RAISE-FS *Woreda* profile #001

Angot *Woreda* Food System Profile

Population

86,005

42,075 | 43,930

Altitude

2,432-3,800 m.a.s.l

Diets

Predominantly grains and pulses

Food insecurity

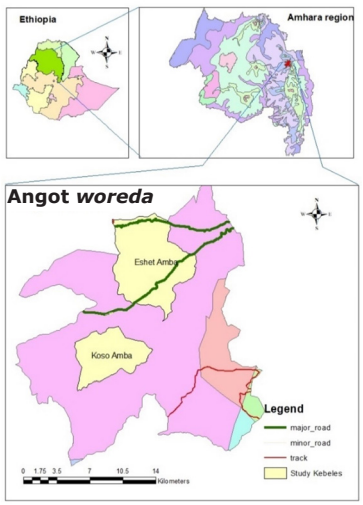
83% **FHH**

68% **MHH**

Food gap months

Jan ..... ▶ Dec

June to October



Angot *woreda*

Top 5 crops produced

Potato | Barley | Wheat | Beans | Cabbage

Climate and soils

- Drought
- Frost and hail damage
- Soil acidity
- Flood
- Soil fertility

Inclusion

Youth (18–35 yrs) | Women | Men

No access | Limited access | Access

- High workload during the peak agricultural months
- Access to agri-inputs & extension services
- Access to credit
- Decision making
- Job opportunities
- Cooperative membership

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RAISE-FS Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems

1 Introduction and methodology

This document gives an overview of the current status, dynamics and behaviour of the local food system in the Angot *woreda*, which is called the *woreda* profile. The *woreda* profile was developed to support stakeholders' exercising evidence-based, bottom-up planning based on the existing reality of the *woreda*. The profile is meant to enable stakeholders to be on equal footing in understanding the complex challenges and realities of the *woreda* and to use these insights as starting point for the *woreda* planning process. This document describes the current situation of the *woreda* in eight chapters. It endeavours to provide information and data on demography, agroecological conditions, production factors, markets and value addition, food and nutrition security, social inclusion, as well as policies and government support.

This *woreda* profile is generated based on insights obtained from the baseline survey and rapid food system appraisal (RFSA) in two *kebeles* of Angot *woreda*. The two *kebeles* more or less represent the agroecology of the *woreda*. Officials from the *woreda* administration acknowledged and certified that the RFSA engaged a diversity of stakeholders, and the findings present a realistic overview representing the entire *woreda*. Activities conducted to construct the *woreda* profile were done in light of the RAISE-FS project. Angot is one of the selected implementation areas. A quantitative baseline survey and a qualitative RFSA were conducted in parallel, with secondary data; these are the main inputs for this *woreda* profile. Data were collected in two of the *woreda*'s *kebeles*, Eshet Amba and Koso Amba. These *kebeles* were purposely chosen because of their potential for the project commodities (food security crops such as potato, food oat and barley). A structured standard questionnaire and RFSA tools were developed to collect field data. Female-headed, male-headed, women in male-headed households and youth were proportionally selected randomly from the households in the selected *kebeles*. Quantitative data were collected from 104 respondents, of which 41% were men, 38% were women, and 21% were youth (54.5% were men and 45.5% were women).

The RFSA involved a sequence of steps and activities that sequentially build on one another to provide a diverse and integrated perspective on the current food system situation, key challenges and opportunities (see figure 1). The applied RFSA tools were community mapping, activity calendar, in-depth dialogue and different plates activity[1].

[1] An extended description of the tools can be found here: https://doi.org/10.18174/590873.

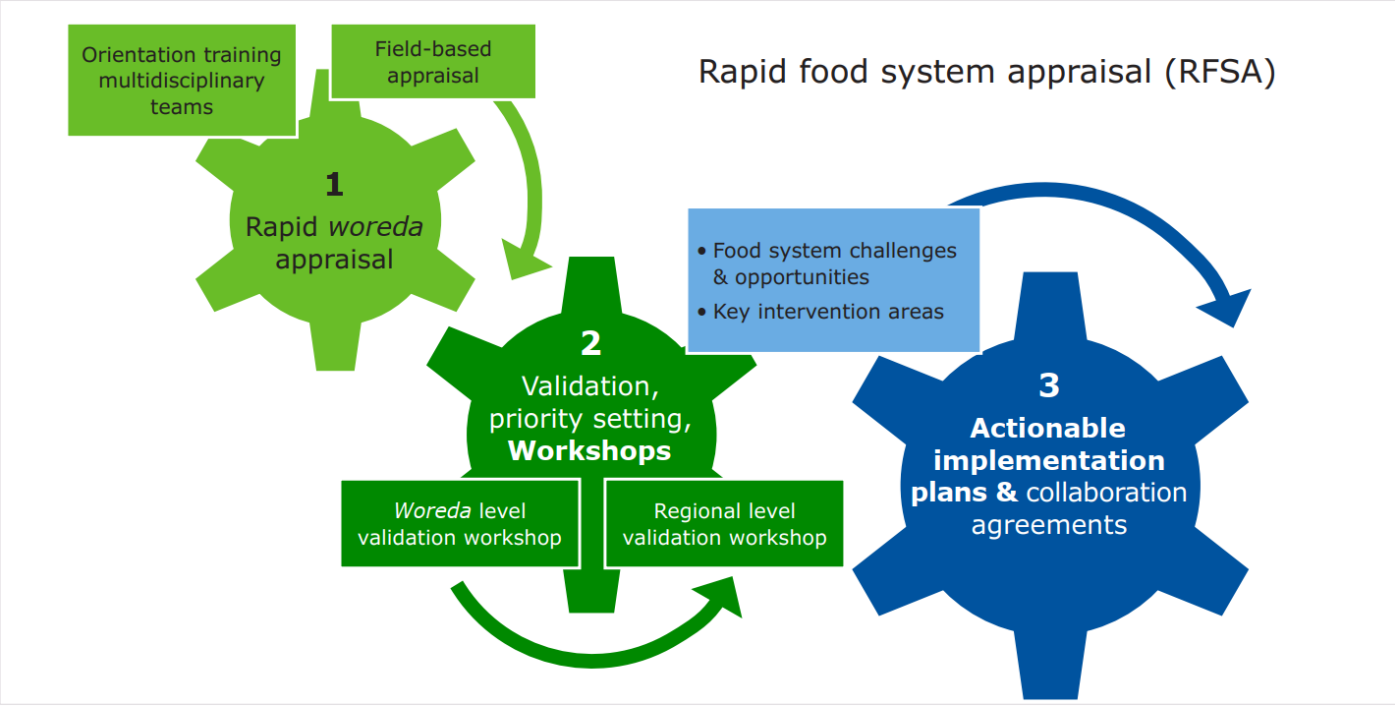
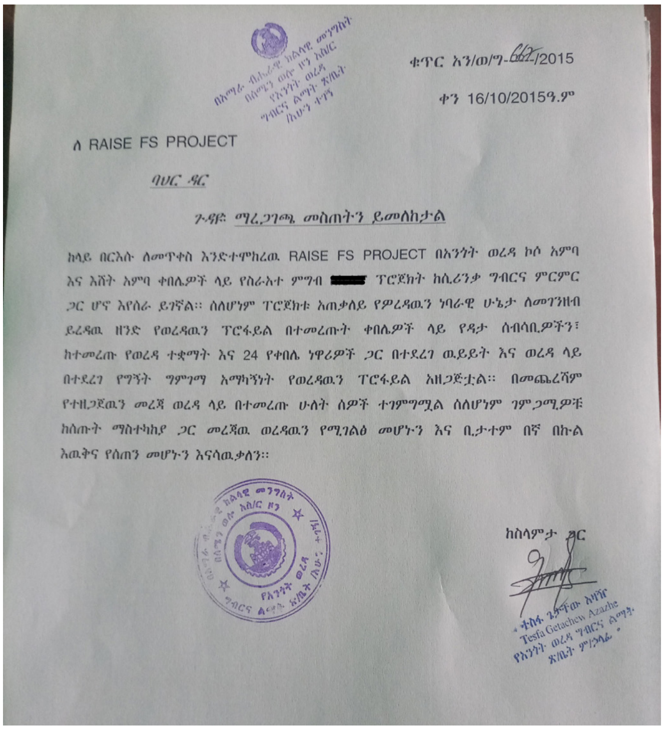


Figure 1: Steps of the rapid food system appraisal (RFSA) process

The activities were undertaken with female, male, and stakeholder groups separately. The female group consisted of 12 persons (5 youth <35yrs of age, 4 middle-aged between 35 and 60yrs of age, and 3 elderly >60yrs of age). Similarly, the male group comprised 12 persons (5 youth, 4 middle-aged and 3 elderly). The institutional stakeholder group comprised development agents (DAs), heads of agricultural offices, health extension workers, cooperative managers, microfinance managers and land administration experts from *kebele* level and office of agriculture experts (extension, nutrition, natural resources and agronomy), cooperative promotion office, women children and social affairs, trade and development office, microfinance, and labour and skills/training.



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ለ RAISE FS PROJECT

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Figure 2: Official communication from Angot woreda *Agricultural Development Office*

The validation workshop was conducted with the deputy *woreda* administrator, researchers of the Sirinka agricultural research centre, Bahir Dar University and representatives of different offices of the *woreda* (agriculture, livestock development, cooperative, women and youth affairs, job creation, trade and health). In addition, representatives of the men and women who participated in the RFSA were present. During the workshops, the key findings from the appraisal and baseline survey were discussed and validated. Suggestions received from *woreda* officials regarding the *woreda* profile were taken into consideration and added to this document.

Summary of the content of the letter

From: Angot *woreda* Agricultural Office
To: RAISE-FS Project
Subject: Giving feedback on *woreda* Profile document

The RAISE-FS project, in collabouration with the Sirinka Agricultural Research Center, has been working on the food system in two *kebeles* of the *woreda*, namely, Eshet Amba and Koso Amba. In order to gain a comprehensive understanding of the overall state of the world's food system, the project worked together with selected stakeholders from the *woreda* and residents of the *kebeles*. Using the data collected, the project developed a profile of the *woreda* and subsequently evaluated and validated the data in the presence of the *woreda* and *kebele*-level stakeholders. Finally, two professionals from the *woreda* evaluated the profile and provided feedback. The *woreda* expressed its acknowledgement of the profile when it gets published.

With best regards,

Community maps

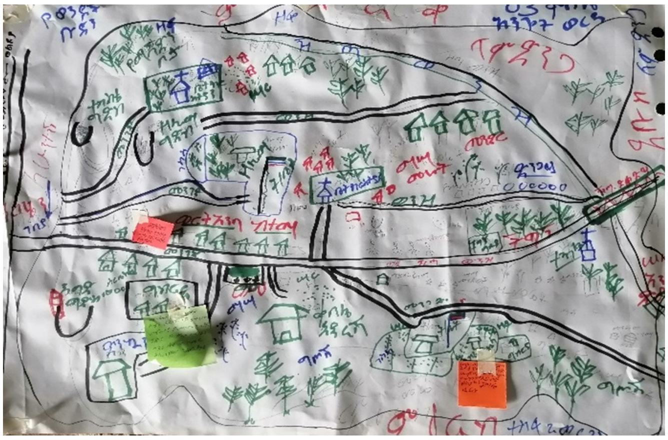

Figure 3: Community map from Koso Amba kebele *from male focus group*

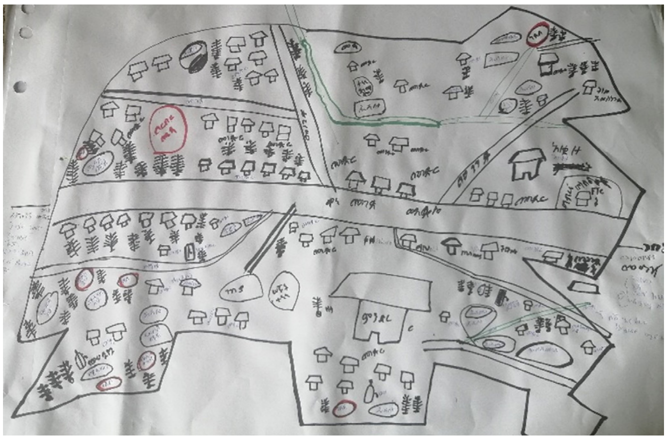

Figure 4: Community map from Koso Amba kebele *from female focus group*

Figure 5: Women FGD participants from Eshet Amba kebele

Figure 6: Male FGD participants from Eshet Amba kebele

Seasonal calendar

Table 1: Seasonal calendar from Koso Amba kebele from female focus group

No	List of activities	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	July	Aug
1	Expenditures	xxx	x	x	x	xxx	xxx	xxx	xxx	xxx	xx	xx	xx
2	Income	xx	xx	xxx	xx	xxx	x	x	x	xx	xx	x	x
3	Seasonal labour activities	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xxx	xx
4	Workload	xx	xx	xxx	xxx	xxx	xxx	xx	xx	xx	xx	xxx	xx
5	The rainy seasons						xx	xx				xxx	xxx
6	Moments of critical drought					xxx	xxx	xxx	xxx				
7	Key cropping season for different crops	xxx	xx	xx	xx	xx	xxx	xx			xx	xx	
8	High/low Market price months	xxx	xx			xx	xx	xxx	xxx	xxx	xx	xx	xx
9	Busiest months for women			x	x								
10	Busiest months for men	xx		xx	xx	xxx	xx	xx	x	x	xxx	xx	x
11	Pest and disease prevalence	xxx	xxx	xxx	x	x	xx	xx	xx	xx	xxx	xxx	xxx
12	Prevailing livestock activities								xx	xx	xx	xx	xx
13	Local market demands for local products	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
14	Periods of food scarcity	xxx		x	x				xxx	xxx			
15	Periods of food scarcity	xxx	xx	xx	xx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

Table 2: Seasonal calendar from Eshet Amba kebele from male focus group

No	List of activities	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	July	Aug
1	Expenditures	xxx	x	x	xx	xxx	xxx	xxx	xxx	xx	xx	xxx	xx
2	Income	x	x	xxx	xxx	x	x	x	xx	x	xx	x	xx
3	Seasonal labour activities	xx	xx	xx	xx	xxx	xxx	xxx	xx	xxx	xxx	xx	xx
4	Workload	xxx	xxx	xxx	xx	xx	xxx	xx	xx	xx	xx	x	x
5	The rainy seasons	xx				x		xxx			xx	xxx	xxx
6	Moments of critical drought	x	xx	xx	xx	xx	xxx	x	xxx	xxx	x		
7	Key cropping season for different crops	xxx	x	x	x	xx	xxx	xx	x	x	xxx	xxx	
8	High/low Market price months					x	xx	xxx	xxx	xxx		xx	xx
9	Busiest months for women	x	xx	xx		xxx	xxx				xx	xx	
10	Busiest months for men	xxx	xxx	xxx		x	xx	xx			xxx	xxx	xxx
11	Pest and disease prevalence		xxx	xxx							xxx	xxx	
12	Prevailing livestock activities	xxx	xxx	xxx	x	x	x	xx	xxx	x	x	xx	xxx
13	Local market demands for local products	x				xx	xxx	xxx	xxx			xx	xx
14	Periods of food scarcity	xx	x	x	x	x	x	xxx	xxx	xxx	xx	x	x

The 'X' refers to the normal intensity level of the situation about the corresponding activity whereas XX and XXX represent strong and very strong intensity levels, respectively.

1 Demography

Angot *woreda* is located in the North Wollo Zone, Amhara region which is about 60 km from the Zone town, Woldia and 300 km from the regional capital Bahir Dar. The main town of the *woreda* is Ahun Tegnen. Data from the *woreda* plan and development commission office shows that the population size of the *woreda* is 86,005 (male: 43,930; female 42,075). The *woreda* has 12 rural and 1 urban administration *kebeles*.

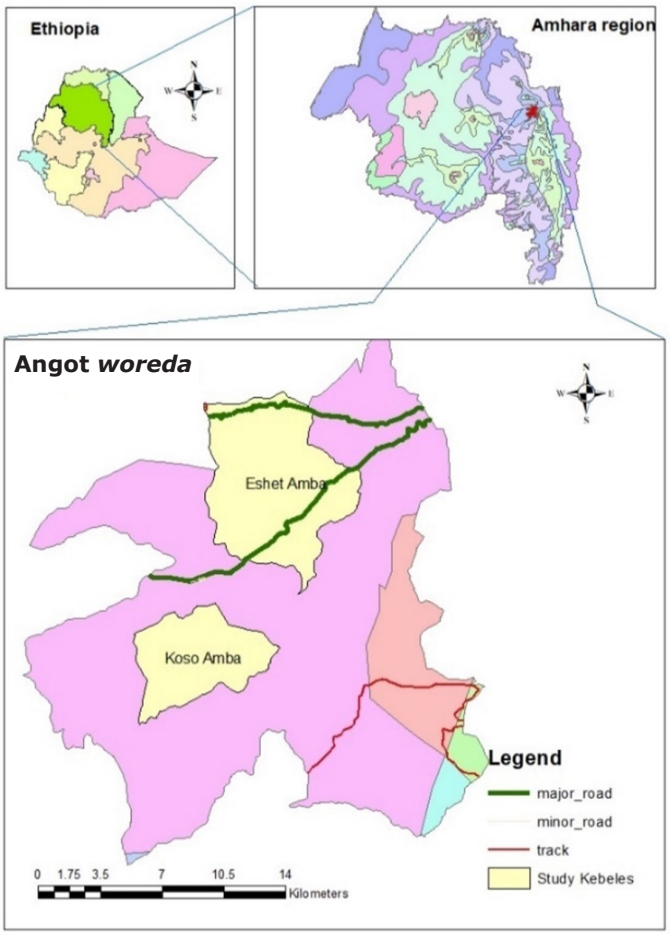

Figure 7: Map of Angotworeda

The baseline data shows that the average household size in the two *kebeles* is 4. While male-headed households have an average household size of 5 members, female headed-households have 4 members on average. Children below 18 years of age represent a large portion of the population, 37.5% (40% male and 35% female), while the youth (population from 18-35 years) represent 34% of the sampled population. Adults, from 36-60 years, represent 22%, and the elderly, who are above 60 years old, make up 6.5 % of the total population. Concerning the educational level, the baseline study shows that 23% of male-headed and 52% of female-headed households do not read and write. About 51% of the household heads attended formal education,

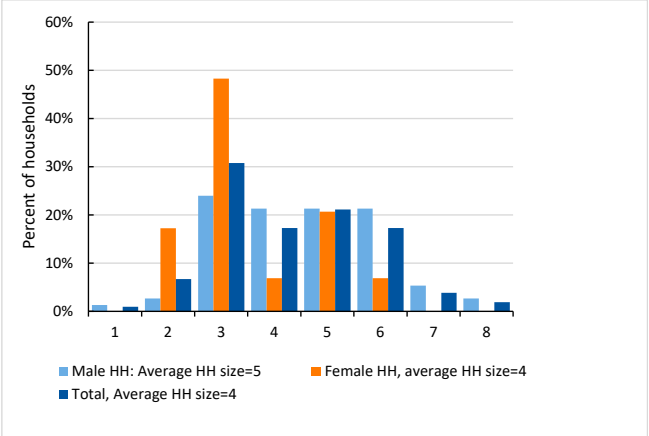

Figure 8: Family size of surveyed households

including 40.4% in primary school, 9.6% in secondary school, and 1% in diploma and higher levels. Of this, 45.3% of male-headed and 27.6% of female heads at the primary level; 13.3% and 1.3% of male heads completed secondary schools and have a diploma and above level, respectively. None of the sampled female household heads attended secondary and diploma-level education. 17.3% of male and 20.7% of female heads attended adult and religious education.

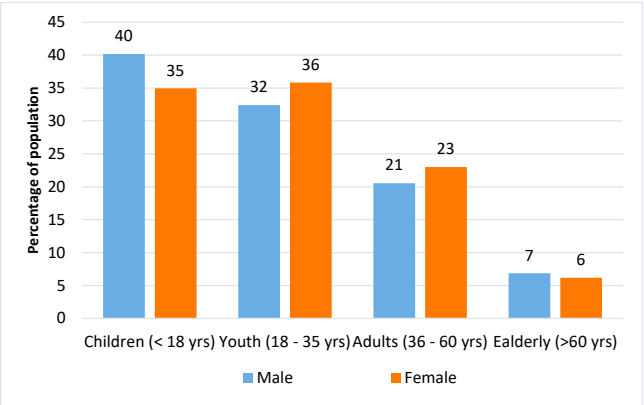

Figure 9: Age category of surveyed households

Table 3: Education level of surveyed household head

Educational level	Male head %	Female head %	Total
Does not read and write	22.7	51.7	30.8
Adult and religious education	17.3	20.7	18.3
Primary school	45.3	27.6	40.4
Secondary school	13.3	0.0	9.6
Diploma and above	1.3	0.0	1.0

Priority topics identified and validated by stakeholders

- Improve access to adult education, especially for women

2 Agro-ecological and environmental conditions

Secondary data from the *woreda* office of agriculture showed that the total area of Angot *woreda* is 393.4028 km2. About 22.2% of the *woreda*'s geophysical features constitute high steep slopes, 28.9% plateau and 28.9% are of a moderate slope. Out of the total area of the *woreda*, 2,629.71ha are used for human habitation, 21.5ha for perennial fruit, 1,849.055 ha for natural forest, 4,030ha for grazing land, 9,832.155 for cultivation and 1,580ha for shrubs. About 16,397.87 ha are eroded land, and another 3,000 ha are exposed to erosion. The leading causes of erosion include overgrazing, limited vegetation coverage, mono-cropping, ploughing towards the gradient/ not using contour ploughing, flood, wind and other inappropriate farming trends.

More than 94 % of the *woreda*'s land lies between 3,200 and 3,700 meters above sea level (m.a.s.l.); 4.28% is between 2,432-3200 m.a.s.l; and less than 2% is higher than 3,700 m.a.s.l. The major soil type of the *woreda* is nitisol, characterised as slightly acidic and low in organic matter.

The major crops grown in the *woreda* are potato, barley, bean, cabbage, beetroot, carrot and feed oat. As information from the RFSA, the major agricultural activities taking place in the *kebeles* are crop production (barley, potato, and linseed), animal feed production (feed oat), animal production (milking cows) and fattening (sheep and oxen), donkeys and horses' production, poultry production, and also some households practice home gardening producing vegetables such as kale and carrot during rainy seasons. Frequent frost and drought, lack of improved agricultural practices - such as lack of and or limited experience with soil acidity treatment technologies, lack of improved crop varieties, uneven distribution of rainfall, and land degradation due to cereal mono-cropping were all reported as challenges in practising agricultural activities during FGDs discussions. Details of each agro-ecological condition, climate change and environmental degradation condition reported during the FGDs discussions are stated below.

Drought has been experienced in the last three to four years as a result of unexpectedly changing rainfall patterns of the *Belg* season (January to May), which has been considered the main season of food crop production in the area. This situation has forced farmers

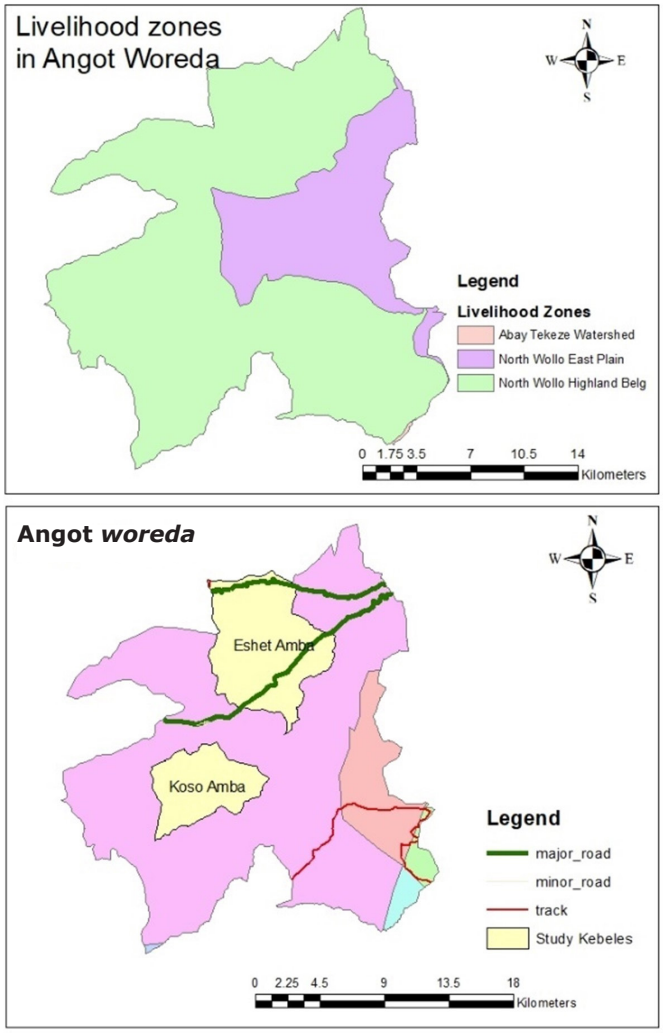

Figure 10: Livelihood and agro-ecological zones of the woreda

to gradually quit crop production in the season due to drought. Drought affects the farming system and all household members since agricultural production depends on rainfall. Women are especially vulnerable to drought since they have the responsibility to search for and fetch water from distant areas. They are also responsible for feeding the family, making them worry about what food to prepare and bring. In addition, drought causes the death of animals because of the scarcity of drinking water and feed.

Floods have been experienced during the main rainy season (June to August). Flooding destroys terraces and houses, eroding crops, land and soil, trees, and soil nutrients. Erosion of soil nutrients contributed its part to low productivity and production, and as a result, poverty was also reported. As mentioned above, secondary data from the *woreda* agricultural office indicated that 16,397.87 ha of land is already eroded and largely unproductive. About 3,000 ha of land is still exposed to erosion.

Soil acidity and a decrease in soil fertility are resulting from monocropping practices, flooding, deforestation, and overgrazing. This decreases the productivity and production of crops and livestock which in turn increasingly impacts people's livelihood, causing food insecurity.

Frost: the *woreda* experiences recurrent frost, which negatively affects the crops and has an impact on all farm households. At times, the impact of frost extends beyond seasonal crops and it can have adverse effect on perennial plants such as eucalyptus. Access to safe water: In both *kebeles*, some hand wells and tap water infrastructure were constructed to deliver clean water to rural farmers. There is access to safe drinking water in some areas but not in other areas of the *Kebelekebele*. The majority of households do not have access to safe drinking water. Lack of access to safe drinking water during the dry season is serious when small streams dry up.

In the rainy season, there is spring water but during the dry seasons, water is scarce and as a result, some of the hand-dug wells dry out. Both women and men travel long distances searching for water during the dry seasons. Government- constructed water sources are no longer functional due to drought. There is a high reliance on natural water sources. Increasingly, water sanitation is becoming a problem due to lack of regulations over water utilization, disposal and service provision.

Irrigation: Though there are some ponds, streams, and rivers in the *kebeles*, they cannot be used for irrigation. These water sources are used by both animals and humans for drinking. As mentioned, some water sources dry up in the dry season and the remaining ones are used for drinking by cattle. There are some dams constructed by the government, but irrigation facilities have not yet been established around them.

FGD participants indicated that the available water sources were inaccessible due to a lack of infrastructure, especially delivery canals; they also mentioned a lack of improved vegetable seeds for horticulture crop production. They stated that there were large amounts of rainwater in the main rainy season but due to lack of infrastructure for water harvesting, they are not using water for irrigation in the dry season.

Priority topics identified and validated by stakeholders

- Promotion of drought-resistant and short-maturing crops
- Enhance access to improved crop and vegetable varieties
- Enhance sustainable land management to prevent soil erosion, land degradation, and deforestation
- Enhance and manage soil fertility
- Improve access to affordable acid soil management technologies
- Promote climate-smart production strategies to limit the damage of drought, frost and hail, and to cope with rainfall variability
- Develop irrigation infrastructure and water-harvesting structures to collect excess rainwater during the rainy season and use in the dry season

3 Agricultural production system

Information from the FGDs revealed that both *kebeles* are characterised by mixed crop-livestock production practices. Fattening animals, particularly oxen, sheep and poultry production, are common practices in both *kebeles*. Crops are mainly produced with rain-fed agriculture.

The land use pattern of the *woreda* consists of scattered grazing land comprising approximately 4,030ha. A large portion of the area is arable land scattered in various locations, and household land size is small. In the arable areas, households grow barley as a monoculture year after year. Eucalyptus trees predominantly cover forest areas (1,849.055 ha). Water collection structures are built in small areas. There are mountain rages that are stony and devoid of vegetation. Failure to act in accordance with the land use plan, farmers' use of degraded gully and highly degraded land for crop production, free grazing practices, and an increasing trend in soil acidity were reported as challenges in land use during FGDs discussions.

There are two key cropping seasons in the *woreda*; one is the main production season, which lasts from June to December, and the other is the *Belg* production season which lasts from September to July. Uneven rainfall distribution and late-onset rains are challenges experienced in the areas. The *woreda* produces a limited variety of crops. The major crops produced are barley, feed oats and potatoes. The household survey showed that about 88% of households produced barley, 34% produced oats and only 7% produced potato in the 2021/22 main production season. Farmers' experience of using an improved variety of seeds for cereals was low. About 43% of households used improved varieties of potato seed for potato production; about 7% of households used improved varieties of barley seed for barley production and about 6% of households used improved seed varieties of oats.

In terms of input use, the survey result shows that the application of fertilizer and chemicals is very low. Only about 2% of the sampled households used urea and NPS fertiliser. Pesticides were not used by the surveyed sample households to protect pests in the production of barley, oats or potatoes.

The majority of arable land in this *woreda* was not fertile and has acidic soil, resulting in low crop productivity. The average productivity of barley and oats was 8, and 10.6 quintals per hectare, respectively. In terms of the percentage of products sold to the market, 3 % of barley, and 11 % of oats were sold. Barley is the least in the proportion of sales, despite the fact that the number of sample households producing it is larger than that of oats and potatoes. The FGD participants reported using barley for home consumption rather than sales.

Table 4: Inputs used for major crops

Crop	HH that cultivate specific crops	HHS that used inputs				Productivity (t ha^{-1})	% Produce sold
		Improved Variety	Urea	NPS	Pesticide		
	%	%	%	%	%		
Barley	87.5	6.6	2.2	2.2		0.8	3
Oats	33.7	5.7				0.106	11
Potatoes	6.7	42.9				0.16.3	12

Table 5: Experience in agronomic practices

Household head	Inter-cropping	Relay cropping	Crop rotation	Agro-forestry	Green manuring
	%	%	%	%	%
Male	5		37	4	
Female	3	7	17		
Overall	5	2	32	3	

Farmers' experience in agronomic practices is very low for both male and female-headed households. Of the different practices, crop rotation was a relatively better-used agronomic practice, used by 32% of sample households, of which 37% were male-headed and 17% were female-headed households. Inter-cropping, relay cropping, and agro-forestry were practised only by 5, 2 and 3 % of sample households, respectively. There is no practice of green manuring in the area. Relay cropping was practised by female-headed households only on the farms around the house which are mainly managed by women. Results from the survey indicate that only male-headed households are practicing agro-forestry.

Priority topics identified and validated by stakeholders

- Strengthen extension services and provision of customised extension services
- Effective and timely improved seed multiplication and distribution system

Eshet Amba kebele agriculture field landscape (top) and Koso Amba kebele agriculture field landscape (bottom)
Photostakenby: Anteneh Mekuria

4 Markets and value addition

Access to market information services increases the efficiency of agricultural markets by decreasing market information asymmetry. The data obtained from the baseline survey shows that most farming households (60% male-headed and 66% female-headed households) have access to market information (Figure 11). According to the data, female-headed households had relatively better access to market information than male-headed households. This may be because women tend to participate in informal networks more than men.

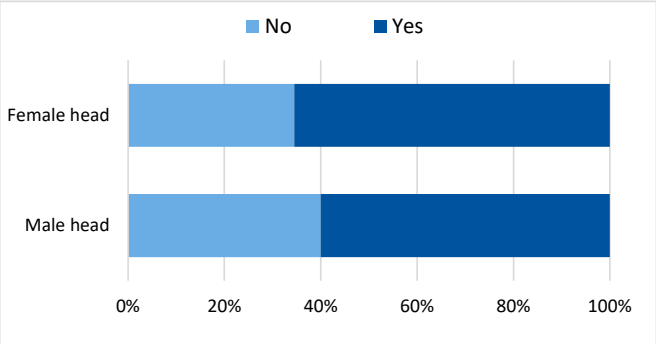

Figure 11: Proportion of access to market information

Farming households in this *woreda* obtain market information from different sources. Most farmers (29.69%) access market information through friends and families. About 23% of sample households receive market information from neighbours. Only about 19% of the sample households obtain market information from formal sources such as radio and television (Figure 12).

As means of transporting their produce to market, most farmers in the sampled *kebeles* use animals and vehicles. They also transport their produce on foot by carrying it on their backs. Figure 8 shows that most farmers (about 63%) used animals to take their produce to market, while about 36% carried it on their backs. The average time spent travelling from the farm to the nearest market, using animals as a means of transport, is about 43 minutes (Figure 13). Among sampled farmers, farmers living in Eshet Amba are nearer to the market than those living in Koso Amba. About half of the respondents from Eshet Amba (50%) carry their products for an average of 30 minutes to reach the market.

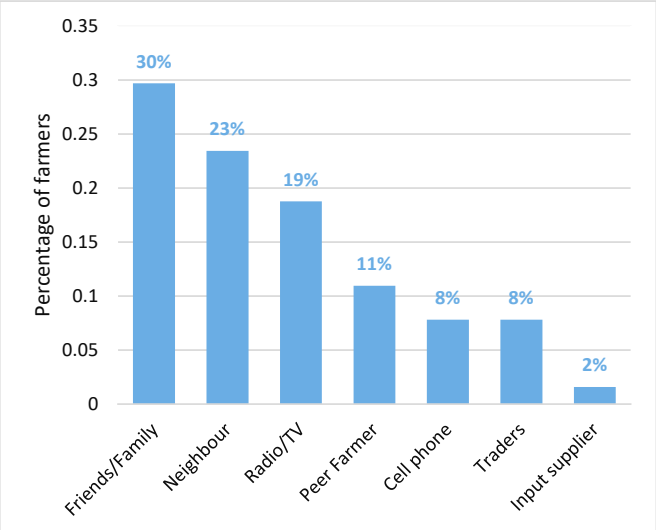

Figure 12: Source of market information

The RFSA focus group discussions clarified that, in Koso Amba, there is no access to a village market in the *kebele*. The market for the *kebele* residents is available only in *woreda* town and no alternative markets are nearby. It takes around an hour and a half, for some even two hours, to travel on foot from the *kebele* to the market at Ahun Tegegn, the *woreda* town. High transportation cost to go to distant markets was reported as a challenge. In Eshet Amba, a bi-weekly market is available at Kebero Meda on Mondays and Wednesdays. Trader's purchase and sell different crops, including barley, maize, field peas, linseed, and others; as well as livestock, mainly sheep and other livestock products such as butter and eggs. Butter, sheep, barley, linseed, and potatoes are sourced from the *woreda* producers while other crops like maize, teff, field pea, faba bean, and grass pea are sourced from the nearby market such as Estayish, Gashena, Kon, Geregera, Woldia and others.

An important weekly market for households in Koso Amba is the biweekly market in Ahun Tegegn, which is held on Thursdays and Saturdays. Households from Koso Amba use the market to purchase clothes and consumables as well as to sell livestock and livestock products, and crops. For households in Eshet Amba, both the Wednesday and Monday markets within the *kebele*, as well as, the Thursday and Saturday markets in Ahun Tegegn town, are important weekly marketplaces.

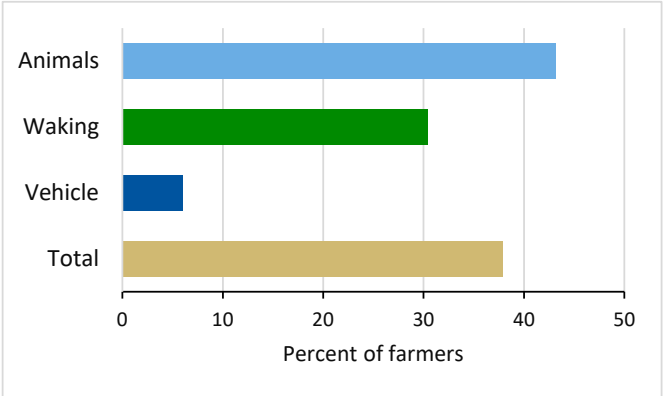

Figure 13: Means of transport to market

With the exception of butter production at a household level, in both *kebeles* there are no small and medium enterprises (SMEs) and large-scale businesses operating with agricultural products. Butter, which is the main marketable commodity produced by households with milking cows, is processed at home before being taken to the market and sold.

Key commercial agricultural activities for cash income generation are animal production, fattening (sheep and oxen), butter production, and poultry production. Potato is marketed only if there is marketable surplus production. In the FGDs, it was reported that barley production had decreased due to several reasons and that, as a result, barley is no longer a commercial crop for income generation in the area. Garlic and linseed (flaxseed) are also produced and marketed for cash income generation.

In addition to Ahun Tegegn, which is the *woredas* main town, other important towns for trade and processing are Terefe, Robit, Beklo Manekiya, Estayesh in Gazo *woreda*, Woldia, Hara, Sanka and Mersa. Woodlot and livestock products are mostly transported to Kobo and Woldia. Women in Eshet Amba (*kebele* 06) use the Beklo Manekiya market to buy different cereals, pulses, vegetables and spices; and they then go to the market at the *woreda* town Ahun-Tegegn to sell their produce and trade foodstuffs. Men also purchase animals from the Beklo Manekiya market.

During crop harvesting seasons, since there is production, market supply relatively increases and price decreases. In contrast, during off seasons, there is no production and market prices of products increases. Accordingly, market prices in the areas are high in March, April and May. In those cases when *Belg* production fails in July and August, market prices increase too in both *kebeles*. Market prices get relatively lower in November and December and sometimes in June when the *Belg* crops are harvested. From the household survey result, the major challenges in marketing that were highlighted were the high cost of inputs, lack of diversified products for marketing, shortage of transportation, and a relatively low cost of produced products. During the RFSA, similarly, transportation problems and the high cost of transportation were reported as challenges that led people mainly to rely on the local markets. In addition, during FGDs discussions, inflation, the mismatch between demand and supply and the resulting increase in the cost of living were reported as key challenges.

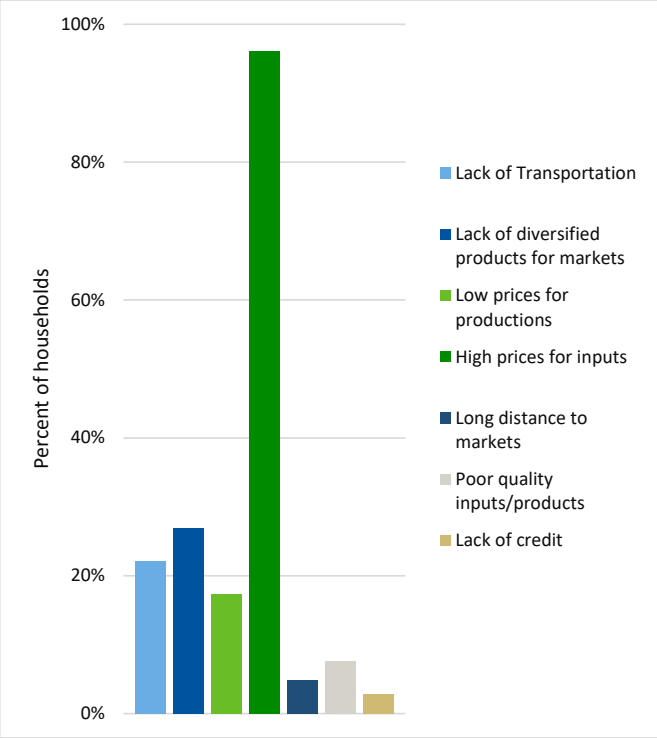

Figure 14: Challenges faced in marketing

Priority topics identified and validated by stake-holders

- Improve access to technologies for value addition of livestock and livestock products produced in the *woreda*
- Strengthen access to inputs like feed oats production at affordable prices
- Improve access to alternative job opportunities for the increasing population in general and youths in particular

5 Credit and financial services

The RFSA result showed that Tseday Bank and RuSACCOs are both present in Eshet Amba, while RuSACCOs are the sole financial institutions available in Koso Amba *kebele*. Despite the presence of financial institutions, many people seem to have restricted access to finance. A considerable number of people, especially the youth, who do not have land to use as collateral, are unable to access loans from Tseday Bank. Also, RuSACCOs are only accessible to those who are members and have savings.

The results of the RFSA show that there have been instances where farmers have been unable to repay their loans since farming in the area is susceptible to a number of shocks, including drought, hail, frost and flooding. Due to their limited financial capital, RuSACCOs are only able to provide credit if the number of borrowers is within the available money that they have for credit in the cooperative. RuSACCOs members must have a minimum of six months of membership in order to get access to credit, and the amount of credit depends on the amount of money they have saved in the RUSACCO. In the case of Tseday Bank, those who meet the criteria for borrowing, such as grouping, and availability of collateral can get credit. RSACCOs in the *kebele* have been training farmers about saving and its use as a source of credit. RUSACCO's relatively charge lower interest rate for credit, as compared to Tseday Bank, was reported as an opportunity.

The baseline survey results indicated that only 34% of the sample households had access to credit from formal financial institutions, in the *woredas* case- Tseday Bank and RuSACCOs. About 40% of male-headed and 17 % of female-headed households had access to credit from formal institutions. This result shows that access to credit from formal sources in the area may be more challenging for female-headed households than for male-headed households.

Regarding access to credit from informal sources, including families, friends, neighbours, merry-go-round groups such as Ekub, funeral societies, etc. The survey revealed that about 25% of male-headed and 38% of female-headed households have access to credit from these sources. Overall, 29% of households accessed credit from informal institutions. This result indicated that more female-headed households access credit from informal than formal institutions, while mostly male-headed households access credit from formal institutions (figure 10). The reason for this can be attributed to the better involvement of women in the informal networks.

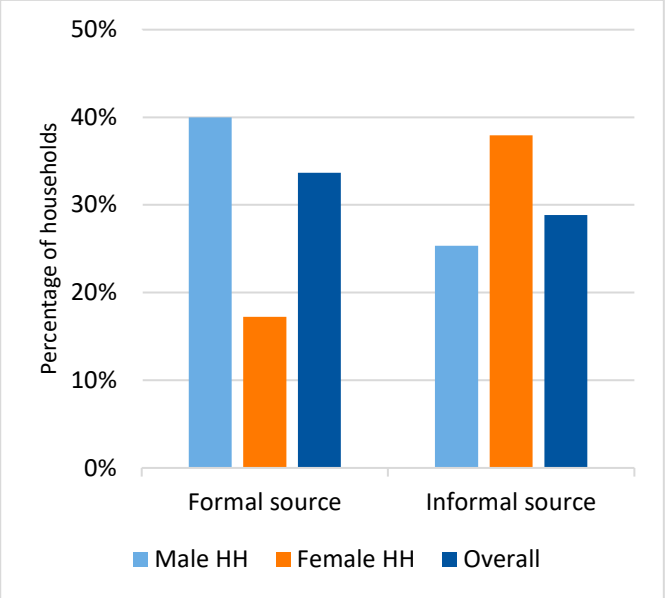

Figure 15: Proportion of households who have access to credit

Priority topics identified and validated by stakeholders

- Strengthen RuSACCOs financial capacity
- Develop innovative credit products which are inclusive of women and youths
- Strengthen local availability of financial institutions and access to credit
- Improve access to credit at an affordable interest rate

6 Food and nutrition security

According to information from the RFSA and household survey (figure 11), most people in Angot *woreda* experience food insecurity throughout the year, with June, July, August, September and October being the months when most farmers experience food shortages. During the peak of food insecurity in August, about 75% of households reported food shortage.

From FGDs, it was learned that almost all food items are scarce, and the majority of the people in the community have limited dietary diversity. Most of the time, households eat injera with shiro stew from beans – for the case of better-off households - and Injera with stinging nettle, a wild crop locally called Sama for the case of very poor households.

Figure 12 shows that 28% of the sample households were food secure the month before the data collection (June). Of these food-secured households, 32% were male-headed, while 17% were female-headed households, indicating that male-headed households have a relatively better food security status than female-headed households. Furthermore, female-headed households also experienced more severe food insecurity (31% of HH) than male-headed households (20%). In total, 23% of all households experienced severe food insecurity in the last 30 days, which is a worryingly high percentage.

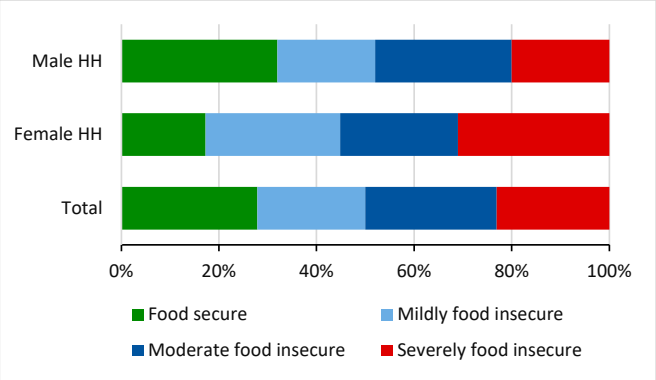

Figure 16: Proportion of households categorized in different stages of food security levels [2]

FGDs show that wealth status, awareness, age, market price, availability of food from own production, availability of food in the market and affordability are socio-economic and cultural factors influencing diets and dietary behaviour. Households with better income and awareness tend to consume more diverse foods, including animal-source food products, than low-income households.

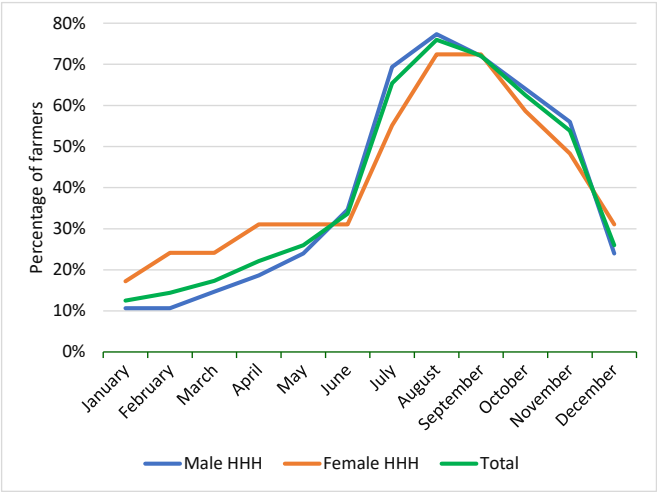

Figure 17: Percentage of HH having insufficient food in different months of the year

Concerning dominant diets and the differences between the standard meals of different households, the RFSA revealed that poor households with better awareness of diets consume injera prepared from sorghum and maize with stew from grass peas, while poor households

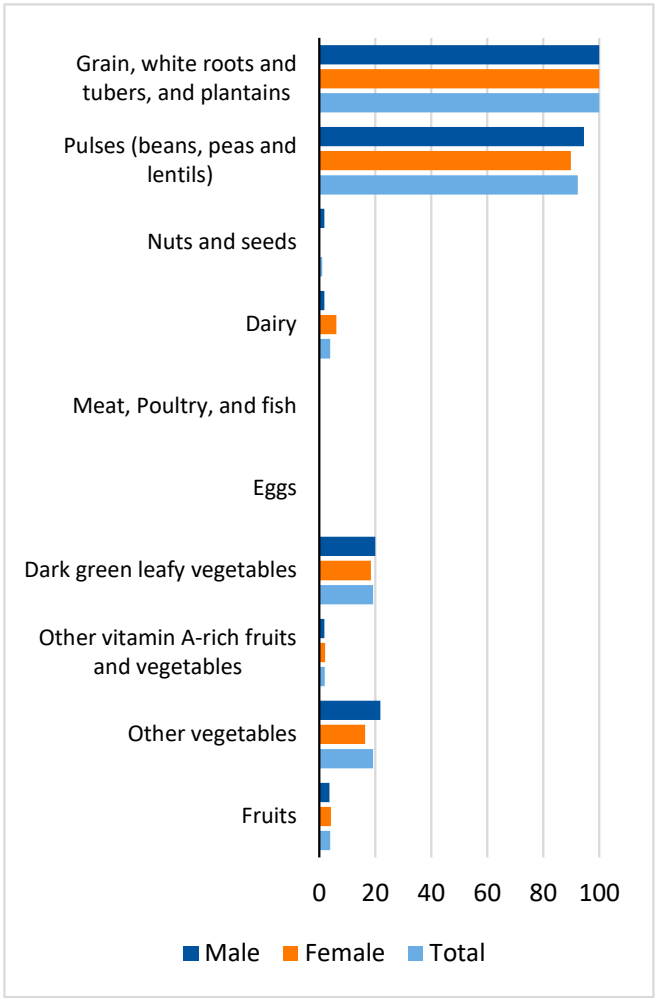

Figure 18: Percentage of individuals consuming food group in the previous day to the interview

[2] https://www.fantaproject.org/sites/default/files/resources/HFIAS_ENG_v3_Aug07.pdf

with low awareness of diets eat injera made from sorghum and stinging-nettle. Women FGD participants indicated that infants from low-income families depend on breastfeeding 100%, when less than six months old. After the first six months, in addition to breastfeeding, infants are fed thin porridge made from sorghum flour up to the age of two. Young children up to the age of two also eat bread made from sorghum flour (100%). Relatively wealthy households with better awareness of healthy diets usually eat injera prepared from a mix of teff, barley, maize, and sorghum with a stew made from either or a mix of grass pea, chickpea, faba bean, beans, field pea, lentil, and vegetables (potato, tomato, chilli, kale), milk, local beer, meat, egg, linseed, butter, stinging-nettle. On the other hand, wealthier households with low awareness of diet consume injera with stew, kale, chili, local beverage and coffee. Infants of relatively wealthier people drink breast milk and cow milk and bread prepared from a mix of cereals with milk, and porridge prepared from barley and wheat flour starting from the age of six months.

The result of the baseline survey, indicates the food groups consumed in the day – 24 hours - before the interview, based on the sex of the interviewees (figure 13). Accordingly, the result shows that most sample households in Angot *woreda* mainly consume grains, roots and tubers, leafy vegetables and pulses (beans, peas and lentils), while consumption of nuts and seeds, as well as animal products, is minimal. About 20% of the interviewees consume dark green leafy vegetables and 20% other vegetables. Dairy, nuts and seeds, and fruits were consumed by very few respondents (less than 10%). Almost none of the participants consumed meat, poultry and eggs. Data was collected during the Orthodox Christian religion followers fasting season, where animal source food products are not eaten for religious reasons.

The average number of food groups consumed by all interviewees was 2.4, with no notable difference between men and women. The average number of food groups consumed is far below the recommended score of five food groups for women. Furthermore, only 2% of all interviewees consumed the recommended five or more food groups.

During FGDs a number of culinary taboos were mentioned in both *kebeles*. FGD participants reported the following restricted food items and respondents' justifications for the taboos "Pork and camel meat are strictly forbidden by the religions. A person with haemorrhoids is advised not to eat food made of wheat. Rabies patients who started cultural treatment are not allowed to eat linseed, stinging nettle and kale. Flour of roasted barley, locally named "Beso" and porridge are not allowed to be consumed by pregnant women due to the belief that these foods limit oxygen access to an infant in the womb. Pregnant women are not supposed to consume coffee because it makes the child's head bald. All people do not consume the small intestine of consumable animals because it is believed that eating them makes people cruel. Pregnant women should not consume cheese because it will be smeared on the infant's head if consumed. Children are restricted from eating consumable animals' hearts because it is believed it spoils the growth of teeth of children and increases the risk of developing heart disease when they grow up. Pregnant women are not supposed to consume roasted pulse and cereals (kolo) because doing so during pregnancy causes constipation and until 40 days after birth it causes toothaches".

Most people obtained nutrition information from radio, health extension experts, NGOs such as Concern Ethiopia and sometimes from members of the community and television. Children also learn about diets and nutrition at school.

Priority topics identified and validated by stakeholders

- Improve production and productivity of agricultural products and access to food
- Increase awareness of the importance of a healthy diet
- Improve access to training on nutrition education and training to discuss dietary behaviour and the negative roles of food taboos

7 Inequalities based on gender identity and age

In the household survey, five domains of empowerment and eight respective indicators were used to analyse the empowerment of men, women and youth in the agricultural sector. Production, resources, income, leadership, and time are the domains used to measure empowerment and/or disempowerment. The indicators are input in the productive decision; ownership of assets, access to and decision on credit; control over the use of income, group membership, speaking in public, workload and leisure time. As the households' survey results, portrayed in Figure 19, show - the youth are the most disempowered

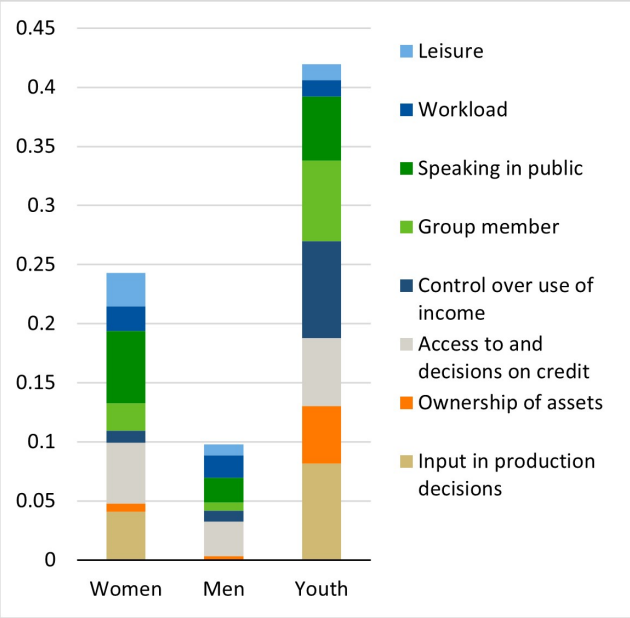

Figure 19: Women empowerment in agriculture (WEIA) score. Weighted score of the % of people classified as disempowered in specific domains[3]

in society. They face challenges due to their limited access to decision-making on credit, limited group membership, not being able to speak in public, and limited control over the use of income and ownership of assets. Next to youth, women are the second most disempowered due to their limited access to and decisions making power on credit, social norms limiting them from speaking in public, high workload and limited leisure time. Men are disempowered mainly due to access to and decisions on credit and high workload.

Women's empowerment and ideal women

Figure 14 and Table 6 both show that women generally are less empowered than men. The main contributors to women's disempowerment are identified as limited access to and decision-making on credit, speaking in public, heavy workloads and limited leisure time.

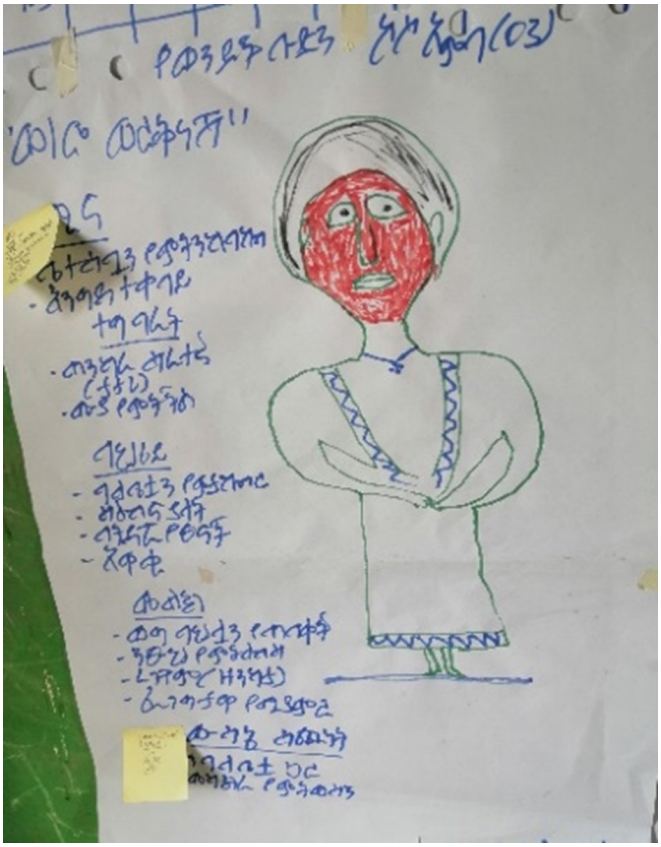

Figure 20: Drawings of ideal women as described by the participants of the FGD. Mentioned characteristics: protectors of their family, beautiful, tall, respectful, strong and hardworking, good cook, well dressed, have a nice smile, respect their husbands and make decisions together with their husband

Table 6: Percentage of women, men, and youth classified as disempowered in different domains using the WEIA cut-off values[4]

Respondent	Input in production decisions	Ownership of assets	Access to and decisions on credit	Control over use of income	Group member	Speaking in public	Workload	Leisure
	%	%	%	%	%	%	%	%
Women	2.6	0.0	84.6	2.6	28.2	38.5	59.0	48.7
Men	0.0	0.0	81.0	0.0	16.7	0.0	11.9	26.2
Youth	14.3	4.8	100.0	14.3	81.0	47.6	14.3	9.5
Overall	3.9	1.0	86.3	3.9	34.3	24.5	30.4	31.4

[3] https://www.ifpri.org/project/weai

[4] https://www.ifpri.org/project/weai

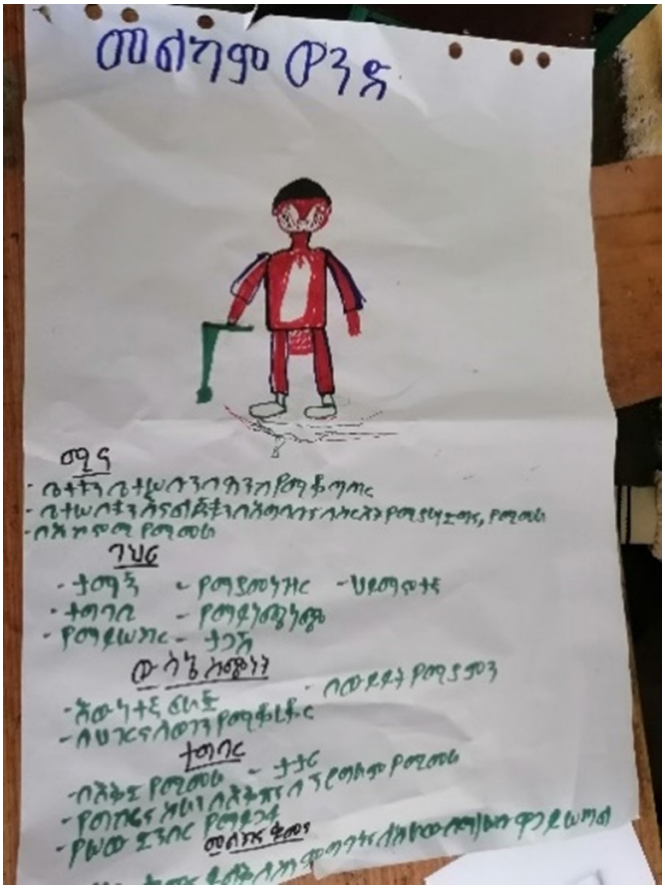

Figure 21: Drawing of ideal men as described by participants of the FGD. Mentioned characteristics: Loyal to his wife, family and the community, communicative, one who does not get drank, trust the discussion, lead his life with a plan, and have a good judgment

Focus group discussions (FGD) revealed that the social norms and conventions favour men's decision-making over that of women, regardless of whether they are young or adult women. This is limiting the amount of involvement women may have in making productive decisions. As the FGD indicated, men must make the final decisions even though women may have more information about the subject at hand. They mentioned the adage "women know, men decide" as an example. According to the FGD participants, one of the characteristics of an ideal woman is to be silent and obedient to her husband, which limits women's decision-making capacity.

One issue raised by women in the FGDs was their inability to obtain justice when, for instance, the land was forcibly taken from households headed by women by some illegal men. Women's shyness to speak in front of large gatherings of people to persuade them of the realities they faced may have contributed to such problems. Shyness was seen as a good characteristic of women.

The workload was also mentioned as challenging for women because they have many roles to fulfil, including reproductive, productive tasks and community roles/ works. This is in line with the findings from the WEIA (table 6).

Women from both *kebeles* pointed out that the cropping season is one of the busiest periods of the year since they are engaged in potato planting, growing and harvesting, as well as barley harvesting, gathering and threshing. They also stated that February and March are busy months due to the *Belg* cropping season. January is busy due to holidays and the respective activities that take women's time.

As shown in Table 6, overall disempowerment regarding access to and credit decisions was the highest across all the disempowerment indicators for all surveyed households for all men, women and the youth (average 77.9%). Accordingly, the factor that contributes most to women's disempowerment is their limited access to and decision over credit, which accounts for 76.9%, followed by their inability to speak in public (61.5%). The issue of accessing and making credit-related decisions was also ranked among the highest indicators of men's disempowerment, with a considerable proportion (72%). The result of the FGDs revealed that the primary causes of a lack of access to credit in both *kebeles* were: limited capacities of financial institutions such as Rural Saving and Credit Cooperative Organisations; requirements for collaterals on the part of Tseday Bank (the former Amhara Credit and Saving Institution); and households poor saving cultures.

The major challenges for women, as identified during the FGDs were drought, lack of access to alternative income-generating activities, lack of credit access, shortage of contraceptives, lack of working space for petty trade, lack of capacity building training, workload from household chores and farm activities, restricted access to health care, and limited decision-making power at home. As mentioned above, lack of justice was also mentioned as one major challenge for women as some men forcefully and illegally take land from women.

Youth's disempowerment and ideal men

As indicated in Figure 14, youth between the ages of 18 and 35 who are not household heads are the most dis-empowered when compared to men and women over the age of 35 who are heads of a household.

Youth are mainly disempowered due to limited access to and decisions on credit (90.9%), group membership (68.2%), public speaking (54.5%) input in production decisions (41%), control over the use of income (41%), and ownership of the asset (36.4%). Except for the workload and leisure time, all measures of disempow-

erment indicators, show that young people are more disempowered than adult men.

Disempowerment scores for young men and women were not calculated separately due to the limited sample size. Nevertheless, the FGDs results show that there are differences in disempowerment between young men and women and that young women probably face more challenges as a result of existing gender inequality. Young men and women have different roles based on their sex. Young women engage in activities that adult women engage in; likewise, young men do activities that adult males do.

Major challenges identified in FGDs discussions for youth are lack of access to land, lack of job opportunities, lack of collateral to access loans, the requirement of license for livestock fattening when they access loans, market linkage problems, and lack of working place to run businesses. The fact that the youth have been taxed as traders while they are farmers was also raised as a challenge by participants. All these challenges are corroborated by the household survey.

Men's disempowerment and ideal men

Men are more empowered than women and youth; nevertheless, a high percentage of men are disempowered in the domains of access to and decision-making on credit (72.1%), workload (23.3%) and speaking in public (23.3%).

FGDs showed that men face similar challenges as women with regard to access to credit (see the section on women's empowerment). High workload, speaking in public and limited leisure time has also been found as contributors to men's disempowerment, even though the proportion of women who are disempowered in relation to these indicators is greater than that of men, and also, men and women have different responsibilities and roles. Strengthening the social and economic inclusion of women and youth is important, as it can potentially bring significant positive change in food system outcomes. Effective transformation of the food systems requires planning and implementing integrated strategies to address these challenges.

Priority topics identified and validated by stakeholders

- Strengthening the social and economic inclusion of women and youth
- Access to alternative job opportunities like value addition on livestock and livestock products
- Access to improved technologies which can be adapted to the harsh environment of the area
- Strengthening access to credit by strengthening financial capacities of RUSACCOs
- Increased decision-making power over household resources for women and youth though provision of trainings
- Youth and women empowerment through capacity building trainings and access to credit

Male FGD participants from Koso Amba kebele

Female FGD participants from Koso Amba kebele

8 Policies and government support

The baseline survey and focus group discussions have revealed the importance of designing integrated policies customised to support vulnerable population groups and people within HHs (women and youth).

The thematic policy areas for Angot are:

- Social and economic inclusion for local economic development
- Enhanced extension and advisory services,
- Diversified and nutritious food systems,
- Promoting local food environments and healthy consumer behaviour,
- Climate smart and resilient agricultural practices,
- Partnerships for integrated food system policies, planning and governance.

Social and economic inclusion for local economic development

This thematic area encompasses enabling programs focussing on the extension system, market system, input support system and, in addition, mechanisms to provide enhanced access to credit and financial support for small and medium enterprise development. Customised support programs that create opportunities for women and youth to engage in the value chain or local economic development activities have a strong potential to dynamize agro-economic development.

Enhanced extension and advisory services

Ethiopia's Digital Agriculture Extension and Advisory Services Roadmap 2030 and the extension strategy emphasise the importance of strengthening a pluralistic extension system that would enable private sector stakeholders to start operating as service providers at the *woreda* and *kebele* levels. The experience derived from the cooperative sector and other innovative structures and experiences from initiatives to distribute for and disseminate agricultural services and inputs (for example, a one-stop shop) needs to inform future policies and investments within this domain.

Extension and advisory services need to extend beyond their traditional function of distribution of agricultural inputs and dissemination of recommendations for production. Inclusive policies, mechanisms and instruments are required to create structural support for local (agro-)entrepreneurship. This encompasses support in areas such as, capacity strengthening in rural entrepreneurship, providing access to market information, provision of financial support and seed capital for the development of the agri-food sector and supporting the creation of non-agricultural jobs in the food system.

Diversified and nutritious food systems

Policies and programs that promote diversified production systems by integrating livestock production with cereals and nutrition-dense horticultural crops can enhance the resilience of the food system and the nutrition security of *woreda* HHs.

Supporting producers to enhance their access to the market and market information can contribute to improving incomes and improve the availability, accessibility and affordability of nutrition-dense food products in the local market.

Promoting local food environments and healthy consumer behaviour

Policies addressing food and nutrition security should consider supporting the development of the local food environment. This can be through the development of domestic and local value chains, but also in the sense of strengthening the local market systems where producers, traders and consumers can sell and purchase diverse fresh food items.

Support for the development of the agri-food system will require additional efforts on post-harvest services and value addition. Nutritious food systems require alignment and integration of production-related policies promoting healthy consumption behaviours.

Communication campaigns and behavioural change programmes, geared towards the promotion of healthy dietary behaviour and consumption habits should be part of the strategies and support provided by the *woreda* administration. Collabouration between stakeholders working on production, nutrition, and health is required to bring about impact.

Climate smart agricultural practices and resilient production systems

Climate variability and environmental degradation are increasingly affecting agricultural production, food and nutrition security and population dynamics in the *woreda*. A diversity of national and regional initiatives has been deployed to prepare the agricultural sector for climate

readiness. Successful initiatives that have been tested and validated in other food insecure *woredas* with similar agroecological conditions, with the support of research and development partners, can be scaled and disseminated to reach more farming HHs in other *kebeles* of the *woreda*.

There is ample evidence and proven positive impacts of climate smart agricultural practices, including evidence, crop diversification, diversification of crop genetic resources with stress resilient crop cultivars, water management and conservation practices and, integrated soil fertility management practices. There is a need to expand on programs and policies promoting the dissemination and uptake of these types of agricultural and food system innovations.

The high pressures being exerted on the volatile agri-input market have caused skyrocketing fertiliser prices. The high costs of fertiliser be relieved by promoting soil fertility management measures that consider the integrated use of, locally produced fertilisers in combination with– imported fertilisers.

Partnerships for integrated food system policies, planning and governance

Addressing complex food systems requires collabourative partnerships between stakeholders from different disciplines, sectors and jurisdictions of government. There is a need to develop strategies and plans that account for local complexity and diversity in the food systems and take into consideration locally identified priorities for action.

Using a food system approach, stakeholders can consider investments that contribute to socio-economic inclusion and wellbeing, food and nutrition security and ecosystem health.

Overview of projects implemented in Angot *woreda*

Because Angot *woreda* is a relatively new administrative jurisdiction, only a few projects are being implemented. Some projects, programmes and interventions that have been implemented at the level of the *woreda* are:

- Productive Safety Net Programme (PSNP)
- Sekota Declaration- works with the objective of eradicating the underlying causes of chronic undernutrition and ending stunting among children under two years by 2030
- SoS emergency programme
- Save the Children (Emergency programme)

Opportunities and challenges for Angot in a food system perspective

An overview of the most important opportunities and challenges, as identified through the RFSA and baseline surveys and validated by the stakeholders, is presented in Figure 22. The challenges are formulated into goals, specific activities and interventions and placed into a food systems framework.

This overview illustrates how the identified opportunities and challenges are scattered throughout the different areas of the food system framework. In addition, it portrays how opportunities interlink and mutually contribute to specific food system outcome areas.

Understanding and managing trade-offs and synergies in the food system

Food systems are by nature complex and dynamic and are characterised by interconnected, non-linear relations between the system elements and outcomes. When looking at any food system, one must be explicit and intentional to understand how certain activities affect different food systems outcomes, both positively and negatively.

An analysis of potential synergies and trade-offs is essential in understanding how food system outcomes at times compete and conflict with each other. For example, activities focussing on the production and productivity of staple crops have the potential to generate positive benefits in terms of yield increases with synergies that translate to the generation of income for farming households and contributions to improve food security at the national level. Nevertheless, these activities might also generate negative trade-offs such as the formation of acid soils due to excessive use of fertiliser. In addition, focusing on staple crops might negatively deteriorate household nutrition security and utilise dietary diversity (when farming households do not utilise the increased income to purchase healthy and nutrient dense food products). Another example of system behaviour is how activities to promote home gardens can improve the production of nutrient dense crops with potential synergies to enhance household dietary diversity and to create a series of alternative livelihood and employment opportunities for women and youth in sector related support activities (transport, value addition, distribution and others). A system analysis reveals that the promotion of home gardens can also potentially generate trade-offs that have a negative impact on producers, consumers and the environment. For example, home gardening has the potential to increase the labour burden for women in the household. In addition, the excessive use of chemicals in home gardening activities has the potential to negatively affect the health of producers, the health of consumers and the health of the environment.

When designing any food system intervention, one must be explicit and intentional to understand and manage how specific interventions can affect different food system outcomes. Understanding how trade-offs and synergies affect the food system and being explicit about how certain interventions can create trade-offs and synergies can support the design of bundled intervention packages, that actively pursue integrated approaches, designed to address multiple systemic food system issues.

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List of abbreviations:

AGP	Agricultural Growth Program
DA	Development agent
FGD	Focus group discussions
FHH	Female headed households
HH	Household
M.A.S.L.	Meters above sea level
MHH	Male headed households
MFI	Micro-finance institutions
RFSA	Rapid food system appraisal
RuSACCOs	Rural Saving and Credit Cooperatives
WEIA	Women empowerment in agriculture
QDS	Quality Declared Seed
Qt	Quintals (10 Quintals = 1 metric tonne)

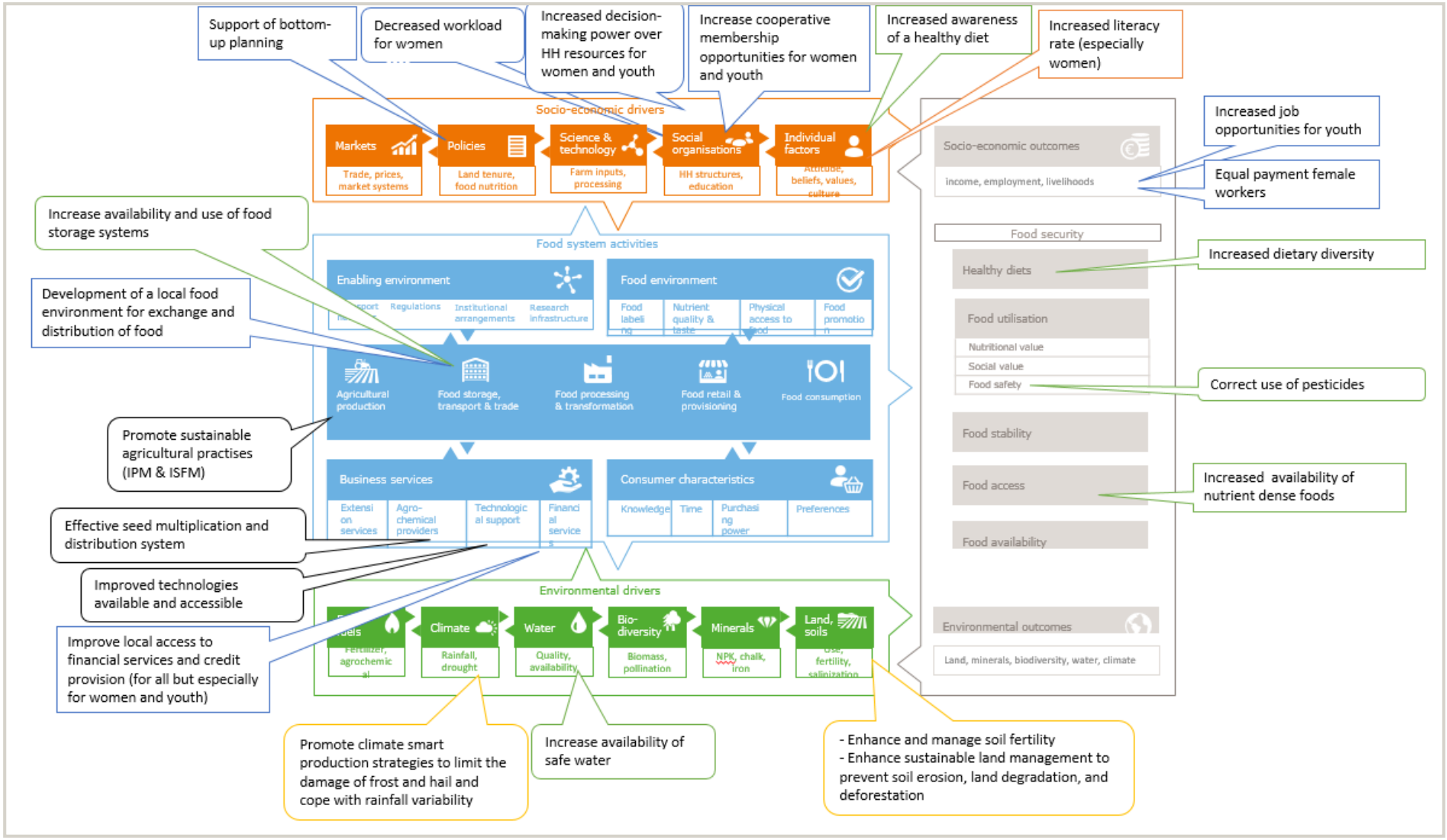

Figure 22: Identified priority topics in a food systems perspective (following van Berkum et al., 2018)

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