0.53 percent of all cultivated land in 1998/99. Key informants in all sample kebeles (except

one) claim that there was improvement in the provision of agricultural services. The trend in the provision of veterinary services is encouraging.

Another important service available in the wereda is credit facility, particularly by the Amhara Credit and Saving Institute (ACSI). The coverage however is low.

There are seven weekly markets in Sekota wereda and no two markets are held on the same day

Prices have increased for wheat, maize, barley, and sorghum while that of pulses and teff decreased. Due to seasonality of crop production, prices usually fluctuate, being low during the harvest season and high in the period before harvest. The prices of cows, oxen, sheep and goats were declining since 1995/96. The sharp drop in livestock prices is likely to be the result of crop failure in the preceding year.

Access to roads, measured in terms of road density, is too low. Sekota town was the only beneficiary of postal service in the wereda. Telephone service was available only in Sekota town, where there was a radiotelephone connection that had been upgraded to an automatic exchange with a capacity of 500 lines. Electricity was available in Sekota town. The source of power was hydroelectric that was connected to the national grid system, with a 24 hours power supply.

B. CONCLUSIONS

The problems identified could be classified as those that are amenable to policy intervention in the short and medium term and those that are either not directly controllable or that can be influenced only in the long run. The following are recommendations that are identified and can be potentially introduced to positively affect the food security of the population in the wereda.

1. Social services

The study indicates that the wereda population has low education levels and low access to services. Literacy rate as well as school enrollment ratio is very low. The cause for low enrollment is partly the distance traveled by children coupled with the scarcity of food. Hence:

- A possible solution is the introduction of school feeding program. Such a program, apart from bringing more children in to school, could also help in improving the nutritional status of children.
- Awareness creation to minimize cultural challenges that undervalue girls' education and early marriage of girls' to reducing male/female differentials in educational attainment; and
- Provision of informal education for adults to increase awareness for farm management and natural resource protection are another areas of intervention.

The study also reveals the prevalence of diseases, which is in effect closely related to the socioeconomic status. The provision of clean water and adequate sanitation are key to reducing the threat of water born diseases.

- Provision of adequate and safe water supply;
- Promoting integrated health services to mothers and children and integrated approach to reducing levels of malnutrition;

- Provision of health services and education in family planning and primary health care;
- Promoting education and awareness creation against communicable diseases and HIV/AIDS; and
- Capacity building – in terms of both personnel and equipment are commendable.

2. Environmental rehabilitation

Excessive erosion and resultant poor quality soil have led to declining fertility and declining crop yields, which in turn contributes to food insecurity. Fallowing has been abandoned and marginal lands were already colonized. In the due course accelerated deforestation and loss of other forms of vegetation has taken place. As the result increasing pasture and fuel wood scarcity became a related concern, which aggravate food insecurity. Conversely, reforestation and other conservation practices are minimal. Hence:

- The promotion of an integrated watershed management is a major concern to rehabilitate the natural environment of the wereda;
- Introduction of alternative energy sources;
- Awareness creation for the adjustment of livestock number according to the carrying capacity of the grazing land and improvement in pasture management and use;
- Promoting voluntary resettlements of people from the excessively degraded areas to the better fertile areas in the region are some of the possible areas of intervention.

3. Increasing agricultural production

The study has shown that the wereda relies entirely on rain-fed agricultural production. Conversely scarcity of rainfall has resulted in problems of decreasing agricultural production. Hence:

- One possible area of intervention in this respect is the introduction of water conservation and water management methods such as “water harvesting” and small-scale irrigation to help reduce risk of drought and stabilize supplies. This should also incorporate the introduction of “carry and drain” fields to farmers who reside close to water sources.
- The development of community based seed banks is also another area of concern.

4. Infrastructure

As revealed in the study, a range of factors is attributed to the causes of food insecurity of the rural people. One of these contributing factors is lack of access to markets. Most of the rural people of the wereda are living in highly isolated localities.

- Therefore, market access partly through increased infrastructure; particularly construction of intermediate roads could have a strong positive impact to enhancing the livelihood of the people of this area.

- The construction of rural roads is thus very much critical in ensuring access to this people than any other places.

5. Credit and non farm

The study reveals that non-farm sources provide a significant portion of total income of the sample households. Given the constant threat of drought-led shortfalls in crop or livestock production, the provision of credit and the creation of off farm employment opportunities for diversifying income sources to adopt the hazards and shocks is a possible area of intervention.

Employment creation could take the form of FFW/CFW whereby communities become actively involved in programs that enhance the natural resource base or the area's local infrastructure.

The profile reveals that female-headed households are more vulnerable to food insecurity. They have higher dependency ratios and lower access to agricultural inputs, particularly labour, oxen and capital. Therefore particular emphasis should be given to expanding services that could give a chance to women to participate in alternative income generating schemes.

Finally, for the proper implementation and sustainability of development projects in the wereda, developing the capacity of government employees and community leaders in areas of project identification, design, implementation and monitoring is a major concern.