RAISE-FS *Woreda* profile #002

Yilmana Densa *Woreda* Food System Profile

Population

235,000

Altitude

1,800–3,000 m.a.s.l.

Diets

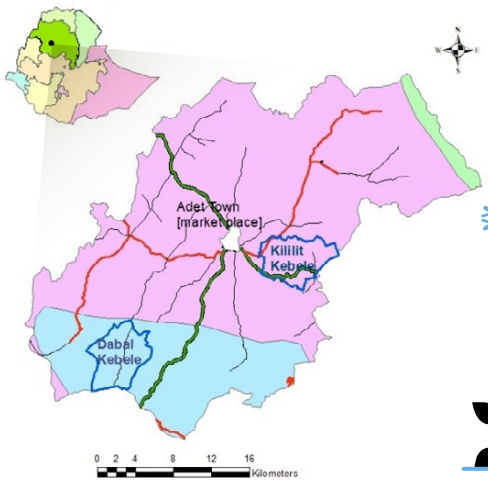
Predominantly grains and pulses

Food insecurity

30% **FHH**

10% **MHH**

Food gap months

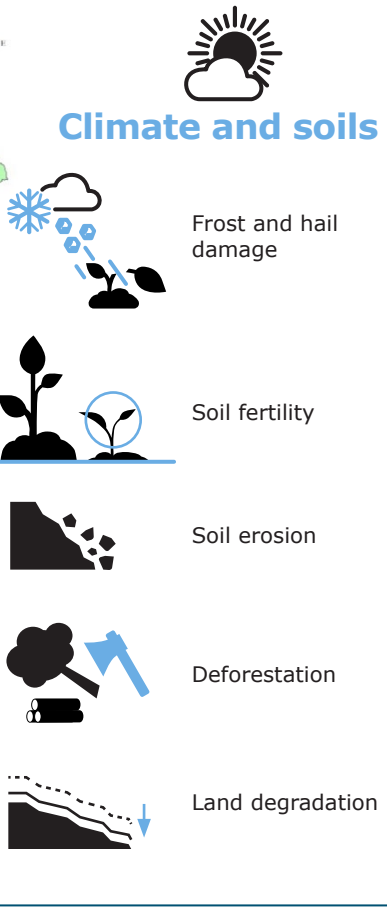


Yilmana Densa *woreda*

Top 5 crops produced

teff maize wheat potato barley

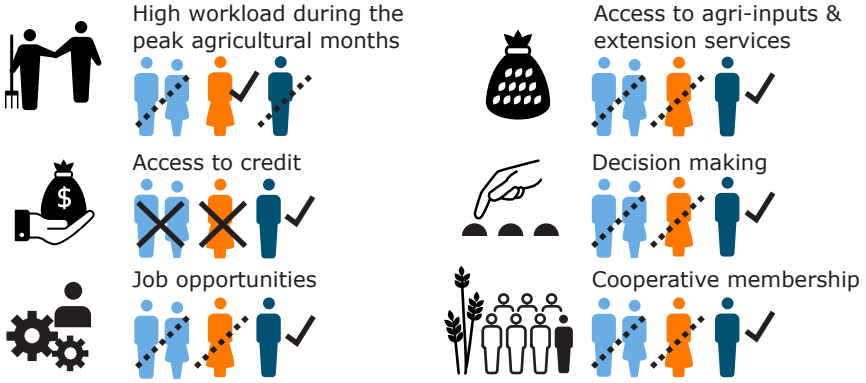
Climate and soils



Inclusion

Youth (18–35 yrs) Women Men

No access
Limited access
Access



WAGENINGEN UNIVERSITY & RESEARCH

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

Introduction and methodology

This document gives an overview of the current status, dynamics, and behaviour of the local food system present in the Yilmana Densa *woreda* and 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) that took place in two *kebele*'s of Yilmana Densa *woreda*. The two selected *kebele*s represent the different agro-ecologies that can be found in this geographical area with the exception of the lowland areas, which represent 5% of the *woreda*'s area.

Officials from the *woreda* administration acknowledge and certify 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. Yilmana Densa is one of the selected implementation areas. A quantitative baseline survey and a qualitative RFSA were conducted in parallel and together with secondary data, these are the main inputs for this *woreda* profile. Data collection was conducted in two of the *woreda*'s *kebeles*, Kililit and Dabal. These *kebeles* were purposefully chosen because of their potential for the project commodities (teff and potato). 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 102 respondents of which 41% were men, 36% women and 23% youth (of which 52% men and 48% women)

The RFSA comprised a sequence of steps and activities that consecutively 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.

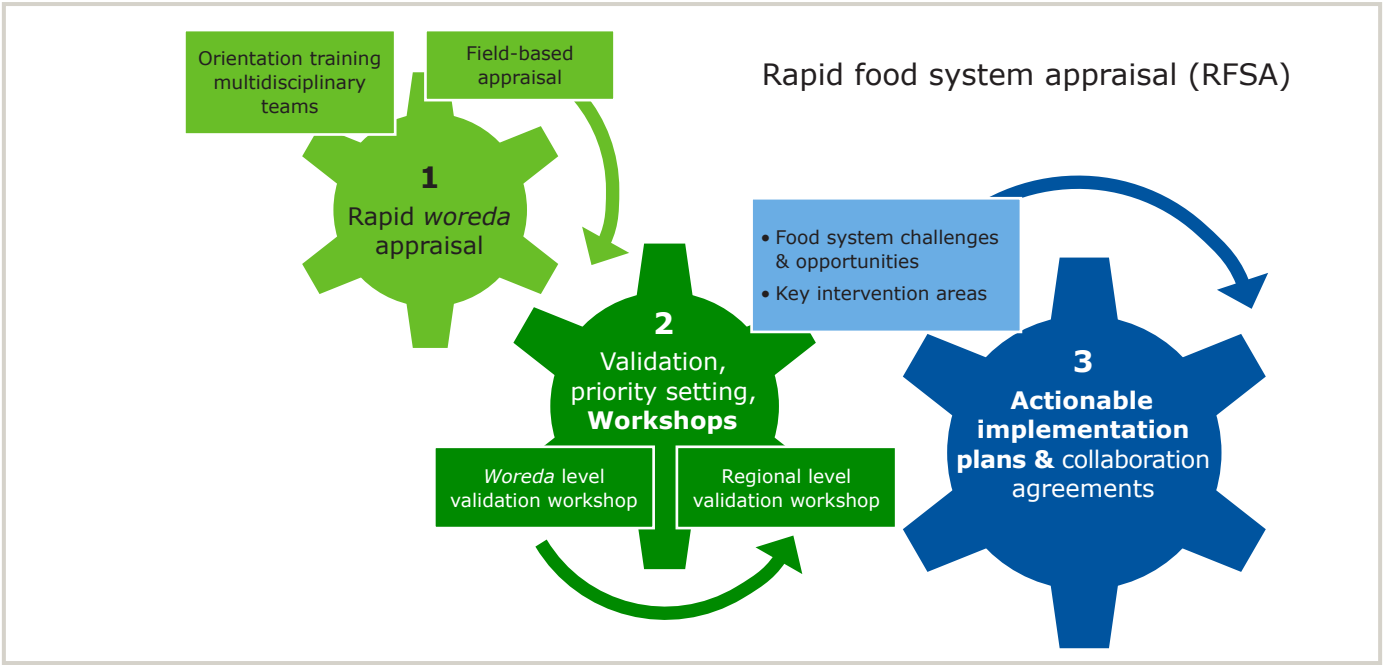


Figure 1: Steps of the rapid food system appraisal (RFSA) process

The activities were undertaken with female, male and stakeholder groups separately. The female group consisted of 12 persons (5 youth <35 yrs of age, 4 middle-aged between 35 and 60 yrs of age, 3 elderly >60 yrs of age). Similarly, the male group was composed of 12 persons (5 youth, 4 middle-aged and 3 elderly). The institutional stakeholder group comprised development agents (DAs), head of agricultural offices, health extensions, 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 job creation.

The validation workshop was conducted with the *woreda* administrator, researchers of Adet research centre, and head of different offices of the *woreda* (agriculture, cooperative, women, children and social 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. In addition, suggestions received by *woreda* official regarding the *woreda* profile (Figure 2) were taken into consideration and added in this document.

Summary of the content of the letter

From: Yilmana Densa *Woreda* Agricultural Development Office

To: RAISE-FS Project

Subject: Giving feedback on *woreda* profile document

As it is known RAISE-FS project undertook RFSA in two *kebeles* of Yilmana Densa *woreda* (Kililit and Dabal *kebeles*) in collaboration with experts of different sectors of the *woreda* and *kebele* level stakeholders. We reviewed the document and found out that the document fully provides a summarized overview into the current food system dynamics of the *woreda*. During the appraisal process, the participation of women was immense.

With best regards,

Figure 2: Official communication from the Yilmana Densa Woreda Agricultural Development Office

Community mapping

Figure 3: Community map from Kililit Kebele from female focus group

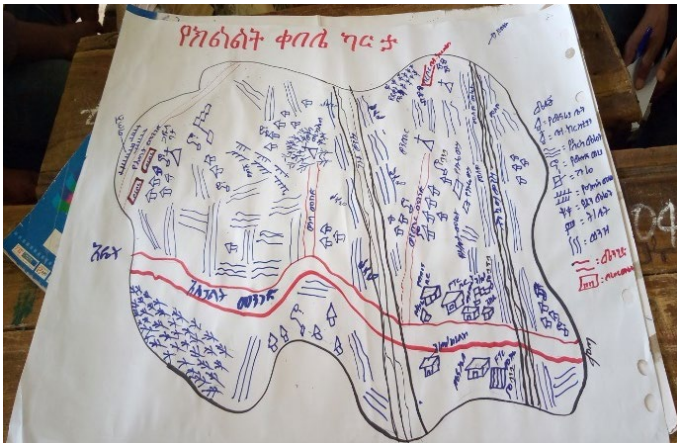


Figure 4: Community map from Kililit Kebele from male focus group

Figure 5: Community map from Dabal Kebele from female focus group

Figure 6: Community map from Dabal from male focus group

Seasonal calendar

Table 1: Seasonal calendar from Dabal Kebele from female focus group

No	List of activities	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	July	Aug
1	Expenditures distributed over the year	X				X				X			
2	Income spread over the year			X					X				X
3	Seasonal labour activities	X			X		X			X	X		
4	High workload in different seasons	X			X					X			
5	The rainy seasons	X	X						X	X	X	X	X
6	Moments of critical drought		X						X	X			
7	Key cropping season for different crops	X	X	X	X					X	X	X	X
8	High market price months							X	X	X			
9	Low market price			X	X	X							
10	Busiest months of the year for women					X				X			
11	Busiest months of the year for men	X								X			
12	Pest and disease prevailing months		X								X	X	
13	Prevailing livestock activities over the year		X	X				X	X				
14	Local market demands for local products		X							X	X		
15	Periods of food scarce	X											X

Table 2: Seasonal calendar from Dabal Kebele from male focus group

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

1 Demography

Yilmana Densa is a *woreda* in West Gojjam Zone, Amhara region. The main town of the *woreda* is Adet, which is 42 km far from Bahir Dar. Data from the *woreda* plan and development commission office shows that the population size of Yilmana Densa *woreda* is 235,026 (of which men 114,181 and women 120,845).

The baseline found that the median household (HH) size consists of 5 people in the two studied *kebeles*. Male-headed households (MHH) have a size of five people on average while the median female headed households (FHH) have a slightly smaller size of four people (Figure 8). As illustrated in Figure 9, about 41% of the population are children (<18 years) and about 32% are youths (18 years to 35 years). Adults (36 years to 60 years) account for 21% of MHHs while 26% for FHHs. Elders (aged above 60 years) are less than 5%. The educational level of the head of the HH was assessed in the baseline survey (Table 3). About 84% and 35% of female heads of household and male heads of household respectively are unable to read and write. Of those able to read and write this has been through adult and religious education (34% MHH / 8% FHH), completed primary school (25% MHH / 8% FHH) and about 6% of MHH completed secondary school, but none of the FHH.

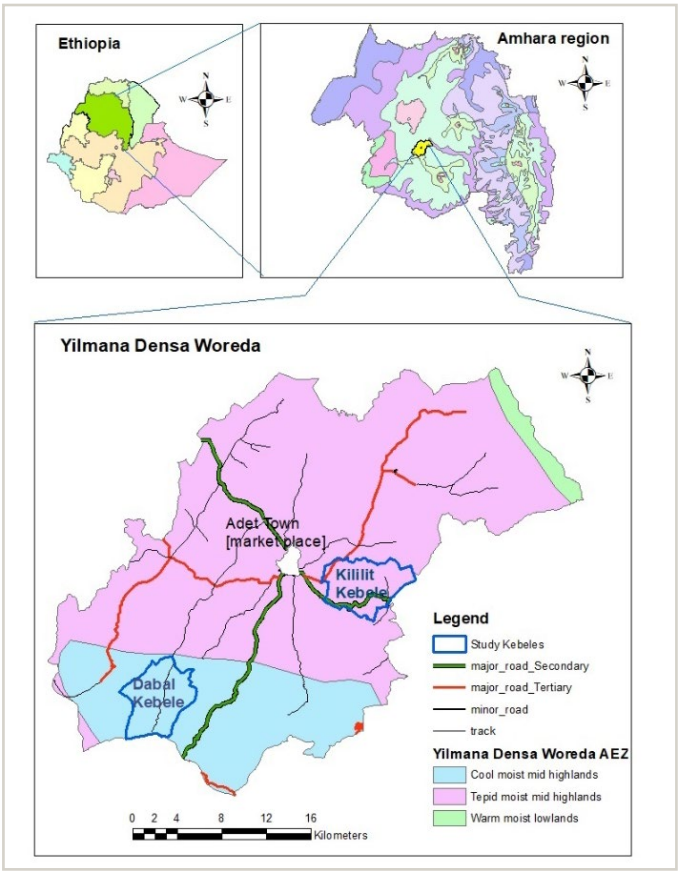


Figure 7: Map of Yilmana Densa woreda

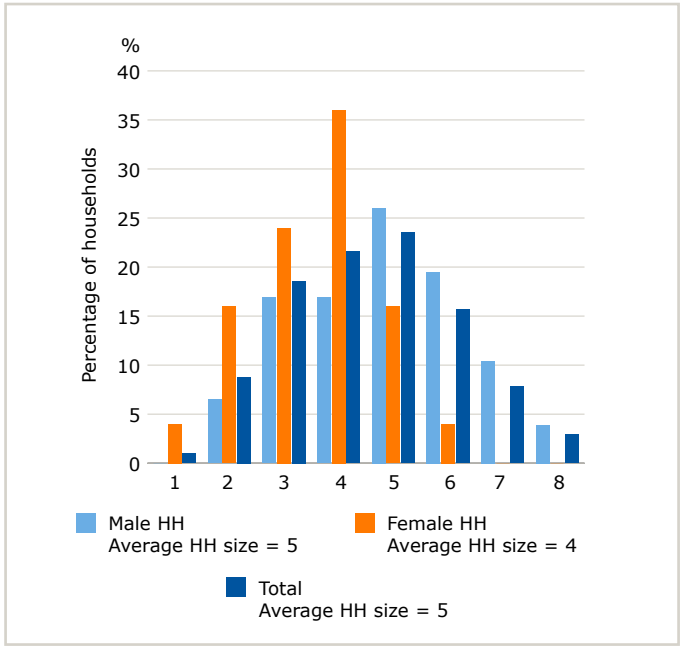


Figure 8: Family size of surveyed HHs

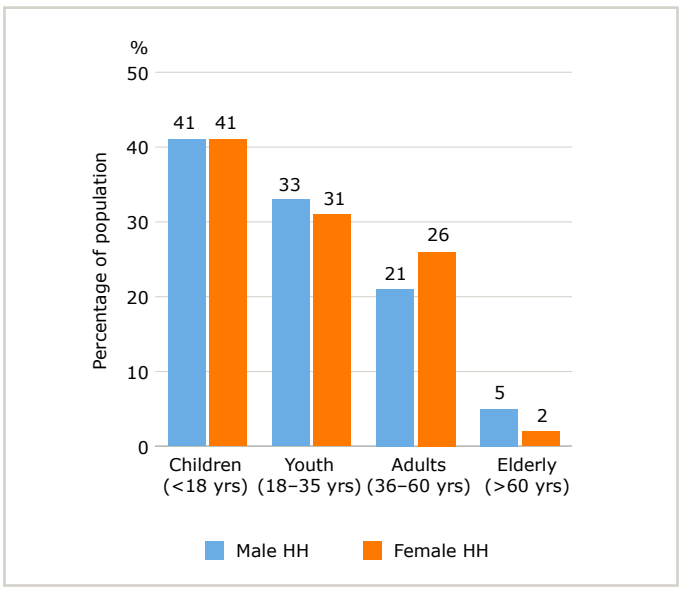


Figure 9: Age category of surveyed HHs

Table 3: Education level of surveyed HH head

Educational level	Male head %	Female head %	Total %
Does not read and write	35.1	84.0	47.1
Primary school	24.7	8.0	20.6
Secondary school	6.5	0	4.9
Adult and religious education	33.8	8.0	27.5

Priority topics identified and validated by stakeholders

- Increased literacy rate, especially for women

2 Agro-ecological and environmental conditions

Secondary data, obtained from the Yilmana Densa office of agriculture Annual Agriculture report 2022[2], indicates that the size of Yilmana Densa *woreda* is 99,180 ha. The *woreda* comprises altitudes ranging between 1,800 and 3,000 meters above sea level (m.a.s.l.). It has three major agro-ecology zones (see Figure 10): highland (21.5%), intermediate (72.5%) and lowland (6.25%) and the temperature ranges between 15–24 °C. The average annual rainfall is 1,400 mm and is distributed in a unimodal pattern from April till September. The topography of the *woreda* is varied and consists of flat land (16%), mountain (20%), valley (8%) and undulated topography (56%). The major soil types of the *woreda* are nitisols (65%), vertisols (20%) and cambisols (15%).

The major crops grown in the area are teff, maize, wheat, potato, barley, faba bean, finger millet, haricot bean, grass pea and field pea. Some of the areas with vertisols are used for double cropping e.g. teff followed by grass pea (Yilmana Densa office of agriculture, 2022). Rainfall variability (Late onset of rain, early cessation of rain, uneven distributions of rain) are increasingly affecting crop production. Crop damage from frost and hail are common phenomena in the area which is near Adama Mountain (Dabal area) making these areas risky for crop production.

Livestock, especially the oxen which provide the draft power used for land preparation, plays a major role in the farming system.

Land degradation (soil erosion, deforestation, poor fertility management) is a major problem related to environmental degradation.

Access to both potable water for drinking and water for irrigation is better in Kililit *kebele* compared to the other *kebeles* of the *woreda*. Three rivers are utilized for irrigation but access to irrigation water does not seem to be available for all HH. Few residents in the relatively low-lying sections of Dabal have access to the rivers, but the entire *kebele* does not have access to clean drinking water. Water pumping technologies are not available in Dabal *kebele*.

The identified and validated priority topics underscore the importance of anticipating the future impact of environmental degradation and climate variability on the food system. A future-proof food system will need to be resilient, to adapt to climate variability and to mitigate environmental degradation and soil fertility loss.

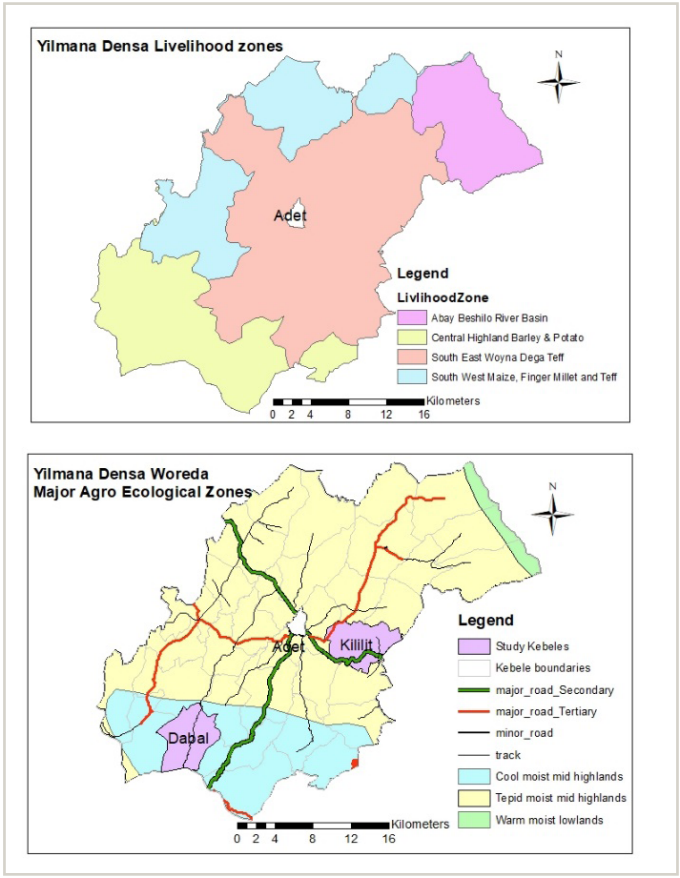


Figure 10: Livelihood zones and agro-ecological zones of the woreda

Priority topics identified and validated by stakeholders

- Enhance sustainable land management to prevent soil erosion, land degradation, and deforestation
- Enhance and manage soil fertility
- Promote climate smart production strategies to limit the damage of frost and hail and cope with rainfall variability

[2] Yilimana Densa Office of Agriculture 2022. Annual Agriculture Report. Adet.

3 Agricultural production system

Mixed crop-livestock production systems dominate much of the agricultural production of both *kebeles*. Crops are produced with rain-fed, irrigation and residual system. Animal fatting (oxen and sheep) and poultry production are also common practice at both *kebeles*.

The common land use types of Kililit *kebele* are cultivated, grazing, irrigable and forest land. Arable and grazing land are the common land use type of Dabal *kebele*, but the forest land use type is not present in Dabal.

A community mapping exercise showed how most of the flat lands are used for crop production while grazing lands are found near rivers. Also, most of the areas that have access to irrigation are near the rivers.

The *woreda* has two main production seasons either rain fed or irrigated. The main production season is from April to January and the irrigation production takes place from September to April.

Teff, maize, barley, wheat and grass pea are major crops produced in Kililit. The commonly produced crops in Dabal are potato, barley, wheat and faba bean. The focus on commercial (market oriented) commodities is different for the two *kebeles*. Teff, vegetables (onion, carrot, beetroot, garlic) and maize (green) are the main commercial agricultural products for income generation at Kililit. Potato, fattening of animals (oxen and sheep), maize (green) and food barley are the main commercial agricultural products for income generation for farming HH in Dabal. There is also experience in producing vegetables using irrigation at both *kebeles* but mainly in Kililit. As Table 4 summarises, among the surveyed *kebeles*, most farmers produce maize (87%), teff (73%) and barley (72%) but productivity is low. All HH have limited access to and use of improved varieties of barley as compared to the use of improved varieties for maize and teff. Farmers have little experience in the use of pesticides, especially in the case of maize and barley production. A relatively high percentage of farmers used pesticides for production of teff.

Most farming HHs engaged in the baseline survey have experience with crop rotation and intercropping (Table 5). However, continuous cereal-based crop rotation is a common practice in both *kebeles*. For example, the study observed rotation of teff with maize at nitisols and rotation of teff with barley at vertisols in Kililit. This is not a recommended practise. The dialogues with stakeholders during the RFSA, and the prevalence of continuous cereal based cropping systems have shown that the legume-cereal rotation system has witnessed a dramatic decline in the farming system of both *kebeles*. Intercropping of potato with maize and faba bean is practiced at both *kebeles*. Farming HHs are applying different soil water conservation and soil fertility management practices such as terracing, production and application of compost, utilization of manures, etc. The baseline survey showed that a small number of farming HHs have experience with relay cropping and a very limited number of farmers have experience with green manuring practices or agro-forestry (Table 5).

Table 4: Inputs used for the three major crops[3]

Crop	% HH that cultivate specific crops %	Improved variety % HHs	Urea % HHs	NPS % HHs	Pesticide % HHs	Productivity QT/Ha	% Produce sold %
Maize	87	99	99	100	34	26	17
Teff	73	11	95	96	85	11	39
Barley	72	1	59	93	60	15	22

Table 5: Experience in agronomic practices

HH head	Intercropping %	Relay cropping %	Crop rotation %	Agro-forestry %	Green manuring %
Male	70	32	96	4	4
Female	52	36	92		4
Overall	66	33	95	3	4

[3] 10 Quintals = 1 metric tonne

Both *kebeles* are considered high potential areas and therefore the demand for agricultural inputs and technologies is very high. Nevertheless, the input as well as the extension system are constrained by a series of challenges. In the focus group discussions, stakeholders mentioned issues such as shortage and unavailability of agricultural inputs and technologies, high price of inputs, lack of improved crop varieties except for maize, poor extension services, lack of agricultural machinery and post-harvest technologies. In the case of irrigated crops, stakeholders observed the overuse of synthetic fertilizers for irrigated crops, especially garlic.

The baseline survey also indicate that MHH apply more agronomic practices compared to FHH (Table 5).

The *woreda* has great potential to strengthen and diversify its agricultural production and enhance the food and nutrition security of its inhabitants. There is a need for integrated food system development strategies that aim to enhance the availability and improve access to agricultural technologies. On the other hand, there is a potential to strengthen the extension and advisory services, and by doing so, support farming HHs to advance their practical awareness about climate smart, sustainable agricultural practices (i.e. integrated pest management and integrated soil fertility management practices). Customized extension has the potential to support vulnerable groups of the population to secure access to healthy diets and income generating opportunities.

The validated priority topics for agricultural production strongly correspond with the insights generated from the baseline survey and focus group discussions.

Priority topics identified and validated by stakeholders

- Affordable agri inputs available (including fertilizer)
- Strengthen extension services and provide customized extension services for women and youth
- Effective seed multiplication and distribution system
- Increased availability and access to improved technologies including an effective distribution system
- Promote sustainable agricultural practices such as Integrated Pest Management & Integrated Soil Fertility Management)

Dabal kebele agriculture field landscape (top) and Kililit kebele agriculture field landscape (bottom)
Photos taken by: Akalu Teshome and Andualem Tadesse, respectively

4 Markets and value addition

The provision of basic market information is a service that aims to increase the efficiency of agricultural markets and contribute towards overcoming issues of market failure based on asymmetric access to basic market information. According to Shepherd (1997)[4], public dissemination of prevailing market prices and conditions is one of the formats whereby farming HHs obtain market information. Public provision of market information aims to reduce asymmetry of information in the marketplace. Data obtained from the baseline (Figure 11) shows that most farming HHs (76%) have access to market information, which they obtain through a variety of sources. FHHs (72%) had less access to market information compared to MHHs (78%). Most farmers (26%) access market information through peer farmers, friends and family (24%) and neighbours (24%). A very small proportion of farming HHs obtain market information from other sources like radio, television or development agents (Figure 12).

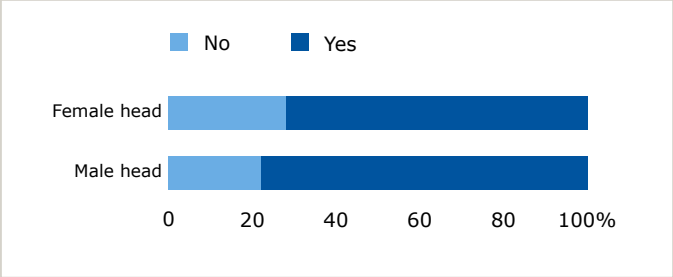


Figure 11: Proportion of households with access to market information

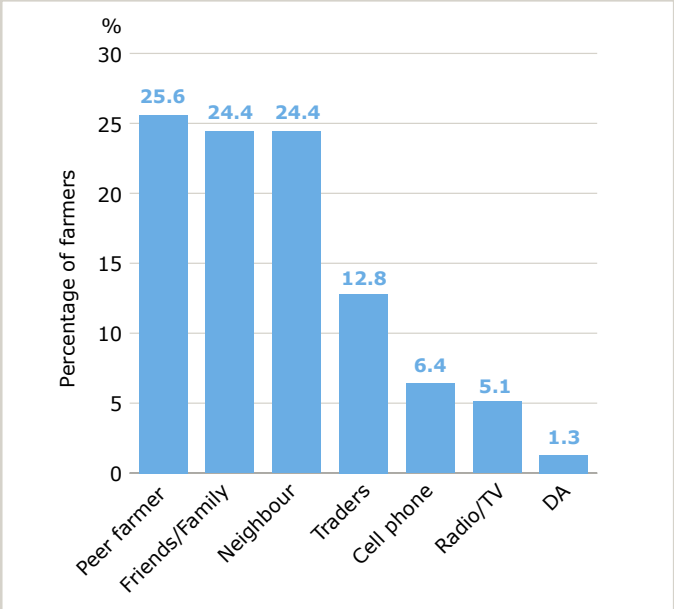


Figure 12: Source of market information

The survey assessed the means used and the distance that farmers travelled to sell their produce. Households from Dabal and Kililit *kebeles* use different means of transport to take their produce to the market (Figure 13). Most farmers in Dabal *kebele* use animals (48%) as a means of transport to take their produce to the market, while most farmers in Kililit *kebele* (67%) take their produce to the market by vehicle/'*Bajaj'*. The average time spent travelling from the farm to the nearest market – using animals as a means of transport – is 120 minutes. For surveyed households in Dabal *kebele* it is 140 minutes and for households in Kililit *kebele* it is 85 minutes.

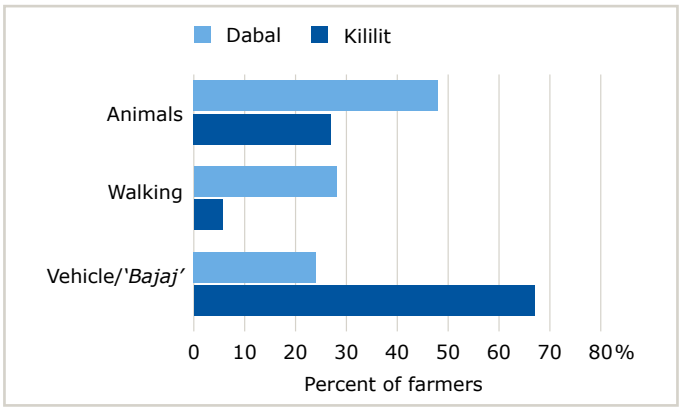


Figure 13: Means of transport to market

The food system appraisal showed that there are limited local marketplaces in both Kililit and Dabal *kebeles*. The Adet market in the *woreda* centre town, is located 10 kilometres from Kililit and 23 kilometres from Dabal. This market serves as the primary centre of trading for Kililit and Dabal HHs. As a result, farming HHs incur transportation costs, if they want to sell their agricultural produce on the market, or if they want to purchase food products. Both *kebeles* have all-weather roads to Adet town; Kililit is connected to Adet with asphalt road while the road from Dabal to Adet is an unpaved road.

Surrounding *woreda* towns such as Sekela, Quarit and Bir-Adama are important towns for Dabal farmers where they sell their potatoes, livestock and cereals.

Even farming HHs that make use of the main irrigation systems for their agricultural production, are not able to sell their products in their locality. Due to the absence of a local market and local "food environment", cereal and vegetable crops are sold directly to traders without value addition. Infrastructure related problems such as lack of electricity system, insufficient water and a lack of roads connecting different *kebeles*, are among the major causes of joblessness in Dabal *kebele*. In focus group discussions participants mentioned that service providing organizations have shortcomings in providing support to the community.

[4] Shepherd, A.W. (1997) *Market Information Services: Theory and Practice.* FAO, Rome.

Data generated in the baseline and focus group discussions revealed the absence of medium- and large-scale businesses that are working with or adding value to raw agricultural produce.

Market prices fluctuate for most crops throughout the year; they increase from June to September, when the supply is constrained, and fall from December to February when most of the crops have been harvested and there is a supply glut.

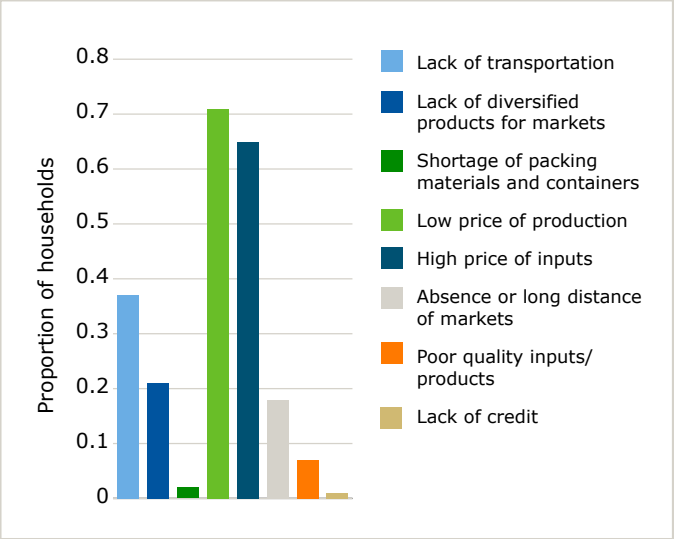


Figure 14: Challenges faced in marketing

In both *kebeles* the main challenges in relation to marketing include amongst others: necessity to travel long distances due to unavailability of local markets in the *kebeles*, exposure to brokers, lack of market linkage, lack of market information, and low market prices for some crops, particularly for horticulture crops (vegetables) – see Figure 14. In addition, the current high market prices for inputs used to produce crops are a challenge. As a result of the dialogues maintained in the RFSA investments to support the development of a fully-fledged local food environment has been prioritized by stakeholders. This local food environment would generate a physical location where farmers can sell and buy diverse, healthy and safe food products. Strengthening the local food environment has the potential to dynamize the local food system by supporting exchange and distribution of diverse food items produced locally and traded regionally.

Priority topics identified and validated by stakeholders

- Support for bottom-up *woreda* development planning and prioritization approaches.
- Development of full-fledged local food environment for exchange and distribution of locally produced and regionally traded food items.

Dabal mini-spot market (only for potato)
Photo taken by: Akalu Teshome

5 Credit and financial services

The results from the baseline survey and RFSA indicate that there are micro-finance institutions (MFIs) and Rural Saving and Credit Cooperatives (RuSACCOs) in the *kebeles*. Nonetheless, access to and utilization of financial institutes is very low due to a series of constraints such as short credit time, low amount of credit, high interest rates, collateral requirements and low saving culture. The baseline survey clearly shows that there are a very limited number of community credit institutions which provide credit with low interest rates.

Focus group discussions revealed that the available credit systems do not benefit the rural youth as they do not have access to land or other assets that they can use as collateral with financial institutions.

The data from the RFSA show that a number of the pre-conditions to access credit imposed by MFIs – such as having access to collateral – have excluded poor farming HHs, women, landless HHs and the youth from accessing credit services. In addition, resource poor HHs are reluctant to take out loans as they are afraid of failing to repay their loans.

The proportion of HHs with access to credit from both formal (25%) (non-governmental organizations, bank/financial institution, micro-finance including village saving and loan associations and rural savings and saving cooperative organizations) and informal (32%) sources (informal lender, friends or relatives, informal credit/savings groups) (Figure 15). There are limited differences between MHHs and FHHs. Most MHHs accessed loans from informal sources while most FHHs from formal sources.

Insights from the focus group discussions revealed that the alternative measures that some resource poor HHs' resort to, to obtain cash, frequently deteriorate their livelihoods further. Informal loan services, from village money lenders, are often obtained at exceedingly high-interest rates, compared to the interest rates of MFIs and banks.

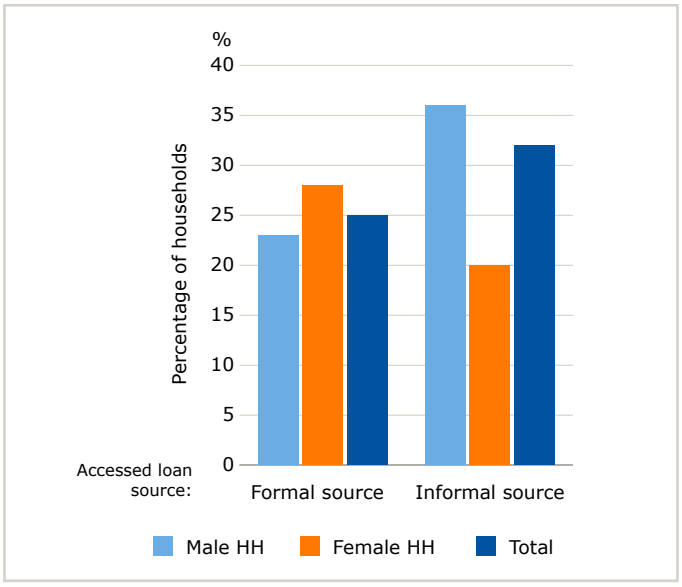


Figure 15: Access to credit

The topics that have been prioritized in this particular domain correspond to these specific challenges. There is a need to improve access to financial services and credit provision. Currently there are insufficient options to access and obtain credit to purchase agricultural technologies. In addition, there are limited credit facilities for SME's and entrepreneurial investments in the agri-food sector. There is a strong need to develop and implement innovative and inclusive finance instruments, which are customized and attractive for women and youth, to strengthen the skills and competences of emerging entrepreneurs.

Priority topics identified and validated by stakeholders

- Improve local access to financial services and credit provision
- Develop innovative mechanisms for local credit provision that are inclusive for women and youth, have low interest rates and are administered and managed locally

6 Food and nutrition security

Dietary diversity is extremely low in both researched *kebeles* and there are clear gendered differences around food and nutrition security. Approximately 30% of FHH are food insecure compared to 10% of the MHH (Figure 16). Evidence from the baseline survey also clearly demonstrates that FHHs are mostly depending on their own production for their food.

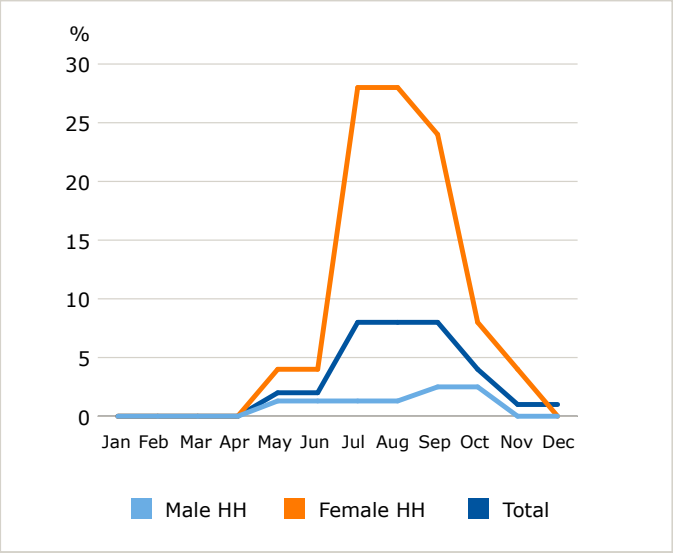


Figure 16: Percentage of HH having insufficient food in different months of the year

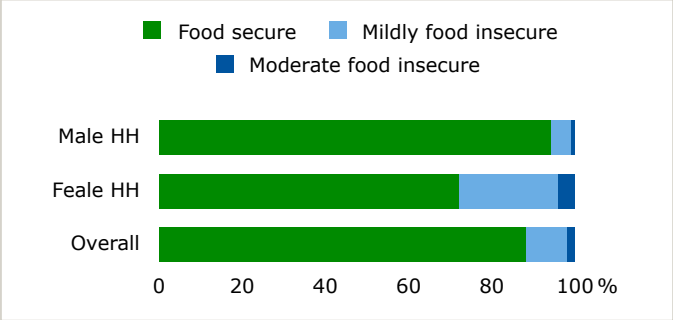


Figure 17: Percentage of HH classified in different stages of food security[5]

FHH particularly experience more food insecurity (Figure 17 and Figure 18). Food scarcity in Kililit is most severe throughout July and August. In Dabal, the food scarcity period is longer, running from May to September. The survey and focus group discussions showed that a majority of HHs depend on their own production for the food they consume.

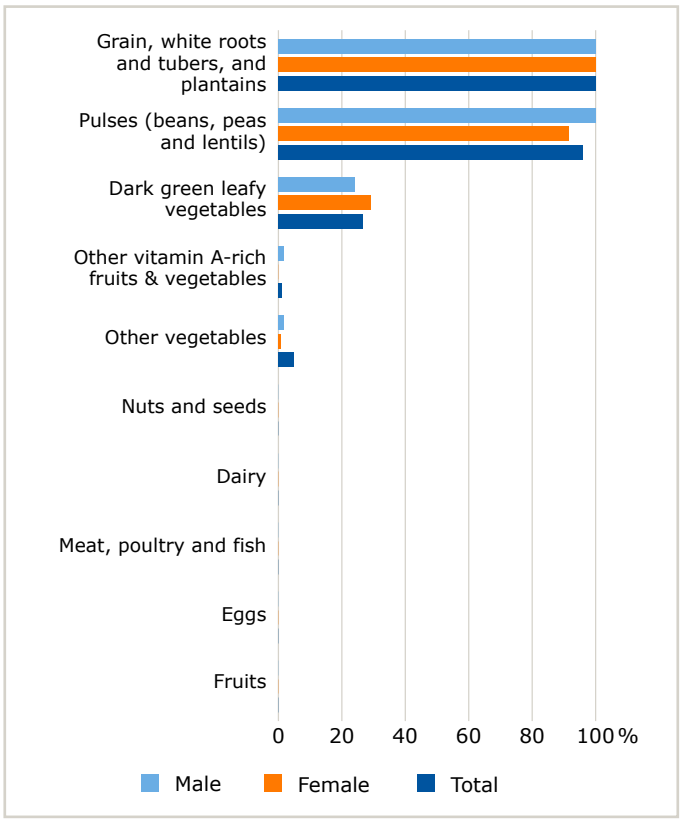


Figure 18: Percentage of HH consuming food group in the previous day to the interview

People in Yilmana Densa consume a low variety of different foods and the diet consists mainly of grains and pulses (Figure 18). On average, only 2.3 different food groups are consumed and diets consist mainly of grains and pulses, which is far below the recommended score of 5 food groups for women[6]. There is little difference between men and women and between the two *kebeles*. Of all the people interviewed, none of the respondents consumed 5 or more food groups on the previous day. This makes the probability of micronutrient deficiencies in women very likely.

Focus group discussions showed that income, availability, affordability of foods and religious and cultural food practices are the main factors shaping peoples food consumption. According to insights from focus group discussions, inhabitants of the *woreda* believe that a healthy diet contains teff, peas, potato and animal products like eggs, dairy and meat. Fruit and vegetables were not strongly identified as components of a healthy diet. Focus group discussions with men indicated that HHs with access to irrigated land were able to increase the diversity of their diets.

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

[6] https://www.fao.org/3/cb3434en/cb3434en.pdf

The women participants in the focus group discussions noted that while they occasionally attend trainings on nutrition and healthy diets, provided by health extension experts, and sometimes listen to radio, they still need to improve their knowledge and skills in the area of nutrition. Despite the *woreda*'s ideal climatic conditions for a variety of food products, there is a lack of awareness and knowledge about nutrition and a healthy diet as well as limited production and availability of nutrition dense foods.

Although female focus group discussions participants claim to be somewhat aware of some storage methods, such as the use of PICS bags, there appears to be a poor adoption of storage and harvesting practices.

In addition, unrecommended application of chemicals during production and storage tend to affect the food safety of agricultural produce.

Harmful food taboos were prevalent, establishing restrictive norms regarding the consumption of particular food items for specific members of the household during specific moments. In the focus group discussions one food taboo that was mentioned was the consumption of goat meat. Depending on the household and family tradition, some households avoid consuming goat meat considering that it might cause allergies or illness. A large number of food taboos affect women of reproductive age, pregnant and lactating women and young children.

Malnutrition during these stages of life can have irreversible and life-long negative health effects.

The priority topics that were identified within this domain relate to a necessity to enhance people's awareness and consumption behaviour towards healthy and nutritious diets. This requires multi-pronged and bundled approaches that focus on increasing diversity in diets, while working on behavioural change in consumption behaviour and food handling practices in parallel. The priority topics that have been prioritized also underscore the necessity to work on food safety related topics and simultaneously improve the infrastructure to enhance HHs' access to safe water.

Priority topics identified and validated by stakeholders

- Increased awareness on the importance of a healthy diet
- Increase the availability and use of storage and harvesting system
- Nutrient dense food (vitamin A & zinc rich product) are more available
- Correct use of pesticides to improve food safety
- Increased availability of safe water
- Increased dietary diversity

Household members at Kililit kebele eating food
Photo taken by: Andualem Tadesse

Woman working at her homeyard at Kililit kebele
Photo taken by: Andualem Tadesse

7 Inequalities based on gender identity and age

Youths and women in Kililit and Dabal, face the most disempowerment (Figure 19, Table 6). The youths are challenged especially due to their limited access to and decision making on credit, agricultural inputs and agricultural production, and lack of group membership. Women are overall less empowered than men due partly to social norms. Access to and decision on credit, group membership, speaking in public, workload and the absence of leisure contributed most to women's disempowerment.

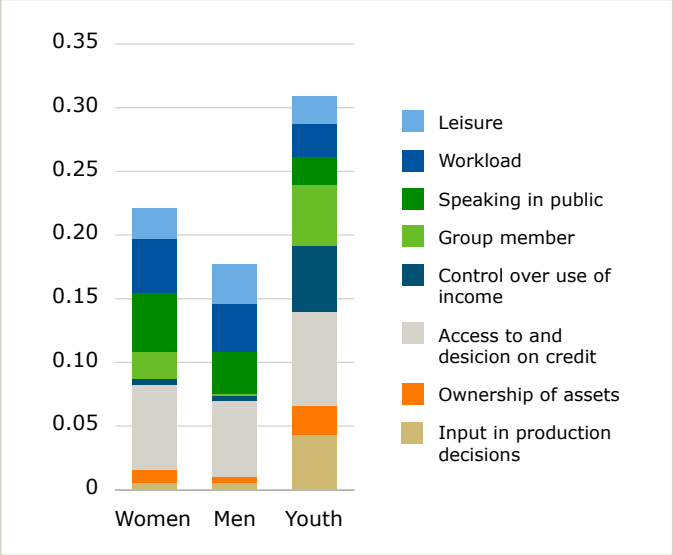


Figure 19: Women empowerment in agriculture (WEIA) score for women, men and youth in Yilmana Densa. Weighted score of the % of people classified as disempowered in specific domains

Women's disempowerment and ideal women

Focus group discussions (FGD) revealed that women have limited access to cooperative membership in Dabal; and that social work is seen by the men group as a typical task for men and not for women. One characteristic of an ideal woman is to be silent and to be submissive to her husband (Figure 20). These social norms contribute to the difference in empowerment between men in women in the domains of group membership and speaking in public. Women have a high workload, during the peak agricultural months (May–August and October–January) women perform agricultural work during the day, and in addition perform all their work within the HH during remaining daytime hours and during the night. It was indicated that workload for women was higher than for men, however, the WEIA score (Table 6) shows that a high workload and absence of leisure contributes substantially to the disempowerment of both men and women. This discrepancy between WEIA and the focus group discussions could partly be explained by the fact that also men have a very high workload, especially during the cultivating season when the questionnaire was asked. Men spend on average 7.2 h per day on productive and reproductive tasks while women spend on average 9.3 h per day on those tasks.

Other high contributors to disempowerment for women were their limited access to and decisions on credit. 75.7% of women were disempowered in this domain (Table 6). The focus group discussions highlighted that access to finance is limited due to short credit time, low amount of credit, high interest rates, the requirement of collateral and low saving culture. These challenges were experienced by all people and not women specifically.

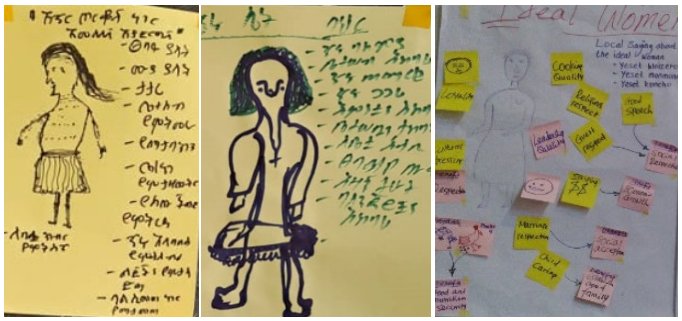


Figure 20: Drawings of ideal women as described by the participants of the FGD. Mentioned characteristics: humble, good cook, good advisor to husband, well dressed, peacefully with neighbour, silent, calm, patient, religious, good communicator to husband

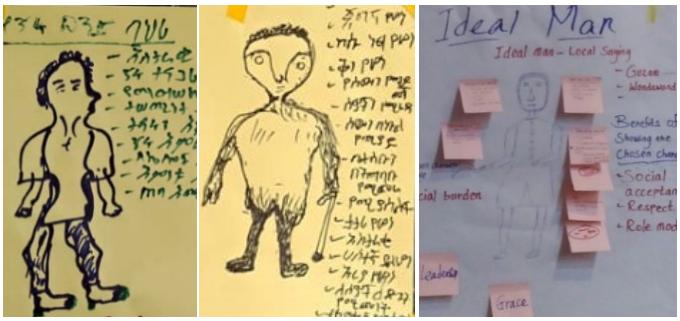


Figure 21: Drawing of ideal men as described by participants of the FGD. Mentioned characteristics: honest, innovator, sociable, free from alcohol addiction, mediator, collaborative, respect his wife, well dressed, not extravagant, religious, hard worker

Table 6: Percentage of women, men and youth classified as disempowered in different domains using the WEIA cut-off values[7]

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	2.7	10.8	75.7	2.7	21.6	54.1	45.9	27.0
Men	2.4	4.8	69.0	2.4	2.4	33.3	38.1	31.0
Youth	21.7	21.7	95.7	26.1	47.8	21.7	26.1	26.1
All respondent	6.9	10.8	77.5	7.8	19.6	38.2	38.2	28.4

Men's disempowerment and ideal men

Men were the most empowered, when compared to women and youth. Nevertheless, the insight from the baseline revealed that a high percentage of men are disempowered in some domains. As can be seen in table 6, men tend to be disempowered in the domain of access to and decision on credit (69%), workload (38.1%) and speaking in public (33.3%).

The FGD showed that men face similar challenges as women with regard to access to finance. High workload and limited leisure time were for both men and women main contributor to their disempowerment. However, men and women have different responsibilities and roles. Being free from alcohol addiction was a character trait for men was also mentioned (Figure 21).

Youth disempowerment

Young people (between 18 years and 35 years) that are not HH heads are most disempowered compared to men and women above the age of 35 (Figure 19). Most young people are disempowered in the domain of limited access and decision on credit (95.7%) and group membership (47.8%) (Table 6). Furthermore, a high percentage of young people were disempowered compared to men in the domains of decision making on production and inputs (21.7% for youth vs. 2.4% of men), ownership of assets (21.7% for youth vs. 4.8% for men), control and use over income (26.1% for youth vs. 2.4% for men). From the focus group discussions it was indicated that young people have less access to collateral and assets. This contributes to their disempowerment of control over income but also ownership of assets and limited input in production decisions.

Young people were more empowered in the domain of leisure time, workload and their ability to speak in public compared to men and women above the age of 35.

The disempowerment score for male and female youth was not calculated separately due to the limited sample size. However, the focus group discussions suggest that disempowerment is probably different for young men and women and the low empowerment could partly be explained by gender inequality. Young men and women have different tasks than older people, for example, cleaning, cooking and watching toddlers were seen as specific tasks for young women while looking after animals were mainly seen as a task for young men. Education was described as a task for both young men and women.

The insights obtained from the focus group discussions and the baseline correspond to a large extent, with the priority topics regarding social and economic inclusion, that were identified and validated by stakeholders in both locations. Among the priority topics, we find challenges that the youth encounter in terms of access to employment opportunities access extension support and agricultural inputs. The priority topics also reveal that both women and youth are often not members of cooperatives.

Enhancing the social and economic inclusion of women and youth can bring significant positive change in food system outcomes. Effective transformation of the food systems will require integrated strategies addressing these topics.

Priority topics identified and validated by stakeholders

- Decrease the workload of women
- Increased access to financial services and credit
- Equal payment for female laborers
- Increased job opportunity, especially for youth
- Input and extension are more available and accessible for youth
- Increased decision making power over household resources for women and youth.
- Increase cooperative membership opportunities for women and youth

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

8 Policies and government support

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

The thematic policy areas for Yilmana Densa 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 programmes focussing on the extension system, market system, the input support system and mechanisms to provide enhanced access to credit and finance support for small and medium enterprise development. Customized support programmes geared towards creating opportunities for women and youth to engage in value chain activities 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 refer to the strengthening of pluralistic extension system which would enable private sector stakeholders to start operating as service providers at *woreda* and *kebele* level. Experience derived from the cooperative sector and other innovative structures, and experiences from initiatives to distribute and disseminate agricultural services and inputs (e.g. one stop shop) need to inform future policies and investments within this domain.

Extension and advisory services need to extend beyond traditional function of distribution of agricultural inputs and dissemination of recommendations for production. 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 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 programmes that promote diversified production systems by integrating nutrition dense horticultural crops and pulses can enhance 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 improved incomes, improved 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 can support 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 and fresh food items.

Support for 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 with polices aimed and 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. Collaboration between different stakeholders working on production and working on 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. Successfully initiatives that have been tested and validated at *woreda* level, 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 are ample evidence and proven positive impact of climate smart, regenerative agricultural practices including amongst others, 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 programmes 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 fertilizer prices. The high costs of fertilizer can be relieved though promotion of soil fertility management measures that consider the integrated use of, locally produced, organic fertilizers in combination with – imported – mineral fertilizers.

Partnerships for integrated food system policies, planning and governance

Addressing complex food system requires collaborative 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 Yilmana Densa

The *woreda* administration in collaboration with diverse partners, have deployed and implemented different national policies and support programmes at a local level. Policies and programmes have worked on supporting agricultural development, nutrition and health, regenerative agricultural practices, soil and water conservation, watershed management and agroforestry.

Some noteworthy projects, programme's and interventions that have been implemented at the level of the *woreda* are:

- Agricultural Growth Programme (Government flagship programme)
- Watershed management programme (KfW)
- Soil and water conservation and watershed management programme (SLM)
- Soil and water conservation and watershed management programme (Water and land resource centre)
- Agroforestry and community-based seed multiplication, horticulture and seedling production (supported by One acre fund)
- Market oriented extension, postharvest management programme (SG-2000)
- Pulse crops programme supported (GIZ)
- Research on Potato and Oat supported by Ethiopian Sustainable Food Project
- Natural Resource Management programme (ICRISAT)
- REFOOTURE – living lab on regenerative agricultural practices (IKEA Foundation and Wageningen University and Research).

Woreda baseline study validation
Photo taken by: Emebet Achenef

Opportunities and challenges for Yilmana Densa 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, are 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 in specific ways 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 HHs and contributions to improve food security at national level.

Nevertheless, these activities might also generate negative trade-offs such as the formation of acid soils due to excessive use of fertilizer. In addition a focus on staple crops might negatively deteriorate HH nutrition security and HH dietary diversity when farming HHs do not utilize 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 HH dietary diversity and to create a series of alternative livelihood and employment opportunities for women and youth in sector related support activities such as transport, value addition, distribution, etc.

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 HH. In addition, the excessive use of fertilizers and pesticides in home gardening activities has the potential to negatively affect the health of producers and consumers but also has a negative impact on the environment.

When designing any type of food system interventions one must be explicit and intentional to try 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

AEZ	Agroecological zones
DA	Development agent
FGD	Focus group discussions
FHH	Female headed households
GIZ	German Agency for International Development Cooperation
HH	Household
ICRISAT	The International Crops Research Institute for the Semi-Arid Tropics
KfW	KfW (German) Development Bank
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
Qt	Quintals (10 Quintals = 1 metric tonne)

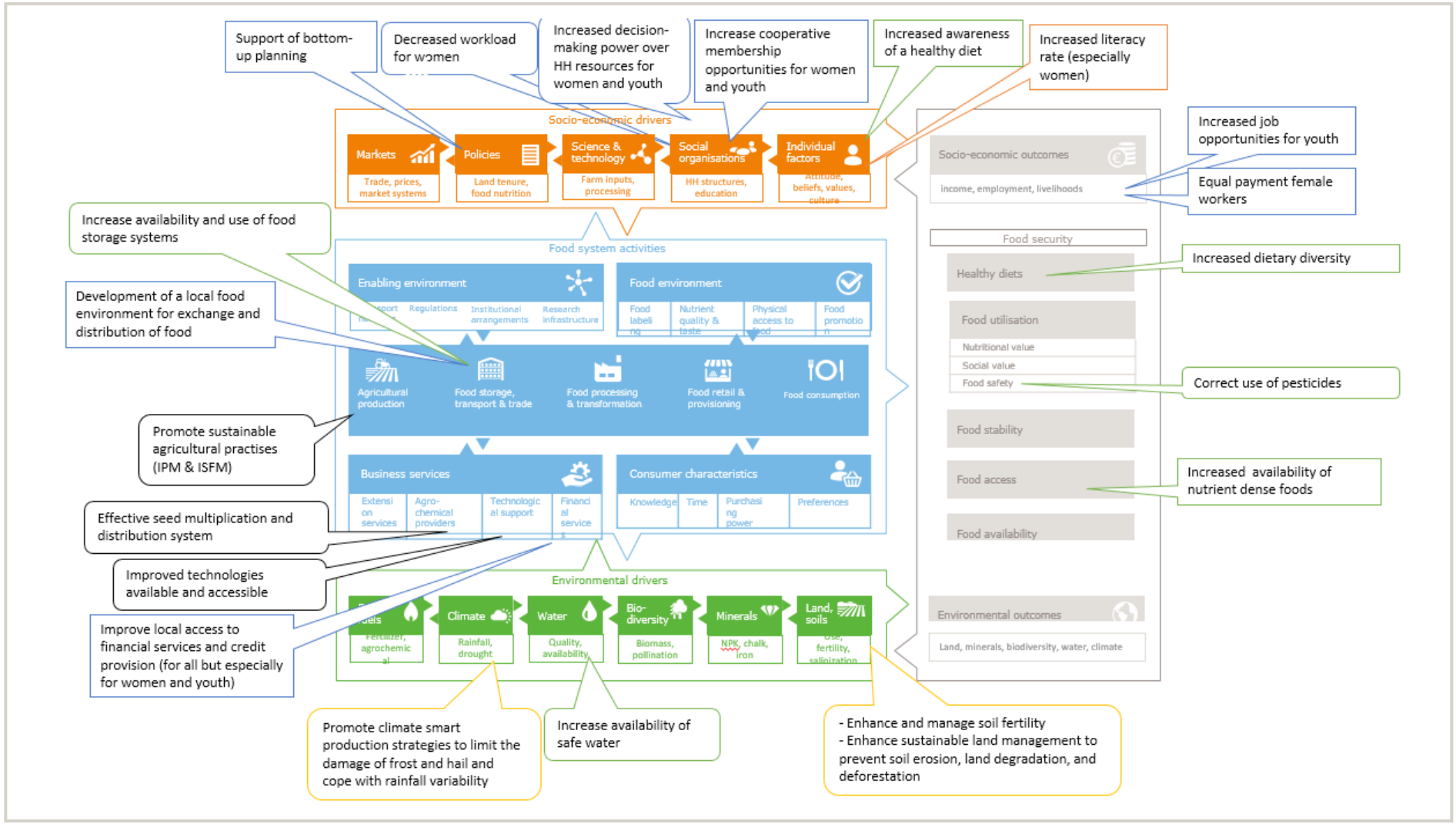

Figure 22: Identified priority topics in a food systems perspective (following by Berkum et al., 2018)

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