



# **PARTICIPATORY RURAL APPRAISAL REPORT: MECHA DISTRICT**

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## List of abbreviations and acronyms

ACSI	Amhara Credit and Saving Institution
AGP	Agricultural Growth Programme
ARDO	Amhara Rehabilitation and Development Organization
BoA	Bureau of Agriculture
CASCAPE	Capacity Building for Scaling Up of Evidence-Based Best Practices in Agricultural Production in Ethiopia Project
DA	Development Agent
FTC	Farmers Training Centre
GOs	Governmental Organisations
NGO	Non-Governmental Organisation
PRA	Participatory Rural Appraisal
WoA	<i>Woreda</i> Office of Agriculture



## Executive summary

PRA is becoming an essential component to be implemented in any development intervention. Hence, the CASCAPE innovation team members of Bahir Dar University were have conducted PRA in Mecha *woreda* in the four project *kebeles*; Tagel Wodefit, Engote, Ambomesk and Amarit. The objectives were to identify potentials, constraints and best practices of agricultural activities in the area.

The PRA was conducted focusing on four major areas; environmental conditions, socio-economic conditions, the actor landscape and agricultural production conditions. Altogether, 25 to 32 participants were selected to represent both genders and all age and wealth strata in different villages of the *kebele*. The tools used were resource mapping, social mapping, semi-structured interviews, Venn diagrams, wealth ranking, pair-wise ranking, key informant interviews and group discussion.

The results of the PRA indicated that livelihood depends on agricultural production which is mainly practiced in fragmented holdings. Mixed farming is the typical farming system in the area. The natural resources are much degraded and all of them are categorized as scarce except firewood and in some *kebeles*, irrigation water. Arable and grazing lands are very limited in extent to carry the ever increasing human and animal populations. Moreover, the lands are highly affected by soil erosion and deforestation. The sources of finance for the farming community are ACSI and farmers' cooperatives. Both have some problems in their services. Marketing problems are of great concern to the resource poor small holder farmers in the area. Many GOs and a few NGO institutions are found in all *kebeles*.



## 1. Introduction

The Capacity building for scaling up of evidence-based best practices in agricultural production in Ethiopia (CASCAPE) project is a joint project of the governments of Ethiopia and The Netherlands, funded by the Dutch Ministry of Foreign Affairs. The project is working in five Ethiopian universities, with the main objectives of enhancing agricultural production and productivity by identifying, proving, documenting and promoting best practices in agricultural production. The universities of Bahir Dar, Haramaya, Hawassa, Jimma and Mekelle implement the project in technical and administrative collaboration with Wageningen University in The Netherlands.

CASCAPE works closely with, and acts as the technical wing of, The Agricultural Growth Program (AGP), for the realization of the five year Growth and Transformation Plan (GTP) of the country.

### 1.1 Objectives

The objectives of this Participatory Rural Appraisal (PRA) were:

- a/ To identify opportunities, constraints and intervention points for the improvements of agricultural production and productivity of the area
- b/ To gain insight into, and a clear picture of the farming systems of the community.
- c/ To identify best practices, if available, employed to tackle the agricultural production problems being addressed.

### 1.2 Methodology

#### 1.2.1 Geographical area covered

The PRA was conducted in four selected CASCAPE *kebeles* in Mecha *Woreda*. The *kebeles* were selected based on the criteria of AGP intervention, their potential for agricultural production, agro-ecological variations, and others. The selection of *kebeles* was made by the officials of the *woreda* agriculture office in partnership with the CASCAPE IT members of Bahir Dar University.

#### 1.2.2 Participant selection procedure

The main participants or sources of information were the farming community members living in Mecha *woreda*, and four CASCAPE *kebeles*. Hence, between 22 and 32 male and female household head members participated from each *kebele*. The selection of households deliberately considered different strata of the community, such as wealth status, age, gender, education level and representatives of different villages. In addition, *woreda* level officials and experts, development agents, cooperative leaders, agricultural input distributors, *kebele* leaders and model farmers were contacted as key informants, although comprehensive participation by these experts was not possible due to time constraints. A *kebele* level workshop was conducted as indicated in the plan, even



though it was done with a limited number of people. The reasons were time shortage and overlapping of too many meeting schedules at *kebele* level by different government bodies.

For validation of the data collected, it is essential to do triangulation. We approached this by making the team multidisciplinary, by collecting data from various sources and by making direct observations. Direct observation was not, however, carried out fully in each *kebele* because of time constraints.

### **1.2.3 Methods of data collection**

The PRA survey focused on environmental and socio-economic conditions, the actor landscape and agricultural production conditions. As PRA demands a multidisciplinary approach, all the team members worked together as one group out of which one member of the team acted as facilitator and the rest as note-takers. In addition, one *woreda* expert and all the development agents in each *kebele* participated in coordinating the PRA meeting.

## **1.3. PRA Tools Used**

### **1.3.1. Environmental conditions**

The situation in the *kebele* perceived by the community concerning soils (fertility, composition, etc.), water (quality and quantity of groundwater and of surface water), vegetation, and climate (agro-ecological zone, average precipitation rates, etc.) is presented in the section. Results were subsequently compared with figures from other data sources and described in the baseline survey which we have conducted a couple of months ago. The tools employed were resource mapping and a transect walk as specified during the planning period.

#### ***Key questions addressed:***

1. What resources are abundant according to different community groups?
2. What resources are scarce according to different community groups?
3. Which resources are problematic?
4. Do different community groups have equal access to land (e.g. rich/poor, elderly/youngsters, women/men)?
5. Is the land equally fertile?
6. Who makes decisions on land allocation?
7. How is water and firewood collection organised?
8. Where do people go to graze livestock?
9. What are the main environmental constraints as perceived by the community?

### **1.3.2. Socio-economic conditions**

Data on socio-economic status (livelihood, income, capital, etc.), facilities and institutions (medical posts, schools, etc.) and infrastructure (roads, etc.) are presented in this section. Discussions included access to markets and credit. The tools employed were social mapping, focus group discussion and wealth ranking.



### **Key questions addressed:**

1. What are the approximate boundaries of the village with regard to social interaction and social services?
2. How many households are found in the village and where are they located?
3. Is the number of households growing or shrinking?
4. What religious groups are found in the village? Where in the village do the different religious groups live?
5. What ethnic groups are found in the village? Where in the village do the different ethnic groups live?
6. Which are the female headed households and where are they located?
7. What are the main economic activities?
8. How are livelihoods comprised?
9. How is access to finance organised?
10. How is access to markets organised?
11. What are the main economic constraints as perceived by different community groups?

### **1.3.3. Actor landscape**

The institutions and organisations in the *kebele*, and their relative importance to different sections of the community are described in this section. The only tool used was Venn diagram, as specified during the planning period.

### **Key questions addressed:**

1. Which organisations/institutions/groups are working in or with the community?
2. Which institutions/groups do the villagers regard as most important, and why?
3. Which groups are addressing household food security and nutrition issues?
4. Which organisations work together?
5. Are there groups which are meant for women or men only?
6. Are some particular groups or kinds of people excluded from being members of, or receiving services from certain institutions?

### **1.3.4. Agricultural practices, opportunities and constraints**

In this section data on agricultural practices, opportunities and constraints was presented including the most important crops, production strategies and main production constraints. The tools used were semi-structured interview and preparation of a pair wise problem ranking matrix.

### **Key questions addressed:**

1. What are the main crops cultivated/livestock kept by different community groups?
2. What are the agricultural practices for most prevalent crops?
3. How is agricultural input organised?
4. What are the most important agricultural production constraints?

## **1.4. Data Analysis Methods**

The PRA data was analysed using descriptive statistics and different PRA tools. Pair wise ranking was applied to identify opportunities, problems and potential solutions for each *kebele*. The data are presented in the form of charts, diagrams and tables.



## **2. Description of the *woreda* and selected *kebele***

### **2.1 Mecha *Woreda***

#### **2.1.1 Location**

Mecha *woreda*, one of the thirteen *woredas* found in West Gojam Administrative Zone, is located 30 kms south-west of Bahir Dar town, the capital of Amhara Region. It borders North Achefer in the north, South Achefer in the south and west, and Yilmana Densa *Woreda* in the east.

#### **2.1.2 Topography and climate**

As in most parts of West Gojam, Mecha *woreda* is known for its flat topography, which accounts for about 75 percent of the total area of the *woreda*. 13 percent of the area is characterized as undulating topography, and the remaining 8 percent and 4 percent of the area are covered by mountainous and valley topographies respectively.

The altitude of the *woreda* ranges from 1,800 to 2,500 m. above sea level. This means 80 percent of the *woreda* lies in the mid-altitude area and the remaining 20 percent is in the *dega* climate zone. The mean annual rainfall ranges from 1,000mm 2,000mm.

#### **2.1.3 Land use**

The total area of the *woreda* is about 156,027 hectares. Of this, nearly half, 72,178 hectares are used for cultivation. Forest land and the grazing land cover 18,547 hectares and 15,591 hectares respectively. The land covered by water bodies accounts for about 1,386 hectares.

#### **2.1.4 Agriculture and livelihood**

Mixed farming is practiced in all parts of the *woreda* and by each of the households in the community. It is at subsistence level and is practiced in fragmented holdings which mostly lack modern technologies. The average land holding at *woreda* level is 1.5 ha per household, and ranges from 0 to 3 ha among the farmers in the *woreda*. In the crop sub-sector, the main crops grown include maize, teff, finger millet, wheat, chickpea, beans, niger seed and cabbage. In the livestock subsector, cattle are dominant and large numbers of poultry, sheep and goats are also kept. Oxen, cows, heifers, bulls, calves, chickens, goats and sheep are found in numbers in most households. Livelihood therefore depends to a large extent on agricultural production and trading. Mecha is considered as one of the most food secure and surplus producing *woredas* in the region.



### 2.1.5 Soil type

The soil type of Mecha *woreda* is characterized as:

- ✓ 93% red soil
- ✓ 3% black soil
- ✓ 4% gray soil

## 3. The PRA Results

### 3.1. Tagel Wodefit *Kebele*

#### 3.1.1. Environmental conditions

The identification of the natural resource constraints and opportunities, on which the livelihoods of the rural community depend, is an essential element for successful implementation of any agricultural interventions. During our work at Tagel Wodefit, the major natural resources identified by the community were water for irrigation and drinking, arable land, grazing land and forest.

Water for irrigation and drinking was identified as a relatively abundant resource. The construction of the Koga irrigation scheme is increasing the availability of water for irrigation. The distribution of drinking and irrigation water for both livestock and for the rural poor still varies from village to village and from season to season, however. As we also observed during the transect walk, the surface and ground water available in the *kebele* are sufficient for the human and animal populations, but there are difficulties with management of drinking water points and irrigation systems.

Many natural resources of the *kebele* are scarce, notably arable land, natural forest, grazing land and firewood. Natural forest is continuously shrinking because of competition for arable and grazing land uses. The natural forest cover is found in a very small proportion when compared with other land use types.

Most of the community discussions concluded that the destruction of the natural forest was a major cause of land degradation. People understood the environmental importance of the natural forest and had witnessed the damage to the farmland, to the settlements and to the free movement of people, caused by flooding. The existing natural forests in most of the *kebeles* are now regenerating, as they are getting due consideration by the communities.

The other major scarce resource in the *kebele* is arable land. The average holding of arable land per farming household is not greater than 1.5 hectares. The distribution varies greatly between young and old farm household groups. The young farmers have less than a hectare, or no land at all, but the elderly own from one to three hectares. According to suggestions from farmers and some secondary sources, 15-25% of the farming community, all of them young farmers, are landless. Land holdings also vary between the bureaucrat and non-bureaucrat



household groups. The bureaucrats own only one hectare or less, whereas the rich farmers and the non-bureaucrats own from one to three hectares.

The arable land also has some additional problems. Due to land shortage, the same plot of land may be ploughed continuously for many years. This brings nutrient depletion and breakdown of the soil structure. Soil erosion is another problem which damages the arable land and hence the livelihoods of the smallholder farming households. These factors all cause declining productivity and contribute to emergence of crop diseases and pests. Thus, considering the size of land holdings per household, their distribution and fertility levels, the PRA group of farmers in the *kebele* identified arable land as a problematic resource.

There are no differences in the sizes of arable land holdings between households headed by women or men. Women have equal rights and were treated equally during the land redistribution that took place in 1997. Family size and other criteria were used as a basis of this redistribution of the arable land, which used lottery methods, to avoid biases that might otherwise appear in distributing the fertile and the non fertile plots among potential candidates.

Decisions on crop allocation to land used mostly to be made by the husband. However, in recent times, due to the efforts of different development practitioners, local administrators, gender workers and others, the culture is rapidly changing. In most cases the husband decides on land allocation after a considerable consultation with his wife and other family members, especially with the elder and educated children or other influential members of the family.

Drinking water is obtained from rivers, springs, ponds, developed water points and hand dug wells. The collection is made mostly by female members of the family with a little assistance coming from boys and in rare cases from the husband. This is a culture that the farming community in the *kebele* has difficulty changing. Women in most villages walk for more than 30 minutes each way to fetch drinking water, and wait for hours in queues. This is a tiresome and difficult practice to live with.

The farming community in the *kebele* mostly practises grazing on communal lands, but a few farmers also allocate some of their plots for grazing. Crop residues as well as those from making the local drinks *Tella* and *Areke* are common sources of feed for animals during the dry season. Free grazing is practised, but the area of grazing land is too small to support the large animal population found in the *kebele*, leading to overstocking. These problems make the communal grazing land unproductive and liable to soil erosion. As a result, big gullies form, which impede the free movement of people and animals. Farmers are now starting to grow improved pasture grasses on the edges of their irrigated plots and in separate lands allotted for this purpose.

To conclude, most natural resources in the *kebele* are scarce, and problems related to arable land are a critical constraint in the efforts to improve the living conditions of the smallholding farming community. The increasing population size causes a continuing decrease in the sizes of holdings, and this is made worse by decreasing soil fertility and soil erosion. Consequently, there is a continuous decline in the productivity of the farmland.



**Summary of findings**

**Table 1: Summary findings in natural resources (Tagel Wodefit)**

No	Items	Findings
1	Abundant resources	Irrigation and drinking water
2	Scarce resources	All except the above
3	Most problematic resource	Arable land
4	Access to land per community group	Not equal between the elderly and young farmers
5	Fertility distribution of the land	Not uniform
6	Decision making on land allocation	Based on discussion and decision among all family members
7	Collection of firewood	Equal responsibility for all family members
8	Collection of water	Women and girls are mainly responsible
9	Livestock grazing	On communal lands, in few cases on private grazing lands
10	Environmental constraints	Soil erosion, deforestation, free grazing

Source: PRA finding

**3.1.2. Socio-economic conditions**

The discussion on socio-economic conditions was started by encouraging PRA farmers to draw a social map which indicates the boundaries of the *kebeles* in relation to social interactions. Hence, the approximate boundaries of Tagel Wodefit with regard to social interaction and social services are wider than the physical boundaries of the *kebele*. The reason is that there is frequent interaction in many issues such as marriage, idir, ikub, debo and so on with the nearby villages of other *kebeles*. The social network which extends beyond the physical boundary indicates that if some innovations are introduced in the *kebele*, they can be disseminated in a wider area.

The social map also included the socio-economic institutions which are found within the *kebele*. The mapping exercise demonstrated that basic institutions such as schools, churches, FTCs, *kebele* administrations, health extension centres and so on are found in every *kebele*. On the other hand, some institutions such as market places, animal health posts, and some NGOs are found only in some *kebeles*. After mapping, semi-structured interviews were conducted. The findings of the semi-structured interviews included the following.

**3.1.2.1 Demographic characteristics**

According to the perceptions of the PRA discussion group of farmers, the number of households, the total population and the average family size within a typical household are all increasing. They also underlined that, the family planning efforts of the government and other organisations have had no significant effect in reducing the rate of increase in population growth. Farmers have a fear of population growth, as the numbers of landless farmers are growing steadily. This was clearly observed during the pair wise ranking of problems exercise.

The Ethiopian Orthodox Church is the only religion across all villages in the *kebele*. There are a very few individuals who are followers of other religions such as Muslims and Protestants. The CASCAPE PRA team of Bahir Dar University, also confirmed in its walk around that no other religious institutions have been built in any of the villages in the *kebele*. All residents are Amhara, where the female-headed households are living together in segregation with other community members.



### 3.1.2.2 Livelihood

Livelihoods are based mainly on agricultural production, in which crop production and animal husbandry are practised side by side. This means mixed farming is predominantly practiced throughout all farming households in Tagel Wodefit. The productivity of agriculture is, however, being challenged by several constraints, which in most cases are interlinked. In addition to agriculture, petty trading is exercised by the farmers, although at a low level as an alternative livelihood option.

### 3.1.2.3 Access to finance

The Amhara Credit and Saving Institution (ACSI) and cooperatives, serve as the major finance sources for farmers. The PRA group of farmers in Tagel Wodefit *kebele* told us that The Ethiopian Orthodox Church also gives credit services, although on an informal basis. Problems with the credit services of ACSI and the cooperatives include the low level of credit that an individual farmer is able to obtain. The maximum amount is not more than 3,000 Birr (112 euro). This is not sufficient for an individual farmer who is trying to expand his farming practices in multiple disciplines, such as fattening.

The credit service delivery system of cooperatives also faces challenges. These include the delay in the time of delivery for agricultural inputs bought on credit, which usually happens at the end of the sowing season. This causes late sowing, leading to crop diseases and pests later in the season. The result is an overall decline in productivity and the prevalence of long term poverty. Another problem with the credit delivery system of the cooperatives is the inefficiency observed in the system. Farmers have to make repeated claims for credit, wasting time and resources that would otherwise be invested in their farms. A third problem in the credit delivery system of cooperatives, is the low levels of credit that the cooperatives provide for their customers. Discussions with the input and credit department of the *woreda* agriculture office revealed that the delay in input credit is a deliberate attempt to encourage farmers to buy in cash rather than expecting credit every time. Another reason is the incomplete or delayed repayments by the farmers of loans from previous seasons. The regional government borrows from banks by providing its annual budget as collateral. That means any delay in loan repayments by farmers has a big influence on the development efforts of the regional government.

### 3.1.2.4 Market

The Market in this context refers to the supply, demand and presence or absence of a place for the exchange of commodities. The supply of agricultural outputs, especially at the time of harvest when many farmers need to sell, is very high. At present, prices are decided only by grain merchants, who often fix them at unthinkably low levels.

As the *kebele* has a lot of irrigated land, the farmers produce large amounts of vegetables and other perishable agricultural products. In most cases it is a big challenge to find markets for their products. There is no all-weather road connecting the *kebele* to the national road system, and there is insufficient demand in the nearby areas to absorb all the produce.

On the other hand, the demand of farmers for industrial outputs is steadily increasing. The prices of industrial outputs such as iron sheet, clothing, and household items which farmers need for day to day life, are increasing at a



growing rate. Furthermore, the supply of some products such as sugar and oil sometimes dries up. These shortages in supply cause farmers to deal with illegal merchants with high prices and low quality goods.

To conclude, farmers are highly but negatively affected by the current market system. That is why the PRA group of farmers in every *kebele* prioritised market problems among the three major problems which are challenging their living conditions.

### 3.1.2.5 Summary of findings

**Table 2** Summary of findings - socio-economic conditions (Tagel wodefit *kebele*)

No	Item	Findings
1	Village boundary in respect to interaction and services	Wider than the administrative boundary
2	Demographic characteristics	<ul style="list-style-type: none"> <li>• All inhabitants are Amhara</li> <li>• Religion - Ethiopian Orthodox Church</li> <li>• Population is increasing</li> <li>• Household number is increasing</li> </ul>
3	The main economic activities	Crop and livestock production, petty trading
4	Access to finance	ACSI and cooperatives are the only sources
5	Access to markets	<ul style="list-style-type: none"> <li>• Market place is found in the <i>kebele</i></li> <li>• The prices of agricultural outputs are very low</li> <li>• The prices of industrial outputs are very high</li> </ul>
6	Main economic constraints	<ul style="list-style-type: none"> <li>• Land shortage</li> <li>• Marketing problems</li> <li>• High price of agricultural inputs</li> </ul>

### 3.1.3. Institutions or actors of development

The institutions and actors of development in Tagel Wodefit *kebele* are categorized into two groups, governmental organisations (GOs) and non-governmental organisations (NGOs). Governmental organisations include *kebele* administration, farmers’ training centre (FTC), health extension, schools, police, women’s affairs, youth association, animal health centre, and cooperatives. The NGOs are the church, and Amhara Credit and Saving Institution (ACSI). Gender is a cross cutting issue that every development actor has to include in its main activities.

The results of the Venn diagram indicated the organisations that the community members regard as important, and those that are considered to be less important. Some organisations are considered important in some *kebeles* but not in others. Women and men considered different institutions to be important. For example, women acknowledge the importance of health extension workers, women’s affairs and the water committee. Men usually found FTCs, *kebele* administration and schools more important. The institutions considered important across all community groups were *kebele* administration, farmers’ training centres, schools, churches, ACSI, police and animal health institutions.

Many organisations work independently. However, in some cases there are some organisations and groups who work in close cooperation with each other. For example, ACSI works with the *kebele* administration, farmers’ training centre, cooperatives and police. Similarly, the farmers’ training centre, *kebele* administration, community water committee and church are also working together.



### 3.1.4. Agricultural production conditions

Mixed farming, which comprises crop production and animal husbandry, is the typical farming system in Tagel wodefit *kebele*. The crop and animal enterprises are dependent of each other for their existence and productivity. The crop enterprise needs animal power for traction and animal manure for soil fertility and compost preparation. The animal enterprise in turn, needs crop residues and some grain for feed from the crop enterprise. Both sub-sectors suffer constraints preventing improvements in productivity.

#### 3.1.4.1 Crop production

The major crops grown in the area under rain-fed conditions are maize, finger millet, teff and niger seed on red soils and teff, niger seed, chick pea and grass pea on Vertisol. Vegetables such as cabbage, potato and sugar cane are grown under irrigation. Almost all the households in Tagel Wodefit *kebele*, are dependent on subsistence agriculture where the average productivity has decreased substantially due to major constraints, particularly the loss of soil fertility, land shortage and crop pest and disease damage. The system of production is traditional, and ploughing, harvesting and threshing are done by human and animal power only.

**Land preparation:** Land is prepared using the traditional plough drawn by two oxen. The frequency of ploughing varies from crop to crop and from one soil type to another. Brown (dark red soil) soil and black soil need ploughing more frequently than red soil. Traditionally, teff and finger millet plots need more frequent, intensive ploughing as well as more care than other crops.

**Sowing and weeding (Cultivation):** The broadcasting method of sowing is usually used for teff, finger millet, and niger seed, because these crops are difficult to plant in rows as the size of the seed is very small. Planting these crops in rows is now becoming more common. Planting in rows is widely adopted for maize and it is advantageous for proper utilization of fertilizer, distribution of the seed and weeding. For broad leaved weeds, farmers commonly use the weedkiller 2,4-D, but for grassy weeds hand weeding is the only option. Weeding in the *kebele* is commonly practised during July to September.

**Harvesting and threshing:** Harvesting and threshing are the most labour intensive and time-consuming activities. Harvesting is commonly practised using sickles and threshing is done on agricultural ground which is cleaned, compacted, and plastered with cow dung. Harvesting is commonly practised during October to December.

**Cropping pattern:** Farmers in Tagel Wodefit *kebele*, predominantly practise the sole cropping system. Fallowing is not currently, practised because of rising demand for agricultural land. The usual cropping systems in addition to sole cropping are crop rotation, which is used to restore soil fertility when farmers integrate pulses with cereals, and lupine is the common legume crop used for crop rotation. Crop rotation is also one way of minimizing weed intensity.

**Organisation of inputs:** Major agricultural inputs such as fertilizer, improved seed and chemicals are distributed to farmers through farmers' cooperatives. The quantities of inputs provided to farmers are sufficient, but the price and quality have become the day to day agenda of debate and dialogue. The high price of fertilizer worries farmers more than anything else.

#### 3.1.4.2 Livestock production

The main livestock types found in the *kebele* are cattle such as oxen, cows, bulls, heifers, and calves, and mules and donkeys. There are also substantial numbers of sheep, goats and poultry in each household. Livestock production is



a means of livelihood and a measure of wealth status. A wealthy farmer can have more than four oxen and some number of cows, heifers, mules, donkeys and others.

### **3.1.5. Agricultural production constraints**

#### **3.1.5.1 Crop production constraints**

Pair wise ranking of the major problems in the farming community revealed that declining soil fertility, high fertilizer prices, soil erosion, lack of improved crop seed and crop pests and diseases were the major constraints on crop production.

#### **3.1.5.2 Low soil fertility:**

Farmers described the low levels of productivity in terms of many interrelated factors. They considered the loss of soil fertility to be the major factor in declining productivity. They ascribed this mainly to repeated cultivation, without allowing time for the plot to recover (absence of fallowing and crop rotation). In the past, when land was abundant, such plots would be left uncultivated as fallow land to recover, but now, land has become so scarce so that fallowing is difficult to justify. Rotation with legumes as a means of soil fertility restoration is declining, as legumes are less productive and easily damaged by pests when compared with cereals such as maize and millet. Thus, farmers repeatedly cultivate cereals, especially maize, year after year on the same field. Removal of all crop residues for feed and firewood consumption is another major reason for the decline of soil fertility as it affects nutrient recycling and exposes the soil to wind and water erosion. Traditional land preparation which needs frequent ploughing coupled with high levels of rainfall aggravates soil erosion which causes further losses of soil fertility.

Farmers also explained that even though they are applying higher doses of chemical fertilizer than previously, the productivity of each crop is declining. This may be due to changes in the physical and chemical properties of the soil, which results in soil acidity and low organic matter content that affects the nutrient use efficiency.

#### **3.1.5.3 High price of fertilizer:**

As the fertility level of the soil is declining year after year, farmers are forced to use increasing levels of fertilizer to maintain the productivity of their plots. The price of fertilizer is increasing so much that resource-poor farmers are finding it increasingly difficult to afford. Thus, considerable numbers of farmers are not applying enough chemical fertilizer to their crop fields, and as a result, they have been unable to maintain the productivity of their land. That is why farmers selected this as their biggest problem during the pair wise ranking of problems.

#### **3.1.5.4 Lack of improved seeds:**

Farmers grow maize on most of their plots for reasons of productivity. However, the rate of productivity of maize hybrids is declining. The farmers argued that they use the same amount of fertilizer, the same methods of cultivation, weeding and other activities, and yet the rate of productivity continues to decline. Currently, hybrid maize is produced by farmers and redistributed to other farmers through the regional seed enterprise, and farmers are complaining that the quality of the seed is very low, with high impurity, broken seeds, germination problems and very poor productivity. Improved varieties for other crops such as teff, finger millet, niger seed and chickpea have not been introduced into the *kebele*, but a number of improved varieties of these crops have been released by the regional and national research centres. Farmers explained that a lack of improved varieties for other crops is one of the major gaps of the farming system.



### 3.1.5.5 Livestock production constraints

The livestock production subsector also experiences a number of constraints. The quality and quantity of grazing land is the main constraint which is mentioned repeatedly and insistently. The main problem on the grazing land is overstocking. Furthermore, some farmers are illegally expanding their holdings into the grazing areas which further reduces its area. Lack of rotation in the grazing system limits the productivity of the grazing land. As it is communally owned, the grazing land is usually also affected by soil erosion.

Another constraint of the livestock subsector is the prevalence of animal disease, and the provision of a poor animal health service. Animal disease is not as challenging as it was in past decades, but different types of animal diseases still adversely affect the livestock. Animal health services are much improved on previous decades, but farmers complained about the service delivery, as they are sent to the private sector to buy drugs, which are very expensive and of poor quality.

The livestock sub sector is also constrained by a shortage of improved animal breeds. The productivity of local animals is decreasing due to numerous factors. On the other hand, the supply of improved animals is non-existent, or exists in a very limited supply. This made the sub sector unproductive considering the number of livestock kept by each household.

### Summary of findings

**Table 3: Summary of findings in agricultural production conditions (Tagel Wodefit kebele)**

No	Item	Findings
1	Main	
	• Crops	Maize, millet, teff, pulses, crop trees
	• Livestock	Cattle, sheep, goats, poultry, bees
2	Prevalent practices	
	• Crop	<ul style="list-style-type: none"> <li>• Land preparation-by oxen power</li> <li>• Sowing—by broadcast except for maize</li> <li>• Weeding—by hand and using chemicals</li> <li>• Threshing—by animal and human power</li> </ul>
	• Livestock	<ul style="list-style-type: none"> <li>• Free grazing</li> <li>• Crop residues</li> <li>• Residues of local drinks</li> </ul>
3	Organisation of agricultural inputs	
	• Fertilizer	Provided by cooperatives and agriculture offices
	• Improved seed	Provided by cooperatives, agriculture offices, private companies & NGOs
4	Agricultural production constraints	
	• Crop production constraints	<ul style="list-style-type: none"> <li>• Declining soil fertility</li> <li>• High fertilizer price</li> <li>• Crop diseases and pests</li> <li>• Shortage of improved seed</li> </ul>
	• Livestock production constraints	<ul style="list-style-type: none"> <li>• Shortage of grazing land and feed problem</li> <li>• Animal health problem</li> <li>• Shortage of improved animal breeds &amp; AI</li> </ul>



**Table 4:** Pair-wise problem ranking matrix of problems faced by farmers in Tagel Wodefit *kebele*

No	Problems	1	2	3	4	5	6	7	8	9	10	11	12	13	Score	Rank
1	Animal health		1	1	1	1	1	1	1	1	1	11	1	1	11	2
2	Shortage of improved animal breeds			3	4	5	6	7	8	9	10	11	12	12	0	13
3	Shortage of animal forage and grazing land				4	5	6	7	8	9	10	11	12	3	2	11
4	Shortage of improved seed					4	4	7	8	4	4	11	4	4	8	5
5	Declining soil fertility						6	7	8	9	10	11	5	5	4+1	9
6	Drinking water problem							7	8	9	6	11	6	6	6	7
7	Marketing problems								7	7	7	11	7	7	10	3
8	Crop pests and disease									8	8	11	8	8	9	4
9	Shortage of credit										9	11	9	9	7	6
10	Deforestation											11	12	10	4+1+1	8
11	Increase in the price of fertilizer												11	11	12	1
12	Cooperatives problem													12	4	10
13	Shortage of arable land for young farmers														1	12



Table 5: Cause-effect relationships

No	Problem	Cause	Effect	Solution
1	Shortage of improved crop varieties and provision of low quality seed	<ul style="list-style-type: none"> <li>Supply problem/ limited suppliers/</li> <li>Private seed supplying enterprises don't deliver quality seed</li> </ul>	<ul style="list-style-type: none"> <li>Decline in crop productivity</li> <li>Damage/ total failure</li> </ul>	<ul style="list-style-type: none"> <li>Government involvement in the supply of improved seed</li> <li>Farmers need guarantee from suppliers</li> <li>Follow-up of seed producing farmers; quality control</li> <li>Community- based farmer to farmer seed exchange</li> </ul>
2	Animal health problems	<ul style="list-style-type: none"> <li>Limited vet service &amp; drug supply</li> <li>Insufficient service delivery</li> <li>Skill limitation of animal health workers</li> </ul>	<ul style="list-style-type: none"> <li>Increased animal mortality</li> <li>Decrease in productivity</li> <li>Lame animals</li> </ul>	<ul style="list-style-type: none"> <li>Improve drug supply</li> <li>Improve the competence of animal health service providers</li> </ul>
3	Shortage of improved animal breeds and feeds	<ul style="list-style-type: none"> <li>Limited supply</li> <li>Shortage of AI service</li> </ul>	<ul style="list-style-type: none"> <li>Low productivity of animals</li> <li>Low income</li> <li>High incidence of poverty</li> </ul>	<ul style="list-style-type: none"> <li>Improve the supply of improved breed animals and AI</li> </ul>
4	Mismanagement of natural resources	<ul style="list-style-type: none"> <li>Lack of sense of ownership</li> <li>Limited awareness</li> </ul>	<ul style="list-style-type: none"> <li>Soil acidity</li> <li>Low crop and animal productivity</li> <li>Climate change</li> </ul>	<ul style="list-style-type: none"> <li>Establishment of community bylaw for natural resource management and utilization</li> <li>Watershed management</li> </ul>
5	Declining crop productivity	<ul style="list-style-type: none"> <li>Zero fallowing</li> <li>Land shortage</li> <li>Limited rotation of crops</li> </ul>	<ul style="list-style-type: none"> <li>Reduced crop productivity</li> <li>Low household income</li> </ul>	<ul style="list-style-type: none"> <li>Application of compost</li> <li>Practice soil and water conservation measures</li> <li>Community level seed multiplication</li> </ul>
6	High fertilizer price	<ul style="list-style-type: none"> <li>Increased demand</li> <li>Not produced domestically (imported)</li> </ul>	<ul style="list-style-type: none"> <li>Increased cost of production</li> <li>Declining crop yields</li> </ul>	<ul style="list-style-type: none"> <li>Application of compost</li> <li>Domestic production of fertilizer</li> <li>Improve agricultural marketing</li> </ul>
7	Agricultural marketing problems	<ul style="list-style-type: none"> <li>Malfunctioning of free market</li> <li>Lack of competitive market</li> </ul>	<ul style="list-style-type: none"> <li>Low commodity price</li> <li>Low income</li> <li>Poverty</li> </ul>	<ul style="list-style-type: none"> <li>Government support</li> </ul>



8	Credit supply problem	<ul style="list-style-type: none"> <li>• Untimely supply</li> <li>• Shortage of supply</li> <li>• Limited supply of input credit</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced crop yields</li> <li>• Late application of fertilizer</li> <li>• Incidence of diseases &amp; pests</li> </ul>	<ul style="list-style-type: none"> <li>• Demand based</li> <li>• Timely supply (March-May)</li> </ul>
9	Shortage of pure drinking water	<ul style="list-style-type: none"> <li>• Population increase</li> <li>• Mismanagement of existing water points</li> <li>• Insufficient water supply</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing disease incidence</li> <li>• Time wastage</li> <li>• Inability to produce backyard vegetables</li> </ul>	<ul style="list-style-type: none"> <li>• Construction of water points by the government</li> </ul>



## 3.2. Amarit Kebele

### 3.2.1. Environmental conditions

The status of the natural resources in the *kebele*, was identified by inviting the participants to draw their own *kebele* resource map. This light-hearted exercise involved all participants and revealed that the mix and status of natural resources in this *kebele* are very similar to those in Tagel Wodefit *kebele*. The main natural resources identified in Amarit *kebele* were water, farmland, forest and grazing land.

All resources except for irrigation and drinking water were categorised as scarce for all community groups. Arable land scarcity is especially critical for young farmers. They own none, or no more than half a hectare. The problems with grazing land are overstocking and mismanagement.

Male and female headed households have equal access to arable land, but young farmers do not have access to land because there has been no redistribution since 1997, due to fear of further land fragmentation. A group of farmers who were categorized as bureaucrats during the land redistribution were allocated smaller areas of land than the rich and the non bureaucrat group of farmers.

The allocation of various crops within a household's land made by discussion and common decision of husband, wife and other family members. In most cases, the husband dominates these discussions, but this varies from household to household.

Collection of firewood is the equal responsibility of husband and wife and children and other family members are also involved. Tree branches, crop residues and cow dung are also used for fuel. Collection of drinking water is done mainly by women and girls, with occasional help from boys.

As we have described in Tagel Wodefit *kebele*, farmers use communal grazing lands with a free grazing system. The productivity of the grazing land is very low as it is affected by overgrazing and there is no rotational grazing system.

### Summary of findings

Table 6: Summary of findings in natural resources (Amarit *kebele*)

No	Items	Findings
1	Abundant resources	Irrigation and drinking water
2	Scarce resources	All except the above
3	Most problematic resource	Arable land
4	Access to land by community group	Not equal between the elderly and young farmers
5	Fertility distribution of the land	Not uniform
6	Decision making on land allocation	Based on discussion and decision among all family members
7	Collection of firewood	Equal responsibility for all family members
8	Collection of water	Women and girls are mainly responsible
9	Livestock grazing	Done on communal lands, in few cases on private grazing lands
10	Environmental constraints	Soil erosion, deforestation, free grazing

Source: PRA finding



### **3.2.2. Socio-economic conditions**

A social map of the *kebele* was prepared by participant farmers. The approximate boundary of the social map was found to be wider than the physical boundary of the *kebele*. Institutions such as schools, churches, FTC, *kebele* administration, health extension centre are found in the *kebele*.

#### **3.2.2.1 Demographic characteristics**

The number of households, the total population and the average family size within a typical household are increasing every year. This is a concern, especially as the numbers of landless young farmers continue to grow.

The Ethiopian Orthodox Church is the dominant religion across all villages in the *kebele* and all residents are Amhara, where the female headed households are living together in segregation with other community members.

#### **3.2.2.2 Livelihood**

Livelihood is based mainly on agricultural production, in which crop production and animal husbandry are practiced side by side. This means mixed farming is dominantly practiced throughout all farming households in the *kebele*. The productivity of agriculture is, however, being challenged by several constraints, which in most cases are interlinked. In addition to agriculture, a low level of petty trading is exercised by farmers as an alternative livelihood option.

#### **3.2.2.3 Access to finance**

Here again, ACSI and primary level farmers' cooperatives appear to be the main finance sources for farmers. There are, however, problems in the credit services of both institutions. The problems are similar to those mentioned in Tagel Wodefit *kebele*.

#### **3.2.2.4 Market**

The market system has problems that are common to all the *kebeles* in the *woreda*. A particular challenge for this *kebele* is its location some distance from the main asphalt road which connects the *woreda* capital, Merawi town, to Bahir Dar. Because of this, the marketing problem is even worse than in the other *kebeles* in the *woreda*.



## Summary of findings

Table 7: Summary of findings in socio-economic conditions (Amarit kebele)

No	Item	Findings
1	Village boundary in respect to interaction & services	Wider than the administrative boundary
2	Demographic characteristics	<ul style="list-style-type: none"> <li>All inhabitants are Amhara</li> <li>Religion- Ethiopian Orthodox Church</li> <li>Population is increasing</li> <li>Household number is increasing</li> </ul>
3	The main economic activities	Crop and livestock production, petty trading
4	Access to finance	ACSI and cooperatives are the only sources
5	Access to market	<ul style="list-style-type: none"> <li>Market place is found in the <i>kebele</i></li> <li>The prices of agricultural outputs are very low</li> <li>The prices of industrial outputs are very high</li> </ul>
6	Main economic constraints	<ul style="list-style-type: none"> <li>Land shortage</li> <li>Marketing problems</li> <li>High prices of agricultural inputs</li> </ul>

Source: PRA finding

### 3.2.3. Institutions or actors of development

The institutions fall into governmental organisations (GOs) and non-governmental organisations (NGOs). Governmental organisations include *kebele* administration, farmers' training centre (FTC), health extension, schools, police, women's affairs, youth association, animal health centre, and cooperatives. The NGOs are the church, and Amhara Credit and Saving Institution (ACSI). Gender is a cross cutting issue that every development actor has to include in its main activities.

### 3.2.4. Agricultural production conditions

#### 3.2.4.1 Crop production

The major crops grown are maize, finger millet, teff and pulses. Irrigation is practised in limited areas and mostly uses a traditional irrigation system with earthen canals.

Major crop production practices such as land preparation, sowing and threshing follow the same methods described above for Tagel Wodefit *kebele*



### 3.2.4.2 Livestock production

The main livestock types are oxen, cows, sheep, goats, chickens, donkeys and mules. The production system and the constraints are similar to those described for the other *kebeles*.

The main agricultural inputs in the *kebele* are fertilizer, improved seed, chemicals and improved animal breeds. The inputs are distributed through cooperatives and agriculture offices. The price and quality of inputs have been controversial in recent years.

#### **Summary of findings**

**Table 8:** Summary of findings in agricultural production conditions (Amarit *kebele*)

No	Item	Findings
<b>1</b>	<b>Main</b>	
	• Crops	Maize, millet, teff, pulses, crop trees
	• Livestock	Cattle, sheep, goats, poultry, bees
<b>2</b>	<b>Prevalent practices</b>	
	• Crop	<ul style="list-style-type: none"> <li>• Land preparation—by oxen power</li> <li>• Sowing—by broadcast except for maize</li> <li>• Weeding—by hand and using chemicals</li> <li>• Threshing—by animal and human power</li> </ul>
	• Livestock	<ul style="list-style-type: none"> <li>• Free grazing</li> <li>• Crop residues</li> <li>• Residues of local drinks</li> </ul>
<b>3</b>	<b>Organisation of agricultural inputs</b>	
	• Fertilizer	Provided by cooperatives and agriculture offices
	• Improved seed	Provided by cooperatives, agriculture offices, private business & NGOs
<b>4</b>	<b>Agricultural production constraints</b>	
	• Crop production constraints	<ul style="list-style-type: none"> <li>• Declining soil fertility</li> <li>• High fertilizer prices</li> <li>• Crop diseases and pests</li> <li>• Shortage of improved seeds</li> </ul>
	• Livestock production constraints	<ul style="list-style-type: none"> <li>• Shortage of grazing land and feed problem</li> <li>• Animal health problem</li> <li>• Shortage of improved animal breeds &amp; AI</li> </ul>



**Table 9:** Pair-wise problem ranking matrix of problems faced by farmers in Amarit *kebele*

No	Problems	1	2	3	4	5	6	7	8	9	10	Score	Rank
1	Marketing problems		2	3	1	1	1	1	1	9	10	5+1	4
2	Crop diseases and pests			3	4	5	2	2	2	9	10	4	7
3	Fertilizer price increase				3	3	3	3	3	9	10	7	3
4	Shortage of improved seed					5	4	4	4	9	10	4	6
5	Irrigation water problems						5	5	5	9	10	5	5
6	Animal forage and grazing problems							6	6	9	10	2	8
7	Animal health problems								7	9	10	1	9
8	Shortage of Artificial insemination									9	10	0	10
9	Deforestation										9	9	1
10	Decline in productivity											8	2



### 3.3. Ambo Mesk Kebele

#### 3.3.1. Environmental conditions

As in all the *kebeles*, the discussion on environmental conditions by the farmers' group started after they had drawn the resource map.

The resource map showed that the most important resources found in the *kebele* are water, arable and grazing lands and forest.

All natural resources are highly depleted due to population pressure and no resource was categorized as abundant except irrigation and drinking water. Management of water for both these purposes is, however, problematic, and water supply remains a major problem. Young farmers are often unable to get arable land, which is a scarce resource for all community groups. But women and men have equal access to land.

Collection of firewood is the equal responsibility of husband and wife, but collection of water the sole responsibility of women and girls.

People graze their animals on communally owned grazing lands in a free grazing system.

#### Summary of findings

Table 10: Summary of findings on natural resources (Ambo Mesk *kebele*)

No	Items	Findings
1	Abundant resources	Irrigation and drinking water
2	Scarce resources	All except the above
3	Problematic resource	Arable land
4	Access to land per community group	Not equal between the elderly and young farmers
5	Fertility distribution of the land	Not uniform
6	Decision making on land allocation	Based on discussion and decision among all family members
7	Collection of firewood	Equal responsibility for all family members
8	Collection of water	Women and girls are mainly responsible
9	Livestock grazing	On communal lands, in few cases on private grazing lands
10	Environmental constraints	Soil erosion, deforestation, free grazing



### 3.3.2. Socio-economic conditions

Farmers prepared a social map of the *kebele* and followed up with discussions on socio-economic issues. The map indicated that the social boundary of the *kebele* is wider than the physical one. The institutions found in the *kebele* are as follows.

**Table 11: Institutions found in Ambo Mesk *kebele***

<b>Name of institution</b>	<b>Type</b>
School	Social institution
Church	Religious institution
Animal health post	Economic institution
Cooperative	Economic institution
FTC	Economic institution
Market place	Economic institution
<i>Kebele</i> administration	Administrative institution
Seed nursery sites	Economic institution
Grain mill	Economic Institution
NGOs	Non-governmental organisations

#### 3.3.2.1 Demographic characteristics

All residents of the *kebele* are Amhara and the dominant religion is the Ethiopian Orthodox Church. The population and the numbers of households are increasing steadily and efforts at birth control have not yet been effective.

#### 3.3.2.2 Access to finance

As in other *kebeles*, the sources of finance, and especially loans, are ACSI and farmers' cooperatives. Loans from cooperatives are restricted mainly to agricultural inputs such as fertilizers and improved seed but ACSI provides loans for diversified activities. The services of both institutions have limitations such as low credit limits and inefficient services.



### 3.3.2.3 Marketing

The supply of agricultural outputs, especially at the time of harvest when many farmers need to sell, is very large. This reduces prices and damages the livelihoods of smallholder farmers, particularly those who are already poor.

Ambo Mesk *kebele* is crossed by an asphalt road, which eases some transportation problems, but farmers still experience difficulty with marketing perishable agricultural products such as potatoes.

The prices of industrial outputs which farmers need in everyday life, are, on the other hand, increasing rapidly. These opposing forces push the livelihood of farmers in the *kebele* into a difficult corner.

### Summary of findings

Table 12: Summary of findings in socio-economic conditions (Ambo Mesk *kebele*)

No	Item	Findings
1	Village boundary in respect to interaction & services	Wider than the administrative boundary
2	Demographic characteristics	<ul style="list-style-type: none"> <li>• All inhabitants are Amhara</li> <li>• Religion-Ethiopian Orthodox Church</li> <li>• Population number is increasing</li> <li>• Household number is increasing</li> </ul>
3	The main economic activities	Crop and livestock production, petty trading
4	Access to finance	ACSI and cooperatives are the only sources
5	Access to market	<ul style="list-style-type: none"> <li>• Market place is found in the <i>kebele</i></li> <li>• The prices of agricultural outputs are very low</li> <li>• The prices of industrial outputs are very high</li> </ul>
6	Main economic constraints	<ul style="list-style-type: none"> <li>• Land shortage</li> <li>• Marketing problems</li> <li>• High prices of agricultural inputs</li> </ul>

### 3.3.3. Actor landscape

A majority of the institutions working on the *kebele* are governmental organisations. There are also a few NGOs such as ACSI.



### **3.3.4. Agricultural production conditions**

#### **3.3.4.1 Crop production**

Crop production is practised in fragmented smallholder farms which lack modern technologies. It is at subsistence level and uses animal power for traction, threshing and other major agricultural activities. Sowing is done mostly in a broadcast system except for maize which has been planted in rows for decades. The major crops grown are maize, finger millet, pulses, and tree crops.

#### **3.3.4.2 Livestock production**

Cattle, sheep, goats, donkeys and mules are the common livestock types kept by the farming community.

#### **3.3.4.3 Organisation of inputs**

Agricultural inputs are provided by cooperatives and different level agricultural offices. They supply fertilizers, improved seed, and improved livestock breeds, either for cash or on loan terms.

#### **3.3.4.4 Crop production constraints**

Crop production constraints mentioned during the PRA survey included fertilizer price increases, poor quality and high price of improved seeds, declining soil fertility, prevalence of crop disease and pests, arable land shortage, and limited supply and poor adoption rate of improved technologies.

#### **3.3.4.5 Livestock production constraints**

The common problems of the sub sector such as grazing land shortage, poor animal health service both in quality and coverage, and shortage of improved animal breeds also affect this *kebele*.



## Summary of findings

Table 13: Summary of findings in agricultural production conditions (Ambo Mesk kebele)

No	Item	Findings
1	Main	
	<ul style="list-style-type: none"> <li>Crops</li> </ul>	Maize, millet, teff, pulses, crop trees
	<ul style="list-style-type: none"> <li>Livestock</li> </ul>	Cattle, sheep, goats, poultry, bees
2	<b>Prevalent practices</b>	
	<ul style="list-style-type: none"> <li>Crop</li> </ul>	<ul style="list-style-type: none"> <li>Land preparation-by oxen power</li> <li>Sowing—by broadcast except for maize</li> <li>Weeding—by hand and using chemicals</li> <li>Threshing—by animal and human power</li> </ul>
	<ul style="list-style-type: none"> <li>Livestock</li> </ul>	<ul style="list-style-type: none"> <li>Free grazing</li> <li>Crop residues</li> <li>Residues of local drinks</li> </ul>
3	<b>Organisation of agricultural inputs</b>	
	<ul style="list-style-type: none"> <li>Fertilizer</li> </ul>	Provided by cooperatives and agriculture offices
	<ul style="list-style-type: none"> <li>Improved seed</li> </ul>	Provided by cooperatives, agriculture offices, private companies & NGOs
4	<b>Agricultural production constraints</b>	
	<ul style="list-style-type: none"> <li>Crop production constraints</li> </ul>	<ul style="list-style-type: none"> <li>Declining soil fertility</li> <li>High fertilizer prices</li> <li>Crop disease and pests</li> <li>Shortage of improved seed</li> </ul>
	<ul style="list-style-type: none"> <li>Livestock production constraint</li> </ul>	<ul style="list-style-type: none"> <li>Shortage of grazing land and feed problems</li> <li>Animal health problems</li> <li>Shortage of improved animal breeds &amp; AI</li> </ul>



**Table 14:** Pair-wise problem ranking matrix of problems faced by farmers in Ambo Mesk *kebele*

No	Problems	1	2	3	4	5	6	7	8	9	Score	Rank
1	Crop pests and disease		1	3	4	1	6	1	8	1	4+1	4
2	Fertilizer price increases			2	2	2	2	2	8	2	6+1	2
3	Grazing land problems				3	5	6	3	8	9	3+1	6
4	Irrigation water management					4	6	4	8	9	3	7
5	Shortage of improved seeds						6	5	8	9	2	8
6	Marketing problems							6	8	6	6	3
7	Shortage of firewood								8	9	0	9
8	Drinking water management									8	8	1
9	Arable land shortage										4	5



### 3.4. Engote Kebele

#### 3.4.1. Environmental conditions

Drawing the resource map was the first job carried out by the farmers from the *kebele*.

Water is an abundant resource in the *kebele*. But there are many problems in the management of water, both for drinking and irrigation. Firewood is another abundant resource found in the *kebele*.

Scarce resources are the same as in the *kebeles*. mentioned above. Land allocation at household level is decided with discussions and common understanding among all family members of the household.

Collection of firewood and drinking water is similar the situation mentioned in other *kebeles*.

People mainly use communally owned grazing areas to feed their livestock. Few farmers also allocate some of their plots for grazing as well as for local cut and carry practices. Some also provide their animals with residues left over from making the local drinks "Atela" and "Brint".

#### Summary of findings

Table 15: Summary of findings in natural resource (Engote *kebele*)

No	Items	Findings
1	Abundant resources	Water and firewood
2	Scarce resources	All except the above
3	Problematic resource	Arable land
4	Access to land per community group	Not equal between the elderly and young farmers
5	Fertility distribution of the land	Not uniform
6	Decision making on land allocation	Based on discussion and decision among all family members
7	Collection of firewood	Equal responsibility for all family members
8	Collection of water	Women and girls are mainly responsible
9	Livestock grazing	Done on communal lands, in few cases on private grazing lands
10	Environmental constraints	Soil erosion, deforestation, free grazing



### 3.4.2. Socio-economic conditions

The Social mapping exercise by farmers in the *kebele* revealed that the following organisations work within it.

**Table 16: Institutions found in Kare Gurach *kebele***

<b>Name of institution</b>	<b>Type</b>
School	Social institution
Church	Religious institution
Cooperative	Economic institution
FTC	Economic institution
<i>Kebele</i> administration	Administrative institution
Police	Administrative institution
Seed nursery sites	Economic institution
NGOs	Non-governmental organisations

#### 3.4.2.1 Demographic characteristics

The inhabitants of the *kebele* are Amhara, and the Ethiopian Orthodox Church is the sole religious institution in the area. The number of households and the total population are increasing despite efforts by the government and other stakeholders to introduce family planning.

#### 3.4.2.2 Livelihoods

Livelihoods depend largely on agricultural production, where mixed farming is the dominant farming system. Every household in Engote *Kebele* can produce its own consumable agricultural products either by directly producing on its own plot, or by sharing in and sharing out arrangements. Food security is not, however, universal and there are few households which face hunger for a few months each year.



### 3.4.2.3 Access to finance

Farmers in the area receive finance from ACSI and the cooperatives. The first gives credit for all activities and the latter focuses mainly on delivering credit for purchase of agricultural inputs. Their services are not without shortcomings.

### 3.4.2.4 Market

There is a huge marketing problem in the *kebele*. The prices of agricultural outputs are very low but industrial outputs are too expensive.

## Summary of findings

Table 17: Summary of findings in socio-economy (Engote *kebele*)

No	Item	Findings
1	Village boundary in respect to interaction & services	Wider than the administrative boundary
2	Demographic characteristics	<ul style="list-style-type: none"> <li>• All inhabitants are Amhara</li> <li>• Religion-Ethiopian Orthodox Church</li> <li>• Population number is increasing</li> <li>• Household number is increasing</li> </ul>
3	The main economic activities	Crop and livestock production, petty trading
4	Access to finance	ACSI and cooperatives are the only sources
5	Access to market	<ul style="list-style-type: none"> <li>• Market place is found in the <i>kebele</i></li> <li>• The prices of agricultural outputs are very low</li> <li>• The prices of industrial outputs are very high</li> </ul>
6	Main economic constraints	<ul style="list-style-type: none"> <li>• Land shortage</li> <li>• Marketing problems</li> <li>• High prices of inputs</li> </ul>

### 3.4.3. Actor landscape

As in the other *kebeles*, the institutions are Governmental Organisations (GOs) and Non- Governmental Organisations (NGOs).



### **3.4.4. Agricultural production conditions**

#### **3.4.4.1 Crop production**

The system of production is the same as in the *kebeles* detailed above.

#### **3.4.4.2 Livestock production**

The common livestock types in the *kebele* are cattle (local and cross breeds), sheep and goats, equine (donkey, mule, horse) poultry and bees.

#### **3.4.4.3 Organisation of inputs**

Fertilizer is distributed through cooperatives and agricultural offices at different levels. Supply of improved crop varieties involves the private sector and NGOs in addition to cooperatives and agriculture offices. The supply of improved animal breeds is very limited, but if available, is carried out through the agriculture office.

#### **3.4.4.4 Crop production constraints**

The major crop production constraints are declining soil fertility, high fertilizer prices, declining crop productivity and crop pests and diseases.

#### **3.4.4.5 Livestock production constraints**

The major constraints are shortage of grazing land and animal feed supply, a poor veterinary service and very limited or non-existent supply of improved animal breeds.



## Summary of findings

**Table 18: Summary of findings in agricultural production conditions (Engote Kebele)**

No	Item	Findings
1	Main	
	<ul style="list-style-type: none"> <li>Crops</li> </ul>	Maize, millet, teff, pulses, crop trees
	<ul style="list-style-type: none"> <li>Livestock</li> </ul>	Cattle, sheep, goats, poultry, bees
2	Prevalent practices	
	<ul style="list-style-type: none"> <li>Crop</li> </ul>	<ul style="list-style-type: none"> <li>Land preparation-by oxen power</li> <li>Sowing—by broadcast except for maize</li> <li>Weeding—by hand and using chemicals</li> <li>Threshing—by animal and human power</li> </ul>
	<ul style="list-style-type: none"> <li>Livestock</li> </ul>	<ul style="list-style-type: none"> <li>Free grazing</li> <li>Crop residues</li> <li>Residues of local drinks</li> </ul>
3	Organisation of agricultural inputs	
	<ul style="list-style-type: none"> <li>Fertilizer</li> </ul>	Provided by cooperatives and agriculture offices
	<ul style="list-style-type: none"> <li>Improved seed</li> </ul>	Provided by cooperatives, agriculture offices, private business & NGOs
4	Agricultural production constraints	
	<ul style="list-style-type: none"> <li>Crop production constraints</li> </ul>	<ul style="list-style-type: none"> <li>Declining soil fertility</li> <li>High fertilizer prices</li> <li>Crop disease and pests</li> <li>Shortage of improved seeds</li> </ul>
	<ul style="list-style-type: none"> <li>Livestock production constraints</li> </ul>	<ul style="list-style-type: none"> <li>Shortage of grazing land and animal feed</li> <li>Animal health problems</li> <li>Shortage of improved animal breeds &amp; AI</li> </ul>



**Table 19: Pair-wise problem ranking matrix of problems faced by farmers in Engote kebele**

No	Problems	1	2	3	4	5	6	7	8	9	10	Score	Rank
1	Fertilizer price increases		1	1	1	1	1	1	1	1	1	9	1
2	Marketing problems			2	2	2	2	2	2	2	2	8	2
3	Crop pests and disease				3	5	3	3	3	3	3	6	4
4	Shortage of improved seed					5	4	4	4	4	4	5	5
5	Management of irrigation water						5	5	5	5	5	7	3
6	Animal forage and grazing land problem							6	6	6	10	3	7
7	Shortage of improved animal breeds								7	9	10	1	9
8	Firewood problem									9	10	0	10
9	Management of drinking water										10	2	8
10	Declining soil fertility											4	6



## 4. STAKEHOLDER WORKSHOPS

### 4.1 Organisation of Workshops and Feedback Received

At the start we had planned to conduct stakeholder workshops at different levels: at community level, at *woreda* level and at regional level. The community workshops at *kebele* level were planned to include participation by all inhabitants of the community. However, at the time of our PRA, the government and other development stakeholders were conducting large-scale conferences. In addition, our PRA was conducted at the peak harvesting season of the area. However, the community workshop have been conducted with some of the community. In most cases, the problems raised and prioritized by the PRA group of farmers in each *kebele* were approved by the participants of the workshop. This indicates the success of our PRA work in two major areas. The first is that we were effective in selecting the correct community representatives from each stratum. The second strength was that the brainstorming and discussions with the community revealed the perceptions of the wider community through understanding the local culture, attitudes, concerns and feelings.

*Woreda* and regional level workshops (scoping study) were conducted according to our plan. There were sufficient numbers of participants, who were eager to raise whatever problems and ideas they felt. The innovation themes identified during the various workshops are listed in the following section.

### 4.2 List of Innovation Themes

**Table 20: Proposed Innovation Themes for 2012**

#### A. Crop

Commodity	Activities/ themes	Responsible body
Fruits and vegetables	<ul style="list-style-type: none"> <li>▪ Demonstration and provision of fruit and vegetable varieties</li> <li>▪ Establish quality seed supply system</li> </ul>	<ul style="list-style-type: none"> <li>▪ CASCAPE and ARARI</li> <li>▪ CASCAPE and WoA</li> </ul>
Potato	<ul style="list-style-type: none"> <li>▪ Demonstration of high yielding and disease resistant varieties</li> <li>▪ Disease and pest control/ management options</li> <li>▪ Quality seed multiplication</li> <li>▪ Develop potato post-harvest handling system(DLS construction)</li> <li>▪ Demonstration of food preparation</li> <li>▪ Value chain development</li> </ul>	<ul style="list-style-type: none"> <li>▪ CASCAPE &amp; ARARI</li> <li>▪ CASCAPE&amp; BDU scientists</li> <li>▪ CASCAPE &amp; WoA</li> <li>▪ CASCAPE &amp; AGP</li> <li>▪ CASCAPE &amp; ARARI</li> <li>▪ CASCAPE, NIDP &amp; AGP</li> </ul>



Maize	<ul style="list-style-type: none"> <li>▪ Establish quality seed supply system</li> <li>▪ Demonstration of improved varieties for different agro-ecology</li> <li>▪ Enhancing farmer- level hybrid seed production</li> <li>▪ Demonstration of seed Sheller</li> <li>▪ Demonstration of maize – pigeon pea and maize- faba bean intercropping</li> <li>▪ Demonstration of food preparation</li> <li>▪ Disease and pest control options</li> </ul>	<ul style="list-style-type: none"> <li>▪ CASCAPE &amp; BoA</li> <li>▪ CASCAPE</li> <li>▪ Regional seed enterprise</li> <li>▪ CASCAPE &amp;ARARI</li> <li>▪ CASCAPE &amp; ARARI</li> <li>▪ CASCAPE &amp; ARARI</li> <li>▪ CASCAPE</li> </ul>
Wheat	<ul style="list-style-type: none"> <li>▪ Demonstration of high yielding and disease resistant varieties</li> <li>▪ Disease and pest control options</li> <li>▪ Seed multiplication and dissemination</li> <li>▪ Demonstration of food preparation</li> <li>▪ Value chain development</li> <li>▪ Demonstration of wheat threshing machine</li> </ul>	<ul style="list-style-type: none"> <li>▪ CASCAPE &amp; ARARI</li> <li>▪ CASCAPE &amp; ARARI</li> <li>▪ CASCAPE, ISSD &amp; BoA</li> <li>▪ CASCAPE &amp; ARARI</li> <li>▪ CASCAPE &amp;AGP</li> <li>▪ CASCAPE, ARARI, BoA &amp; AGP</li> </ul>
Teff	<ul style="list-style-type: none"> <li>▪ Demonstration/scale up of improved varieties 'Koncho' and 'Etsub'</li> <li>▪ Demonstration of green manure on teff plot before planting</li> <li>▪ Demonstration of row planting and transplanting vs. broadcasting</li> <li>▪ Establish quality seed supply system</li> </ul>	<ul style="list-style-type: none"> <li>▪ CASCAPE &amp; ARARI</li> <li>▪ CASCAPE</li> <li>▪ CASCAPE</li> <li>▪ CASCAPE, ISSD &amp; BoA</li> </ul>
Finger millet	<ul style="list-style-type: none"> <li>▪ Demonstration of head blast disease resistant and high yielding variety</li> <li>▪ Introduction of treshing machine</li> </ul>	<ul style="list-style-type: none"> <li>▪ CASCAPE</li> <li>▪ CASCAPE &amp; ARARI</li> </ul>



## B. Livestock

Commodity/ Theme	Activities/ sub themes	Responsible body
Livestock feed and nutrition development	<ul style="list-style-type: none"> <li>• Demonstration of improved forage varieties on FTCs and model farmers who are involved in dairy production and fattening activities</li> <li>• Facilitation of improved forage seed supply via seed multiplication on FTCs and interested farmers groups and rural youth</li> <li>• Creation of forage seed market linkage</li> <li>• Household level feed package (best cost ration formulation)</li> <li>• Demonstration of small scale silage making</li> <li>• Demonstration of UREA treatment on crop residues</li> <li>• Demonstration of household cattle feeding trough</li> <li>• Strengthening community grazing land management and forage development practice (rotational grazing)</li> </ul>	<ul style="list-style-type: none"> <li>▪ CASCAPE, ARARI &amp; AGP</li> <li>▪ CASCAPE, ARARI &amp; AGP</li> </ul>
Poultry production	<ul style="list-style-type: none"> <li>▪ Demonstration of poultry production system</li> </ul>	CASCAPE& WoA (AGP)
Honey bee production	<ul style="list-style-type: none"> <li>▪ Demonstration of modern honey bee production system integrating with area closure and watershed development</li> </ul>	CASCAPE& WoA (AGP)

## C. Natural Resource management

Theme	Activities/ sub themes	Responsible body
Integrated nutrient management	<ul style="list-style-type: none"> <li>▪ Demonstration of integrated nutrient management</li> </ul>	CASCAPE
Area closure, forage and apiculture	<ul style="list-style-type: none"> <li>▪ Capacity building</li> <li>▪ Introduction of multipurpose tree species, herbaceous grass and legumes</li> </ul>	CASCAPE
Maintain sustainability of soil and water conservation structures	<ul style="list-style-type: none"> <li>▪ Capacity building</li> <li>▪ Introduction of multipurpose tree species</li> </ul>	CASCAPE
Gully rehabilitation	<ul style="list-style-type: none"> <li>▪ Introduction of forage and multipurpose tree species</li> </ul>	CASCAPE



## 5. Evaluation of PRA process by the team

The PRA process in Mecha woreda has been conducted successfully. It was conducted within the time frame and as planned. There were sufficient participants, including a good number of female headed households in each *kebele*. The discussions and other data exchanging mechanisms were conducted openly, democratically and with mutual understanding.

The overlap of too many conferences and meetings by the government bodies and NGOs has created some problems in getting access to the target community groups within the scheduled time and place. In addition, the PRAs were conducted at harvest time which complicated the arrangements.

By making minor adjustments to the plans, the PRA process was successfully completed.

## 6. References

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