

Strengthening Emergency Response Abilities  
**SERA Project**

# Vulnerability Profile: SUMMARY

**Abergele Woreda (district)**  
Central Zone  
Tigray Region

2000

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## **A. SUMMARY of MAJOR FINDINGS**

*Population= 65,574*

*Agro ecology=Kolla*

### **1. Disaster history, Climate and Risk, Drought and epidemics**

The main types of disasters, which frequently occur and affect the community since the 1950s are drought, famine, epidemic, etc. The years 1951, 1977 are the common drought occurrence in the sampled PAs. Mothers, children and elders were the most affected parts of the community. The effect of drought was also reflected in epidemic in the years of 1951 and 1977. This shows that when drought occurs epidemic follows. Hailstorm in 1990/91 during rainy season affected the crop of half of the community.

### **2. Population pressure, natural resources and environment stress**

In the wereda the increase in population does have strong relationship with land and environment. The increase in population with respect to land and environment, the elderly perceive it negatively. That is the rapid increase in population caused the household to own fragmented and small plot of land. The finding of this survey regarding the relationship of population to resource in less than five years is summarized as follows:

- Crude population density increased from 50.7 to 53.5.
- Average family size increased from 4.61 to 4.74.
- Dependency ratio increased from 91.5 to 121.8

There is a rapid change in the age structure of the population mainly in the young and working age. The proportion of young age group (less than 15) increased from 44.8% in 1987 E.C. to 51.2 % in this survey.

The rapid increase in population was also perceived to have contribution to environmental stress (soil erosion, deforestation, shortage of potable water and flood). This was verified by the key informant's perception of environmental stress over one period of time.

The migration status of the household members aged 10 years and above of Abergele was also studied. Results show that only 2.2% of the members aged 10 years and above are in migrants. The low level of migration to Abergele may indicate the vulnerability conditions of the area. So it seems that migrating to Abergele has never been a usual experience. A very common feature of such areas is out migration, which may be seasonal or permanent out migration.

### **3. Access to basic services, infrastructure and their quality**

The availability and accessibility of basic social and economic services to the community has increased substantially in the last 10 years. Data from KI interview indicates that 68.7% of the basic top ten services are accessible to the sampled PAs.

According to the wereda sources the Agricultural extension coverage grown up from 1.3% to 23.9% in the last four years, livestock extension from zero to 2.4% in the same period. The agricultural extension agent to population ratio in the wereda is 1:884. However there is a tendency to decline proportion of household in agricultural extension coverage after a quick growth in the four years.

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Currently there are five health stations and two health posts. The ratio of nurse and health assistants to population is 32,908 and 50,662 respectively. According to the community focal group and key informants interview, the physical availability alone is not sufficient; a lot has to be improved on the quality of the services by equipping the health posts with adequate health personal, medicine and equipment.

Child immunization (BCG, DPT3 Measles and Polio) is higher than national and regional average more than one third of the children are fully vaccinated.

Potable water supply has increased from 18.7% to 47.7% (including the broken hand pumps) in less than 10 years,

Student enrollment in the wereda is 57.9 percent despite the increment in number of schools, the student to classroom ratio didn't improved, and rather increasing, and this together with shortage of teachers has greatly compromised the quality of the service.

#### **4. Community Livelihood Systems, Food insecurity and Poverty**

Livelihood in the wereda largely depends both on farming and livestock breeding. The community focal group discussion shows that the wealth of households is by large determined by number of oxen and other livestock owned, but households with other non-agricultural sources are considered better wealth as compared to their counter parts. According to the community focal group discussions it is believed that 71% of the households are considered as poor or very poor with food deficit over seven months.

Regardless of the length of the period of food deficit, all (100%) of the sampled population have food shortage. While 76.7% of the sampled population has over nine months of food deficite, 14.8% have food deficit for 6-9 months. Based on the data obtained from the wereda office of agriculture, average food production computed for three consecutive years was covered only for 38.7% of the wereda's food requirement.

Based on data taken form the 1990 E.C livestock population census of Tigray, the average TLU per household is computed to be 5.92. Female-headed households have small TLU holding than the male headed. The crude data of grazing area (6125.7 hectare) obtained from the wereda office of agriculture indicate that livestock-stocking rate of Tanqu Abergele wereda is 11.6 TLU per hectare of the grazing area, which is very low.

Over 65% of the sampled populations do not own a pair of oxen. While 25.1% are oxless, 34.6% of households own 2 and more oxen. The ox holding is low this may be due to the reason that there is a critical feed shortage particularly during the dry season. The survey result indicate that all oxless households have their own land holding but they depend on the good will of others to plough their land.

Land holding in the wereda ranged from 0.25 to 3.6 hectare in size. The survey result indicates that from the selected households only 7.2 percent have less than 0.5 hectares. In general from the given sample size it has been estimated that average land holding is 1.56 hectare and 57.2 percent of the households lies below average.

The households in the wereda have relatively large land holding and better livestock possession as compared to the rest pilot weredas. But the crop production is very low, which is 2.5 quintal/hectare. The reason for low production can be, the size of land cultivated is small in

comparing to their total land holding, poor land fertility, labour constraint, lack of enough rainfall, and farming tools and high moisture stress with unpredictable rainfall.

Based on the household survey, 46% of the lands of the sampled households are found in sloping areas. Similarly according to the perception of household heads only 26.2% of the lands in the wereda are fertile. The lands with moderately fertile status accounts for 28.2% while the infertile land accounts for 54.5% of the lands of the sampled population. The customary cultivation practice of annual crops, regardless of the slope, topography, soil type and other site-specific details of the lands has been leading to degradation of the soil and other natural resources. This is one of the reasons for decreasing agricultural products.

The proportion of households participated in non and an off-farm activity during survey year is 27.6% and 10.0%, with mean income 250 and 230 Birr respectively. This being the fact, the possibility of earning income from non farm activities appears to have some relationship with some selected background variables. It seems to be more common in literate headed households, male headed households, households with large family size and those headed by age group 15-60.

Based on the self-assessed income the poverty multivariate analysis shows that the determinant factors identified to have significant relationship for the welfare of the household are the land holding size, livestock ownership, participating in non- farm activities, family size, literacy status, use improved seed, credit and presence of out migration in the household. Moreover, the experience of food insecurity and epidemics appear to explain the variation in the level of income of the respondents.

Among the felt problems are the shortage of rainfall, labor constraints, food insecurity and epidemic experience. These have all been found to have negatively contributed to the welfare of the households.

Although unexpected, age of household head, gender difference and marital status don't significantly explain the variation in the living standard of the study area.

## **5. Health malnutrition and child mortality**

After the implementation of the new health policy, physical access to basic health services has improved, reached to about 50%. However, as improvement in health is a reflection of overall socio-economic development of a country, the health status indicators are still very low.

Antenatal check-ups and safe delivery services reduces the risk of maternal death and improves child survival as well. However, only less than one third of pregnant women had received antenatal check-ups and 21% of them had received two doses of tetanus toxid injection. Moreover, safe delivery and contraceptive prevalence rate is very low. Current and ever use of contraceptives is 1.9 and 4.5 % respectively.

Similarly, immunization statues of children of 12-24 months was assessed and analyzed, only 36.3% of children had received full doses (i.e. Measles, BCG and three doses of Polio and DPT).

In the wereda it was found that 57% of households used drinking water from relatively safer sources, and less than one third of households were with in the acceptable distance of sources of drinking water.

Two weeks disease prevalence was seen in about half of women, and the magnitude of maternal malnutrition was 46.2%. Similarly two weeks childhood disease burden was seen in about half of children. Chronic malnutrition was prevalent in 56% of children and acute malnutrition (wasting) in about 7% of children.

According to Coale-Demeny West family model life tables, of 1000 children born in the wereda 128 will die before age one; and 70 will die between age 1-5 and 189 will die before reaching age five. The most important predictors from the multivariable analysis are sex of household head, vaccination status, number of rooms owned by households, mothers marital status, condition of child during delivery and mother's age in that order. In short child of male-headed households are at much higher risk of death. Similarly the risk of death in vaccinated child is 75% times less as compared with unvaccinated child.

## **6. Resilience, Coping strategic, and Institutional responses capacity**

In the household survey all household heads were asked whether applied any of the coping strategies included in the questionnaire. Based on the severity of the type of strategies and for convenience of the analysis the strategies are grouped into reversible and irreversible. Reversible coping strategies are the type of strategy that enable the household to escape disaster having seasonal or short term nature and households have the chance to reverse the situation relatively easier, where as irreversible coping strategies are the type of strategies that are practiced in responses to a disaster of chronic nature and result in depletion of resources assets base of households and households lack capacity to recover easily.

According to the above classification, in the wereda over the last 10 years only 49.4% of the households used the reversible coping strategy alone and the remaining 50.6% in combination with the irreversible type of coping strategy. This indicates that 50.6% of the households have exhausted their reversible type of coping strategy and shifted to the most severe or the irreversible type coping strategies.

Among the reversible type of coping strategies reducing number of meal and reducing quantity of meal are the most common and frequently practiced strategies so also selling livestock and borrowing food cash or grain and eating less preferred food, participating in food for work in their sequence are the next common and frequent practice and all others are rarely practiced by the community.

## **B. CONCLUSIONS**

### **Functional classification of vulnerability who are vulnerable, when are they vulnerable, why and how**

The family size may determine the living condition including the amount as well as quality of food intake. The mean family size of the studied population in Abergelle is 4.8. The mean family size for male-headed households (5.3) is greater than the mean family size of the female-headed households (3.3) by two persons. This is mainly due to low fertility level in the female-headed households because of marriage dissolutions and high out migration rate in female-headed households.

The migration status of the household members aged 10 years and above show that only 2.2 % of the household member are in-migrants. When analyzed by sex 13.8% of the females and 5.7%

of the males are migrants, which show that there is no sex difference. Results for seasonal migration show that 9.2 % of the household members have experienced seasonal immigration. When analyzed by sex 15.3% of the males and 4.1% of the females have experienced seasonal migration. This shows that it is the male who use seasonal migration commonly as a coping strategy than the females.

With regard to literacy status males are more literate than females. The literacy status of the household heads shows that 29% of the male household heads and 0.8% of the female household heads are literate. In addition 26.1% of the males and 4.7% of the females of ages 7 years and above are literate. None of the females of the wereda included in the study that are older than 40 years are literate.

Regarding to health indicators antenatal service seems to have some association with maternal age. Though the proportion is very low to compare a higher proportion of teenage mothers tended to receive antenatal services compared to older mothers and similarly delivery services seemed to be associated with literacy status of the mothers. A relatively higher proportion of mothers who could read and write tended to receive delivery services from health professionals and TBAs compared to illiterate mothers.

Ever use and current use of any family planning method in the wereda is very low, which is 5.5% and 1.9% respectively. Both knowledge and use seemed to have some degree of association with maternal age and marital status. A lower proportion of teenage mothers tended to know and use contraceptives compared to older mothers. Similarly, lower proportion of single mothers tended to know and use contraceptives compared to married, divorced, widowed and separated ones.

Vaccination coverage in the wereda is much higher compared to the national average. According to the finding, sex of child seemed to be associated with immunization status. A higher proportion of male children tended to receive BCG, polio 3 and measles. However, a higher proportion of female children seemed to get DPT3 compared to male children. With regard to the prevalence of childhood illness the magnitude was analyzed against some background variable. According to the result lower proportion of under 6 months infants tended to have any medical illness compared to older age children, and similarly a higher proportion of children of mothers who could read and write seemed to have childhood illness compared to their counterparts.

The average landholding owned or rented for the households is 1.56 hectare. It is 1.69 hectare for the male-headed households and 1.26 hectare for their counter part. The problem of ox-less in female-headed households (51.1%) is highly pronounced compared to their counter part (15.5%).

Similarly an attempt is made to characterize those households that have longer period of food deficit and the survey result indicates that:

- Households with longer period of food gap have the highest proportion of small landholding size (less than 0.5 hectare)
- Households with high percent shortage of oxen are also having the highest food gap.
- Households with larger family size are with higher percentage of food deficit (over 9 months) than those having smaller family sizes.

- Higher percent of male -headed households (77.9%) are with over 9 months of food deficit compared to that of female headed with 73.4%. The rational behind it is that the average family size of male headed households (5.27) is by far higher than female -headed households (32.8) and the second possible reason is that though male headed households own large land size but the survey result turned out that as the size of land holding by households increases the tendency to cultivate their entire land holding decreases, which indicates that part of their land holding is used for other purpose like grazing, fallow land etc.
- Households with heads of 60 and above have the lowest percent of households with shortage of food in comparing to households with heads 15-45 age. The rational behind it is that the former have very small family size.
- Households with large family size have small land holding per person, compared to small sized households.

Beside to the above findings the multivariate analyses result shows that possession of livestock, participation in non-farm activities and access to rural credit have positive contribution in enhancing the food security of households. It is to be noted that the non-farm activities has the largest positive association, signifying the participation in non-farm activities are better of by 258 Birr than those who don't participated at all.