# Interviews on farming in Oda Haro, West Shewa

## Place

### Altitude and terrain

Most of the land in Oda Haro is flat and favourable for farming activities. The north, north-west and north-east parts of the area are highland. This is the areas where still we find natural forests. Conflict over the use of forest land is also common in this area. The hilly and highland nature of lands in this area creates conditions for erosion in different times which flooded the flat area downstream. The flooding has led to the destruction of crops during the summer times. Erosion also contributes to the decline in the fertility of the top fertile soil in the area. With the expansion of deforestation activities in these highland areas, erosion has become a common phenomenon in recent years which contributes to decline in the fertility of the soil, and productivity of the land. The deforestation activities have been carried out in the last 20 years.

Recently the government and the people have worked together on watershed activities mainly in the hill side areas of the community. This is expected to reduce the impact of erosion and flooding on farming activities. The water shede activities were started last year. And farmers observed that there have been encouraging results. In the terraced areas, it became possible to divert the running water away which meant that the flooding of the flat farm lands was reduced. The presence of the highland and the continuous destruction of the forest lands are the main factor for the erosion of the soil. Now with the terracing activities, the rain water from the mountain and highland areas starts to flow to the rivers and streams. In particular, now that most of the flood waters affecting the flat lands is diverted to the Sama River which finally joins the Gibe River in Tarkeanfata Gibe kebele on the border with east wollega zone. There are smaller streams which start from the highland areas and finally join the Sama River at different points in the community. Most of these streams have small amount of water during the dry season but they are the main tributaries to the Sama in summer.

The land in the community is favourable for different kinds of crop production. These include maize, sorghum, teff, red-pepper and nug in the flat lowland areas; and wheat, barley, beans chicken pea, teff and maize in the high land areas. The wheat, barley and beans are grown only in the highland areas, and nug and red-pepper grown only in the low land areas. In addition, fruits, vegetables, and cash crops grow in the irrigated lands. These include sugar cane, coffee, mango, banana, papaya, orange, and vegetables including potato, tomato, onion, carrot, beetroot, cabbage, green pepper, etc. Irrigated land is on the River Sama and other smaller streams such as laga Hubo and laga Bakere which finally forms a small river called Facha’a. Also there is Walale River (in Boto zone which finally joins Sama River), laga Adugna stream located closer to Tibe town and which finally joins in the Sama River in Ebicho zone.

The presence of the rivers and streams in the community contribute to the expansion of irrigation activities in recent years. The rivers and streams are also an important source of drinking water for people and livestock (animals in general).

Due to the differences in altitude and terrain, people use different kinds of improved seeds according to the soil and weather condition. For example, the maize species called 660 is used for the highland areas and take longer time to be repined. The other species include 540, 543 and Agare Shone are more suitable in the lowland areas where the temperature is hot and the rain stops early.

### Soil

The soil types are red soil in the lowland areas and very important for crops like maize, teff, nug and red-pepper. The black-koticha soil is also available in some places in the lowlands areas and is used for growing grasses. It is not recommended for farming and is now mainly used for grazing activities. Of course grow teff and nug on this soil. It is mainly found in the Alemgena zone and in the boundary between Ebicho zone and the town of Tibe- here it is the place is called Goda Gogessa. The brown soil is found in the highlands areas of Boto zone where crops like barley and wheat are grown. This is the area which was highly forested in the past and so this soil is very fertile. The weather conditions were also wet in the past but with the huge deforestation activities in the last 10-15 years, the forest cover has declined and so the soil is exposed to erosion. This resulted in decline in the fertility of this fertile brown soil.

Now the people are using chemical fertilizers in order to compensate the loss of the fertility of the soil. The fertilizer is suitable for all the soils. The improved seeds are also suitable for each of the different soil types.

### Ecosystem

People get different benefits from the forests. The forests help to modify the weather condition so that it helps to get rain. It has the capacity to reduce heat (temperature).

The forest trees are used for the construction of houses. People use the forests for fire wood and charcoal. People eat the fruits obtained from the different kinds of trees growing in the forest. For example, the people get fruits from the Badessa tree which is one of the big trees in the community and its stem is good for timber. They also eat the fruits of Goshu (Dokuma in Amharic) tree- it is also a big tree. Moreover, we can get fruits from smaller forest trees such as Hudha (inquay in Amharic), and Hagamsa.

The flowers of the trees are food for honey bees. There are a number of trees which provide good flowers which are used by bees to make honey. Some of them include Ebicha, Bagi, etc. They flower during the spring season.

The forests are also the home of different kinds of wild beasts. Wild animals such as hyenas, Dart, Dikula, Midaqua, etc had lived in the forests though their number have greatly reduced due to the deforestation activities. There are also different kinds of reptile’s living in the forests. There are also animals which eat crops. These include apes, monkeys, Bosonu (Diquala, Dart, and Hyenas have recently started to eat maize crops this indicates a change in the feeding habits of some carnivorous animals. This change may be due to the decline in the other kinds of wild animals in the area which results in shortage of food for hyenas. The wild animals are dangerous for the lives of the people. They attack their domestic animals and others eat crops in the farm. People protect their crop from these wild animals by building small tents on the trees. They use sticks and spears to protect their crops. Of course, the use of spears leads to the death of these animals but the farmers have no choice. They have to protect the crops.

1. Farmers face many problems in producing their crops and in rearing their animals. Pests and diseases affect their crops at different times. There is a pest (locally called temch) which affects the maize and sorghum. It also affects the red-pepper and nug crops. Farmers use pesticide to protect this disease. Most of the time, the pesticide prevents this disease but sometimes it is not effective.

Termites affect both the maize crop and some trees first it attacks the roots of the crop and the trees and then when they fell down on the ground, it eats all the stalk, leaves, seeds and fruits as well. The pesticide for this pest is not available in the nearby areas. The service cooperative does not sell this pesticide. Some people buy it from distant places e.g. from Addis Ababa but the price is expensive (600 birr per kg). As a result most people could not use pesticide to protect their crops and newly planted trees from this pest. The DAs and woreda agricultural experts advise farmers to buy the chemical and use to eliminate the termites but no farmer in this kebele is able to buy it yet because the price is expensive. Only some farmers in the neighbouring kebeles have used it.

The other pest is the one which affects the re-pepper plant. Farmers do not know the name of the disease of this crop. It is locally called ‘cholera.’ It attacks the root of the crop so the first they know is when the plant starts to dry out. It was started some five years ago and has been expanding from time to time. Now farmers have reached the stage of not cultivating this crop. No pesticide has yet been provided for this disease. The DAs advise farmers to manage the soil, and to protect the farm from flooding, which they expect to be the cause for the emergence of this pest.

There is a big tree called Wadessa (Wenza in Amharic) in the community. Though this tree is good for shading, timber, and construction of houses, it is not good for the growing of some smaller plants such as coffee. It releases bad ‘gas’ which destroys the coffee tree.

There are different kinds of pests which affect vegetables in the irrigation farmers. But farmers protect most of them using pesticides.

One of the major plant diseases which have been spreading in recent years is the mango plant disease. It is locally called ‘cholera.’ The disease emerged in one kebele three years ago. In the last two years it has spread to all kebeles in the woreda. It started to attack mango trees in Oda Haro two years ago, and now if affects almost all mango trees. It dries the leaves and spoils the fruit. It reduces the quality of the fruit so that it is difficult to sell them. Though the people repeatedly reported to the DAs and woreda agricultural office, no action has been taken yet.

The most important new pests emerged recently and affects crops include the termites, the mango and red-pepper cholera diseases [they may be different though people gave them the same name]. The termite affects both the crops and trees.

The production of sorghum has been declining from time to time because it has been affected by the flocks of birds. It is becoming difficult to protect this crop from the birds because the birds come in large number and they easily affect the crop. It seems that people will stop producing sorghum due to this problem.

Cattle disease: - these include Dingatagna (acute and fast killer), Aba Gorba, Gandi, eye disease, stomach-disease, etc. All of them have medicines and people buy the medicine from the vet service in Tibe town and tree them. There is also annual vaccination of livestock by the vet workers which results in the decline in the impact of this disease on the health condition of the cattle. Recently with the expansion of drought and with the decline of water in the rivers and streams, the number of small animal which enters to the body of the animals while drinking water has increased. It lives in the rivers. Now the numbers have increased and it easily enters to the mouth of the cattle and stays in their throats. It sucks the blood of the animals and kills them. There is no medication for this yet so people use traditional ways to protect the cattle. First they try to follow up their cattle while drinking the water and when they see that it enters their mouth, they take it out using nails. Even after one or two days, some people can take it out using long sharp things. But when it moved deep into the throats it is difficult to take out and finally it goes to the brain of the animas and kills them. The name of this animal (look like snake but very small) is ulanula (ilkit in Amharic).

There has been a chicken disease. Though the people use medicine which obtained from the vet service in Tibe town, it is not effective in curing them. The disease is called Fengil. It is easily transmitted from one chicken to another. Respondents say that they have been losing large numbers of chickens every year. The DAs and the agricultural experts have not helped them to protect their chickens from the illness.

Bees have recently been affected by pesticides. The weed killers are effective in controlling weeds but it has been killing a large number of bees every year, as a result the bee population has been declining.

Watershed: - the main source of water for farming is rain water. The meher farm is mainly cultivated using the summer rain. In addition, people use rivers and streams for irrigation. People use the underground and river water for drinking. In recent years the rains start to come very late. In the past the rain came in March and April and people but now the rains come in May/June. So people sow crops in June. The increasing of the dry season affects the production and farmers are concerned that they will adversely affect the local economy. Shortage of rain also leads to the decline in the water in rivers and streams which leads to a shortage of water for irrigation and to water animals.

|  |  |  |
| --- | --- | --- |
|  |  | How good/bad was the rain? |
| 2008 | *Belg* | It was bad |
| *Meher* | It was very good |
| 2009 | *Belg* | It was bad |
| *Meher* | It was fair |
| 2010 | *Belg* | It was bad |
| *Meher* | It was fair but declined than the previous year |
| 2011 | *Belg* | It was bad |
| *Meher* | It was very bad –declined than the previous year |
| 2012 | *Belg* | It was very bad. |
| *Meher* | It was very bad. |

Flooding has been affecting the farming in the community. The deforestation activities have greatly contributed to erosion and flooding the last 10 years. The flooding affects the low land areas. It contributed to the decline in the fertility of the soil and destroys crops several times every year. Alemgena zone is highly exposed to flooding. The flooding creates ditches in many places.

## Climate change

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Year | Belg rain | Meher rain | Unexpected rain | Heat | Frost | Wind *describe* |
| 2001EC | All right | Good | Summer  | Very hot | Less than expected | Average  |
| 2002EC | All right | Too much | Meher  | Very hot | Average  | More than expected  |
| 2003EC | Poor | Good  | Meher  | Very hot | Average  | More than expected |
| 2004EC | Poor | Good  | Meher  | Very hot | More than expected | More than expected |
| 2005EC | Poor | - | Meher  | Very hot, hotter than the previous year | Average  | More than expected |

 The impact of climate change includes: -

* Leads to increasing the temperature
* Leads to shortage of rain
* Leads to increase in the dry season
* Leads to decline in the production of crops
* Leads to increase in animal diseases due to increasing dust and drought
* Leads to the death of livestock due to drought
* Increase in human disease such as Asthmatic, cough, other lung diseases,
* The temperature has become hotter and hotter in the last 7 years.

Leads to decline in the underground water

## Land

### Land for smallholder farming

85% of the land in the community is used for smallholding farm. As compared to the last five years, the land used for smallholding has been increased mainly due to an increase in the population. People have started to actively engage in farming, people are able to increase production due to the use of improved seeds and chemical fertilizer. The expansion of the irrigation scheme contributes to the increase of smallholding farming. The training and advice from the DAs and agricultural activities also contribute to the expansion of farming.

The largest land size is 7 hectares and the smallest land size is 1 hectare. In the last few years, the land size has been declining because parents have distributed their land to their male children when they marry. In addition, the expansion of public building in the community leads to the changing of farm lands into office, schools and FTC buildings.

There is youth cooperative in Boto zone and they work on the afforestation activities on the deforested highland areas of Gona. The forest lands are now less than 5% of the kebele. The irrigation fields in the community are also 5% of the total land in the community.

### Access to land

The landless population can be up to 5% of the total population. Land was officially distributed to the people during the time of the Derg. However, those who have been displaced from their farms due to the construction of public buildings have been given replacement land by the kebele from the communal grazing lands. Officially the communal grazing and grass lands have never been re-distributed, people still use them in common.

There has been an encroachment into the forests lands in different places in the community. Some people expanded their farm lands into the forest lands, grazing lands, grasslands, and swampy areas illegally. People repeatedly reported this problem to the kebele and woreda officials but limited action has been taken yet. This encroachment can be considered as a dangerous move as it leads to intra and inter community conflict. It is also a dangerous as it leads to unwise use of resources, particularly the forest resources. So the government should intervene to stop the problem and to protect the forests from destruction.

Most of the landless people survive by renting land or by share cropping. In the past they could rent land for up to 12 years but recently it’s been reduced to a maximum of 3 years. . It is legally forbidden to rent rural land out for more than 3 years. Informally people sign contracts to rent the land for up to 15 years but this is legally unacceptable. Land rental is common practice in this community more than sharecropping. Short term leases are more common than long term leases. The rent is mainly for farming but sometimes people rent land for grazing. Sharecropping is also a common practice, and it has been increasing in the last few years.

## Crops

### All crops

**Grain crops**:-The most important grain crops grown in the community are as follows in order of importance: - maize, teff, nug, red-pepper and sorghum in the low land areas, and maize, teff, barely, wheat, and sorghum in the highlands areas of the community. The only grain crop grown in the irrigation fields during the dry season is maize. People use improved seeds to grow maize both in the rain-fed and irrigated farm land. The use of improved teff seed was started last year and it seems that many people will use it this year because those who used improved teff seed were able to produce higher yields.

People sell their farm products to the local farm traders, to the market in Tibe town and to the service cooperative. In the past as the service cooperative paid a better price, many farmers preferred to sell to the cooperative. In recent years, the competition from the local traders has contributed to the increase of crop prices and the traders start to pay a better price than the service cooperatives. Moreover, when farmers sell to the local traders, they pay less for transport than when they take the crops to the service cooperative in Tibe town. Unlike the maize and sorghum, teff is mainly consumed at home. As they produce small amount of teff, people do not sell it in the market- it used for family consumption.

The DAs provide training and advice on how to improve the production of these crops. They advise farmers to use improved seeds and fertilizer. Sometimes, they demonstrate on the farm how to sow crops in line, the amount of fertilizer and improved seeds to be used on a hectare of land, in identifying the spaces between seeds mainly maize, how to use pesticides both in the farm and during the time of storing (maize), and on how to use the weed killer before sowing and after the crops grow, etc. Sometimes, they also provide advice on the seasons to farm, to sow, to harvest and how to store the crops.

The DAs also provide some advice on the importance of forests and forests lands for preventing drought, to increase the wet season, and to become the home for many wild animals. They advise farmers to continuously plant new trees and to protect the existing ones from destruction.

**Pulses: -** the most important pulses in the highland areas of the community include beans and chickpeas. These are the only pulses grown in the community. They are grown on smallholdings and in few places in Boto zone. They are produced by small number of farmers. They are not grown in the irrigated farmland. Seeds are not the improved ones and only few farmers’ use chemical fertilizers for these crops. People use these crops both for consumption and for market. The DAs provide training and advice on how to expand the production of these pulses.

**Oil seeds**: - Nug is the only oilseed crop grown in the community. It is grown using rain-fed farming. Only few farmers are growing it mainly to sell. It is sold to the local crop traders who directly transport the crop to Addis Ababa as people in the urban areas do not buy it farmers do not take this crop to market. Farmers do not use selected seeds for this crop. They just sow the local nug crop. Farmers grow it in a traditional farming system. The DAs do not give due attention to this crop. No training and advice has provided to the farmers yet.

**Root crops**: - these are mainly grown in the irrigated farms. They include potatoes, beetroots, and carrots in order of importance. Farmers use improved seeds for these crops. These crops are produced mainly for market. They are mainly sold in Tibe market to traders and consumers. The DAs help in advising the farmers to improve the production.

**Vegetables:** the most important vegetables grown in the community include tomatoes (1st), potatoes (2nd), sugar cane (3rd), green pepper (4th), and cabbage (5th). They are grown only in the irrigated farms where they are the dominant crops. The farmers receive training and advice from the DAs and woreda agricultural experts to improve the production of these marketable crops. The advice, training and demonstrations include sowing the crops in lines, the water usage, weeding and digging the farm land, collection and transporting the crops to the market. They use improved seeds and pesticides are applied when pests arise. Farmers feel that the DAs, the service cooperative and the woreda agricultural office could help them to get improved seeds. Currently farmers buy the seeds from the traders in Addis Ababa which costs them a lot of money. Only sugar cane is grown in traditional way. There are no improved seeds for this crop until recently and only few farmers now start to grow some improved sugar cane. Farmers sell the crops to traders and consumers in the market, and there are big traders coming from Addis Ababa to buy the tomatoes and sugar cane.

**Fruits: -** the most important fruits grown in the community include mango, banana, lemons and orange in order of importance. The dominant one is the mango tree which grows in the garden of many farmers. It is used for both consumption and market but as described elsewhere in the report, it has been affected by pests in the last two years, and farmers are losing hope of growing it in the future. The DAs, the service cooperative and the woreda agricultural office could help the farmers to get improved seeds for fruit. Currently the farmers buy the seeds from the traders in Addis Ababa which costs them a lot of money. Unlike the mango the other fruits are grown in the irrigated fields. The fruits are sold in the Tibe town. The mango fruits are sold to other distant markets of Shoboka, Jaji, Gedeo, Ambo, Ginchi and Addis Ababa as well.

**Spices: -** the importance spices grown in the community include red-pepper and Ginger (in small amount). Both of these crops grow during the summer season by using the rain water. As reported elsewhere in the different reports, the red-pepper has been attacked by a pest locally called cholera. The DAs and other government officials could help to reduce the impact of this pest on the crop. The disease has been expanding from time to time and it affects the quantity and quality of the crop. Many people already stopped producing this crop and still others are on the way to stop. The DAs advise to divert the floods from the red-pepper farming. The assumption is that the disease is caused by the flooding of the farm by the water. It is a cash crop so most of the time people sell it to the local traders who in turn sell to big traders in Ambo and Addis Ababa. There are also local red-pepper traders who sell it to the distant markets of Ginchi and Olomkomi.

**Trees**: - the most important trees grown in the community include Kiltu, Oda, Wadessa (Wenza in Amharic), Badessa, Gossu, Acacia, Bakenisa, Eucalyptus tree (planted), Gravilia (planted and expanding), Mimiye (planted), Lucania (planted), Rukensa (planted), Tesfayina (planted), Mimito, Imala, Danbi and Botoro. See the details of these trees and other below which gives the whole picture of the various local and planted trees in the community. Even there are trees which the local people and our respondents do not know their name.

* Most of the natural forests are located on the highland areas of Boto zone and in some places in Alemegena zone, and on the river banks mainly of the Sama River. We find different kinds of planted trees in various places in the kebele. Some of the main natural and afforests trees are mentioned below:
* **Eucalyptus-** it has been planted in many places in the kebele and mainly used for selling and house construction. The community are aware that this tree consumes much of the water and nutrients in the soil which leads to the decline in the underground water and lose of soil fertility. So, they are reducing to plant this tree.
* **Gravilia** tree\_ introduced in the past 5 years in the kebele, becomes dominant and popular among the community for its capacity to modify the weather, and improving soil fertility. Many people are interested to plant this tree every. This tree is expected to be one of the best trees use for timber but there is a shortage of seedlings as the woreda agricultural offices are not providing it in sufficient amount.
* **Mimiye tree**- this was also introduced into the kebele recently. It is mainly used for shade, fire wood, and in some cases, it is used to protect termites and chicken diseases.
* **Gatira -Tid in Amharic (timber) tree- used for timber,**
* **Lukinia tree- planted and found in few places.**
* **Coffee tree-** grows mainly in the garden of the people; some farmers also grow it in the irrigation farm; selected seeds are used, and mainly consumed in the community, few sales it.
* **Mango trees**- very common in the community mainly grow near to residential houses. People use its fruits for both consumption and market; recently it has been affected by a disease locally called cholera which spoils its leaves and fruits.
* **Orange tree**- introduced with the recent expansion irrigation scheme and has been grown by few farmers.
* **Avocado tree**- introduced with the recent expansion irrigation scheme and has been grown by few farmers.
* **Chat**- mainly consumed in the community, some are sold, and people say that its quality is not good. It is grown mainly by the Muslim community because unlike the other religious followers, they chew chat at home. They just use local seeds and not the improved ones. The DAs and other officials do help to the expansion of this crop.
* **Banana**- mainly grows around the river bank and in swampy areas of the kebele. It has been grown with local species and not yet used improved seeds. People use it for both consumption and market.
* **Papaya**- introduced with the recent expansion of irrigation scheme and has been grown by few farmers.
* **Sugar cane**- grown with local species,- around the river bank and in swampy areas of the kebele- used for both consumption and market- income source for some of the farmers and smaller traders.
* **Baddessa** tree– very big local and natural forest type; people eat its fruits.
* **Gossu** tree- (called Dokuma in Amharic), local and natural forest type, and people eat its fruit.
* **Hudhaa** tree- natural and local forest type, people eat its fruit, it called Enkoy in Amharic.
* **Bakenisa-** big local and natural forest type; used for making furniture like chairs and tables;
* **Imala tree**- local and natural forest type, used for house construction; used for shadow for coffee tree.
* **Rukensa tree-** new plant to the area
* **Danbi tree-** big local used for fencing and fire wood
* **Botoro tree-** very big local and natural, adapt to drought and hot temperature; its stem cover is used tie things and bundles**.**
* **Sombo tree-** very big local and natural forest type, used for household furniture, office furniture, etc.
* **Madale tree- very big, local and natural forest type, used for shade.**
* **Tesfayina tree-new plant;**
* **Haggamsa** tree—small local and natural forest type, people eat its fruit; best for wildlife to hid themselves
* **Ebicha tree**- its flowers are used for bee food,
* **Bagi** tree- local and natural forest type, flowers during the spring season and bees use its flowers for food; used for constructing the roof of the thatch house,
* **Weyra tree** (olive tree)- very big, natural and local forest type used for furniture
* **Wadessa (Wenzea tree in Amharic) -** very big natural and local forest type, used for furniture and construction.
* **Odda (Werka** in Amharic) - very big natural and local forest, vast branches and broad-leaved, used for shade, and traditionally and even now people conduct important meeting and conferences under this tree. Very popular in Oromo tradition for its meeting place for the Geda system- in the past it grew everywhere in the kebele and now only found in small areas.
* **Lafto** tree (Girar in Amharic= Acacia tree)- natural and local forest type, used for shadow for cattle, firewood, its flowers used for bees food,
* **Harbu (shola in Amharic) -** local and natural forest type, used for making different kinds of household furniture; its fruits can be used for food.
* **Kiltu tree-** nature and local forest type- very big, used for shade for cattle and people, and its bark is very hard and used to tie different items and bundles;
* **Gesho tree-** used for making local drinks including tella, Areki, taj
* **Worke-Kamale**- its leaves used for making breads and its stem is used as food for apes.
* **Chada tree** – natural and local forest type, used for fencing compound.
* **Adami-** mainly planted and grown on burial place
* **Cheka tree-** used for construction of houses, very hard, used for making local farm tools.

### New crops

The news crops introduced into the community in the last 10 years include:-

* **Improved maize crops** (660, 540, and 543) - introduced 10 years ago. The DAs encourage farmers to use these different kinds of improved maize seeds. There has been good support from the extension workers to use this crop. The crop is mainly consumed at home. It is a staple food crop in the areas. It is also the dominant cash crop.
* **Gravilia tree**- introduced 5 years ago (during the time of the Ethiopian Millennium). It has been expanding from time to time. The people and DAs give special attention to the planting of this tree every year. It is said that the leaves of this tree can enrich the soil, its wood is used for timber, and it has a power to modify the weather condition so that it will contribute to the improvement of the weather condition in the long run. It can easily adapt to the dry weather condition. It has the power to protect soil erosion. The problem associated with this tree include inability to regenerate once it is cut down, and shortage of the seedlings to plant it in bulk (the demand on the part of the farmers is high but there is a shortage).
* **Improved vegetable seeds** such as tomatoes, onions, beetroots, carrots, new cabbage, new potatoes, green paper, and orange tree were introduced to the community in the last five years. The expansion of irrigation activities contributed to the expansion of these vegetables. They are mainly grown in the irrigation fields and are used for market. The DAs have provided good support to the farmers in terms of advice and training on how to expand the production and selling of these crops.
* **Improved coffee plant**: - it is expanding in the last five years, and mainly consumed at home. Only few farmers sell it in the market. The problem is that it is easily affected by disease.

### Declining crops

Red-pepper: - it has been declined because it has been affected by a disease called cholera. As there is no pesticide for this disease, farmers have declined to grow this crop; there is a concern that if the disease will continue to attack this crop, farmers will totally stop producing it. According to one respondent, we used to use manure to produce the crop and the production was very good. After we start to use chemical fertilizer, the disease start to attacked crop and the production continues to decline. We cannot see the disease with our eyes.

Sorghum- was one of the main grains grown in the community in the past. But recently it has been affected by birds. The number of birds which eat the seeds of this crop before the harvesting season has been increasing and has reached a level whereby they cannot be controlled. The birds were dependent of the seeds and fruits in the forest in the past but with the decline in the forest size, they have started to eat crops mainly sorghum.

Nug- it was/is the only oil food in the community. In recent years people start to use most of their farms for the production maize and other crops which are giving high production. They are reducing the production of nug as its production is not as high as other crops.

### Subsistence crops

The 3 most important subsistence crops in 2003 were:-

1. Maize
2. Sorghum
3. Teff

The 3 most important subsistence crops in 2013 are:-

1. Maize
2. Teff
3. Sorghum

## Cash crops

### Change

The three most important cash crops in 2003 were:-

1. Maize
2. Red-pepper
3. Teff

The three most important cash crops in 2013 are:-

1. Maize
2. Tomatoes
3. coffee

### Maize

#### Maize production

Most of the farmland in the community is allocated to the production of maize every year. Though it is difficult to know the proportion of land used for this crop, the crop has been becoming a dominant both for consumption and market. The land size used for this crop has been increasing from time to time in the last 10 years. One of the problems with this crop is that the crop has been affected by a pest called termites. They eat the root of the crop first and then when the maize falls down they eat the stalk and leaves/seed. The other problem is the seasonality of the rain. In the last five years the rain has come very late and it stops very early which negatively impacts on the production of the crop. This was particularly happening in 2012. Our production has declined by a quarter due to the irregularity of the rains. The third problem is that the soil fertility has been declining from time to time which leads to a decline in outputs. So farmers are forced to use more and more fertilizer to compensate for the decline in the fertility of the soil. Most of the farmers produce the crop by using family labour but sometimes they use wenfel and Debo which are a very common labour sharing system in the community. The use of daily labour has started very recently.

#### Maize inputs

The main source of seeds is improved maize seeds of different variety (maize 660, 540, and 543 are the common ones). The first two are the most important ones in terms of production. The improved seeds were introduced in the last 10 years. The introduction of this crop created important changes in the livelihood of the people. As people start to produce extra, they sell it in the market and improve their house conditions. Some hhs are able to change their thatch house into corrugated sheet iron house; others are able to construct a house in town, still others are able to send their children to Middle East countries (they pay a large amount of money for the brokers and the visa process).

The cost of improved seeds andfertilizers (DAP and UREA) that farmers are using has been increasing from time to time.

People use credit from the woreda saving and credit association to buy the fertilizer and the improved seed. Most of the farmers buy them with the credit money while some rich farmers use their own money.

The DAs played important roles in the improvement of the production of this crop. They provided training and advice to the farmers at different times. But in the recent months they declined their support. They live in town and they visit the community only for half day sometimes they don't even come to the community. The decline of their activity was started after the death of the late Prime Minister Melese Zenawi in the summer of 2012. Now there is no one who controls them as the role of the woreda agricultural office has also declined. They do not come to the kebele every week but in the past they came every week. The farmers repeatedly complained about the DAs absence and their lack of support in big meetings organized by the woreda. But at the end of the meeting, the DAs have tried to retaliate against those who criticised them in front of their boss. The woreda also do not take any action on those who are not available on their work. As a result they are reluctant to perform their work properly.

We cultivate the land with an oxen drawn plough. It is traditional. Most farmers harvest the maize by hand. The threshing is also conducted manually in most cases but now there is model farmer who has a maize threshing machine. He rents it to farmers who are able to pay for the renting cost (4.50 birr per minute). People say that it is expensive. Most of the people, therefore, use their hand for threshing as well. Five years ago, almost all people used hand for harvesting and threshing (used stick and hand).

#### Maize sales

About 50% of this crop is consumed at home while the remaining half is sold to traders, service cooperatives and in the market. The local traders buy the crop from the farmers and send it to Addis Ababa for selling to big traders. The price is fixed through the brokers or by telephone directly with the big trader.

### Tomatoes

#### Tomato production

Tomatoes are the main crop produced on the irrigated land. Tomatoes were introduced some five years ago. In the past no tomato was produced in the community. It is not known how much land is occupied by this crop but the size changes from time to time as the farmers rotate the crops. It is mainly sold to the vegetables traders coming from Addis Ababa. But also smaller traders also buy it from the farm and sell at the Tibe town. People produce it twice a year. The main problem of this crop is the price. The price of tomatoes fluctuates from time to time. When the price is cheap, farmers face huge loses. This year for example the price was not good particularly in the first half of the year. The other problem is the pests. There are pests which affect this crop. Unless the pesticide is used in time, it can adversely affect the production. In most cases, people use family labour to produce this crop but rich farmers use paid daily labourers. Most of them are local paid labourers. Recently one model farmer has employed migrant labourers who made a tent house near the farm and worked there and protect the crop from wild animals and thieves.

#### Tomato inputs

Farmers used improved seeds. As the seed is neither provide by the DAs, nor the service cooperative not the woreda agricultural office, farmers are forced to buy it from the private traders in Addis Ababa with high price. Moreover, the price of fertilizer and pesticide is expensive for many of the farmers. There is not credit service for this crop. People use their own money to buy the seeds, the fertilizer, the pesticides, weed-killers and for the labour.

In most cases farmers get good support from the DAs and the farm experts. As discussed above, this support has declined after the death of the late Prime Minster. The DAs start to enjoy in the town forgetting the duties in the kebele. Even when they come to the office, they do not stay longer. They go back before lunch and they do not come in the afternoon. They are employed to work a full day, now they start to work a half day. They are not abiding by the working time and condition of the government. They do not discharging their duties properly. The woreda agricultural office also does not work properly.

#### Tomato sales

The crop is sold mainly to the traders from Addis Ababa. The price is fixed through the brokers. Smaller farmers sell to petty traders in Tibe town. The buyers come to the farm and buy the crops. Most of the crops are sold to the consumers and traders while they families consume some of it at home. As it is being produced in irrigation farm, the expansion of the production of tomatoes does not affect the production of subsistence farming. Again the farmers can use the same land for tomato and grain in different times (rotation within a year).

### Coffee

#### Coffee production

Coffee is produced on small plot of land. It is produced by only a small number of farmers. It was started some 10 years ago, and it is potentially one of the main cash crops in the community.

The coffee land has been increasing from time to time. The seedlings are produced in the irrigation farm and then it is transferred to other places mainly in the garden or within the compound of residential houses. This is to protect the crops from animals and thieves. The majority of the crop is now consumed in the community and only few farmers are selling it in the market. People in the community love drinking coffee and they sell only the extra ones. The crop is produced by using family labour.

#### Coffee inputs

People use improved seeds to grow coffee. It is obtained from the woreda agricultural office. It cannot be provided through the service cooperative. They mainly do not use fertilizer. They use manure. As it grows in the compound, it is easy to get the animal manures. There is a coffee disease called’ cholera’. It affects the crop. Farmers use pesticide to protect the crop but the pesticide is not effective to protect it from cholera. Moreover, there is a tree called Wadessa which destroys the coffee tree when it grows nearer to it. It is very allergy to coffee tree. People use family labour to produce coffee. The land used for coffee production has been increase from time to time in the last 3 years. The woreda office is encouraging the farmers to expand the production of coffee as coffee is becoming important both at the national and international market.

#### Coffee sales

Coffee is mainly consumed at home but some farmers sell it in the market of Tibe. The production of the coffee tree does not have any impact on the production of substances farming because coffee is grown near/within the compound of the residential houses. So, it is not grown on the subsistence farming.

## Livestock production

There are about 6,030 cattle, 300 sheep, 400 goats, 200 beehives and 3,000 chickens in the community.

### Cattle production and fattening

#### Cattle production

Compared to the last 10 years, the quantity of cattle found in the community has decreased significantly. This is due to the shortage of grazing land and diversification of persistent cattle disease. The DAs have been providing training and advice on modern cattle production and fattening practice. . They encourage farmers to minimize the number of cattle and focus on the quality of cattle production and fattening. However, farmers are reluctant to take initiative to practice what they have received from the DAs. Lack of continuous follow up particularly from the Kebele side is another reason to stick on the traditional cattle production system. According to the respondent, it is not possible to fattening oxen at the same time as using them for ploughing. This is because ploughing takes a lot of energy and makes them to lose weight. Moreover, there is lack of fodder which discourages oxen fattening. In general, shortage of land to protect the cattle, lack of fodder and regular veterinary services are the major problems for cattle rearing in the community. The infrastructure that is very important to rear cattle is access to the type of high quality breeds, fodder, vaccination and training. The community is dependent upon traditional cattle rearing practice which is the main problem in rearing better quality of cattle. The other problem is the reduction of labour resource in herding, milking, cleaning yard due to the introduction of education and local wage competition with non-local types of labour i.e. construction and seasonal migration.The main problem involved in keeping improved breeds is the lack of improved breeds’ provision at the Woreda and Kebele level. Moreover, fodder, vaccination and farmers motivation is another draw back in the community. These days, wives are taking roles in the different kinds of labour due to the effect of school and new wage practice. As the children spend much of their time in school and studying, mothers have been taking the burden to herd cattle, to clean their dung, and take to them to the river for drinking. According to the respondent, the majority of school age children are attending school which affects the household labour sharing particularly sons’ role in herding.

#### Cattle inputs

The main source of fodder for cattle is grass but this is inadequate during summer season. Moreover, crop residual is another source of fodder for cattle. There is a change since the last year following the erratic rain season in the area the shortage of rain contributed to the decline in fodder for cattle. The grazing land did not grow better grasses which contribute to the shortage this year. The increasing dry season this year also affects the cattle because in addition of the shortage of grasses and other fodders, the shortage of water affects cattle in some villages.

The natural mating was the only system available for inseminating cows but now there is there is artificial insemination provided by injection. According to the farmers’ opinion, the introduction of artificial insemination service should be increased since they think it could improve milk production.

There are very few farmers who own improved breed cattle. The farmers buy an ox about 3000 ETB and they expect to be sold up to 6000ETB. It takes three months to fatten an ox. According to the information, farmers buy molasses and take injection in order to cattle fattening.

There is limited vaccination service in the Kebele but farmers takes their cattle to Tibe town to get the services. There is fattening tablet called /dotoma/ medicine for three months. The tablet is accessible in both government and private drug shops in Tibe town. In the last five years, MASSA (egir sentiqo sewinet yasakikal, milas yilital, mebilat ayichulum and yatequrachewal) there is no modern medical treatment but there is traditional treatment which is put in the cattle's water. Ulanulla insect is very serious pest. There is no help and advice concerning this cattle disease and it kills them immediately.

Though it is not regular activity, the agricultural extensions provides some advice on cattle management. There is vaccination service located in Tibe town but this does not cover the whole Keble.

#### Cattle sales

There are markets for non-fattened cattle in jaji and sheboka market. There is no specific market to sell fattened cattle; there is no good market in the area since there is no larger trader who could receive from the farmers in the Keble. The informants said, they have heard that there is a specific market for fattened cattle in some other areas but it is not practiced in Bako Tibe or the nearby Woreda. There is no fixed price for cattle it fluctuates from time to time. The price of cattle could be estimated from 3,000-60,000 but farmers couldn’t afford to buy ox with this amount of money. Previously it was 1,500/1,600 ETB. About 300 cattle could be sold outside of the community every year. The price is very seasonal. As a result of this, it increase during March to May and decrease form August to September. However, since 2008 it has increased significantly.

### Shoat production and fattening

#### Shoat production

The quantity and quality of shoats is better since the last ten years. According to the respondent, among shoats goat is very important for production but it damage tree cover area which affects government intervention on plantation. Goats affect coffee plants; previously they were eating a kind of leave called Areniguama. However, this leave has almost disappeared from the area as results of these goats eat different kinds of leaves in the area. However, said the respondent, there are about 400 goats in the community because they are good for production. There is fattening of goats and to fattening goats the community use boiled fava beans (yebaqela nufro), barley, salt and maize. However, goats like to eat leaves. Either the owner of the goat or children should look after the goats to protect the environment. There are about 300 sheep in the area and the main fodder for sheep is grass, fagulo, furushika and crop residual.

#### Shoat inputs

According to the respondent, there are about 1000 shoats in the community. Since the present time fattening shoat is becoming common in the community i.e. sheep and goats are used for production. There is vaccination in order to fatten shoats but it depends on the owner being willing to pay. However, DAs advice to vaccinate shoats every three months but some may be vaccinated every 6 months. There is no vaccination service in the kebele but farmers go to Tibe town to get vaccinated. There is no credit and saving service to motivate the community to get involved in shoat fattening and production. There is no follow up both from Woreda and kebele.

#### Shoat sales

Tibe and shebokea is the main market for shoat’s production but there is no market place for fattened shoats. There is no fixed price and it fluctuates in different season. During the holiday season, the price of shoats increases very much. The price for goat is estimated to be 1300 to 1500. There could be around 300 goats that are sold outside of the community in last year.

### Chickens

#### Chicken production

According to the respondents, chicken production is not a new practice in the community. People have been involved in chicken production for a long time. There is a disease that affects chicken production every year. People are not interested in engaging in chicken production fully because of the disease problem. In addition to this, there is no vaccination and drug service in the Kebele. Before nine years, there was improved chicken and chicken cage provision in the Kebele. It was distributed among 10 model farmers and it was very good for egg production. But the Kebele didn’t distribute in the community because they face lack of improved chicken from the Woreda. The majority of the community want to be involved in poultry production but because of lack of vaccination and drugs people afraid to get involved.

#### Chicken inputs

There are about 50 high breed chickens in the Kebele. According to the respondents, they bought them for 100 ETB for one hybrid chickens. The Kebele provide the supply and people buy with cash. They have received trainings and advice on how to feed and care for them.

#### Chicken sales

There is poultry production in the community. The farmers get involved in poultry and chicken production. However, the majority of the community members sell chicken particularly women/wives engaged in trading chicken but not regularly.

### Bees

#### Bee production

Pesticide spray / AFORD spray/ cause serious problems to honeybees by killing them and forcing the bee colonies to leave their nest. There is no protection strategy or methods developed by the DAs to subdue the effects of pesticides on honeybee colony,. The other problem is that the variety of flowers has declined in the area which is affected by the weather condition and deforestation.

#### Bee inputs

There has been introduction of modern hives distributed among the few community members but no one used it. Most of the community depend on traditional hives. Traditionally, people smoke the hives with olive, wanza and Beso Bila to attract the bees into the nest. The pure honey/welela mare/ is extracted from the crude honey. Until the bee colony enters into the hive; the hive is placed on a tree in the compound. After the colony enters the hive; the hive is placed inside the farmers’ house to protect it from termite attack. Farmers have received training and advice to improve the traditional honey production. Following the training, five farmers received modern hives but no one used it because bees did not enter in to the modern hives.

#### Bee sales

There are some farmers who sell honey but it is not an important source of income. There are about 500 traditional hives in the community.

## Livestock products

### Cattle

#### Cattle products

There are 3 high bred cattle including 1 bull and 3 cows in the keble. The high-bred cow gives an increased quantity of milk; three litres per one milking time. There is no change in dairy cows in the community except those recently introduced high breeds cattle provided in the community. According to the respondent, the newly introduced breeds are better in quality. The main problem in keeping dairy cows is their fodder. They use a variety of fodder including local drink, sugar cane and crop residual. There is also a shortage of high-bred cows in the community. There is no employed labour involvement in producing milk and butter as well as different kinds of labour. It is covered by the family.

#### Inputs for cattle products

Traditionally qil (a small container made from a plant called qil- it is used for store powdered red-pepper or butter) was very necessary equipment for producing milk. There is also equipment called Akole (a container which is used for storing milk) made up of wood and grass which is used for producing milk. However, now this tradition has been changed. They are now milking cows using plastic jars.

#### Sale of cattle products

Selling milk is not common in the community. However, now some people have started selling milk. Previously, milk was for the family, poor and dogs. However, butter has been sold. There is no milk enterprise in the community. There is no fixed price. Butter could be sold 150-170 ETB for kg and about 200 kg butter is exported for sale outside the community. Farmers sell hides individually in Tibe town licensed hide traders’ people during holiday and sometime when they slaughter cattle occasionally.

### Shoats

#### Shoat products

There are no shout products in the community except the hides’ product people sell to licensed hides traders in the nearest town.

#### Inputs for shoat products

There is no involvement in shoat production in the community.

#### Sale of shoat products

There is no shoat production sale. The community do not have awareness on shoat production and its importance in terms of income source.

### Chickens

#### Egg production

There is no modern poultry and egg production in the community. Women/wives sale egg but the income is not significant. The production of egg is very traditional and poor even though there are some high breed chickens distributed among the community.

#### Inputs for egg production

There is no introduction of special food, inputs and advanced egg production in the community.

#### Sale of eggs

The selling of egg is depending on traditional practice in the community. Most of women/ wives are involved in selling egg production but it is not regular.

### Bees

#### Honey production

There is no honey production for the market as it is still dependent on traditional honey production activity. There are no any different sorts of honey in the community. There was a modern hive resource provision made by the Woreda but no one proved its compatibility with the area. So there is no Woreda involvement to improve honey production.

#### Inputs for making honey

A modern beehive is necessary equipment but people need sustainable follow up, training and advice on how to use the modern hives. The other important input required is critical and professional solution to stop the termite and pesticide spray problem.

#### Sale of honey

There have been very few individual farmers who sell honey in the Tibe town market. There is no specific market for honey production.

## Farm labour

### Smallholder farm labour

Agricultural farming labour is still dependent on the family labour except some rich farmers who employ farm labour. The traditional cooperation during the harvesting season knows as Debo and wonfel is decreasing over time because people become unable to produce the feast ceremony during the Debo practice. Paid daily labour has been increasing and most of them are local people including women in the kebele. There is also in-migrant labour visit the kebele seasonally for looking a farming seasonal work. Most of the area seasonal labourer come are from Gonder, Wollo and Gojjam.

### Customary work exchanges

Debo was one of the biggest labour sharing systems in the community. In the last five years, the role of the Debo have been declined due to that fact that people could not prepare big feasts which are necessary when someone organize the Debo. Moreover, some rich farmers start to give priority to paid labour instead of Debo, So, paid labour is become an easy and low cost part of agricultural labour. The poor people also start to focus on wenfel (one-to-one labour sharing system) instead of Debo.

Communal cattle herding is still one of the most important labour sharing system in the community. the cattle are herd on the communal grazing lands. They people keep the cattle turn by turn. The turn changes every 15 years. It is argued that as most of the children attend schools during the day time, communal herding helps to reduce the labour shortage at the household level.

Sharecropping is still the common practice in the community. The landless and rich farmers share crop with those poor farmers who have extra lands. In most cases, the owner of the land provides the land and labour while the share cropper covers all the remaining production inputs (seeds, fertilizers, pesticides, labour, oxen, etc). The production divided equally among the two parties.

## Diversification

### Combining farm with non-farm activities

There are large numbers of farmers who make living totally from farming. They may engage in both rain-fed and irrigation farming. There are also those who depend only on the rain-fed farming.

The wives of rich households engage in domestic activities such as making food, fetching water and fire wood, and caring for the smaller children. She is responsible for managing all the domestic chores. The wives of rich farm product traders may involve in trading activities (buying the crops, controlling the business, etc). The activities of rich household wives may not totally be different from that of the middle and poor households but the burden of domestic work is high for the rich households (in case there are no house maid or bigger daughter are not in the household to help in domestic chores).

The young men and boys of rich households involve in farming and farm related activities while they are at home. As most of them are in school, they focus on their education. Their economic roles in the household may not be different from that of the middle and poor households. However, the young men and boys of the middle and poor households may engage in paid labour outside their schooling time. They also work for the family. This may adversely affect their educational performance. They have little time to focus on their study.

Young women and girls from the rich households are overburdened with domestic chores while those of te poor households are overburdened with paid work. Both of them may engage in schooling but those from the rich and middle households can get enough support from their parents while those from poorer households cover their educational and personal costs by doing paid labour.