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STRENGTHEN PSNP4 INSTITUTIONS AND RESILIENCE

VALUE CHAIN AND MARKET ASSESSMENT

PSNP Productive Safety Net Programme

Value Chain And Market Assessment Report for the Strengthen PSNP4 Institutions and Resilience Development Food Security Activity

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Acronyms

ACSI	Amhara Credit and Saving Institution
B2B	Business to Business
CSA	Central Statistics Agency
DFSA	Development Food Security Activity
ECX	Ethiopian Commodity Exchange
EM	Effective Microorganism
EMPEA	Ethiopian Meat Producers & Exporters Association
FGD	Focus Group Discussion
KII	Key Informant Interview
MFI	Microfinance Institution
MSP	Multi-Stakeholder Platform
OCSSCO	Oromia Credit and Savings Share Company
ORDA	Organization for Rehabilitation and Development of Amhara
PSNP	Productive Safety Net Program
SME	Small and Micro Enterprises
SPIR	Strengthen PSNP4 Institutions and Resilience
VESA	Village Economic and Saving Association

Executive Summary

Background and objective

The Strengthen PSNP Institutions and Resilience SPIR Development Food Security Activity (DFSA) is a USAID Food for Peace funded five-year project implemented by consortium members led by World Vision Ethiopia in three regions (Amhara, Oromia, and SNNPR). It is implemented in 15 woredas: seven in Amhara, six in Oromia, and two in SNNPR.

This report presents an assessment of the markets in 11 of these woredas, including both livestock and crop value chains. In the SPIR DFSA implementation area, poultry, Shoat ,beekeeping, and oxen fattening were selected as livestock value chains, while vegetable, and haricot bean were selected as the crop value chains.

The objective of this study is to identify opportunities, constraints, and upgrading strategies to enhance the overall performance of the value chains, to describe and map the functions and actors across the selected value chains in each woreda and region, and to select top three and top nine income generating activities that the program participant engage in. One of the limitations of the study is that it does not recommend marketing options with justification of the profitability of each value chain for individual farmers or other market actors.

Challenges for smallholder farmers

Smallholder farmers dominate the production of all of the selected value chains, but theyhave low levels of production and productivity due in part to poor access to quality, affordable, and timely agricultural inputs. Because government and non-governmental organizations dominate the input supply sector, farmers must wait for subsidized or free input provisions. This becomes a barrier to engaging in the input supply market system. Skill gap also constrains smallholder farmers in the production and marketing of each commodity.

Farmers have small surplus production and poor access to market information and to good roads and other infrastructure. In addition, a long chain of intermediaries and brokers dominates the market, which contributes to lower gross margin. Marketing of agricultural produce in the study area is characterized by spot transactions; there is no long-term relationship beyond the spot sale.

Selected value chains

The **poultry** value chain was assessed in each of the selected woredas. Poultry is a significant livelihood activity for smallholder farmers, but production is based on indigenous chickens, which have low productivity in both meat and eggs. Exotic breeds have better performance in production and productivity, but there are no suppliers of exotic breed chickens in any of the woredas that directly supply to farmers. Additionally, few private businesses and Small & Micro Enterprises (SME) are engaged in pullet production and supply to government and nongovernmental organizations.

In the SPIR DFSA implementation area, the most dominant small ruminant produced is goats; the study indicates a 2:1 ratio of goats to sheep. Smallholder farmers keep **shoats** as money-savers in time of emergency because production is not business-oriented. Better-performing breeds like Abargale goats, central highland goats, and Abara sheep are bred in the study areas. However, farmers have a skill gap in selecting and keeping better-performing breeds, which has resulted in inbreeding and low productivity. There is also a high price fluctuation depending on the season, and although farmers are aware of the seasons for high and low prices, there is no trend of following these seasons for production and marketing.

North Wollo and Waghimra zones are areas that are clustered for **honey** production. Honey produced in this area has a high demand in the market. However, production of honey is based on traditional hive and management practices. These zones have limited production of honey; additionally, the adulteration and poor handling of honey contributes to low quality and low price.

Vegetables are produced in all areas of the assessment, but it was selected as an important value chain in few woredas. Vegetable production in this area is classified under kitchen/home gardening. Pumpkin is one vegetable that is often produced and consumed by farmers, as pumpkin production requires very little land, capital, and labor. Its economic gain, however, is high: up to 50 heads of pumpkin are harvested from one plant and one head is sold at minimum of 20 ETB. Pumpkin serves for both human consumption and animal fattening. In addition, pumpkin has a long shelf life and does not require special storage.

Oxen fattening, and **haricot bean a**re value chains selected only in one woreda each (Gemechis, and Chiro woredas, respectively).

Women's roles in value chain production

Women have a major role in production of all the selected value chain commodities. However, their role in the marketing of high-value assets and male-dominated value chain commodities is limited. Even though assets of high value slightly differ from region to region, women are not allowed to sell assets that have equal or higher value than shoats. They also do not have the power to make household spending decisions on the revenue raised from crops and livestock that they are allowed to sell.

Recommendations

The following is a prioritized list of project activities recommended to improve production and productivity of the selected value chain commodities:

Poultry value chain

1. Provide full-fledged training for farmers in poultry house construction, local feed production, bird health, and marketing
2. Facilitate market linkage between farmers, pullet suppliers, day-old chick growers, feed suppliers, and vet service providers

3. Create awareness of the nutritional value of eggs and meat to increase household-level consumption during the fasting season

Shoat value chain

1. Provide full-fledged training on shoat production and management (feeding, health/vaccination, deworming, breed selection, shade and feeding trough construction, and forage development)
2. Facilitate individual loans with group collateral for program participants from micro-finance institutions (MFIs) and other financial institutions, and alignment of loan dispersion with the production season

Support existing and establish new input suppliers (feed, vet service, Effective Microorganism, and other technologies)

Honey value chain

1. Identify and capacitate of model farmers or private sector market actors who provide services like honey harvesting, transitional hive marking, colony splitting, wax molding, wax printing for modern hives, honey extraction, packaging of honey, etc.
2. Provide of basic training in honey processing and quality testing for collectors and/or farmers who are willing to engage in honey value addition
3. Increase women and youth participation in the value chain though focused targeting and providing the necessary support
4. Introduce simple honey packaging material that can be handled by farmers and/or collectors

Oxen value chain

1. Organize farmers into producer marketing groups to increase their bargaining power and help them sell directly to larger buyers
2. Provide fully-fledged training (production cycle, animal health, selection, feeding trough and shade construction, feeding, marketing) to improve farmers' gain from the sector
3. Support government and private vet clinics to improve their service and address the last mile

Vegetable value chain

1. Promote appropriate small-scale irrigation technologies and training for farmers on the related technology (solar pump, rope and washer pump, roof water harvesting structure, etc.)
2. Facilitate input and output market linkage for vegetable-producing farmers
3. Promote pumpkins as an income-earning and high-nutrition commodity

Haricot beans

1. Introduce community-based seed multiplication system to improve access to quality seed
2. Provide fully-fledged training on agronomic practice and post-harvest handling (harvesting, threshing, and storage) of haricot bean

3. Introduce drought-resistant variety of haricot beans in collaboration with research institutes

Activities to improve women's participation in market and livelihood activities

1. Apply Social Analysis and Action (SAA) tools to change norms such as restrictions on women selling high-value assets (shoats and cattle), gender-specific value chains (e.g., honey for men and poultry for women), and lower prices for commodities sold by women than for those sold by men
2. Create conducive environment for women to participate in all agricultural extension through providing training at the closest location, timing trainings conveniently, inviting women specifically, and arranging rooms for day care
3. Introduce technologies that can reduce time and energy necessary for production and marketing

1. Introduction

1.1. Background of the Project

World Vision and partners (CARE Ethiopia and Organization for Rehabilitation of Amhara) propose the DFSA strengthen Productive Safety Net Program 4 (PSNP4) Institutions and Resilience (SPIR) to enhance livelihoods, increase resilience to shocks, and improve food security and nutrition for rural households vulnerable to food insecurity in Ethiopia. The proposed program is responsive to community needs, carefully aligned with the Productive Safety Net Programme (PSNP), and grounded in the the consortium partners' depth of experience in the proposed target areas.

SPIR shares the PSNP goals of enhancing livelihoods and resilience to shocks and improving food security and nutrition for rural households, and will target an estimated 349,834 PSNP clients each year (526,444 LOA) in 13 of the most vulnerable woredas in Amhara and Oromia, along with an additional two pilot woredas in SNNPR.

Goal: The project's goal is to Strengthen PSNP4 Institutions and Resilience with a focus on enhancing livelihoods, increasing resilience to shocks, and improving food security and nutrition for rural households vulnerable to food insecurity in Ethiopia. To achieve its goal, SPIR focuses on following four purposes, all of which are fully integrated and interdependent.

Purpose 1. Increased income, productive assets, and equitable access to nutritious food for vulnerable women, men, and youth

Purpose 2. Improved nutritional status of children under two years of age, pregnant and lactating women, and adolescent girls

Purpose 3. Increased women's empowerment, youth empowerment, and gender equity

Purpose 4. Strengthened ability of women, men, and communities to mitigate, adapt to, and recover from human-caused and natural shocks and stresses

These purposes are designed to address key underlying causes of food insecurity, and include appropriately layered and sequenced interventions for positive behavior change in key areas including agricultural practices, elimination of harmful traditional practices and violence against women and girls, health and nutrition behaviors including sanitation and hygiene, and natural resource regeneration. These interventions are customizable to address unique characteristics of participants by gender, age, position in communities, and skill level.

The DFSA agriculture and livelihood technical team provides strategic value chain development, leadership, and guidance to facilitate and implement project intervention strategies and activities, including linking PSNP households with input and output markets in the selected value chains to contribute to household resilience to shocks and enhanced livelihoods. This will be realized through addressing systemic constraints that affect value chain development.

The value chains selected in the DFSA program are believed to have the potential to pull PSNP households out of food insecurity and enhance participating HH's livelihoods. Furthermore, the

project stimulates off-farm/nonfarm income-generating activities such as petty trading, vegetable gardening, small-scale poultry production, donkey cart operating, and others that will diversify program beneficiary incomes, stabilize income throughout the year, minimize risk, improve nutritional intake, and contribute to resilience.

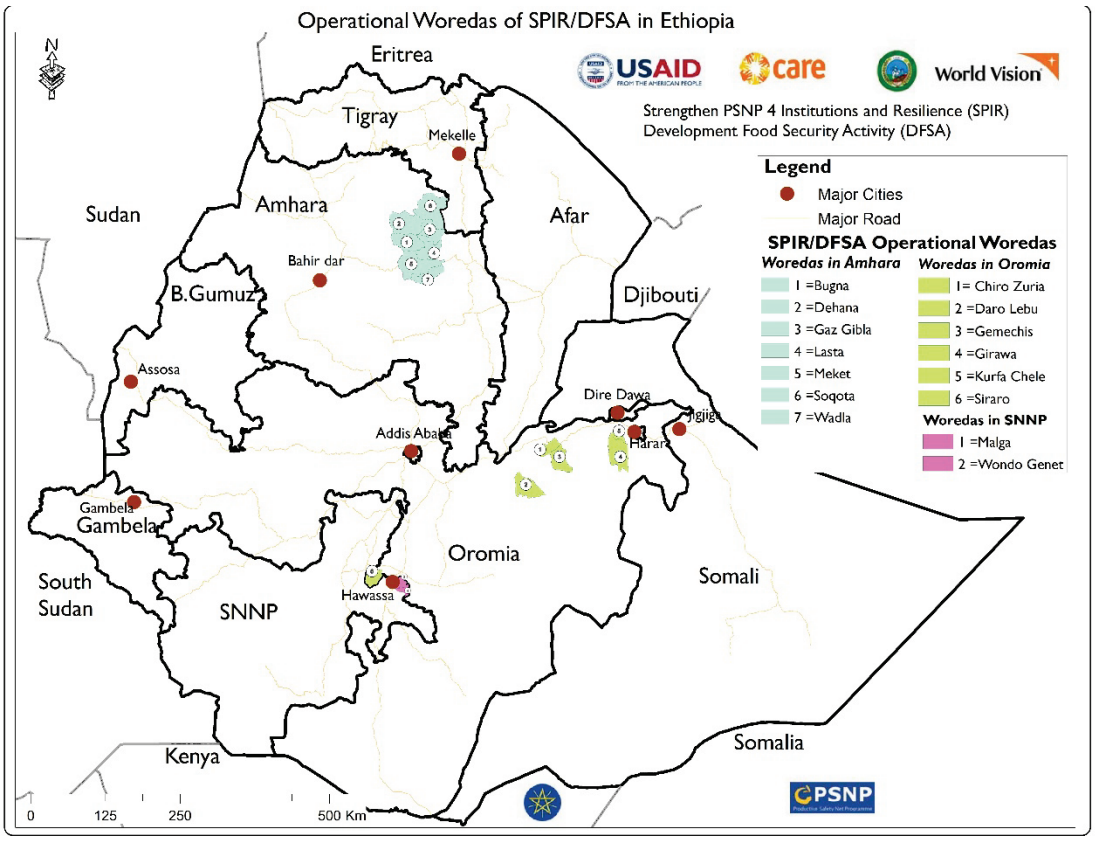
1.2. Brief Description of Each SPIR Woreda

The study was conducted in Amhara, Oromia, and SNNP implementation woredas of SPIR.

Out of the seven implementation woredas of Amhara, this assessment was conducted in five woredas (Bugna, Dehana, Gazgibla, Lasta, and Sekota), and the remaining two Meket and Wadla woreda were left as collaboration and layering for the Livelihood for Resilience Activity (LRA) project implemented by CARE Ethiopia as consortium lead. Dehana is 60 km from Sekota, and Sekota is 120 km from the town of Lalibela. Gazgibla and Bugna are 40 and 64 km away from Lalibela, and Lasta is a woreda around Lalibela.

In Oromia, the assessment was conducted in East Hararghe (Kurfa Chele and Girawa woredas), and West Hararghe (Gemechis and Chiro Zuria woredas). Kurfa Chele and Girawa are 60 and 80 km away from the city of Dire Dawa, and Gemechis is 18 km from Chiro. Chiro Zuria is the woreda around the town of Chiro.

In SNNPR, the assessment was conducted in both pilot woredas of Malga and Wondo Genet, which are 30 km away from Hawassa City.



Profile of Amhara Implementation Area

There are seven SPIR implementation woredas in Amhara region, which are located in North Wollo and Wag Hemra zones. However, value chain commodity and off-farm/nonfarm Income Generating Activities (IGA) selection and analysis is conducted in five of the woredas, because two woredas Meket and Wadla are left for the USAID project, livelihood resilience activity (GRADII) as collaboration and layering of different projects funded by USAID. Hence, only the profile of specific woredas in which the assessment is conducted are presented.

Bugna Woreda

Bugna woreda is in Amhara regional state North Wollo zone. The woreda has total population of 95,712 (48,827 female). The woreda has 22,258 HHs (5,948 female). In the woreda there are 16 kebeles between 0.5 to 57km from the woreda center.

Kebeles in the woreda are classified in to three agro-ecological zones: highland, midland, and low land. The residents of the woreda depends on mixed farming for their livelihood. Major agricultural produce in the area include; shoat, poultry, honey, sorghum, teff, wheat & barley. Average land holding in the woreda by household is 0.25 hectares. In Bugna woreda, the average household has five shoats, four chickens, and cattle.

Dehana Woreda

Dehana woreda is in Amhara regional state Wag Hemra zone. The woreda has a total population of 134,513 (64,083 female). The woreda has 32,723 households (HHs) (8,598 female). In the woreda there are 31 kebeles between five to 75km from the woreda center Amdework.

Kebeles in the woreda are classified in to three agro-ecological zones: highland, midland, and lowland. The residents of the woreda depend on mixed farming for their livelihood. Major agricultural produce in the area include; shoat, poultry, honey, sorghum, teff, wheat and barley. Average land holding in the woreda by household is 0.25 Hectares. In Dehana woreda, an average household has four shoats, five chickens, and three cattle.

Gazgibla Woreda

Gazgibla Woreda is one of the food insecure areas of the Amhara regional state. Found in North East Amhara Region bounded by Dehana woreda in the west, Sekota woreda in the north, Tigray region (Ofla woreda) in the east, and Lasta woreda (north Wollo zone) in the south. It is one of the 7-Woredas of Waghemra Administrative zones, established in the year 2007 having 20-Kebeles (1-urban) with a total population of 85,488 (41,742 female). It is found 377km and 42km away from the regional capital-Bahir Dar and the Zonal town-Sekota respectively. The woreda has an area of 100,099. 1 hectares, of which 26.8 percent, 38.2 percent and 35 percent is Dega, Woina-Daga and Kolla respectively. From the total area, 17937ha (18%), 53553ha (53.5%) and 28500ha (28.5%) is farmland, grazing land, and others (including forest and bushes, gully, mountains, etc.) respectively. In the woreda there are 20 Kebeles between 6km to 94.02km from the woreda center. Kebeles in the woreda are classified in to three agro-ecological zones: highland, midland, and low land. The residents of the woreda depend on mixed farming for their livelihood. Major agricultural produce in the

area are sorghum, wheat, barely, teff, maize, millet, poultry, honey, shoat and cattle. In the woreda, households have an average holding of two cattle, two chickens, one sheep, and three goats.

Lasta Woreda

Lasta woreda is in Amhara regional state North Wollo zone. The woreda has a total population of 153,528 (77,363 female). The woreda has 30,779 HHs (6,606 female). In the woreda there are 26 kebeles between five to 150km from the woreda center.

Kebeles in the woreda are classified into three agro-ecological zones: highland, midland, and lowland. The residents of the woreda depend on mixed farming for their livelihood. Major agricultural produce in the area include shoat, poultry, honey, sorghum, wheat, teff, barley, and Lentil. Average land holding in the woreda by household is 0.65 Hectares. In Lasta woreda, the average household has five shoats, three chickens, and two cattle.

Sekota Woreda

Sekota Woreda is in Amhara regional state Waghimera zone. The woreda has a total population of 168,959 (86,169 female). The woreda has 33,875 HHs (8,468 female). In the woreda there are 34 kebeles between three to 50km from the woreda center.

Kebeles in the woreda are classified in to two agro-ecological zones: midland, and low land. The residents of the woreda depend on mixed farming for their livelihoods. Major agricultural produce in the area include; shoat, poultry, honey, sorghum, barley, wheat, teff and maize. Average land holding in the woreda by household is 0.75 hectares. In Sekota woreda the average household has seven shoats, three chickens, and three cattle.

Profile of Oromia Implementation Area

Chiro Zuria Woreda

Chiro Zuria woreda is in Oromiya regional state in the West Hararghe zone. The woreda has a total population of 207,553 (122,625 female). The woreda has 29,000 HHs (1,400 female). In the woreda there are 39 kebeles between two to 49km from the woreda center Chiro town.

Kebeles in the woreda are classified into agro-ecological zones: highland, midland, and low land. The residents of the woreda depend on mixed farming for their livelihoods. Major agricultural produce in the area include shoat, poultry, donkey, honey, sorghum, maize, teff, coffee, and onion. Average land holding in the woreda by household is 0.25 hectares. In the Chiro woreda, the average household has two shoats, six chickens and one cow.

Gemechis Woreda

Gemechis woreda is in the Oromiya regional state West Hararghe zone. The woreda has a total population of 240,442 (122,625 female). The woreda has 35,801 HHs (892 female). In the woreda there are 39 kebeles between one to 72km from the woreda center, Kuni.

Kebeles in the woreda are classified in to three agro-ecological zones: highland, midland, and low land. The residents of the woreda depend on mixed farming for their livelihood. Major agricultural produce in the area include shoat, poultry, donkey, honey, sorghum, maize, groundnut, teff, coffee, hot pepper and onion. Average land holding in the woreda by household is 0.25 hectares. In Gemechis woreda, the average household has two shoats, three chickens and one cattle.

Girawa Woreda

Girawa woreda is in the Oromia regional state of the East Hararghe zone. The woreda has a total population of 262,323 (129,334 female). The woreda has 34,732 HHs (2,404 female). In the woreda there are 45 kebeles between 2.5 to 49km from the woreda center, Girawa.

Kebeles in the woreda are classified in to three agro ecology: highland, midland, and low land. The residents of the woreda depend on mixed farming for their livelihoods. Major agricultural produce in the area include shoats, poultry, sorghum, maize, wheat, barely, teff and vegetables. Average land holding in the woreda by household is 0.25 hectares. In Girawa woreda, the average household has four shoats, three chickens and four cattle.[1]

Kurfachele Woreda

Kurfachele Woreda is in Oromia regional state in the East Hararghe zone. The woreda has a total population of 75,418 (37,254 female). The woreda has 13,663 HHs (1093 female). In the woreda there are 18 kebeles between 1.5 to 24km from the woreda center, Kurfachele.

Kebeles in the woreda are classified into three agro-ecological zones: highland, midland, and low land. The residents of the woreda depends on mixed farming for their livelihoods. Major agricultural produce in the area include shoats, poultry, sorghum, maize and vegetables. Average land holding in the woreda by household is 0.5 hectares. In Kurfachele woreda, an average household has six shoats, six chickens and five cattle.

Profile of SNNPR Implementation Area

Woredas of SNNPR are under pilot implementation because the woredas are classified as Agricultural Growth Programs. While all the other area of implementation of SPIR are PSNP, woredas and targets are PSNP beneficiaries.

Malga Woreda

Malga woreda is in SNNPR regional state Sidama zone 30km away from SNNPR main city Hawassa. Total area coverage of the woreda is 17,177 hectares with an altitude of 1730-2730 meters above sea level. The woreda has a total population of 146,440 (72,138 female). The woreda has 20,062 HH (766 female). In the woreda there are 23 kebeles; the kebeles are 4 to

[1] Source: Girawa Livestock and Fishery Office, Agricultural Office and Administration Office 2008 E.C.

25 km from the woreda center, Manicho. Kebeles in the woreda are classified in two types of agro ecology: highland and midland (16 highland and 7 midland kebeles).

The residents of the woreda depend on mixed farming for their livelihoods. Major agricultural produce in the area include; shoat, poultry, honey, cereal crops (maize, barely, wheat), pulse, enset (false Banana), chat, vegetables and coffee. Average land holding in the woreda by household is 0.5 hectares. In Malga woreda, an average household has two shoats, two chickens, and one cattle.

Wondo-Genet Woreda

Wondo-Genet woreda is in SNNPR regional state Sidama zone. The woreda has a total population of 156,710 (76,933 female). The woreda has 24,412 HHs (1734 female). In the woreda there are 15 kebeles between 8 to 17km from the woreda center, Basha Town.

Kebeles in the woreda are classified into two agro-ecological zones: highland and midland. The residents of the woreda depend on mixed farming for their livelihood. Major agricultural produce in the area include maize, inset, potato, vegetable, fruit, chat, sugar cane, barley, cattle, horse, donkey, shoat, and poultry. Average land holding in the woreda by household is 0.58 hectares. In Wondo-Genet woreda, the average household has one shoat, two chickens, and two cattle.

1.3. Objective of the Study

- To select the top three to five value chain commodities promoted at woreda and regional level, respectively
- To select the top nine off-farm/nonfarm income-generating activities in each woreda
- To identify opportunities, constraints, and upgrading strategies to enhance the overall performance of the value chains
- To describe and map the functions and actors across the selected value chains in each woreda and region
- To analyze the value chains with the aim of identifying possible profitable production and marketing options for smallholder producers

1.4. Methodology and Scope of the Study

The SPIR project employed market systems and value chain approach and tools to accomplish the assessment, as described in the following steps:

The assessment team listed and described value chains and market systems, which are available in the woredas in Amhara, Oromia and SNNPR. This was achieved through an intensive literature review and preliminary discussions with selected actors in the target areas. Literature review and preliminary interviews helped the assessment team to align the various value chains/market systems to the selection criteria for on-farm and off-farm activities. The desk review was largely based on research and value chain analyses conducted by research institutions and NGOs funded by USAID or other donors.

Market systems selection criteria[2] and weights were applied to rank and rate viable value chains and market systems. The top-three ranking market systems/value chains for on-farm and off-farm activities were selected for further analysis.

The assessment team conducted an in-depth analysis of selected value chains using market systems and value chain tools and interrogated of the structure, behaviour and an enabling environment of these market systems. These included gender and age-inclusive Focus Group Discussions (FGDs) and Key Informant Interviews for input suppliers, collectors, processors and support providing institutions (public, private and government departments) for the selected value chains/market systems. The FGDs also captured the role of women and men along the value chains and identified opportunities and constraints for engaging men, women, and youth in specific value chains and market systems. This analysis targeted the woredas such as *Bugna, Dehana, Gazigbla, Lasta and Sekotain* in Amhara; *Chiro Zuria, Gemechis, Girawa, and, Kurfa Chele* in Oromia; and *Wondo Genet and Malga* in SNNPR.

In each Woreda, two representative kebeles were selected in which two focus group discussions (FGDs) were organized (one for female and one for male members). A cluster-sampling method followed by simple random sampling was utilized. To capture the differences of agroecology-based activities carried out by program participants, kebeles of implementation were clustered based on agroecology. Then random sampling method was used to select kebeles in which FGD were conducted from clustered kebeles. In the selected kebeles, FGD of male-only and female-only community members were conducted to capture the gender differences on engagement in on-farm and off-farm activities and ensure that selected commodities are conducive for both genders. Participants in the FGD ranged between twelve seven, including young members of the community.

The KII process targeted key stakeholders as well as public and private service support institutions as shown in table below:

KII Woreda based Stakeholders	**KII Woreda Support Institutions**
1. Woreda Livestock and Fishery Office ✓ Livestock Production Experts ✓ Input Experts 2. Woreda Agriculture and Natural Resource Management Office ✓ Crop Experts ✓ Input Experts ✓ Cooperative Experts 3. Woreda Trade and Industry Office ✓ Market Experts 4. Rural Job Creation Office ✓ Job Creation Experts 5. Kebele Level	1. Veterinary medicine and equipment suppliers located at zonal and woreda level 2. Seed, feed, and agro-chemical suppliers located at regional, zonal and woreda level 3. Veterinary service providers at different levels 4. Local collectors 5. Regional, zonal, and woreda based traders and whole sellers 6. Farmers' primary cooperative and cooperative union leaders 7. Processing companies

[2] https://microlinks.org/good-practice-center/value-chain-wiki/value-chain-selection

✓ Development Agents ✓ Kebele Managers	8. Support providing institutions (MFI, Government, and non-governmental organizations)

Based on the analysis, opportunities and systemic gaps and constraints were identified for the PNSP beneficiaries. These issues included opportunities for increasing production and productivity, input and output markets, value addition and enabling business environment for PNSP beneficiaries. Besides, systemic gaps and constraints for input and output markets, value addition, enabling business environment were identified. Based on the analysis, Market-based solutions were formulated including identifying potential lead firms with commercial interests and incentives to invest.

The SPIR assessment team debriefed the key stakeholders and validated on the key findings and recommendations contained in the draft report and based on their input produced the final report

1.5. Value Chain and Nonfarm/Off-farm Commodity Selection Process

Lasta woreda, bilbala kebele Female FGD

Selection

In the process of selecting a value chain, commodity and off-farm/nonfarm Income Generating Activity questionnaires were developed in the way that captures community and stakeholder choice and project objective. The criteria was developed based on USAID criteria[3] for selection of value chain commodity and off-farm/nonfarm Income Generating Activities. The scoring and ranking matrix tool is used to prioritize and rank the commodities based on respondent's evaluation, see Annex 1. Based on the questionnaire farmers select the top 5 value chain commodities and top 9 off-farm/nonfarm Income Generating Activities. Then the value chain commodity and off-farm/nonfarm Income Generating Activities selected by each FGD and KII respondents are consolidated and put into scoring and ranking matrix that considers values given by the respondents given weight for each criterion depending on project objective. The top three value chain commodities and top nine off-farm/nonfarm Income-Generating ctivities were then selected at each woreda.

Community voting for their top five-value chain commodity out of the proposed top ten-value chain commodity using rocks.

Wotera Resa Kebele, Mlga Woreda

Validation Workshop

After the selection process is over the selected value chain commodities and off-farm/nonfarm Income Generating Activities were presented to stakeholders to validate the commodities selected as value chain and off-farm/nonfarm Income Generating Activities. The objective of the workshop was to validate value chains selected and off-farm/nonfarm income generating activities based on the data collected from respondants and fill the gap by stakeholders and make

[3] https://microlinks.org/good-practice-center/value-chain-wiki/value-chain-selection

changes or approve the commodities selected through the process. Accordingly in Amhara, SNNPR, and Oromia implementation areas where validation workshops are conducted and recommendations of stakeholders are included before going to data collection for value chain analysis.

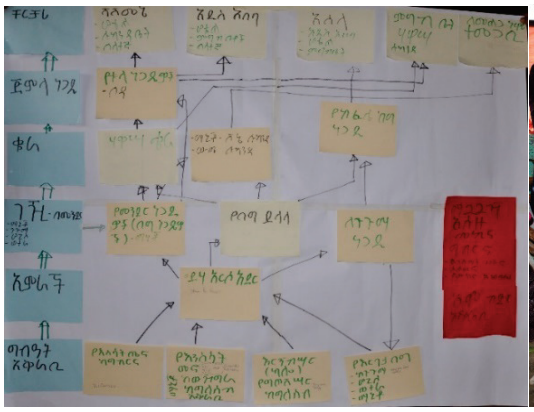
SNNPR validation workshop

Amhara validation workshop

The first photo is the opening session of the validation workshop at Hawassa; second photo is discussion on value chain and off-farm/nonfarm commodity selected by woreda stakeholders at Sekota validation workshop.

Data Collection

After the validation workshop is conducted and the top three-value chain commodity for each woreda is decided. Data collection on the three-selected value chain commodity including developing value chain map with community and stakeholder is conducted.



Shoat Value chain map drawn with community

Program participants working on shoat value chain map

1.6 Woreda-Level Value Chain Commodity and Off-Farm/Nonfarm IGA Selections

In each woreda the top three value chain commodities were selected for analysis. Accordingly, in all the woredas, the top nine off-farm/nonfarm Income Generating Activities were selected.

Below are the results.

Value Chain Commodities

Top Three Value Chain Commodities for North Wollo and Waghimra Zones, Amhara

Rank	Dehana	Sekota	Gazigbla	Bugna	Lasta
1st	Shoat	Shoat	Shoat	Shoat	Shoat
2nd	Poultry	Poultry	Beekeeping	Poultry	Poultry
3rd	Beekeeping	Beekeeping	Poultry	Beekeeping	Beekeeping

Top Three Value Chain Commodities for East and West Hararge Zones, Oromia

Rank	Gemechis	Chiro	Kurfa chelle	Girawa
1st	Shoat	Shoat	Poultry	Poultry
2nd	Ox Fattening	Haricot bean	Shoat	Shoat
3rd	Poultry	Poultry	Vegetable	Vegetable

Top Three Value Chain Commodities for Sidama Zone, SNNPR

Rank	Malga	Wondo-Genet
1st	Vegetable	Vegetable
2nd	Shoat	Poultry
3rd	Poultry	

Off-farm/Nonfarm IGAs

Top Nine Off-Farm/Nonfarm IGAs for North Wollo and Waghimra Zones, Amhara

Rank	Dehana	Sekota	Gazigbla	Bugna	Lasta
1	Shoat trade	Shoat trade	Shoat trade	Petty trade	Shoat trade
2	Grain trade	Chicken trade	Grain trade	Shoat trading	Grain trade
3	Petty trade	Grain trade	Chicken trade	Egg trade	Chicken trade
4	Chicken trade	Petty trade	Egg trade	Grain trade	Lentil trade
5	Tea/coffee	Tailor	Vegetable trade	Poultry trade	Egg trade
6	Vegetable	Daily labor	Petty trade	Tailor	Petty trade
7	Daily Labor	Tea/coffee	Coffee/tea	Oxen trade	Vegetable
8	Honey trade	Oxen	Tailor	Quarry	Daily labor
9	Oxen fattening	Hand craft	Honey trading	Coffee bean trade	Tea/coffee

Top Nine Off-Farm/Nonfarm IGAs for East and West Hararge Zones, Oromia

Rank	Chiro	Gemechis	Kurfa chale	Girawa
1	Vegetable trade	Vegetable trade	Shoat trade	Shoat trade
2	Shoat trade	Shoat trade	Chicken trade	Egg trade

3	Petty trade	Poultry/egg trade	Grain trade	Vegetable trade
4	Grain trade	Small shop/petty trade	Oxen	Grain trade
5	Poultry/egg trade	Milk trade	Egg	Petty trade
6	Milk trade	Spice trade (hot pepper)	Petty	Poultry trade
7	Pepper and spice trade	Ox/cattle trade	Vegetable	Oxen trade
8	Ox/cattle trade	Fruit trade	Milk	Milk trade
9	Handicraft	Handicraft	Wheat floor	Embroidery

Top Nine Off-Farm/Nonfarm IGAs for Sidama Zone, SNNPR

Rank	**Wondo-Genet**	**Malga**
1	Fruit trade	Vegetable trade
2	Vegetable trade	Shoat trade
3	Potato trade	Poultry trade
4	Coffee bean trade	Coffee bean trade
5	Grain maize trade	Potato trade
6	False banana	Small shop
7	Maize floor	Tea/coffee house
8	Donkey cart	Maize floor
9	N/A	False banana

2. Poultry Value Chain

2.1 Overview of Poultry Production in Ethiopia

The importance of chicken production in developing countries is seen through its accessibility. With chickens' wide range of uses from being a source of protein to income, most people living in rural areas own chickens although usually very few. There are an estimated 56.87 million chickens in Ethiopia but in rural communities, farmers only own 20 types of chicken. (CSA)

The village chicken also has lower production and higher mortality rates than commercial breeds. This is due to diseases and predations and the quantity and quality of feed, serving as constraints for rural communities although it still serves as a vital part to a balanced farming system because farmers can have few or many chickens. Much of these issues can be resolved through cross breeding with either cockerels or selected exotic breeds. Another option is to introduce improved poultry breeds to the village chicken, which may improve production and output. Although there have been attempts using exotic breeds, information on the success of these efforts is quite limited.

In terms of the poultry makeup, 37.68 percent of poultry are chicks, which make up the highest portion of the poultry population. Laying hens make up 33.1 percent. Cocks, cockerels, pullets, (non-laying hens) make up the rest of the poultry population. Most of the poultry are indigenous, making up 95.86 percent of the breed with the rest being either hybrid or exotic. In terms of the size of the holding reported, 1-9 head of poultry made up the highest percentage at 46.53 percent (7,691,189). Holdings with no poultry made up 42.18 percent (6,972,315) of total holdings (16,529,949). Refer to table below for full information (CSA, Livestock statistics 2014/2015).

Summary Table: Number of Holdings by Sizes of Poultry,

Ethiopia – 2014/15

	Poultry	
Size	Number Of Holdings	Percent
All Holdings…….	16,529,949	100
Holdings with no Poultry.	6,972,315	42.18
1-9 Head…….	7,691,189	46.53
10-49 Head…….	1,861,382	11.26
50-99 Head…….	4,962	0.03
100-199 Head…….	101	*
200-499 Head…….	-	*

Studies conducted in all the woredas convey the importance of chicken production in farming practice. Out of the specific studies done on three of the woredas (Bure, Fogera, and Dale),

income spending from chicken was hard to assess although most of it went to purchase food, school expenses for children, and agricultural inputs. This reflects the role of chickens in rural communities' for food security and financial well-being. However, the main reason for chicken production varied amongst the three woredas. For Bure, 49 percent of farmers said their main purpose of chicken production was for replacement (breeding) whereas Fogera and Dale farmers both put selling for income as their number one reason. Home consumption, cultural/religious ceremonies, and job opportunities were also reasons for egg and chicken production.

Poultry production is an important livelihood activity in both rural and urban areas. According to Gezahegn Ayele et.al. (2000) 50% of all households in rural areas and 43% of all households in urban areas keep poultry with the average holding of five chickens per household. In Ethiopia, local chickens are kept for both egg and meat production.

According to Aklilu (2007), village poultry is the first step on the ladder for poor households to climb out of poverty. It is also the only capital that households have left when livelihoods threatened by various reasons such as drought.

In the traditional poultry production sector, women are the primary owners and managers of chickens. Rural women raise poultry for income generation to purchase basic commodities such as salt, cooking oil etc. Solomon Demeke (2008). Moreover, poultry is a source of self-reliance for women, since poultry and egg sales are decided by women (Aklilu et al., 2007).

2.2 Importance of Poultry Production in SPIR Woredas

In most of the SPIR implementation areas farmers practice mixed farming. Most of the farming households practice poultry production as one of their livelihood activities. Accordingly, in all SPIR project implementation woredas poultry was selected as value chain commodity in varying order of priority. Poultry production is important source of income and nutrition for poor rural households.

Poultry production in all the woredas falls under the classification of village/ back yard poultry production; Local breeds dominate production of poultry in implementation areas. Even though currently there are increasing trends in demand and possession of exotic breeds. Farmers base their production on free scavenging, and poor housing. Most farmers destock all their possession of chicken during May to July and restock after September to be safe from disease outbreak. During this time, the price of chicken goes down drastically, but during Ethiopian major holidays (New Year, Epiphany, Christmas, Easter, Eid al fitr, and Eid Al Adha(Arafa)); the price of chicken is high. Because, there is traditional and religious custom to consume chicken during this time especially Easter. Moreover, due to the relatively low price of chicken compared to other livestock a majority of the population consumes chicken during the holidays.

Poultry production requires very little capital, land, and labor. It is suitable for any age group to run the business; it also gives return in a very short period. Moreover, poultry is classified as a women domainated livelihood activity. Women and children play a major role in production of

poultry. Women are responsible for managing production and marketing of chickens in all the woredas. They have full control over income earned from poultry. Hence, engaging program participants in poultry will highly contribute to increasing income and assets of program participants. Besides, since women are the sole responsible to run the business and manage income earned from the business; it highly contributes to women economic empowerment and child nutrition.

2.3. Poultry Value Chain in SPIR Implementation Woreda

2.3.1 **Functions and Actors**

Poultry value chain involves different functions and actors. In all the SPIR implementation woreda where poultry value chain is selected, five different function has been identified. Along the functions there are number of actors playing different functions.

Input Supply

Major inputs required for poultry value chain are pullets, feeds, health service, and finance and management skills. Farmers obtain pullets and roasters from their own herd or from other farmers in the spot market. There are at least three local markets surrounding all the main woreda market of SPIR implementation area. Small markets that serve farmers as main source of pullets and roaster and output market outlet is shown in market channel of each woreda.

In all the woredas there are government veterinary clinics providing animal health services. However, the clinics are not equipped with necessary kits, medicine and professionals. In addition, the turnover of the animal health service professionals is high. Moreover, farmers have poor awareness on vaccination and preventive approach. They only take their chicken to the clinic only when they are sick.

Free scavenging indigenous chickens dominate poultry production in implementation woredas. However, there are exotic breeds distributed by government and non-governmental organizations to the farmers to improve production and productivity. Farmers have poor awareness on feeding their chickens Concentrate feed; moreover, there is no supplier of Concentrate feed for poultry in any of the implementation woreda. Farmers access exotic breed chick through agriculture office or by free donation from non-governmental organizations.

There is increasing demand for exotic breeds of chickens by the farmers, but there are no suppliers in most of the implementation woredas. There are pullet growers in Sekota , Lalibela, Malga, and Chiro woredas. However, the farmers do not have direct relation with these private sector actors. Farmer's access exotic breeds though the Livestock and Fishery office only. Moreover, the private sector actors order day old chicks based on the order placed by Livestock and Fishery office of the respective woreda. This has limited the access to exotic breed chicken and stunted the growth of the sector. On the other hand, farmers accessing exotic breeds do not sustainably access Concentrate feed for their chicken. Because there are no suppliers of feed for poultry in any of the woredas. However, pullet growers access feed and vaccine as package deal with day old chicks from institutions supplying day old chicks.

Amhara credit and saving institute, OMO Microfinance, Sidama microfinance, and Oromia credit and saving Share Company are financial institutions providing financial service for farmers in implementation areas. However, representatives of the institution in Key Informant Interviews stated that it is not common in their institution to provide loans for poultry production to farmers. Even though they have provided group loans to small and micro enterprises engaged in pullet growing.

Production

Production of poultry is limited to smallholder farmers in SPIR woredas. Farmers use free scavenging and indigenous breeds. Production of poultry in SPIR implementation is categorized as village /back yard poultry production. Egg production of local poultry systems is poor due to small number of chicks, high mortality resulting from poor disease control and feeding practices. Women dominate production and marketing of poultry. They have inadequate skills in poultry production and management. Income earned from poultry production mostly goes to the purchase of household consumables.

Producers prefer to keep indigenous breeds due to their disease resistance and good output from scavenging. However, there is increasing demand and possession of exotic breeds recently due to their production potential and preference of government and non-governmental organizations. Government is distributing exotic breed chickens (mostly Bovine Browns and Sasso). Government development agents collect money from interested farmers and the Livestock and Fishery office place order to pullet growers located in or close to the woreda of distribution; then the farmers will receive their chicken after three months though the Livestock and Fishery office. Nongovernmental organizations are distributing exotic breed chickens free as means of improving nutrition of poor households and as improving livelihood through semi-intensive poultry production.

Respondents of FGD and KII interview mentioned that access to exotic breed is very hard. Moreover, these breeds are susceptible to disease, and less productive when scavenging. On the other hand, there are no supplier of poultry feed in any of the woreda of implementation. Besides chickens under distribution are not parent stock, farmers need to replace their stock each year. To replace their stock each year is difficult because there is no supplier of exotic breed chicken close to the farmers. Second, the farmers do not have the practice to cull each year their stock and replace with new ones. These all together become challenging in improving production and productivity of poultry through distribution of exotic breeds.

Collection and Trading

Smallholder farmers engage in poultry production have no specific time for marketing of eggs, they sell to bridge day-to-day cash needs and for purchase of household consumables. This will be done at the time they get enough eggs to take to the market. Farmers market eggs to the closest market to the household residence. During the holiday season, they sell at the woreda markets, because they can get higher prices. Eggs and chicken produced in North Wollo and Waghmara zones are marketed to Mekelle and Lalibela terminal markets. Eggs and chicken produced in East and West Hararge are marketed to Chiro, Diredawa, Harmaya and Harara as terminal markets.

In collection and marketing of eggs and chickens there are many actors who take part from village level collectors up to big buyers who transport eggs from the woreda of production to terminal markets. Egg and chicken meat production and sales is probably the easiest business in which most of the rural women and youth engage to raise income. They can do it from their own money or borrow from their VESA to do the business. It is the most convenient livelihood activity for poor rural households and it helps the farmers to easily start productive activity by small loan or their own capital.

In the market, indigenous breed chicken and their eggs has high demand. Consumers base their choice of purchase of chicken on color, size, and breed type of the chicken. The demand of chicken is high and price goes high during Ethiopian holidays. Because there is huge consumption of chicken and egg as the traditional dish *doro wot* during this time. The price of chickens goes down during late May to July due to disease breakout and during fasting season of Ethiopian Orthodox persons. During this time, most of the farmers especially in Amhara area do not eat eggs and chicken and as well, they do not feed it to their children. This will highly contribute for decreasing the price of eggs and chicken.

The price of eggs and chicken has high variation depending on color and breed. Indigenous chicken and their eggs has high value. For example, eggs of indigenous chicken costs 0.50 cents up to 1 Etb higher than exotic chicken eggs; while indigenous chicken costs 20 to 50 Etb higher than exotic breed chickens. The price difference is not in woreda of implementation only it is true in the Addis Ababa open markets and super markets. Moreover, collectors and traders choose indigenous breed chicken eggs due to its hard cover shell: which makes it easier for transportation to distant markets. However, in some of the woreda of implementation size of egg is the determinant of price.

Color is an important determinant of price for the domestic live livestock trade. Similarly, in live chicken trade color of the chicken is one of the determinants of its price. Black chicken cost less than other chickens in most of SPIR implementation areas.

Processing

There is little value addition at the farmer's level in this value chain. The value addition starts at hotels, restaurants and abattoir houses. Poultry produced in Amhara implementation woreda are supplied to hotels and restaurants at Amdework, Ass Ketema, Ayna Bugna, Woldia, Alamata, Lalibela, Korem, Sekota , and along the chain to Mekele. While poultry and eggs produced in East and West Hararge are supplied to Chiro, Diredawa, Haramaya, Harar and along the chain to Wuchale, Adama and Addis Ababa.

However, the value chain has potential to start processing at different capacity and level (small, medium and large). Following the increase in urbanization and constraint of time to go through the whole process of *doro wot* preparation. There is increasing demand of semi-processed chicken that can be used in preparation of the traditional dish *doro wot* or finished prepared doro wot. Moreover, there are currently startups who are engaged in supply of semi-processed chicken and prepared *doro wot* during holidays. This is area in which farmers or SMEs can engage to add value and get better profit margin. ELFORA, Alema, and Genesis, farms are some

of the firms engaged in processing chicken and supplying to super markets in Addis Ababa and other main towns.

Consumption

Domestic consumers prefer local breed chicken and egg. The reason for the preference is taste. Respondents in the assessment mentioned that, indigenous breeds and their eggs is very tasty compared to exotic breeds. More over the color of the York of indigenous breed chicken is deep yellow and consumers prefer this color. High demand for indigenous chicken and their eggs created difference in price of eggs and chicken depending on their breed.

2.3.2 **Relationships Between Actors**

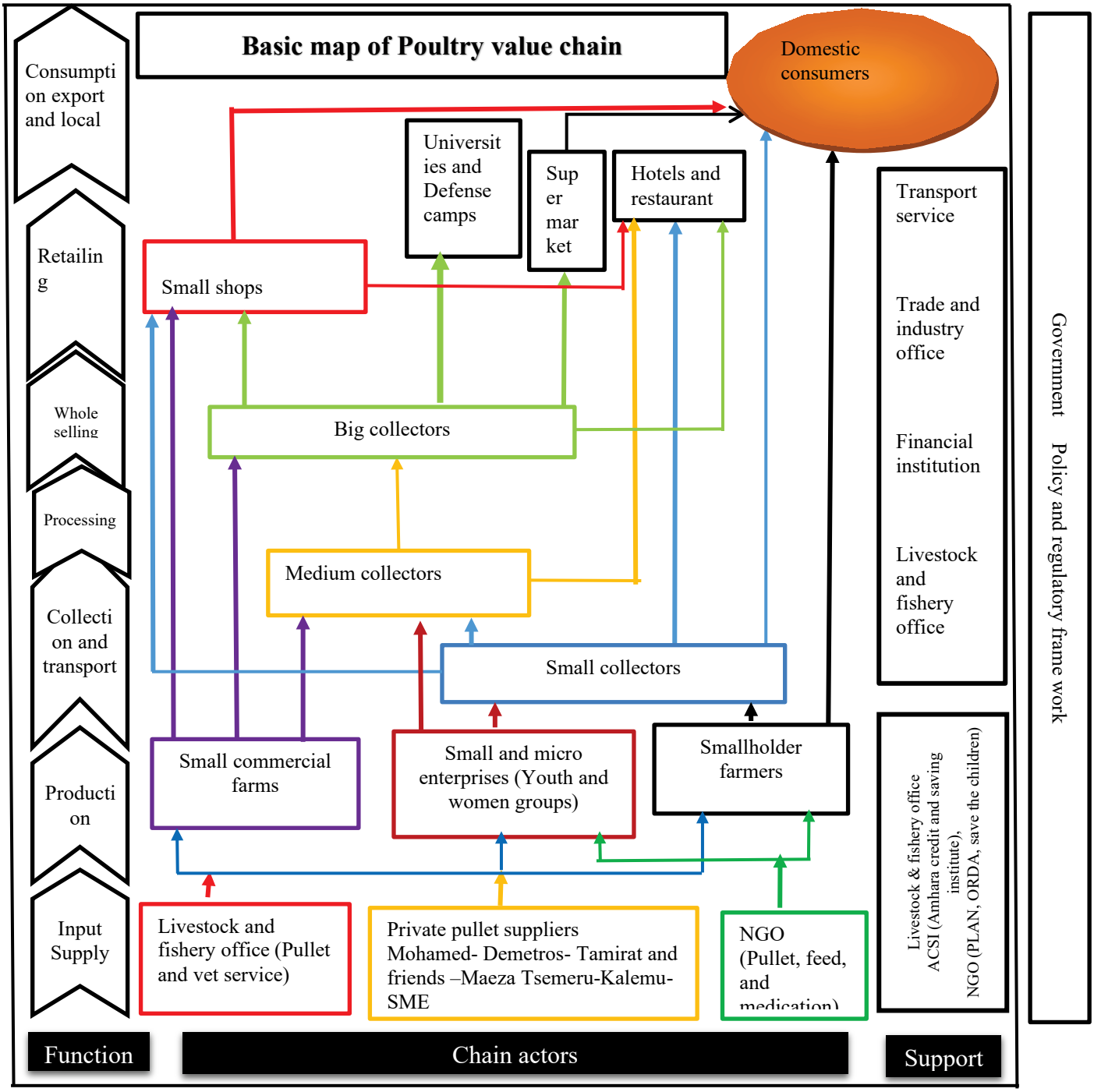
The relationship that exists between value chain actors is informal and mainly characterized by spot transaction. However, there are informal relationships among small, medium, and big collectors. The information flow that exists in the channel is very disconnected, the collectors are aware of the price and demand of buyers but the farmers are not. All the respondents reported that they have never received any kind of information from their buyer or supplier about market information or input source and utilization procedures.

However, the farmers have a traditional way of collecting market information. The participants in the FGD reported that they go to at least one of the woreda markets before they set price for their chicken and eggs and take it to market. Farmers also check for the daily price when they first arrive at the market before they sell their produce.

2.3.3 **Value Chain Map and Market Channels North Wollo and Waghmara Zone Woredas**

A) Value Chain Map of North Wollo and Waghmara Zone Woredas

The poultry value chain map is drawn based on information collected from farmers and woreda level stakeholders. The map includes functions, value chain actors, and support providing institutions. The map illustrates the relationship that exists between each actor, their role and institutions providing support to the value chain. The value chain map of all the woredas of SPIR implementation in Amhara is similar; hence, one map representing all is drawn.



Market Channels

Based on the market routes and value chain map, different market channels are identified. The margin that the farmers get from poultry value chain depends on the type of channels he/she uses and the number of intermediaries involved. If the three are a lot levels of intermediaries, the farmers gets a lower margin. If the numbers of levels of intermediaries involved is small or if the farmers get their chicken and eggs to terminal market, they have a better gross margin.

Poultry Value Chain Market Channels in the Woreda

1. Producers – Consumers
2. Producers – Small Traders – Consumers
3. Producers – Small Traders– Small Shops/ Hotels and Restaurants – Consumer
4. Farmers– Small Traders – Medium and Big Traders – Hotels, Restaurants and Institutions – Consumers

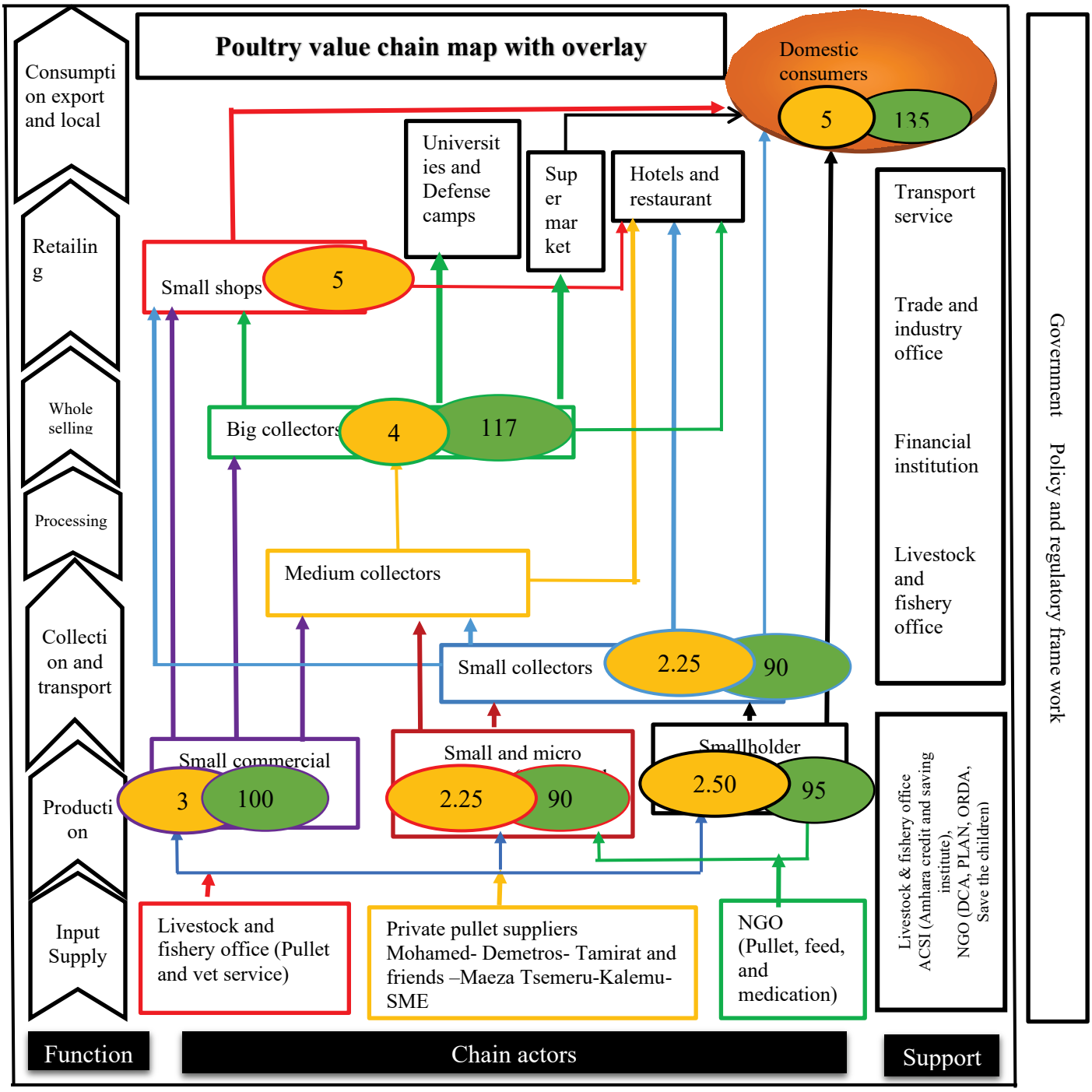
Key:

- ✓ Small traders are traders that collect 15 up to 20 chickens or fewer than 500 eggs at time (single market)
- ✓ Medium traders are traders that collect more than 20-60 chicken or 500-1000 eggs at a time (single market)
- ✓ Big traders are traders that collect more than 600 chickens or 1,000 eggs at a time (single market)

B) Overlays: Number of Actors, Volumes and Transaction Cost

The poultry value chain is significant livelihood activity in all the woreda. There are number of actors involved at each level of production and marketing of poultry. According to the data obtained from the Livestock and Fishery office of each woreda, on average farmers have five chickens. In all the woreda, there are no private input suppliers. At each woreda market there are minimum of 10 small collectors, six medium collectors, and five big collectors. In addition, there are more than three big buyers coming from Mekele, Waldia and Dessie market.

Transaction costs vary across the marketing hierarchy depending on the locations. These include transport, labor, tax, water, feed, and the collector's/trader's own expenses



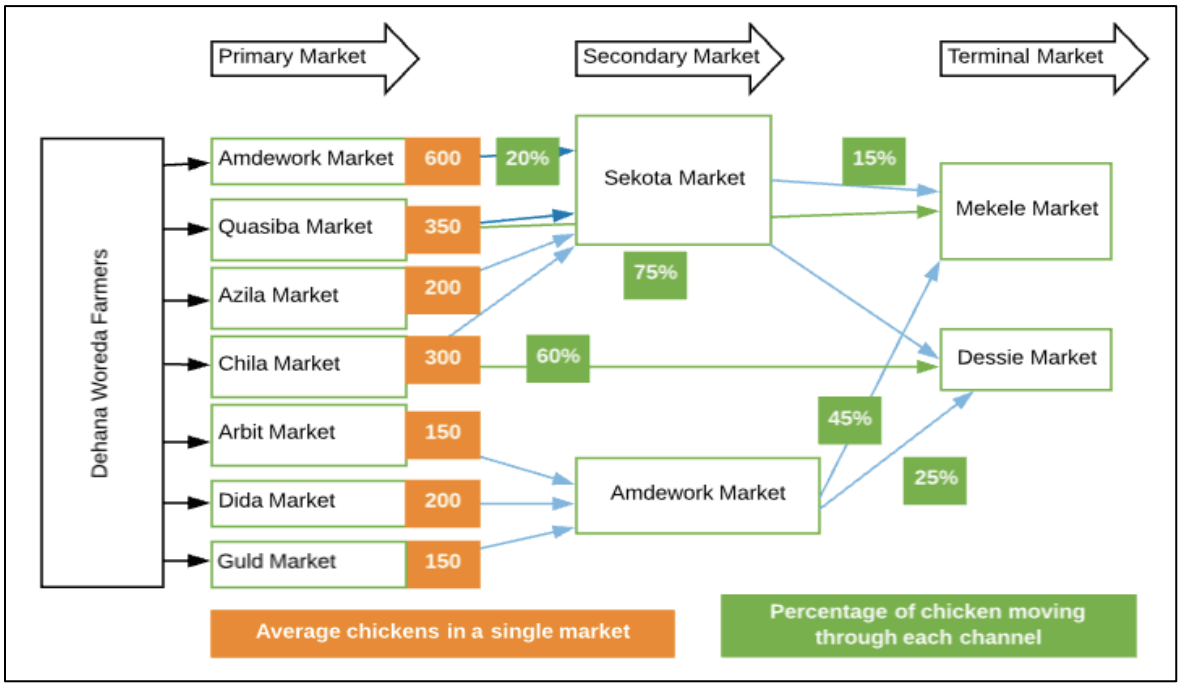
- ✓ All prices indicate the average price of egg and live chickens sold towards the direction of the arrow in Ethiopian birr
- ✓ Orange ovals represents price of egg and green ovals represent price of chicken
- ✓ The price of egg also varies depending on the size of egg in Wagmhra and North Wollo zone

- ✓ The price of exotic breed pullet is higher than the price of idegenous chicken

Dehana Woreda

There are different market routes for marketing of chicken and egg produced in Dehana woreda. Chicken and egg produced in the woreda flow through different routes to reach to the market. Most of the farmers use spot markets in and close to the woreda (Arbit, Dida, Kuasiba, Chila, and Azila) markets, but there are farmers who take their chickens to Sekota in search of better prices. Chicken and egg marketed from Dehana passes through different market routes: Amde work-Sekota -Mekele or Amdework- Sekota -Dessie.

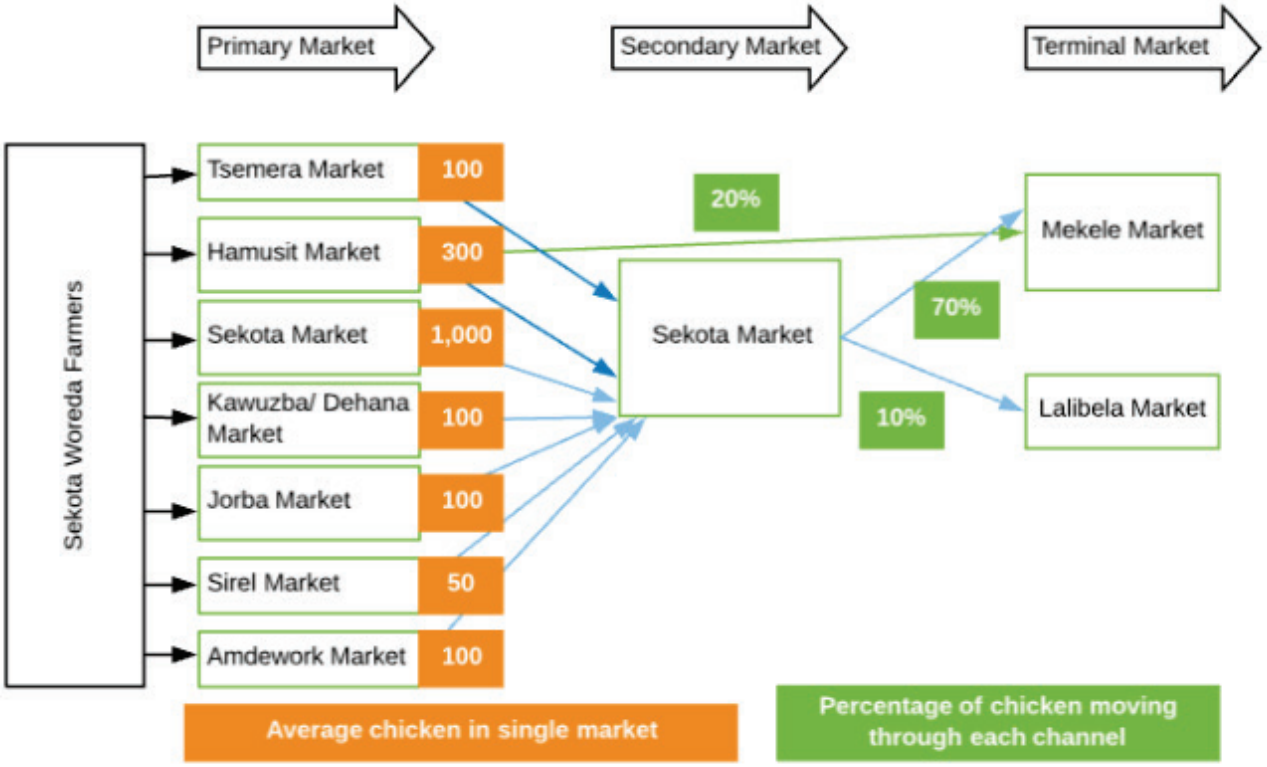
Volumes Moving Through Each Channel



Sekota woreda

There are different market routes for marketing of chicken and eggs produced in Sekota woreda. Chickens and egg produced in the woreda flow through different routes to reach to the market. Most of the farmers use spot market in and close to the woreda (Hamusit, Sirel, Tsemera, and Kewuzba) Markets. Eggs and chicken marketed at Sekota woreda passes through different Market routs: Hamusit-Korem-Almata-Mekele, or Sekota to Mekele.

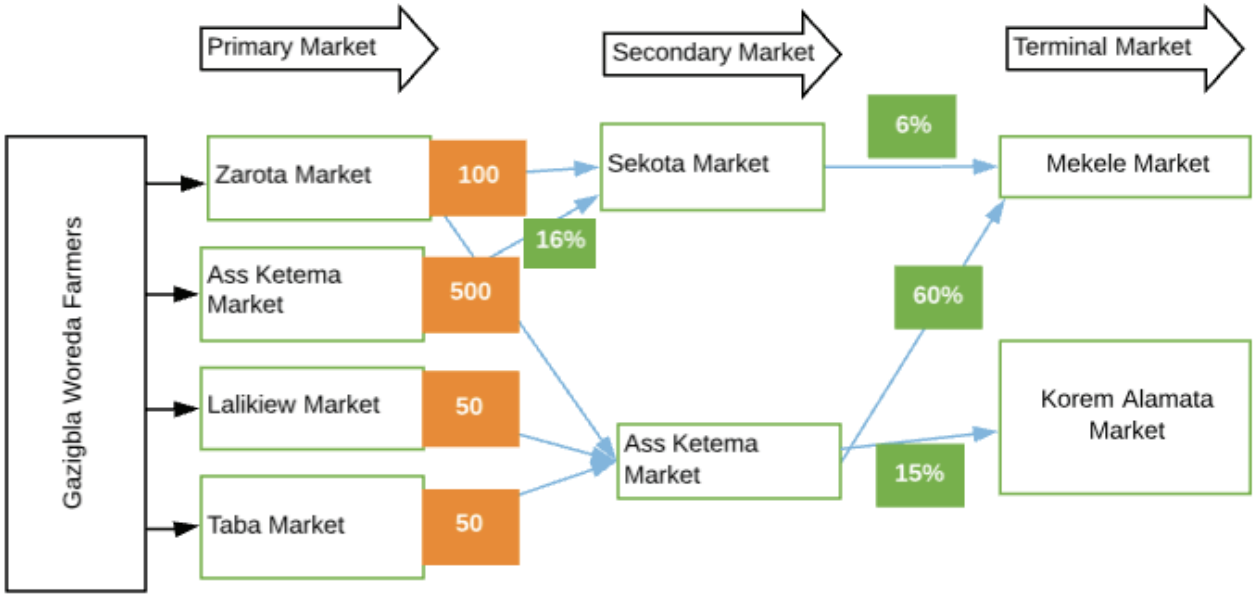
Volumes Moving Through Each Channel



Gazigbla woreda

There are different market routes for marketing of chicken and eggs produced in Gazigbla woreda. Chicken and eggs produced in the woreda flow through different routes to reach to the market. Most of the farmers use spot market in and/or close to the woreda (Zarota, Lalkiew, and Taba markets), but there are farmers who take their chicken and eggs to Sekota and Lalibela in search of better price. Eggs and chicken marketed from Gazigbla woreda passes through different Market routes: Ass Ketema-Sekota -Mekele, or Ass Ketema-Korem-Alamata, or Ass Ketema- Lalibela.

Volumes Moving Through Each Channel



Bugna Woreda

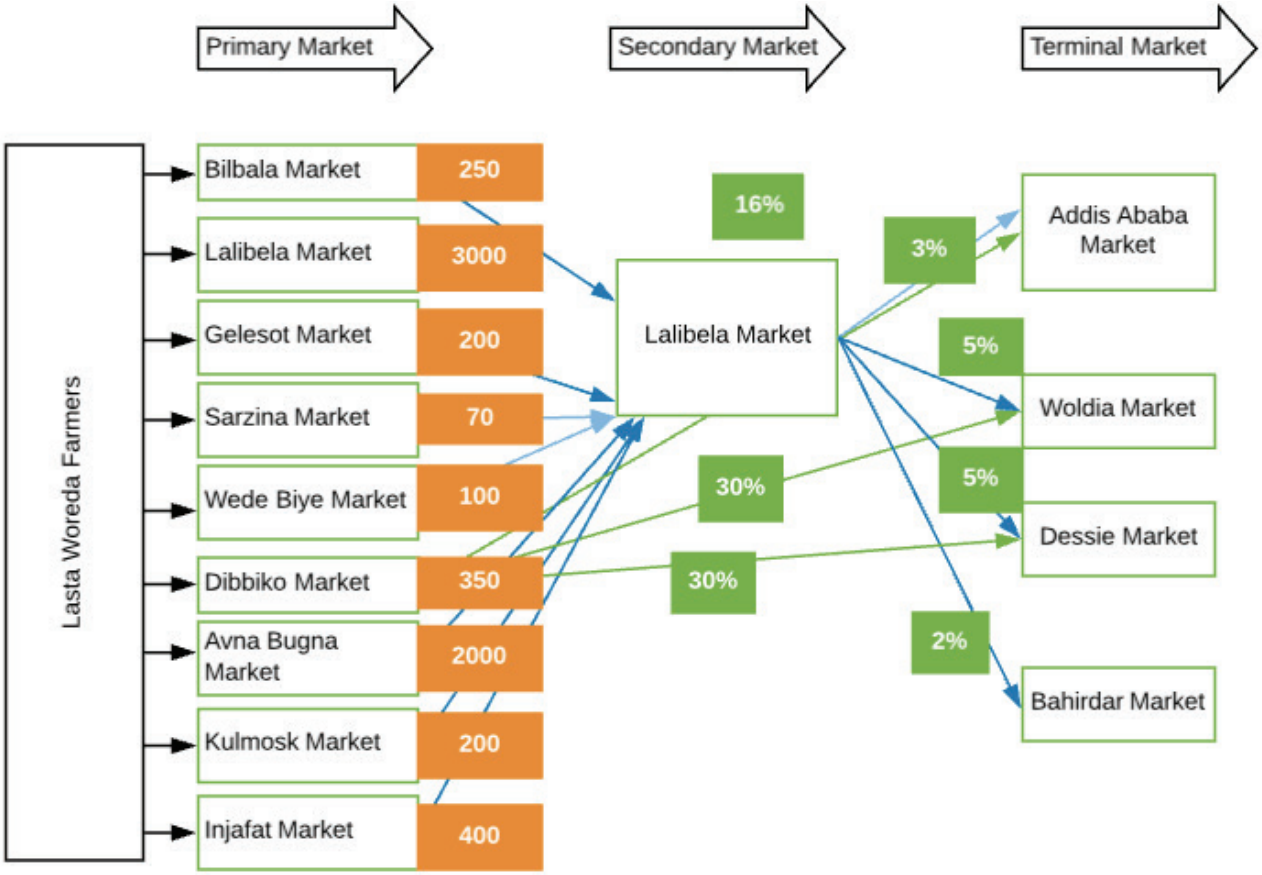
There are different market routes for marketing of chicken and eggs produced in Bugna woreda. Poultry produced in the woreda flow through different routes to reach to the market. Most of the farmers use spot market in and/or close to the woreda (Kob, Kidist Arbe, and Birko markets). However, there are farmers who take their chicken and eggs directly to Lalibela in search of better prices.

Volumes Moving Through Each Channel

Lasta Woreda

There are different market routes for the marketing of chicken and eggs produced in Lasta woreda. Chicken and eggs produced in the woreda flow through different routes to reach the terminal market. Most of the farmers use spot markets in and close to the woreda (Genet Mariam, Wede Biye, Injafat, Dibiko, Tilfatit, Sorba, Ayna Bugna, Shimshiha, Gelesot, Yimrha, Shalo, Bilbala, Lalkiew, Kulmask, and Sarzina) markets. Chicken and eggs produced in the woreda pass through different market routes: Lalibela-Waldia-Dessie-Addis Ababa or Lalibela-Waldia, or Lalibela-Bahirdar or Lalibela-Addis Ababa. However, 85 percent of eggs and chicken produced in the woreda are consumed within the woreda.

Volumes Moving Through Each Channel



C) Analysis of Opportunities, Constraints Market Based Solutions and Proposed SPIR Activities at Farmers Level

Opportunities

1. Focus from government and NGOs on the introduction and provision of improved breeds (especially Bovan brown).
2. Good adoption rate for exotic breeds by farmers.
3. Can be done by men, women, and youth because of small startup cost, small land requirement, and time.
4. Access to credit for the sector from ACSI.
5. Conducive agro-ecology for poultry production.
6. There are lots of holidays in which the price of egg and chicken increases.
7. Availability of crops produced in the area which the exotic breeds can easily adapt to feed chickens.
8. Availability of veterinary clinic in each of the kebeles or at least in neighboring kebele.
9. Women engage in all activities from production, marketing and decisions on income.
10. Reach nutritional content of eggs and chicken and good consumption behavior will have good impact on improving nutrition.

Constraints

1. The stock is not replacing itself, and there is no direct linkage between pullet suppliers and farmers. This is contributing to poor growth of the sector.
2. Skill gap of farmers in poultry production and management (local house construction, local level feed production, poultry health care, marketing etc.).
3. Chickens are susceptible to disease and predators.
4. Poor vet service provision due to low supply of drug, staff turnover, absence of staff from work, absence of equipment etc.).
5. Government is playing an intermediary role by buying and supplying chickens for the farmers. The farmers and private sector day old chick growers do not have direct commercial relationships.
6. Low access to inputs especially feed and pullets by farmers.
7. Power fluctuation for day old chicken growers contributing to high mortality.
8. Reduction in population of domestic breeds.
9. NGOs and Government do not provide transition feed with chicken. This is contributing for immediate resale of pullets provided.
10. High damage rate of exotic chicken egg during transportation.
11. Reduction in the price of eggs and chickens during fasting season.
12. Very poor access to market information.
13. There are no bulk buyers of egg and chicken in the area.
14. There are low levels of consuming egg and chicken.
15. Poor technical support and monitoring by chicken provided by government and NGO for farmers.
16. Lack of certification for vaccination by day old chick suppliers.

Possible Market Based Solution

1. Private sector market actors engaged in pullet supply, start direct selling to farmers.
2. Private mobile vet service providers in place to bridge gap of vet service provision.
3. Private sector market actors engage in supply of pullet feed and other related equipment.
4. Private sector market actors engaged in egg and chicken collection and trading increase their capacity of collection and utilization of safe technologies for transportation of egg and chicken.
5. Private businesses engage in hatchery and growing of day old chicks.

Prioritized List of Proposed Activities for the SPIR DFSA

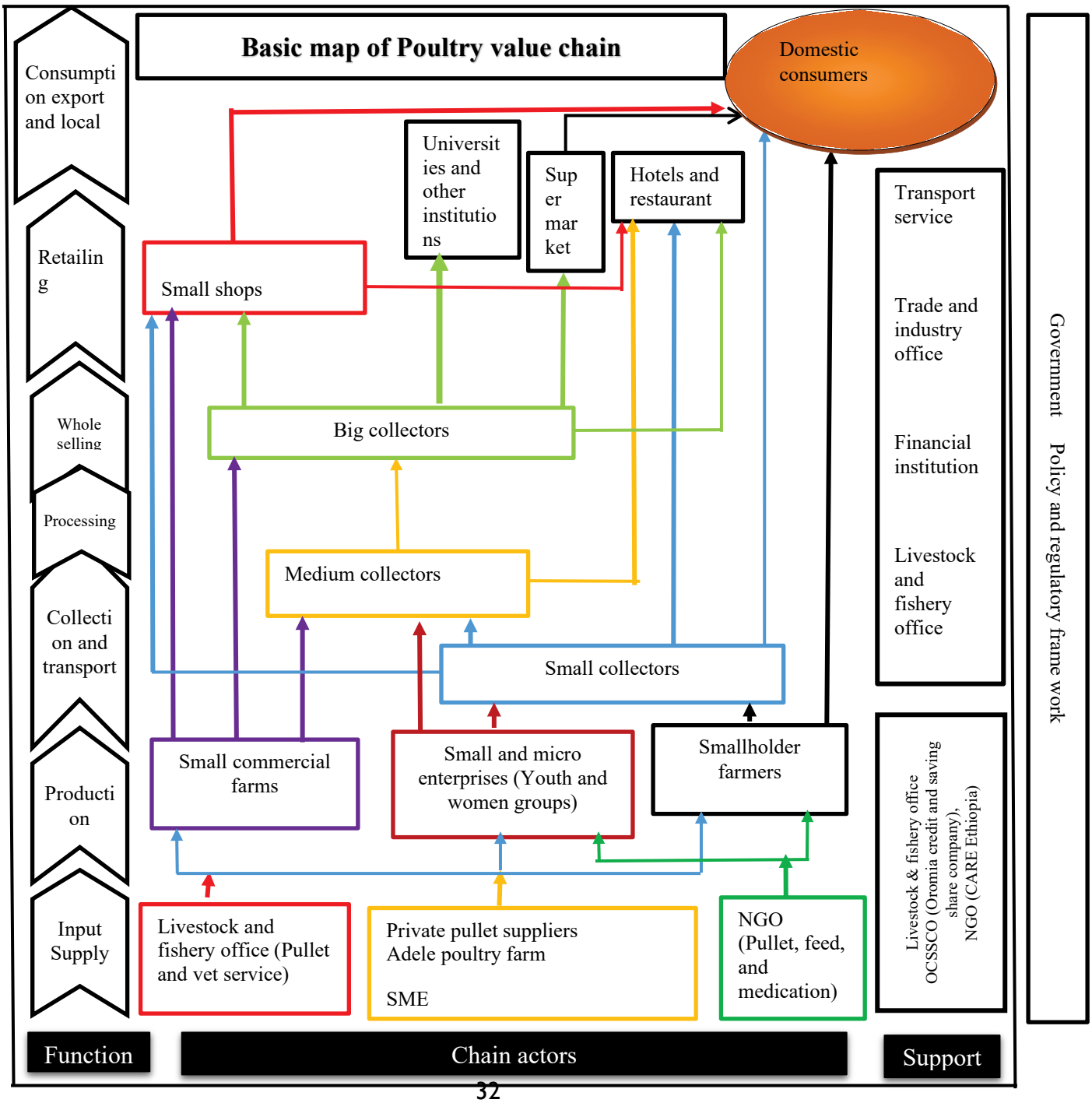
1. Provision of full-fledged training for farmers (poultry house construction, local feed production, heath, and marketing). SPIR will utilize its Poultry Training Manual, engage private sector buyers and suppliers to provide the training, and engage government extension experts to provide the training.
2. Facilitation of market linkages between farmers and pullet suppliers, day old chick growers, feed suppliers and vet service providers. Strengthen these market linkages by using tools such as worksheet six the "Producer to Market Actor Relationship Strengthening Facilitation Worksheet" in the "Integrating Extremely Poor Producers into Markets Field Guide."[4]
3. Supporting existing/ establishing new feed suppliers in the woreda though an innovation fund. This innovation fund would provide cost share for capital assets.
4. Awareness creation on nutritional value of egg and chicken to increase household level consumption during fasting season. This activity will be done in collaboration with the nutrition team and Health Development Army. Research has shown the positive benefits of feeding one egg a day to young children.
5. Collaboration with Ethio- chicken and other poultry producing and marketing companies to provide parent stock for farmers (hatching during fasting, replacing stock of their own etc.) This may include helping to identify individuals to provide marketing and training to farmers from the companies.
6. Creating MFI linkage for producers, collectors, and input suppliers to finance their business. VESAs provide a basis for financial management. VESAs or individuals can provide to MFIs the record of accomplishment for their enterprises and their business plans for future operations in their credit applications. SPIR staff need to monitor individuals and groups so they pay their loans back on time.
7. Strengthening existing vet clinics to improve their outreach and services.

[4] https://agrilinks.org/post/integrating-extremely-poor-producers-markets-field-guide-fourth-edition. Page 39.

2.3.4 Value Chain Map and Market Channels East and West Hararge Woredas

A) Value Chain Map of East and West Hararge Woredas

The poultry value chain map is drawn based on information collected from farmers and woreda level stakeholders. The map constitutes functions, value chain actors and support providing institutions in poultry value chain. The map illustrates the relationship that exists between each actor, their role and institutions providing support to the value chain. Value chain map and market channels of all the woredas of SPIR implementation in East and West Hararge is very similar, but the market routes are quite different.



Market Channels

Based on the market routes and value chain map, different market channels identified. The gross margin that the farmers get from chicken and egg value chain depends on the type of channels he/she uses and the number of intermediaries involved. If there are, many levels of intermediaries the farmers get a lower gross margin. If the number of levels of intermediaries involved is fewer or if the farmers get their chicken and eggs to a terminal market, they have a better gross margin.

Poultry Value Chain Market Channels in the Woreda

1. Producers – Consumers
2. Producers – Small Traders – Consumers
3. Producers – Small Traders– Small Shops/ Hotels and Restaurants – Consumer
4. Farmers– Small Traders – Medium and Big Traders – Hotels, Restaurants, and Institutions – Consumers

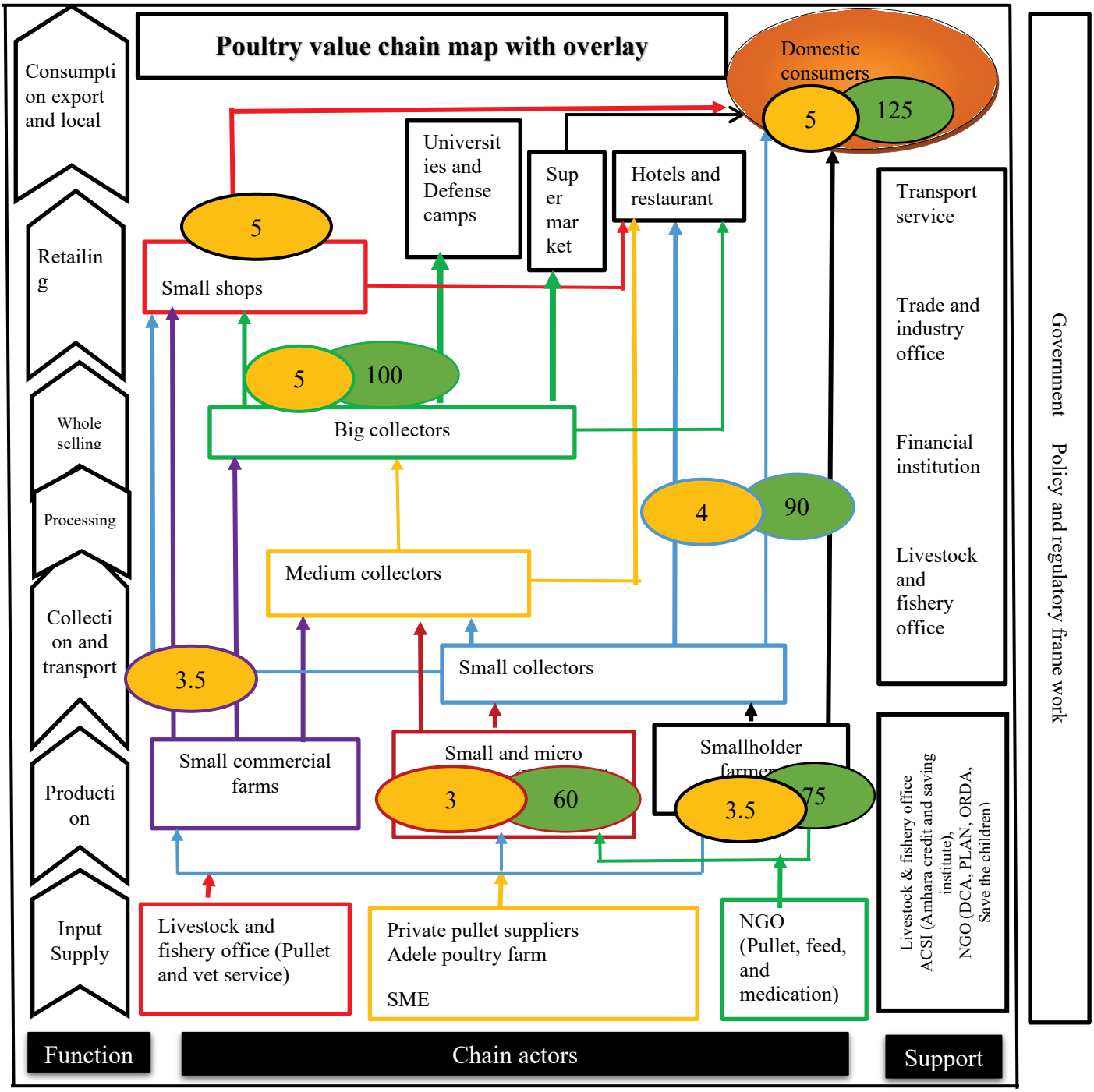
Key:

- ✓ Small traders are traders that collect 15 up to 20 chickens or less than 500 eggs at time (single market)
- ✓ Medium traders are traders that collect more than 20-600 chickens or 500-1000 eggs at a time (single market)
- ✓ Big traders are traders that collect more than 600 chickens or 1,000 eggs at a time (single market)

B) Overlays: Number of Actors, Volumes and Transaction Cost

The poultry value chain is a significant livelihood activity in all the woredas. There are many actors involved at each level of production and marketing of poultry. According to the data obtained from the Livestock and Fishery office of each woreda, on average farmers have four chickens. In the woredas, there are no private input suppliers. At each woreda market there are minimum of ten small collectors, five medium collectors, and four big collectors. In addition, there are more than three big buyers coming from Harar and Dire Dawa market.

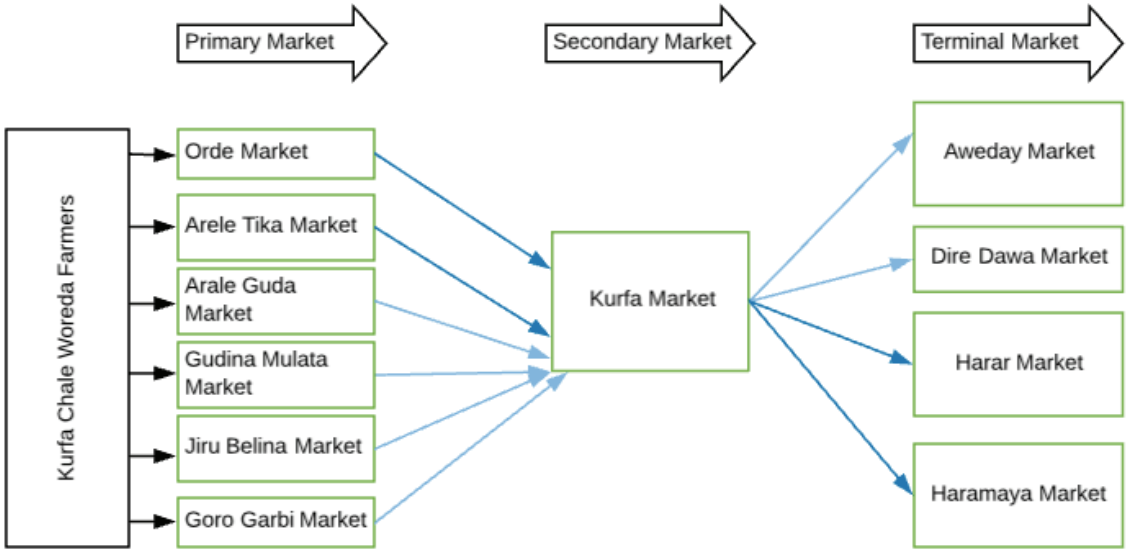
Transaction costs vary across the marketing hierarchy depending on the locations. These include transport, labor, tax, water, feed, and the collector's/trader's own expenses.



- ✓ All prices written in the boxes indicate average price of eggs and chickens sold towards the direction of the arrow
- ✓ Orange represents the price of egg and green represent price of chicken

Kurfachale Woreda

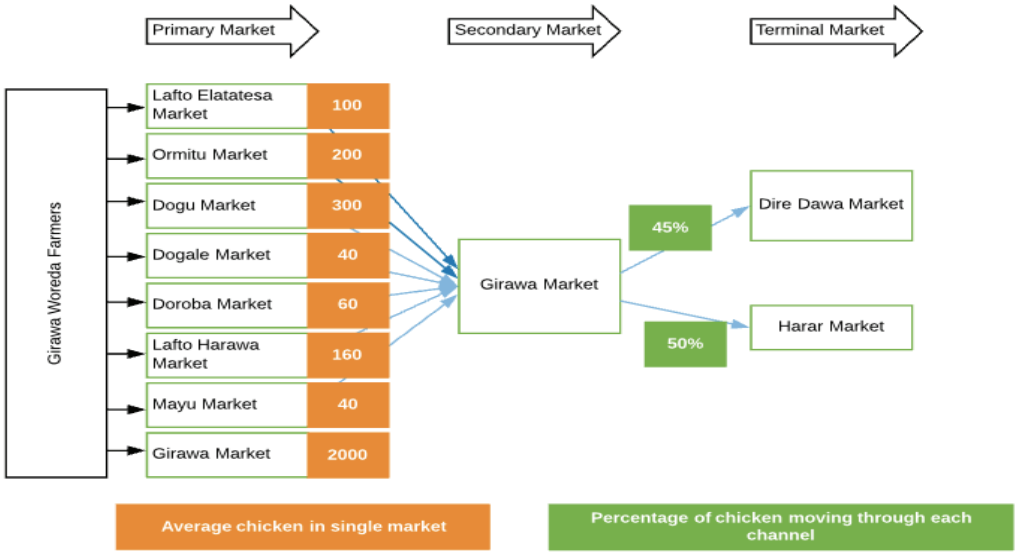
There are different market routes for marketing of chicken and egg produced in Kurfachale woreda. Egg and chicken produced in the woreda flow through different routes to reach to the terminal market. Most of the farmers use spot market in and close to the woreda markets.



Girawa Woreda

There are different market routes for marketing of chicken and egg produced in Girawa woreda. Chickens and eggs produced in the woreda flow through different routes to reach to the market. Most of the farmers use spot markets in and close to the woreda (Oromitu, Dogu, Dogale, Doroba, Lafto Harawa, Lato elatatesa, and Mayu) Markets.

Volumes moving through each channel



C) Opportunities, Constraints, Possible Solutions, and DFSA Proposed Intervention Activities for the Poultry Value Chain

Opportunities

1. Requires small capital, time, and land for production and marketing.
2. Relatively constant price throughout the year for eggs and chickens.
3. Increasing demand for eggs and chicken from time to time.
4. Huge demand in the community for exotic breed chickens.
5. Existence of day old chick growers (pullet suppliers) in some of the woredas.
6. Focus by government and NGO on the sector (especially in introduction of improved breeds).

Constraints

1.Absence of input supplier in the area especially for feed and pullets.
2. Vulnerability to disease.
3. Poor vet service to poultry due to different reasons.
4. Poor poultry production and management skill by the farmers (poultry house construction, feeding, feces management, and health).
5. Inappropriate packaging of vaccine by Ethiopian National Veterinary Institute (one bottle is packaged for 400 chickens, which makes it inconvenient to provide the service to smallholder farmers).

Proposed Market Based Solution

1. Private sector actors engage in pullet production and directly sell it to the farmers.
2. Private sector actors engage in preparation of feed from locally available materials and supply it to farmers.
3. Private sector actors engage in supply of concentrate feed and other inputs required for poultry production.
4. Private sector actors engage in tripartite input credit provision (pullet grower, MFI and farmers enter into agreement so that farmers access pullet as credit).

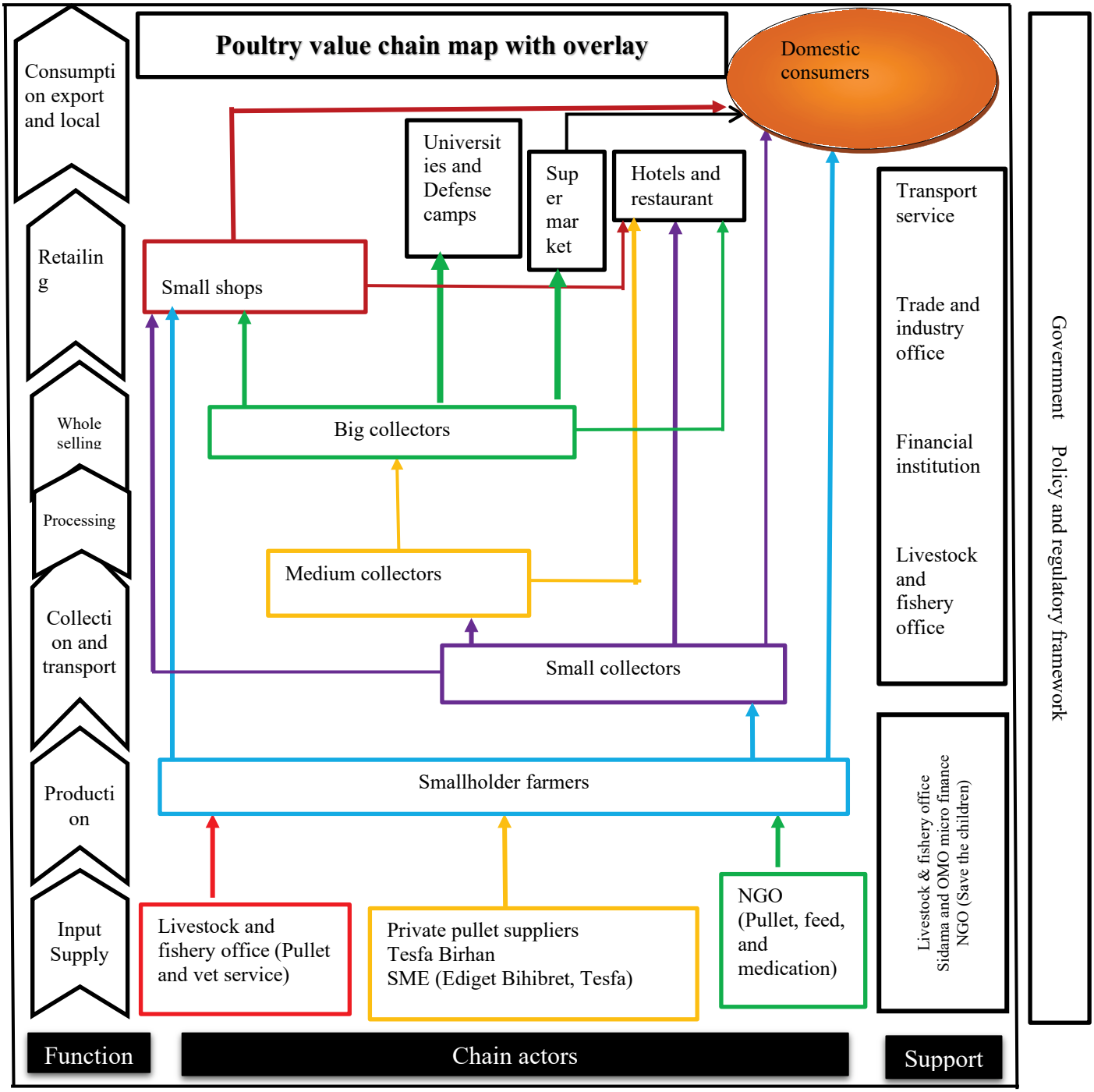
Proposed Activities for SPIR

1. Provision of full-fledged training to program participants on poultry production and management. SPIR staff can train utilizing the SPIR Poultry Training Manual. SPIR staff can also seek poultry companies, pullet suppliers and government extension staff to provide the on-going training and mentoring.
2. Supporting existing/establishing new pullet suppliers so that the farmers can easily access pullets. SPIR staff can utilize the innovation fund to provide funding for capital assets. SPIR staff can also work with poultry supply companies to train pullet suppliers in production practices.
3. Supporting existing/establish new input suppliers. This is done through financial support with an Innovation Fund and linkage to financial institutions.
4. Capacitating government vet service provider to reach the last mile with their service.
5. Supporting private sector actors who are willing to engage in local feed manufacturing and linking to program participants.

2.3.5 Value Chain Map and Market Channels SNNPR Pilot Woredas (Wondo-Genet and Malga)

A) Value Chain Map of SNNPR Pilot Woredas (Wondo-Genet and Malga)

The poultry value chain map is drawn based on information collected from farmers and woreda level stakeholders. The map constitutes functions, value chain actors and support providing institutions. The map illustrates the relationship that exists between each actor, their role and institutions providing support to the value chain. The value chain map and market channels of all the woredas of SPIR implementation in Wondo-Genet and Malga is very similar, but the market routes are different.



Market Channels

Based on the market routes and value chain map, different market channels are identified. The margin that the farmers get from the chicken and egg value chain depend on the type of channel he/she uses and the number of intermediaries involved. If there are many intermediaries, the farmers get lower gross margin. from poultry value chain. If the number of intermediaries involved is small or if the farmers get their chicken and egg to terminal market, they fetch better profit margin for their produce.

Poultry Value Chain Market Channels in the Woreda

1. Producers – Consumers
2. Producers – Small Traders – Consumers
3. Producers – Small Traders– Small Shops/ Hotels and Restaurants – Consumer
4. Farmers– Small Traders – Medium and Big Traders – Hotels, Restaurants and Institutions – Consumers

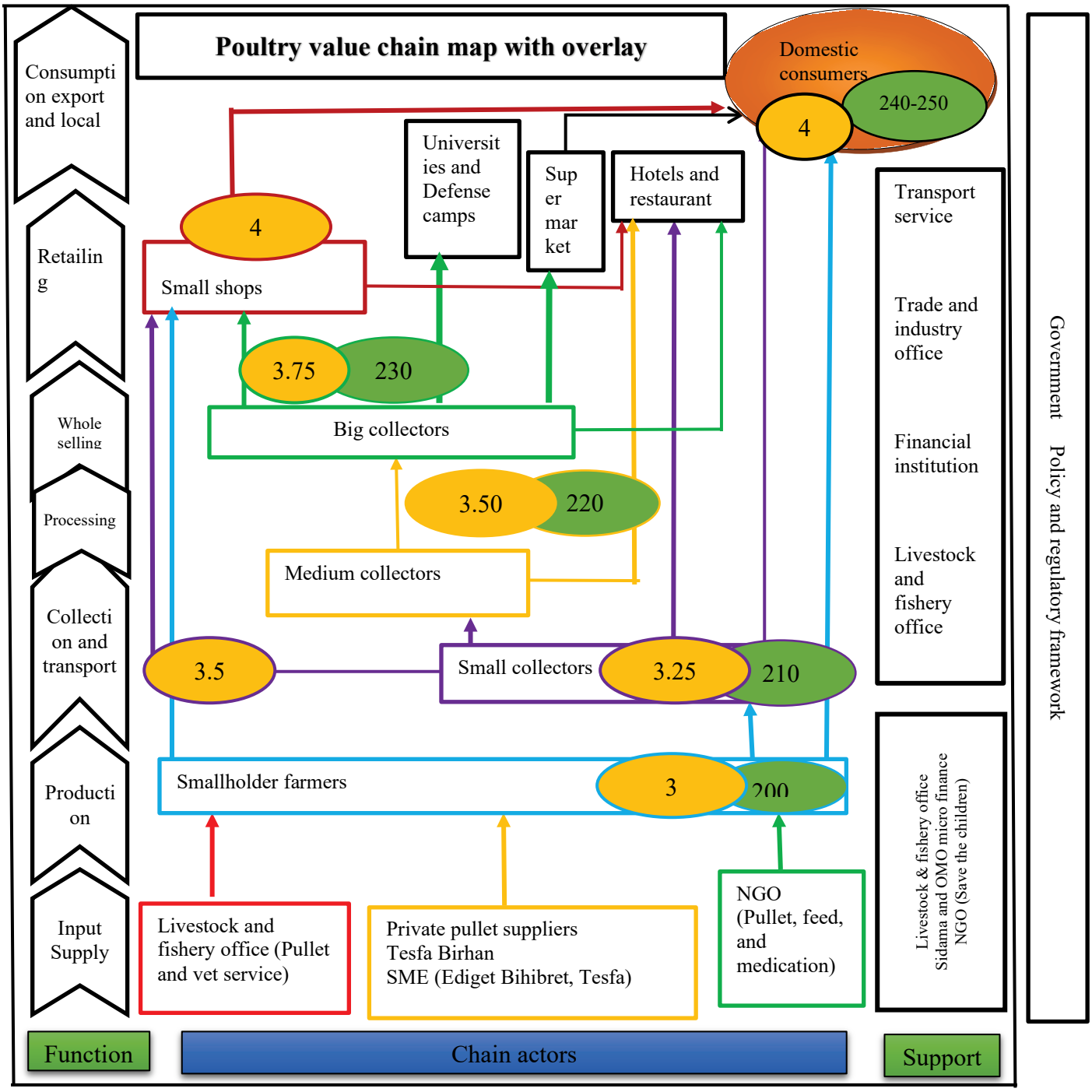
Key:

- ✓ Small traders are traders that collect 15 up to 20 chickens or less than 500 eggs at time (single market).
- ✓ Medium traders are traders that collect more than 20-600 chickens or 500-1,000 eggs at a time (single market).
- ✓ Big traders are traders that collect more than 600 chickens or 1,000 eggs at a time (single market).

B) Overlays: Number of Actors, Volumes and Transaction Cost

The poultry value chain is a significant livelihood activity in all the woredas. There are many actors involved at each level of production and marketing of poultry. According to the data obtained from Livestock and Fishery office of each woreda, on average farmers have two chickens. In all the woredas, there are no private input suppliers. At each woreda market there are a minimum of eight small collectors, four medium collectors, and three big collectors. In addition, there are more than two big buyers coming from Hawassa and Shashamane market.

Transaction costs vary across the marketing hierarchy depending on the locations. These include transport, labor, tax, water, feed, and the collector's/trader's own expenses.



- ✓ All prices written in the boxes indicate average price of eggs and chicken sold towards the direction of the arrow
- ✓ Orange represents the price of the eggs and green represents the price of the chickens

C) *Analysis of Opportunities, Constraints Market Based Solutions and Proposed SPIR Activities Poultry Value Chain*

Opportunities

1. Focus from government and NGOs on the introduction and provision of improved breeds (especially Bovan Brown).
2. Can be performed by men, women, and youth because of small startup cost, small land requirement, time etc.
3. Conducive agro ecology for poultry production.
4. There are lots of holidays in which the price of egg and chicken increases.
5. Rich nutritional content of eggs and chicken and increased consumption of eggs can improve the nutrition of children and pregnant and lactating women.

Constraints

1. NGOs are providing pullet layers and three months of concentrate feed to beneficiaries creating an expectation from farmers that they should receive pullets and feed free. This makes it harder for SPIR to work with market-based approaches especially for feed supply.
2. Skill gap of farmers in poultry production and management (local house construction, local level feed production, poultry health care, marketing etc.)
3. Chickens are susceptible to disease and predator.
4. Poor vet service provision due to low supply of drugs, staff turnover, absence of staff from work, absence of equipment etc.
5. Government is playing an intermediary role by buying and supplying chickens for the farmers. The farmers and private sector day old chick growers do not have direct commercial relationships.
6. Low access to inputs especially feed and pullets by farmers.
7. Power fluctuation for day old chicken growers contributing to high mortality
8. Reduction in population of domestic breeds.

Possible Market Based Solution

1. Private sector market actors engaged in pullet supply, start direct selling to farmers.
2. Private sector market actors engage in supply of pullet feed and other related equipment
3. Private mobile vet service providers in place to bridge gap of vet service provision

Prioritized List of Proposed Activities for the SPIR DFSA

1. Support pullet suppliers to improve quantity and quality. There are three pullet suppliers in Malga woreda and two in Wondo. Their management is poor. They currently have a high mortality of day old chicks. SPIR can train these pullet suppliers and link them to input supply companies.
2. Facilitate linkages of SPIR farmers to the pullet producers. The pullet producers sell their pullets for only 50 ETB for a 47-day old chick compared to the 105-birr price in the larger poultry farms. VESA members could buy pullets from these pullet growers at

50 birr and sell for 100 birr later. In addition, agro dealers (farm shops) could buy the pullets and sell them locally.

3. Train farmers to prepare feed from local ingredients such as maize and sorghum. For sustainability, lead farmers could continue to provide training and mentoring on how to prepare feed from local ingredients. In some locations, entrepreneurial individuals could prepare and sell the feed to other farmers.
4. Train farmers on construction of poultry houses. SPIR could provide nails and mesh wire and the more vulnerable participants could provide the rest of the materials and construct the poultry houses.
5. Promote the new indigenous poultry breed that government research centers will be releasing. Work with breeders who could multiply the chickens in the woredas. Link the breeders to buyers who could sell to the woreda farmers.
6. Coordinate with SPIR WASH and nutrition specialists to address issues of environmental enteropathy if families begin to have more poultry and shoats in their homesteads. Poultry and shoat shades should be separate from the family houses.

2.4 **Business Development Environments and Support Service**

Considering the livestock population and potential of the sector in contributing to poverty reduction and country economy, less emphasis given to the sector in the past. But, recently more focus is coming to the livestock sector; Indication of recent attentions are; development of Ethiopian livestock master plan, Focus given for development of livestock sector in GTPII, Big donor projects focusing on livestock development (AGLP-LMD, FEED I and II, LIVES, etc.), and the establishment of Livestock and Fishery as ministry office from Ministry of Agriculture. This all give big push to development of livestock sector and increase farmers and country economic gain from the sector.

Structure of Ministry of Livestock and Fishery has given more attention in improving production and productivity of livestock sector. The office is working on improving breeds, animal health service, feed and forage development and marketing of livestock. However, there are still gaps in delivering all this service especially concerning breed improvement and animal health service. Veterinary clinics located at woreda and kebele level are not well equipped, there is high turnover of animal health professionals and there is very little work regarding breed improvement.

Engagement of private sector actors in the livestock sector is also improving over time. In the SPIR area of implementation, there are four feed processing companies (Abay feed, and Sidama Elto in Hawassa, Hamaresa in Harar, Wag development association in Sekota). There are also veterinary pharmacies in the city of Dire Dawa, Chiro, Harar, and Hawassa. Moreover, there are a number of SME engaged in pullet production and supply in each woreda. This pullet suppliers source day old chicks from big companies like Ethio- chicken, Alema farms, Genesis and others engaged in production of day old chicks. However, these service providers and feed processing companies are restricted to main towns and selling to government, NGO and big traders. The relationship between farmers and these private sector actors is very limited due to different reasons.

There are four microfinance institutions providing financial services to the farmers of SPIR implementation woreda. These microfinance institutions are OMO, Sidama, OCSSCO, and ACSI. The first two are operating in Sidama woredas of Wondo and Malga, the third is operating in East and West Hararge, and the fourth is operating in North Wollo and Waghimra zone of SPIR implementation area. The MFIs are providing agricultural loans to the farmers based on group collateral. However, the FGD and KII respondents mentioned that it is not common for MFI institutions to provide loans for poultry production.

To increase the outreach of these microfinance institutions to farmers and to remove some of the barriers, government and non-governmental organizations are collaborating with microfinance institutions operating in Ethiopia. Examples include the recently released youth revolving fund by the Ethiopian government. Youth Revolving Fund is offering loans at 8 percent interest rate with a reduction of interest rate for PSNP beneficiaries by ACSI from 18 percent to 15 percent. Different NGOs are providing a loan guarantee fund and assisting microfinance institutions in developing appropriate loan product for different agricultural businesses. This support creates better opportunities for women and youth to access credit than other farmers.

To improve production and productivity of the sector and ensure the gain of farmers and country from livestock sector there is also number of undergoing research efforts by government, international research institutes and non-governmental organizations engaged in the sector.

2.5. Critical Success Factors

Critical success factor for the poultry value chain lies in a few core pillar issues; increasing accessibility and affordability of inputs (feed, animal health service, and chicken breeds), improving the functioning of markets (access to market information, facilitation of market linkages, and infrastructure improvement), and improved knowledge of farmers in poultry production and marketing.

In SPIR implementation area, the farmers have poor access to inputs required to engage in poultry production and marketing. There are not any suppliers of concentrate feed used in poultry production in any of the woreda. However, there are pullet suppliers in some of the woredas even though there are no direct commercial relationships between farmers and these suppliers. In addition, there is poor animal health service provision and less attention given to breed improvement and its extension. Improving accessibility and affordability of inputs required for production of poultry will highly improve the gain of farmers from the sector. Moreover, private sector role in improving input supply system is very crucial.

In the implementation area there are no formal contracts between producers and input or output market actors, there is no information sharing, or any form of embedded services provided to producers. The transaction bases on spot and farmers are price takers, because they take their chicken and egg to the market in time of need and they do have little influence in the value chain governance system. Improving the relationship that is currently existing between producers and input and output market actors though organizing business to business

(B2B) contacts and a MSP, Establishing and supporting SME that will supply pullets and feed will play vital role in increasing financial gain for farmers in the implementation area.

Farmers in the implementation woreda have low awareness of improved production and marketing of poultry some areas for SPIR to work with farmers on is farmers utilizing improved breeds, provision of Concentrate feed; poultry house construction, health service, and access and utilization of market information. Improving extension service in this regard will enhance the capacity of farmers to produced and market poultry.

3. Analysis of Value Chain Commodities Selected

3.1. Overview of Sheep and Goat Production

3.1.1 Importance of Livestock Production, Dynamics & Trends

Livestock is an integral part of the agriculture and the contribution of live animals and their products to the agricultural economy accounts for 40%, excluding the values of draught power, manure and transport of people and products (Winrock International, 1992, cited on Aleme Asresie et al). Livestock serve the Ethiopian economy as sources of food, traction, manure, raw materials, investment, cash income, security, foreign exchange earnings and social and cultural identity[5]

So far, some seven sheep and about twelve goat breeds have been identified in Ethiopia. However, only a few of these have been studied and characterized to some extent. These include the sheep breeds of Horro, Menz, Afar, Arsi and Black-Head Ogaden, and the Afar, Long and Short eared Somali and the Hararghe Highland goats (Azage et al., 2006).

Ethiopia has a significant sheep and goat population accounting 58.44 million in total: 29.33 million sheep and 29.11 million goats. Out of this, 72.77 and 71.08% of sheep and goat are female respectively. With respect to breeds, almost all the sheep and the goats are indigenous (99.78 percent and 99.96 percent, respectively). Sheep and goats are kept for different purposes in the country. The percentages of both sheep and goats kept for mutton and meat are significantly higher for males while female sheep and goats are primarily kept for breeding purposes. Among the sheep flock two years and older (51.99 percent of the total sheep), 48.6 percent are kept for breeding; about 2.55 percent for mutton and less than one percent of them were kept for wool production. Likewise, among the goat population aged two years and older (50.08 percent of the total), goats kept for breeding accounted for about 44.12 percent while goats kept for meat accounted for 2.56 percent. The number of female goats kept for milk at the country level is estimated to be about 845,000 which is 2.9 percent of the total goats.[6]

Concerning possession of sheep and goat 21.19 percent have 1 to 4 sheep while 15.71 percent have 1 to 4 goats. Most of the farming households, about 65.54 percent and about 72.66 percent have no sheep and no goats, respectively; while 9.28% and 7.16% have 5-9 sheep and goats respectively ((Central Statistics Agency (CSA), Livestock statistics 2014/2015)) See table below.

[5] Aleme Asresie et. al.
[6] Agricultural sample survey volume II

Summary Table: Number of Holdings of Sheep and Goats by Size

Ethiopia – 2014/15

Size	Sheep		Goats	
	Number of Holdings	Percent	Number of Holdings	Percent
All Holdings	16,529,949	100	16,529,949	100
Holdings with no Sheep/Goats	10,833,489	65.54	12,011,096	72.66
1-4 Head	3,503,252	21.19	2,597,587	15.71
5-9 Head	1,534,364	9.28	1,183,988	7.16
10-49 Head	643,936	3.9	698,710	4.23
50-99 Head	14,122	0.09	29,160	0.18
100-199 Head	454	*	8,518	0.05
200-499 Head	332	*	890	0.01
>=500 Head	-	-	-	-

Red meat production is projected to grow from 1.275 to 1.933 million tons between 2015 and 2020. The contribution of sheep to overall red meat production grew from 114,776 (in 2015) to 196,430 tons by 2020 (42% increase). The potential contribution of goats grew from 97,331 (in 2015) to 171,400 tons by 2020 (43% increase).

However, this projected increase would not still meet the expected consumption growth of 58% by 2020 (to 2.008 million tons), leaving a 7% deficit (187,000 tons) in the 2015–2020 red meat production and consumption balance.

Given the rapidly growing population and increasing incomes in Ethiopia, such projected deficits would put upward pressure on red meat prices and make it very difficult to meet the growth and transformation plan (GTP II) red meat export goals.

If no investment is made in raising livestock productivity, the LSA projections for the year 2028 show a deficit of 53% for all meat (1.332 million tons) due to exploding demand.

3.1.2 Importance of Livestock Rearing & Fattening in SPIR Woredas

In all SPIR implementation areas, farmers practice mixed farming. Sheep and goat rearing and fattening constitute the bulk of their agricultural activity. Accordingly, in 10 woredas of SPIR implementation, sheep and goat value chains are selected in different order of priority. Most of farmers rear and fatten males born in the herd; however, there are very few farmers engaged in fattening only. The farmers use free grazing for shoat production and market them during a time of household financial need (mostly from July – September). However, currently there is a growing trend of providing industrial byproducts (wheat bran) as supplementary feeding in all the woredas. Similarly, in East and West Hararge woredas they provide shoats, chat residue for supplementation. Shoats are considered as savings for a time of need and for their social status. They also use as recovery mechanism for time of emergency and shock. Most of the farmers keep sheep and goats for economic purposes; and almost all the fattened shoats are for sale.

Woredas of implementation of SPIR have good potential for production and marketing of goats mostly, but there are woredas like Bugna, Malga, and Wondo-Genet who produce sheep. The community has low awareness in improving its breed by selecting from the existing breeds or adopting other breeds promoted by the government or other NGOs. However, implementation woredas have good goat breeds like Abargale, Central Highland, Hararge Highland), and sheep breeds like Abara.

3.2. Shoat Value Chain in North Wollo and Waghimra Woredas of Amhara

3.2.1 Functions and Actors

Shoat value chains involve different functions and actors. In all the SPIR implementation woredas where shoat value chains are selected, five different functions have been identified(input supply, production ,collecting and trading,processing, and consumption)Along the functions there are several actors playing different functions.

Input Supply

Major inputs required for shoat value chains are breeding stocks, animals used for fattening, , health service, feeds, credit, and management skills. The farmers obtain breeding stocks and animals for fattening from their own herd or from other producer farmers in spot markets. There are at least three local markets surrounding all the main woreda market Bugna Dehana, Gazigala , Lasta andSekota , , . The small markets that serve farmers as the main source of breeding stock and source of animals used for fattening is shown in the market channel of each woreda.

In all the woredas there are government veterinary clinics which provide animal health services. However, the clinics are not equipped with necessary kits, medicine and professionals. Besides the animal health, professional service turnover is high. Moreover, the farmers have poor awareness on vaccination and different preventative approaches. They only take their livestock to clinics when the livestock are sick.

The farmers in the woreda base their production on free grazing. There is poor trend of using concentrate feed, industrial by-product or crop residue for supplementing shoat fattening or rearing. According to the FGD and KII respondents, there is poor extension service on backyard forage development, improving crop residue nutritional value and palatability or feeding their shoats with concentrated feed and/or industrial by product for supplementation.

The two zones have breeds that have good potential for meat production, Central High Land and Abargale breeds. The two breeds have different characteristics; Abargale breed is suited for lowland areas and Centeral highland is suited for highland and midland areas. However, farmers are using traditional methods of rearing shoats. Farmers' awareness in selecting better breeds in productivity from their herd is very low, and because of this there is a high rate of inbreeding. Besides there are poor extension services on selecting productive breed and breed improvement of shoats by government and other actors in the sector.

However, the Sekota Dryland Research Center (SDRC) is engaged in selecting and introducing the improved breed of Abargale goats in the area. The research center mainly focuses on improving themeatand milk yield of this breed. There is also side work on sheep and central highland goat breeds meat yield improvement. The institute also works in improving marketing, animal health, feed and forage improvement. The existence of the institute is keen advantage for the farmers in the two zones. However, the linkage between the center and farmers is weak. It needs improvement and involvement of other stakeholders for disseminating finding of the research institute and benefit farmers.

There is only Amhara Credit and Saving Institution (ACSI) operating in the region for provision of financial services. However, the MFI is committed to provide credit for PSNP beneficiaries with a 15% interest rate. The institute is willing to provide credit for farmers who have no outstanding loans and are able to group themselves and fulfill the MFI requirements. However, high interest rates, outstanding loans, and absence of micro-insurance are major obstacles for farmers for not taking advantage of the credit provided by the institution.

Production

Production of shoats is limited to smallholder farmers in Dehana, Sekota , Gazigbla, Bugna and Lasta woreda; production basis on free grazing is mostly done as money saving for a time of emergency or special needs. Production of shoat is based on traditional knowledge, which leads to poor breed selection, poor management, and poor feeding practices. These farmers mostly sell male shoats born of the herd or sell old stock for culling purposes. Production is not business oriented and animals coming to the market by smallholder farmers are in poor condition. This limits the benefits of producer farmers. Most of the farmers' production cycle is on a yearly basis, but farmers engaged in fattening have two cycles of production.

All members of the family are involved in the production of sheep and goats. Children and adult female members of the household play a major role in sheep and goat production, while males (commonly household heads) are mainly involved in marketing activity and control most of the income earned from shoat production. In the woredas, women are not allowed to sell shoats, because it is considered high value commodity, and the market for fattened shoat is distant from the households. In addition, it is not culturally allowed to travel long distance with shoats for females. Even if she passes these two barriers and gets to the market, she must prove that the property belongs to her to sell it in the market, which is not required for a male.

Collection and Trading

Farmers in the Amhara implementation area of SPIR take their finished shoat for marketing to the central market located in the woreda town (Ayana Bugna, Sekota , Ass Ketama, Amdework, and Lalibela) and get their stock from smaller markets in the woreda like Kuaro, Kob, Birko and Gulha for Bugna and Zarota, Lalkiew, Bilbala, Azila for Dehana. Similarly, all the five woredas have such markets within the woreda. However, farmers of the woredas also take their shoats to Sekota and Lalibela markets in search of better prices. Sekota serves as a center for collecting and transporting of shoats towards the main channel of shoat flow (Mekele, Almata, Korem and Woldia). There are more than five big traders engaged in collecting and trading of shoats in Sekota . These big traders have small collectors who are supplying them from all five woredas of implementation. These big traders have collection centers in Sekota woreda and they keep shoats from one week up to three weeks in their collection center. All the big traders supply to Mekele Market. However, there are traders directly coming from the terminal markets, which collect shoat at each woreda market, and transport to terminal market directly. Lalibela market is also the closest terminal market for three of the implementation woreda Gazigbla, Bugna, and Lasta. The majority of shoat produced around Lasta woreda is consumed in Lalibela.

The price of shoats fluctuates depending on the season. Peak season for shoat is during the major Ethiopian Public holidays (New Year, Christmas, and Easter). The price of shoat will hit the bottom during start of rainy season (June - August). Most of the farmers' sell their shoats now for purchase of agricultural inputs and surviving the lean season (purchase of basket for household consumption).

There is also the Wag Development Association engaged in production of dried meat from shoat, cattle, and fish. However, the company's intake capacity of shoats is very small due to limited output market outlet. In addition, the company only takes lowland breeds (Abargale), because they do not accumulate fat and they are suitable for making dried meat.

Apart from other areas of implementation, there is no involvement of brokers in the market. Which is good for farmers because they directly sell to small, medium or big collectors. This reduces at least one layer of intermediaries in the sector and increases the farmers' gross margin.

Processing

There is not any type of value addition at the farmer's level in this value chain. The value addition starts at hotels, restaurants and abattoir houses. Shoats produced in these woredas are supplied to hotels and restaurants at Amdework, Ass Ketema, Ayna Bugna, Woldia, Alamata, Lalibela, Korem, Sekota , and along the value chain to Mekele market. The second level of value addition is done at meat processing company of Wag Development Association and export abattoir located at Mekele. Wag Development Association meat processing company produce dried meat for human consumption and use the bone for preparation of animal feed.

Consumption- Domestic and Export

There are domestic and export level consumers for shoats. The requirement of these consumers varies accordingly. The domestic consumers are classified into three categories, depending on their requirement of shoat type (criteria for buying shoats). The first category of consumers is those requiring shoats that are removed from the herd due to culling to maximize their profit and serve their class of customers; these are (low – medium level hotels and restaurants). Second category choose shoats that are not castrated, in good condition, and has high content of red meat. The third category of consumers look for castrated, good condition and has high content of fat in their meat. While abattoir houses (export market) look for 2-3 years old and 25-28 kg weight shoats. All these class of consumers are different market opportunities for the farmers. However, the production calendar of smallholder farmers is rarely considering season of good price nor criteria of different category of consumers.

3.2.2 **Relationships Between Actors**

The relationship between value chain actors is informal and mainly characterized by spot transactions. However, there are informal relationships between small, medium, big collectors and abattoir houses. The information flow that exists in the channel is very disconnected, the collectors are aware of the criteria of their buyers but the farmers are not. All the respondents reported that they have never received any kind of information from their buyer or suppliers about quality requirements of buyer or input utilization procedures.

However, the farmers have traditional ways of collecting market information. The participants in the FGD reported that they go to at least to one of woreda markets before they set price for their produce and take it to market, farmers also check for the day price before they sell just as they arrive in the market.

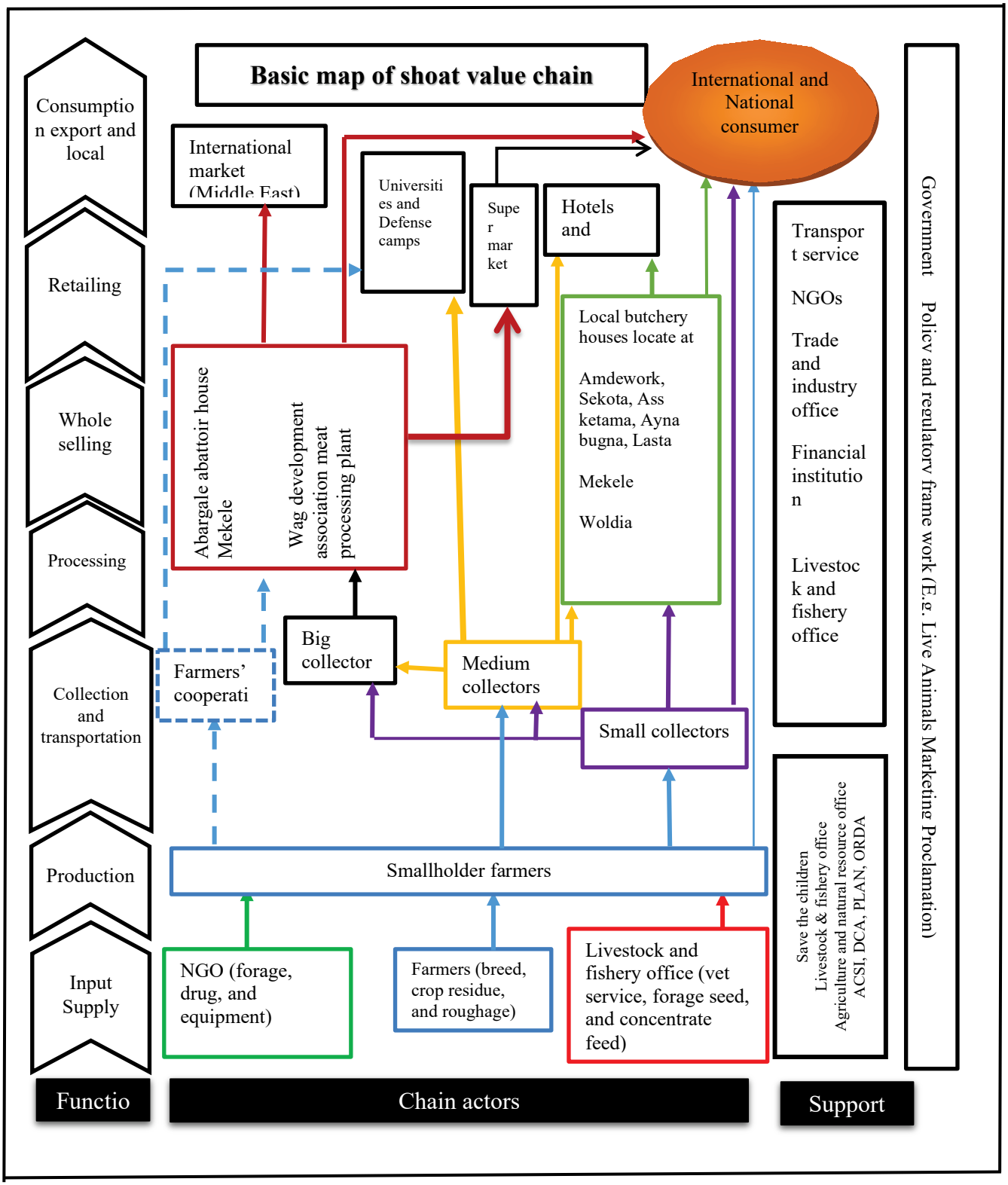
The market price of black shoats is less than other shoats. The local consumers have high preference on the color of shoats. This contributed in reduction of at least 500ETB for black shoat price compared to the same size but different color shoat.

3.2.3 Market channels and value chain map

Value Chain Map of North Wollo and Waghemra Zone Woredas

Value chain map of shoat is drawn based on information collected from farmers and woreda level stakeholders. The map constitutes; functions, value chain actors, and support providing institutions within the shoat value chain. The map illustrates the relationship that exists

between each actor, their role and institutions providing support to the value chain. Value chain map of all the woredas of SPIR implementation in Amhara are similar.



Market channels

Based on the market routes and value chain map, different market channels are identified. The margin that the farmers get from shoat value chain depends on the type of channels he/she uses and the number of intermediaries involved. If the channels are too long, the farmers get lower margins from shoat value chain. If the levels of intermediaries involved is fewer or if the farmers get their shoats to terminal market, they get better profit margins for their shoats.

Shoat value chain market channels in the woreda

1. Farmers → Consumers
2. Farmers → Small Traders → Consumers
3. Farmers → Small Traders → Butchers, Big/Small Hotels → Consumers.
4. Farmers → Small Traders → Medium and Big Traders →Butchers, Big/Small Hotels, Other Institutions → Consumers
5. Farmers → Small Traders → Medium and Big Traders → Export Abattoirs → Consumers
6. Farmers → Farmers' Cooperative → Medium and Big Traders → Export Abattoirs → Consumers

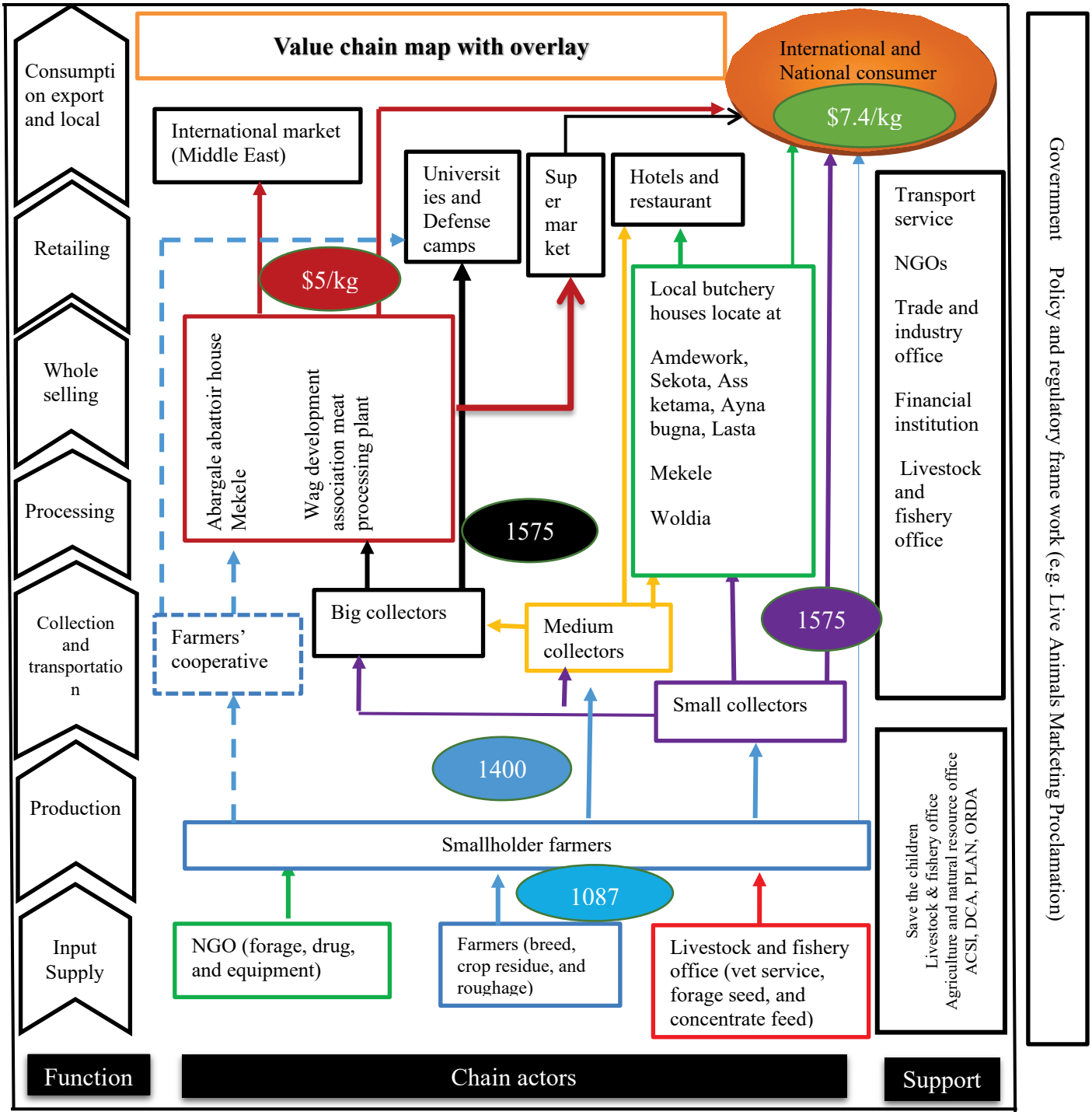
Key:

- ✓ Small traders are traders that are buying five to 20 shoats at time (single market)
- ✓ Medium traders are traders that collect 21-80 shoats at a time (single market)
- ✓ Big traders are traders that collect more than 80 shoats at a time (single market)

3.2.4 **Overlays: Number of Actors, Volumes and Transaction Cost**

The shoat value chain is a significant livelihood activity in all the woredas. There are many actors involved at each level of production and marketing of shoats. According to the data obtained from the Livestock and Fishery Office of each woreda, on average farmers have a holding of five shoats. In all the woredas, there are no private input suppliers. However, there are wheat bran suppliers in Sekota and Lalibela woreda. At each woreda market there are minimum of 10 small collectors, 7 medium collectors, and 3 big collectors. In addition, there are more than two big buyers coming from Mekele market who supply to export abattoir houses, military camps, universities and retailers located at Mekelle.

Transaction costs vary across the marketing hierarchy depending on the locations. These include transport, labor, broker, tax, herders/shepherds, water, feed, and the collector's/trader's own expenses.



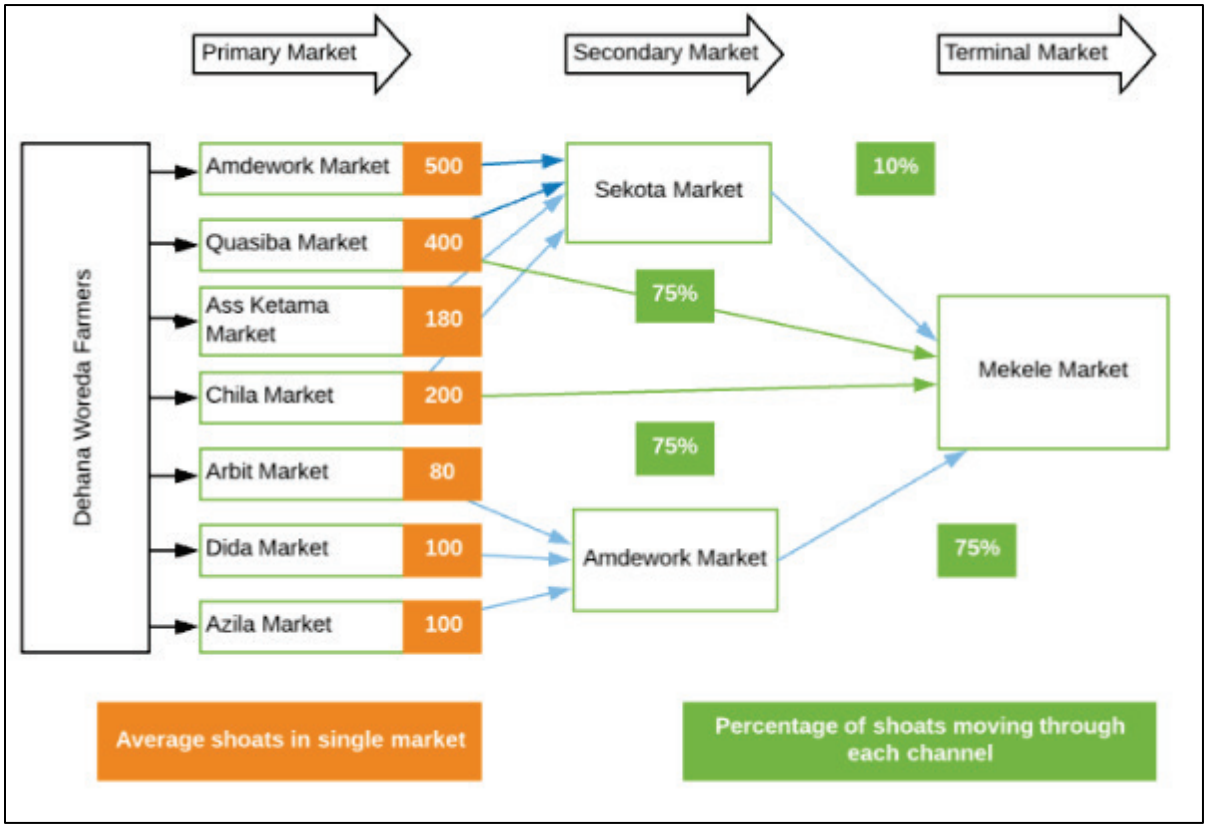
- ✓ $5 per kg for goat meat was set as floor price in 2015, by Ethiopian Meat Producers & Exporters Association (EMPEA) [7]
- ✓ All price written in the oval indicate average price of sheep and goat sold towards the direction of the arrow in ethiopian birr

[7] allafrica.com/stories/201512091539.html

Dehana Woreda

There are different market routes for marketing of shoats produced in Dehana woreda. Shoats produced in the woreda flow through different routes to reach to the market. Most of the farmers use spot market in and close to the woreda (Arbit, Dida, Kuasiba, Chila, and Azila) Markets, but there are farmers who take their shoat to Sekota in search of better price. Sheep and goats marketed from Dehana passes through different market routes: Amde work-Sekota - Mekele or Amdework- Sekota -Woldia.

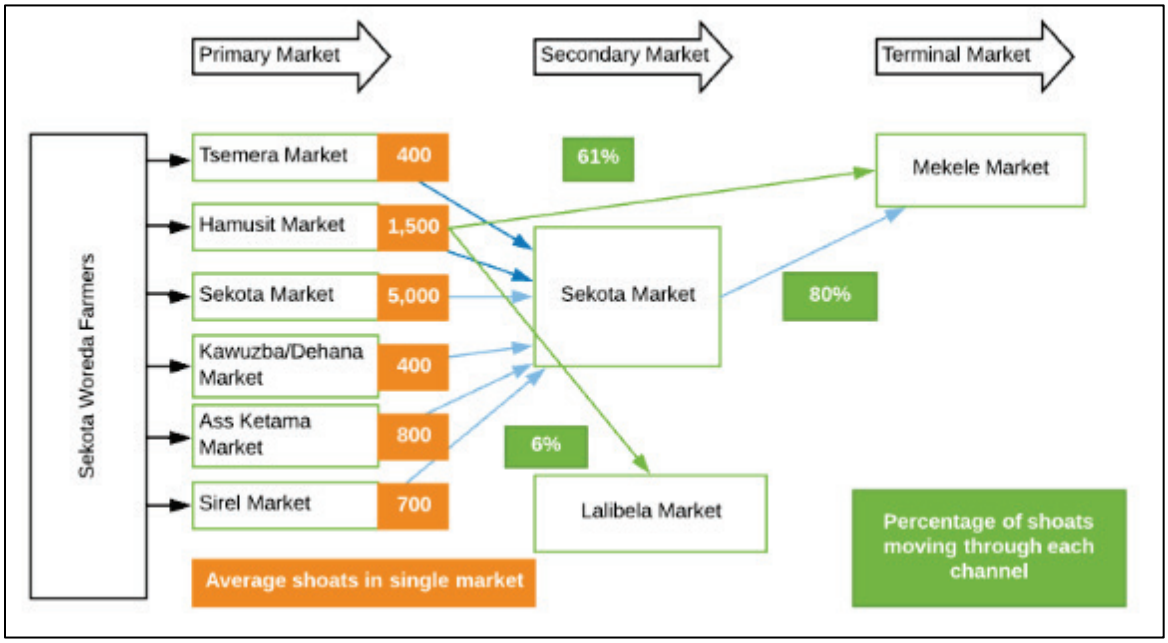
Volumes Moving Through Each Channel



Sekota Woreda

There are different market routes for shoats produced in Sekota woreda. Shoats produced in the woreda flow through different routes to reach to the market. Most of the farmers use spot market in and close to the woreda (Hamusit, Sirel, Tsemera, Tseta, Kewuzba, and Ass Ketema) markets. Sheep and goat marketed at Sekota woreda pass through different market routes: Hamusit→erewa→Almata→Mekele, or Hamusit→Zata→Korem→Mekele, or Sekota→ Mekele.

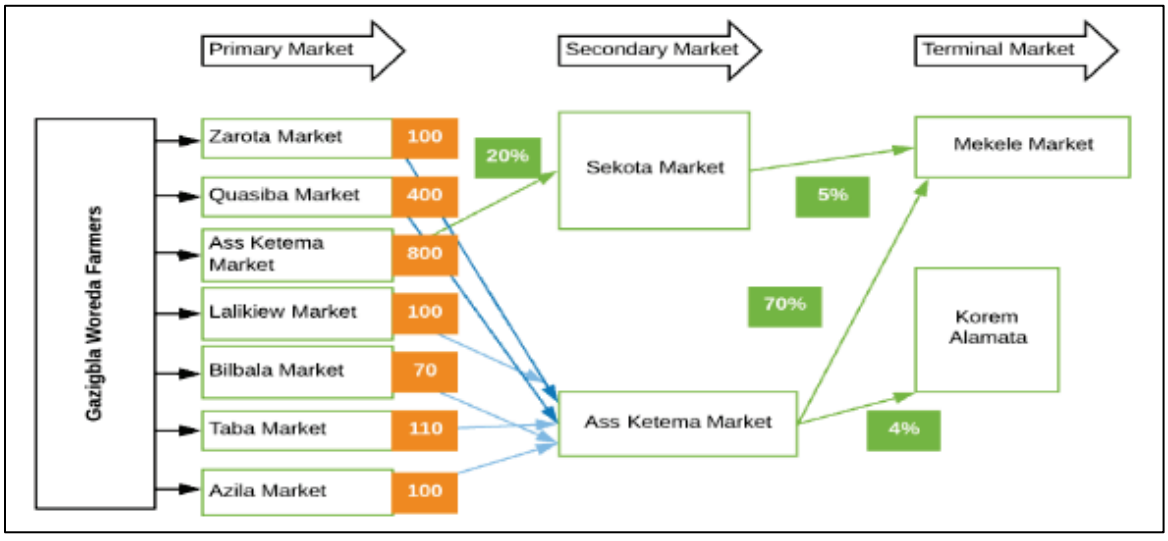
Volumes Moving Through Each Channel



Gazigbla Woreda

There are different market routes for marketing of shoats produced in Gazigbla woreda. Shoats Produced in the woreda flow through different routes to reach to the market. Most of the farmers use spot market in and/or close to the woreda (Zarota, Lalkiew, Taba, Azila, Bilbala, Quasiba markets), but there are farmers who take their shoat to Sekota and Lalibela in search of better price. Sheep and goat marketed from Gazigbla woreda passes through different market routes; Ass Ketema-Sekota -Mekele, or Ass Ketema-Korem-Alamata, or Ass Ketema-Lalibela.

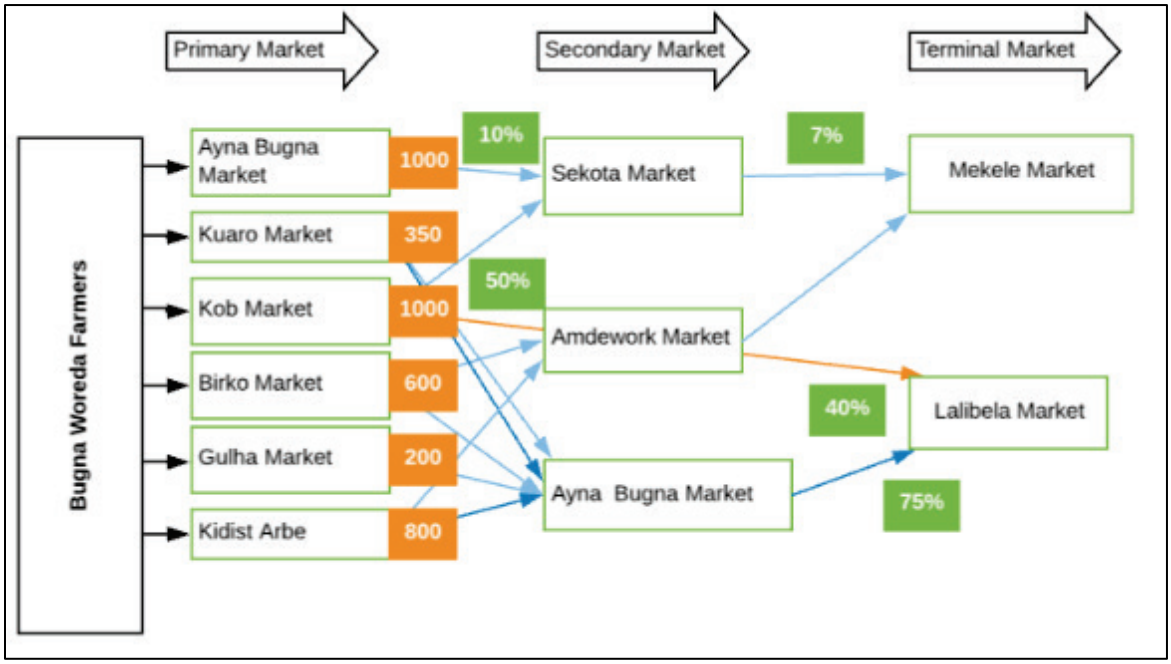
Volumes Moving Through Each Channel



Bugna Woreda

There are different market routes for marketing of shoats produced in Bugna woreda. Shoats Produced in the woreda flow through different routes to reach to the market. Most of the farmers use spot market in and/or close to the woreda (Kob, Kuaro, Kidist Arbe, Birko, and Gulha markets). However, there are farmers who take their shoat to Lalibela in search of better price. Sheep and goat marketed from Bugna woreda passes through different market routes: Kob-Sekota -Mekele or Ayna Bugna-Sekota -Mekele, or Ayna Bugna-Meket-Mekele.

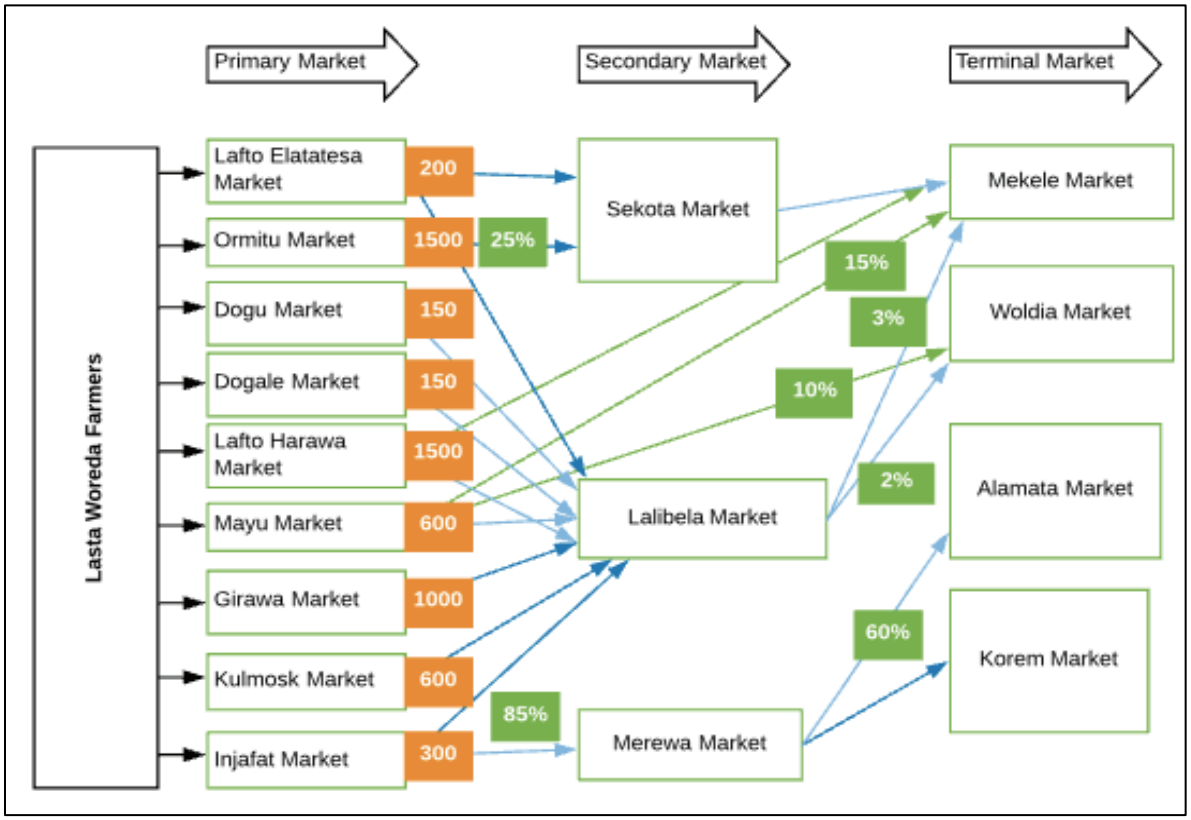
Volumes Moving Through Each Channel



Lasta Woreda

There are different market routes for marketing of shoats produced in Lasta woreda. Shoats Produced in the woreda flow through different routes to reach to the terminal market. Most of the farmers use spot market in and close to the woreda (Hamusit, Ayna Bugna, Bilbala, Serko, Gelesot, Kulmosk, Injafat, Dibiko, and Sarzina) Markets. Sheep and goat produced in the woreda passes through different Market routes: Lalibela-Sekota -Mekelle or Lalibela-Waldia, or Bilbala-Sekota -Mekelle or Injafata- Merewa-Alamata, or Injafat-Korem-Almata-Mekele. However, 70percent of shoats produced in the woreda is consumed with in the woreda.

Volumes Moving Through Each Channel



3.2.5 **Analysis of Opportunities, Constraints Market Based Solutions and Proposed SPIR Activities at Farmers Level**

Opportunities

1. Conducive agro ecology (diverse shrubs, better breeds of shoat, and water).
2. Availability of crop residue that can be used as feed for shoat.
3. Increasing demand for shoats in the market and increasing price.
4. Availability of veterinary clinics in each kebeles.
5. Existence of Sekota Dry Land Agricultural Research center, which is working on breed improvement, health, and marketing.
6. Availability of credit from ACSI for the sector.
7. Ongoing Tekeze cluster initiative gives focus to production of livestock in the area.
8. Fattening can be done four times a year which has good impact on improving income of PSNP beneficiaries.

Constraints

1. Veterinary clinics are not equipped with the necessary materials and professionals.
2. Continuous occurrence of disease and predators (October, November, April, May, June).
3. Skill gap in shoat production and management (fattening, feeding trough construction, animal health.
4. Poor access to inputs (concentrate feed, vet service, and improved breed).

5. Expansion of arable land, and area closure is reducing free grazing land.
6. Price fluctuation during different seasons.
7. Black sheep and goat have less demand and are at least 400ETB less than others.
8. Lack of awareness among farmers on treating crop residue and increase nutritional value and palatability for their livestock.
9. Mismatch in time of credit dispersion by microfinance institutions with season of production.
10. Poor market information and market linkage.

Possible Market Based Solutions

1. Private sector market actors provide inputs (feed, vet service, and other inputs).
2. Private sector market actors engage in continuous purchase of shoats and supplying to abattoir houses and consumers.
3. Private sector engage in production of feed from locally available materials and market it.
4. Farmers align their production season with Ethiopian holidays and adapt to the criteria of abattoir houses.
5. ACSI align its distribution of credit with major production season.

SPIR Prioritized List of Proposed Activities

1. Provision of full-fledged training on shoat production and management (feeding, health/vaccination, deworming, and others/, breed selection, shade and feeding trough construction, backyard forage development).
2. Facilitation of credit for farmers from MFIs and other financial institutions and align time of loan dispersion with season of production.
3. Promotion of zero grazing (will reduce occurrence of disease and increase production efficiency).
4. Provision of training on improving crop residue nutritional value and palatability through treatment by EM (Effective Microorganism) and molasses.
5. Supporting existing/establish new input suppliers (feed, vet service, Effective microorganism, and other technologies).
6. Capacity building for collectors, meat processing companies, and feed producing firms to increase their outreach to farmers.
7. Establishing private business who can produce treated crop residue and sell to farmers.
8. Capacity building for government and private vet clinics to provide the necessary service for value chain actors.
9. Coordinating natural resource management with forage production.
10. Working with WDA (Waghimra Development Association) on feed and meat processing and improving their marketing skill (feed, dried meat).

3.2.6 Analysis of Opportunities, Constraints, Market Based Solutions and Proposed SPIR Activities for Input Suppliers, Collectors, Traders, and Wholesaler

Opportunities

1. There are no agricultural input suppliers in the implementation woreda.
2. Existence of Wag Development Association engaged in feed and meat processing.
3. Increasing demand of concentrate feed and industrial by product by farmers.
4. There is no private sector engaged in animal health service sector in all the woredas.

Constraints

1. Low purchasing power of farmers.
2. Low awareness of farmers on utilizing improved technologies (Feed, Effective microorganism, and molasses).
3. Free or subsidized provision of agricultural inputs by government and nongovernmental organization is hindering farmers to buy products at real price and making them wait for provision.
4. Absence of farmers' cooperative and irregular supply of fattened shoats by the farmer is challenging collectors to carry out their regular activity.
5. Farmers do not produce based on the requirement of buyers; hence, shoats coming to the market does not meet the criteria.
6. Absence of collection center close to intervention woredas.

Market Based Solution

1. Input suppliers open shops close to farmers.
2. Input suppliers use appropriate packaging suiting to Smallholder farmers need.
3. Input suppliers collaborate with agro processing industries to prepare promotional materials in local language.
4. Collectors, traders and whole sellers share information for farmers on requirement of different buyers (export abattoirs, Hotels and restaurants, and local consumer).
5. Collectors, traders and whole sellers have collection center close to potential woreda for shoat production.

SPIR Proposed Activities

1. Support existing/establish new input suppliers in the woreda. The support may be in the form of linking input suppliers to program participants and importers, Proper packaging, conducting field demonstration, and organizing market activation event.
2. Linking collectors, traders and whole sellers to producer marketing groups.
3. Organizing event in which collectors, traders and wholesalers share information of buyers' requirements.
4. Organizing multi-stakeholder platforms and Business to Business (B2B) to facilitate the linkage between producers, input suppliers and traders.

3.3.Shoat Value Chain in East and West Hararge Woredas of Oromia

3.3.1 Functions and Actors

Shoat value chains involve different functions and actors. In all the SPIR implementation woredas where shoat value chains were selected, five different functions have been identified. Along the functions, there are many actors playing different roles. Among these in east and West Hararge, brokers play a significant role and add value in the way that they get a plot of land from the government, facilitate the sale of shoat and charge the buyer for their services and pay taxes to the government. They do not set price but mostly try to negotiate sellers and buyers. In live animal trade, most of the time if a broker is involved farmers get low price for their produce but in East and West Hararge the case is different. Farmers set the price and brokers facilitate the process of sales to help the farmer get their product to market.

Input

Farmers in East and West Hararge have a long-standing tradition of rearing and fattening shoats. The area has also better breeds compared to others. Due to this tradition, farmers in the area have a better experience in rearing and fattening shoats using the cut and carry system, developing backyard forage and supplementary feeding. The two zones are known for their chat production and there is huge residue left from the production of the commodity. Farmers in the area use the residue to feed their shoats. Moreover, there is at least one wheat bran supplier in each kebele, because there is high demand of supplementary feeding of shoats. However, there is no trend of using concentrate feed for supplementation and there is no supplier of concentrate feed. The only company producing concentrate feed in the area is Hamaressa Edible Oil Share Company, which started feed production recently. Unlike other areas of implementation, in East and West Hararge woredas there is an area delineated for the free grazing of shoats. Even though the farmers claim that free grazing area is diminishing due to expansion of arable land and natural resource management work done by the government.

Farmers are buying shoats for fattening and rearing from fellow farmers. The community use goats for both meat and milk production. There are breeds that have good potential for dairy and meat production. The community has good knowledge in selecting goats for milk and meat. However, farmers have poor awareness in improving productivity of shoats though selection of own stock. Hence, there is a high rate of inbreeding of shoats in the area, which has impact on reducing production and productivity of shoats.

There are animal health professionals assigned in each kebele, but the professionals do not have necessary kits, drugs and required facility (health post) to provide full animal health service. However, farmers are accessing diagnostic service and they are buying drugs from towns like Dire Dawa, and Harara for treatment.

Oromia Credit and Saving Share Company (OCSSCO) is operating in the area to address financial service need of smallholder farmers. However, clients of the micro finance institution are limited and they are focusing on better of farmers. Moreover, due to high interest rate, absence of insurance, and collateral required farmers are refrained from using financial service provided by this institute.

Input supply of the shoat value chain includes farmers, private industrial by product suppliers, Microfinance institutions and the Livestock and Fishery office of government that provides veterinary service. In addition, Haramaya University is providing improved breeds of shoat for meat as well as milk, but the supply is only for research purpose and only few farmers' benefit.

Production

Production of shoat is based on free grazing. However, farmers in East and West Hararge have better results using the cut and carry system, backyard forage development and supplementary feeding of their shoats compared to SNNPR and Amhara program participants. Farmers mostly fatten males born from their own herd. Some farmers also achieve higher profits with fattening and milk production. Farmers keep shoats as saving and for time of emergency cash needs. However, there are also farmers who do fattening as a business. Farmers produce and market shoats once a year, but farmers engaged in fattening have at least two cycles of production in a year. In shoat production all family members' children, women and males take part, even though the main role of production and marketing rests on women. Unlike the other areas of implementation shoat marketing is mostly the responsibility of the women. However, women do not have power to make spending decisions on income raised from the sales of shoat.

Collection and Trading

There are many of actors in shoat value chain within the zones. Brokers have a large role in the marketing of shoats in East and West Hararge. The brokers in the area are licensed, they do have plots of land in live animal markets and they charge buyers 30ETB for one shoat purchased. The brokers also pay tax to the government (150ETB/ month). The brokers do not have the power to decide the price like other areas, farmers set the price even though the broker may lobby farmers to sell at a lower price. In SNNPR, the brokers are the price makers. They state a different price for both parties (farmers and big buyers) and have a margin in between, in addition to their commission. Even though female farmers are responsible to sell shoats, in East and West Hararge there are no big or medium female collectors and only very few small female collectors.

Farmers in the East and West Hararge implementation area of SPIR take their finished shoats for marketing to the central market located in the woreda towns (Gamachis, Chiro, Girawa, Kurfa or Dawe secondary market) and get their stock from smaller markets in the woreda like Karasa Woter, Lafto, and Bedano markets. Dawe market found in Kurfa Chale woreda serves as a center for collecting and transporting of shoats towards the main channel of shoat marketing (Wuchale, Somali region). There are more than eight big traders engaged in collecting and trading of shoats in Dawe Market. These big traders have small collectors who are supplying to them from all the four woredas of implementation. All the big traders supply to Wuchale, Modjo, and Diredawa for live animal or carcass export. However, there are traders directly coming from the terminal markets, collect shoats at each woreda market, and transport to terminal market (Wuchale, Modjo and Diredawa) directly.

The price of shoat fluctuates depending on the season. Peak season for shoat is during the major Ethiopian Public holidays (Ramadan, Arafa, Mewlid, New Year, Christmas, and Easter). The price of shoats hit the bottom during start of rainy season in June. Most of the farmers' sell

their shoat now for purchase of agricultural inputs and survive the lean season (purchase basic needs for household consumption).

Processing

There is not any value addition at the farmer's level in this value chain. The value addition starts at hotels, restaurants and abattoirs. Shoats produced in these woredas are supplied to hotels and restaurants at Girawa, Kurfa chale, Haramaya, Harar, Dire Dawa, Chiro and along the chain to Wuchale and Addis Ababa. The second level of value addition is done at meat processing company of export abattoir located at Dire Dawa and Modjo.

Consumption- Domestic and Export

There are domestic and export level consumers for shoats. The requirement of these consumers varies accordingly. Domestic consumers are classified into three, depending on their requirement of shoat type (criteria for buying shoats). The first category of consumers is those who require shoats that are removed from the herd due to culling, to maximize their profit and serve their class of customers. These include Low – medium level hotels and restkaurants. The second category choose shoats that are not castrated and in good condition and has high content of red meat. The third category of consumers look for castrated, good condition and high content of fat. While abattoir houses look for 2-3 years old and 25-28 kg weight shoats for the export market. All these class of consumers are different market opportunities for the farmers. However, smallholder farmers' production calendar rarely considers the season of good price nor criteria of different category of consumers.

3.3.2 **Relationships Between Actors**

The relationship that is existing between the value chain actors is informal and mainly characterized by spot transaction. However, there is informal relationship between small, medium, big, collectors and Abattoir houses. The information flow that exists in the channel is very disconnected, the collectors are aware of the criteria of their buyers but farmers are not. All the respondents reported that they have never received any kind of information from their buyer or supplier about quality requirement of buyer or input utilization procedures.

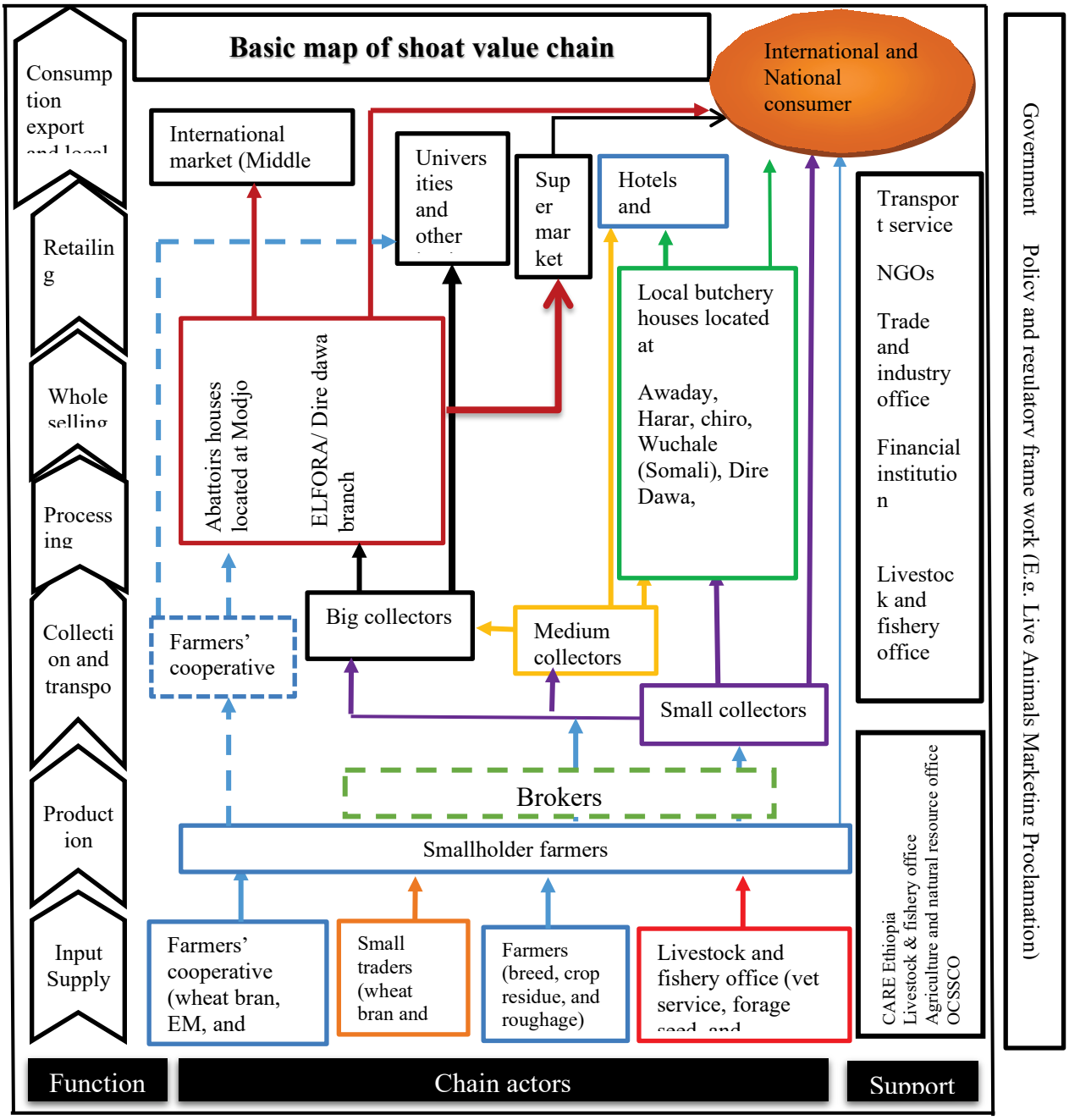
However, the farmers have traditional way of collecting market information. The participants in the FGD reported that they go to at least one of the woreda markets before they set the price for their produce and take it to the market. Farmers also check for the day price before they sell as they arrive in the market. However, since most of the time the farmer's sell their produce during time of financial household needs if the price of the product is high or down by the time farmers are forced to sell with the existing price. On the other hand, there is color preference in the community. Black shoats cost less than other color shoats by at least 500 ETB in all the area of SPIR implementation areas.

3.3.3 **Value Chain Map and Market Channels**

Value Chain Map of East and West Hararge Woredas

Shoat value chain map was drawn based on information collected from farmers and woreda level stakeholders. The map constitutes the functions, value chain actors and support providing institutions in shoat value chain. The map illustrates the relationship that exists between each

actor, their role and institutions providing support to the value chain. Value chain map and market channels of all the woredas of SPIR implementation woredas in East and West Hararge are very similar, but the market routes are quite different.



Market Channels

Based on the market routes and value chain map, different market channels are identified. The margin that the farmers get from the shoat value chain depends on the type of channels he/she uses and the number of intermediaries involved. If the channel is too long, the farmers get lower margin from shoat value chain. If the number, of intermediaries involved is small or if the farmers get their shoats to terminal market, they fetch better gross margin for their shoats.

Shoat Value Chain Market Channel in Each Woreda

1. Farmers – Brokers – Consumers
2. Farmers – Brokers – Small Traders – Consumers
3. Farmers – Brokers – Small Traders– Butchers, Big/Small Hotels – Consumers.
4. Farmers – Brokers – Small Traders – Medium and Big Traders – Butchers, Big/Small Hotels – Consumers
5. Farmers – Brokers – Small Traders – Medium and Big Traders – Export Abattoirs – Consumers
6. Farmers – Farmers' Cooperative – Medium and Big Traders – Export Abattoirs- Consumers

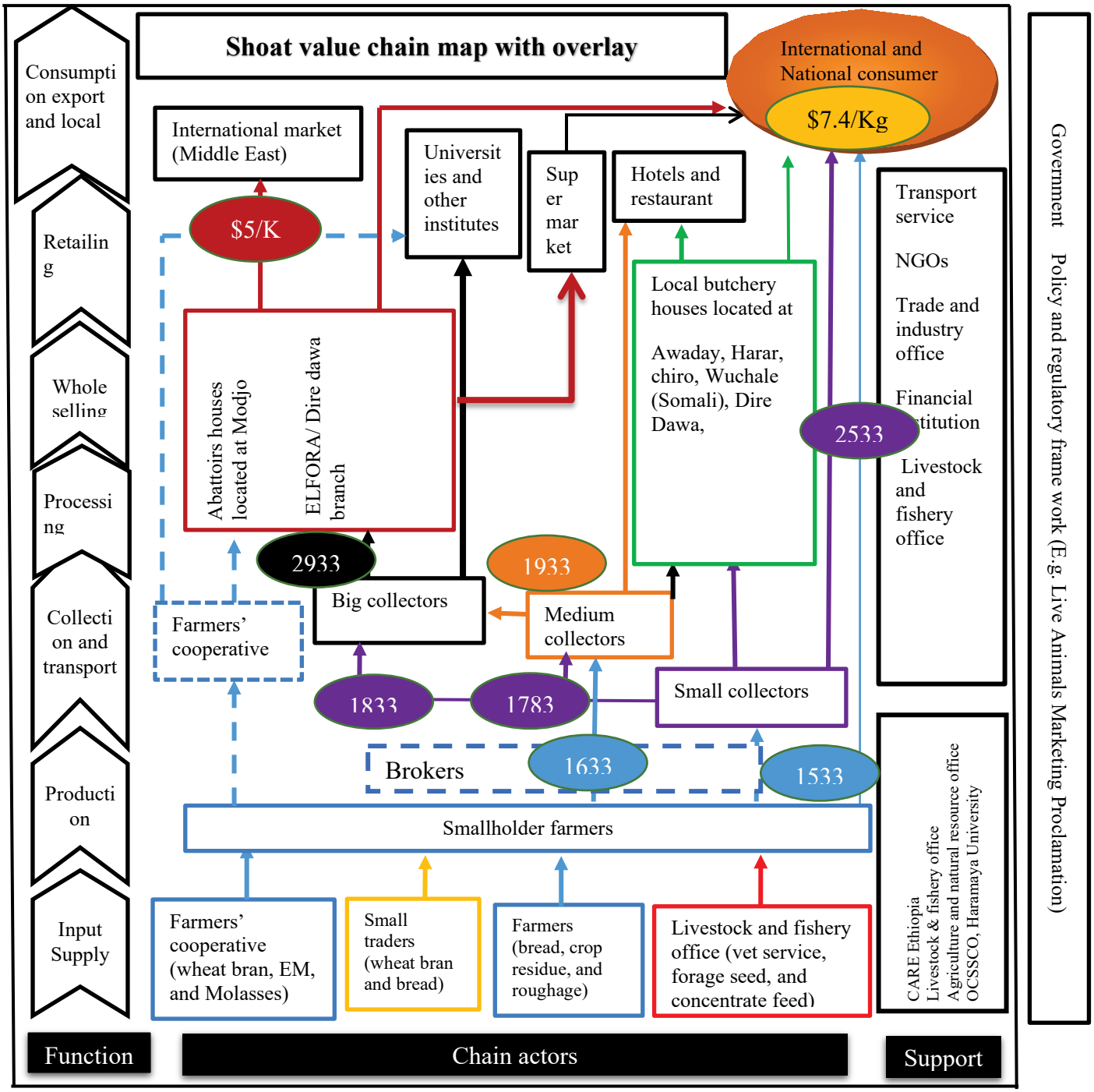
Key:

1. Small traders are traders that are buying five up to 20 shoats at time (single market)
2. Medium traders are traders that collect more than 20-80 shoats at a time (single market)
3. Big traders are traders that collect more than 80 shoats at a time (single market)

3.3.4 **Overlays: Number of Actors, Volumes and Transaction Cost**

Shoat value chain is significant livelihood activity in all the woredas. There are many actors involved at each level of production and marketing of shoat. According to the data obtained from government livestock and fishery office of each woreda, on average farmers have a holding of three shoats. In all the woreda, of East and West Hararge there is at least one trader who supplies wheat bran. However, there are no private veterinary service provider in each woreda even though there are a few veterinary pharmacies in Chiro and Harar. At each woreda market, there are at least twenty small collectors, six medium collectors, and three big collectors. In addition, there are more than three big buyers coming from Somalia region who supply to live animal exporters in Somalia and retailers in the Ethiopian Somali Region. Moreover, these actors include 90 small collectors, 30 medium collectors, and 8 big collectors in the secondary market of Dawe.

Transaction costs vary across the marketing hierarchy depending on the locations. These include transport, labor, broker, tax, herders/shepherds, water, feed, and the collector's/trader's own expenses.



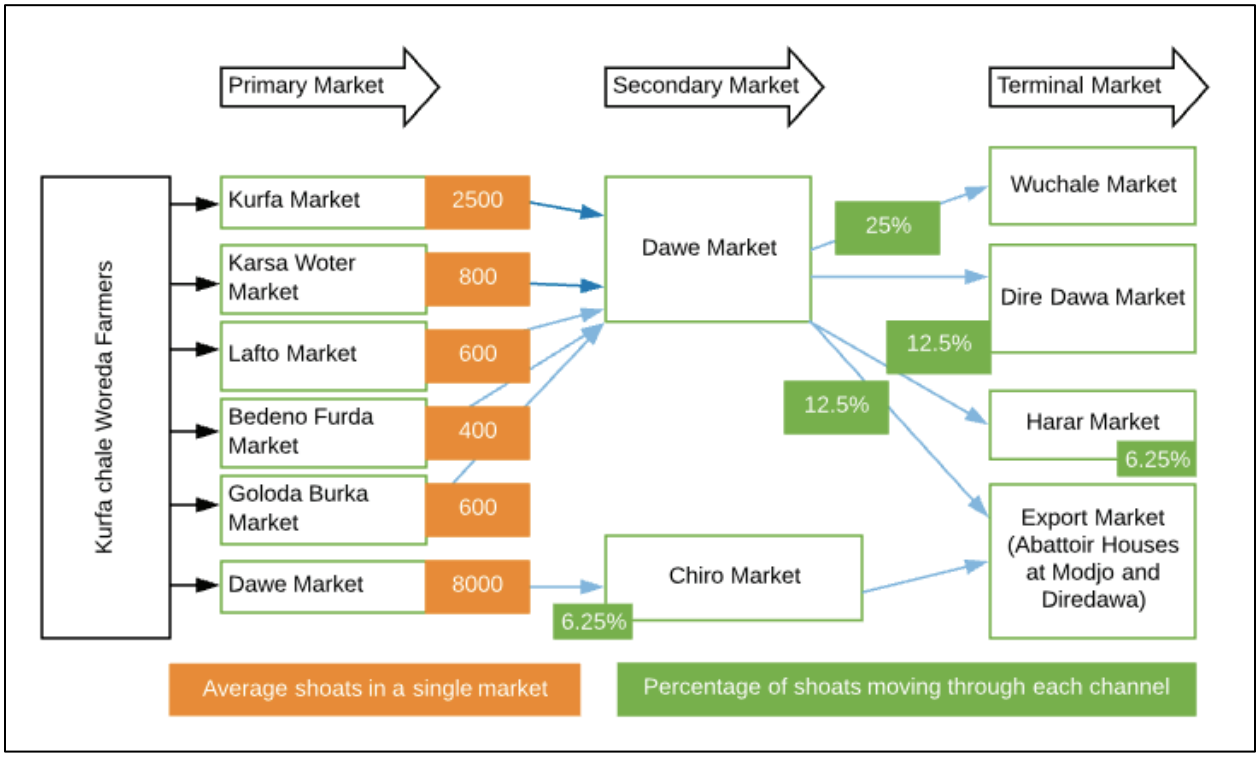
- ✓ $5 per kg for goat meat was set as floor price in 2015, by Ethiopian Meat Producers & Exporters Association (EMPEA) [8]
- ✓ All price written in the oval indicate the average price of sheep and goats in Ethiopian birr that is sold.

[8] allafrica.com/stories/201512091539.html

Kurfachale Woreda

There are different market routes for marketing of shoats produced in Kurfachale woreda. Shoats produced in the woreda flow through different routes to reach the terminal market. Most of the farmers use spot markets in and close to the woreda (Lafto, Bedeno Furda, Kurfa, Girawa, Karsa Woter, and Goloda Burka) markets. Nevertheless, there are farmers who take their shoats to Dawe market in search of a better price. Sheep and goats marketed from Gemechis woreda passes through different market routes: Kurfa-Dawe-Dire Dawa, or Kurfa-Dawe-Chiro or Kurfa-Dawe-Wuchale, or Dawe-Chiro-Modjo. The biggest market in the Woreda is Dawe market, which is also serving as a secondary market for west Hararge Woredas.

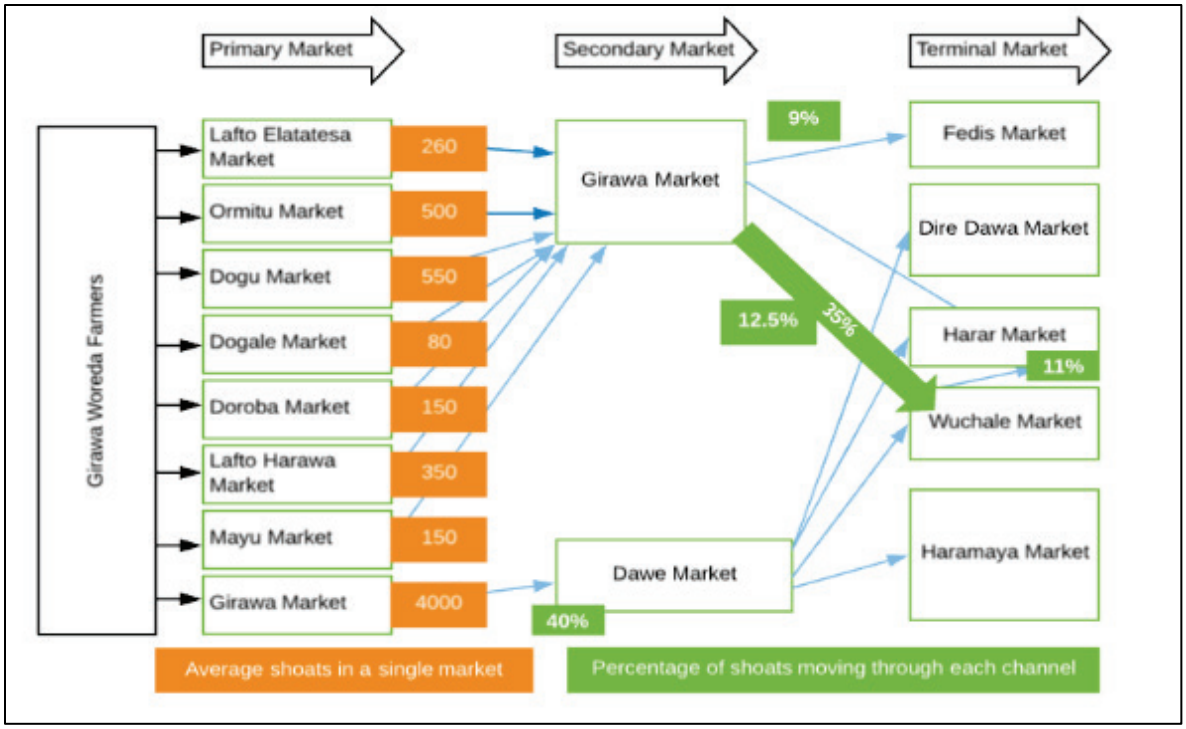
Volumes moving through each channel



Girawa woreda

There are different market routes for marketing of shoats produced in Girawa woreda. Shoats Produced in the woreda flow through different routes to reach to the market. Most of the farmers use spot market in and close to the woreda (Oromitu, Dogu, Dogale, Doroba, Lafto Harawa, Lato elatatesa, and Mayu) Markets. Sheep and goat marketed at Girawa woreda passes through different Market routes: Girawa-Dawe-Wuchale, or Girawa-Dawe-Haromaya, or Girawa-Dawe-wuchale, or Girawa-Fedis.

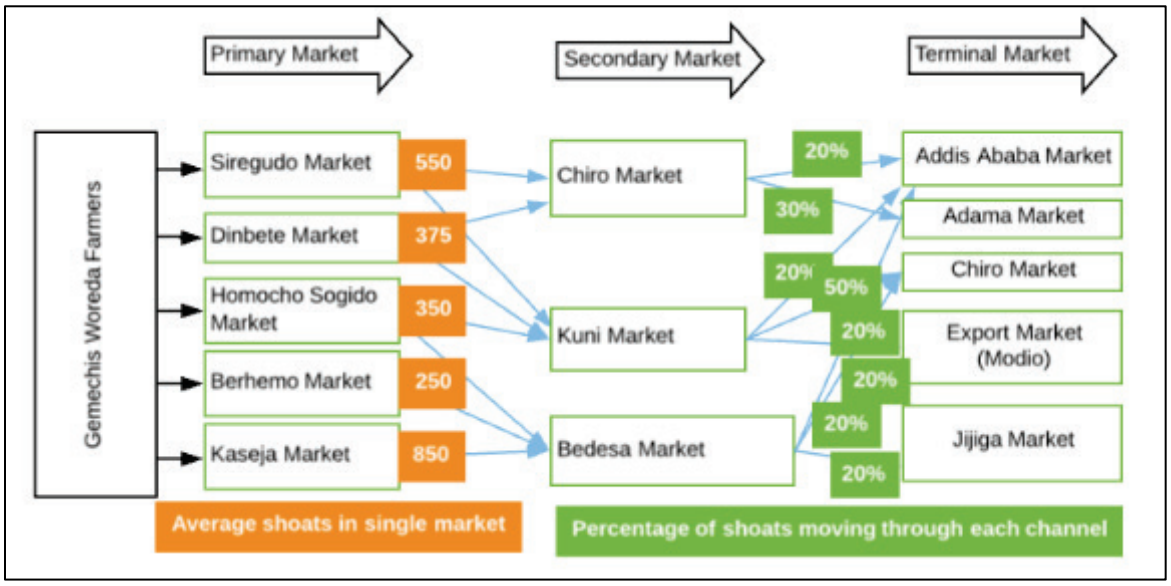
Volumes moving through each channel



Gemechis woreda

There are different market routes for marketing of shoats produced in Gemechis woreda. Shoats produced in the woreda flow through different routes to reach to the terminal market. Most of the farmers use spot market in and close to the woreda. Sheep and goat marketed from Gemechis woreda passes through different market routes. The biggest market in the Woreda is Kuni which is serving as both primary for a very few nearby farmers and as a secondary market.

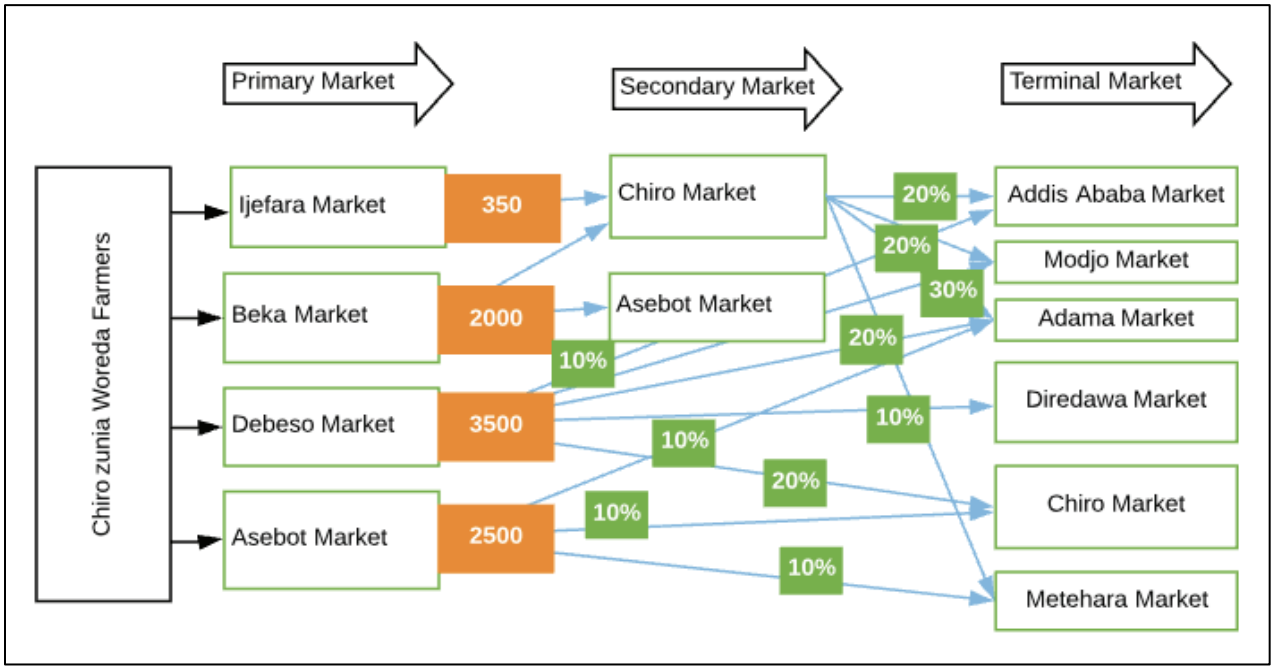
Volumes moving through each channel



Chiro Zuria woreda

There are different market routes for marketing of shoats produced in Chiro Zuria woreda. Shoats produced in the woreda flow through different routes to reach the market. Most of the farmers use spot market in and close to the woreda (Ijefara, Beka, Debeso and Asebot) markets. Asebot market serves both as secondary and primary markets in which shoats from Beka went through this market to reach the final destination. Sheep and goats marketed at Chiro woreda passes through different market routes from Chiro to Addis Ababa, Modjo, Adama or Chiro to Asebot to Addis Ababa or Chiro to Debeso to Addis Ababa, Adama and Diredawa.

Volumes Moving Through Each Channel



3.3.5 **Analysis of opportunities, constraints, market-based solutions, and proposed SPIR activities at farmers level**

Opportunities

1. Availability of chat and crop residue which is used as the main feed for fattening or rearing shoats.
2. The community has indigenous knowledge in fattening and rearing of shoats, they do have their own criteria (e.g. female goat with backwardly open horn is good for milk production, and male goat without horn is good for fattening) for selection of shoat for fattening, milk and rearing.
3. There are free grazing areas assigned in each kebele for grazing shoat by kebele administration.
4. Farmers are adopting cut and carry system for feeding their shoats.
5. Dawe, the biggest livestock market in East Hararge is in Kurfachale woreda and is close to Girawa.

6. The government has given attention to the sector.
7. The farmers have good awareness on providing supplementary feeding for their shoats.
8. There is a supplier of wheat bran and wheat middling in each kebele, which is mostly used as supplementary feed farmers.
9. Small land, capital, time and energy requirement compared to other livelihood activities.
10. The community uses goat milk, that contributions to nutrition security.

Constraints

1. There are no input providers in the area that can be used as supplementary feeding or treating crop residue.
2. The farmers have poor awareness on improving palatability and nutritional value of crop and plant residue.
3. Animal health professionals assigned in the kebele are not equipped with necessary equipment. They are not easily accessible, because most of the time, they come from the main town of the woreda and they do not live in the kebele.
4. The price of goats goes down from November- December due to the following two major reasons: first, the farmers run out of their crop stock and they must purchase food by selling shoats during this period. Second, farmers sell shoats to buy clothes and educational materials to send their kids to school.
5. Low awareness of farmers on production and marketing calendar.
6. Low access to credit for engaging in shoat production.
7. High rate of inbreeding
8. Farmers are not interested to take loans using group collateral, because they are forced to pay defaulters loans when there is cross-guarantees in a group loan.
9. There are no farmer's production and marketing cooperatives that facilitate input and output markets.
10. Expansion of arable land is reducing free grazing land. This reality is becoming a threat to shoat production.

Market Based Solutions

1. Engaging Private sector in agricultural input provision.
2. Farmers sell their shoats during peak times major holidays of Ethiopia (Ethiopian New Year, Christmas, Easter, Eid Al Fitr, and Eid Al Adha). In addition, save their money in financial institutions (FI) or village economic and saving associations VESA for later use (purchase of inputs, food, and children school necessities) or get loans from the same institution during downtime and repay their loan by selling at peak time.
3. Private sector market actors engage in preparation of feed from locally available inputs and supply it to farmers.
4. Private sector market actors engage in the provision of veterinary services.
5. MFI provide micro insurance to farmers.

Prioritized List of Activities Proposed for SPIR

1. Provision of fully-fledged training on shoat production and management

2. Provision of training on improving palatability and nutritional value of crop residue and backyard forage development
3. Introduction of appropriate forage seeds that are suitable to the area and promoting back yard forage development
4. Supporting existing government vet clinics to increase their accessibility and quality of service
5. Supporting existing input providers to diversify their stock keeping unit or support establishment of new input suppliers.
6. Awareness creation on production and marketing calendar and improving saving culture of farmers with financial institutions to cope with local price fluctuation
7. Facilitation of farmer's linkage to MFI and other financial institutions.
8. Supporting establishment of production marketing groups or cooperatives
9. Training farmers on making yogurt from goat milk, from which they can extract cream

3.3.6 Analysis of Opportunities, Constraints, Market Based Solutions and Proposed SPIR Activities for Input Suppliers, Collectors, Traders, and Wholesaler

Opportunities

1. Existence of industrial by product suppliers in each kebele.
2. Existence of Hamaresa edible oil and animal feed processing company.
3. Well-developed trend of utilizing industrial by product as supplementary feeding for shoat.
4. There is no private sector engaged in animal health service sector in all the woreda.
5. Significant number of shoat and households engaged in shoat production.

Constraints

1. Low purchasing power of farmers.
2. Absence of farmers' cooperative and irregular supply of fattened shoats by the farmer is challenging collectors to carry out their regular activity.
3. Farmers do not produce based on the requirement of buyers; hence, shoats coming to the market does not meet the criteria.
4. Absence of collection close to intervention woredas.

Market Based Solution

1. Input suppliers open shops close to farmers and include concentrated feed and effective microorganism in their stock keeping unit
2. Input suppliers use appropriate packaging suiting to Smallholder farmers need
3. Input suppliers collaborate with agro processing industries to prepare promotional materials in local language
4. Collectors, traders and whole sellers share information for farmers on requirement of different buyers (export abattoirs, hotels and restaurants, and local consumer)
5. Collectors, traders and whole sellers have collection center close to potential woreda for shoat production

SPIR Proposed Activities

1. Support existing/establish new input suppliers in the woreda. The support may be in the form of linking input suppliers to program participants and importers, Proper packaging, conducting field demonstration, and organizing market activation event.
2. Linking collectors, traders and whole sellers to producer marketing groups.
3. Organizing event in which collectors, traders and whole sellers share information of buyers' requirement.
4. Organizing multi stakeholder platform and B2B to facilitate the linkage between producers, input suppliers and traders.

3.4. Shoat Value Chain Analysis in SNNPR, Malga

3.4.1 **Functions and Actors**

The shoat value chain has different functions and actors. In all the SPIR implementation woredas where the shoat value chain is selected, five different functions have been identified. Along the functions there are several actors playing different functions.

Input Supply

Major inputs required for shoat value chain included breeding stocks, fattening animals, feed, health service, credit and management skills. The farmers obtain breeding stock and animals for fattening from their own herd or from other farmers in the spot market. There are three local markets (Hagiso, Watara, and Gugguma) for purchase of inputs for shoat production. In addition, farmers also go to Kofale market located in Arsi to get these inputs.

Almost all the farmers base their shoat production on open grazing. However, farmers focusing on fattening provide their shoats with little supplementation of industrial by products like wheat bran and bole. Farmers access wheat bran from local markets and small shops in the village. One kilogram of wheat bran costs 7 Etb during the time of data collection. However, there is no culture of treating the industrial byproduct with molasses or Effective Microorganism to increase its nutritional value and palatability. All the suppliers of industrial byproducts located in the woreda source their products from wholesalers located in Hawassa.

Farmers in the woreda also use traditional feed that is used as supplementation for production of shoat. This feed is called "Bole" it is made from salt and soil called "Maka" in the locality.

According to the participants of the FGD, this feed helps to finish fattened shoat and make the meat of the shoat tastier.

Health service for shoats is provided by the government vet clinic. The clinic is located at

Bole (Local feed made from salt and Soil called Maka)

watara and serves over eight kebele. The farmers in the woreda has access to the government clinic, but the respondents claim that the service is not to the expected level and people do have the habit of taking shoats to the clinic.

Among the inputs required to engage in the shoat value chain, access to credit is the key. There are two microfinance institutions operating in the woreda to provide financial service (OMO and Sidama). However, respondents in the FGD and KII interview respondents said that there are very few farmers who access credit from financial institutions to run their shoat business. The major reason is collateral requirement by microfinance institutions and absence of appropriate loan products for extremely poor producers.

In the shoat value chain farmers' management skill is very important. However, participants in FGD claim that they never received training on shoat management skill, but they think that they do have enough knowledge to do the business.

Small traders who are engaged in supply of wheat bran, farmers themselves who are source of breeding stock and fattening shoats, and MFI institutions, play the function of input supply. Government provides of veterinary and extension service.

Production

Production of shoat is limited to smallholder farmers in Malga woreda because the production is based on free grazing and it is mostly done as to save money for time of special needs or emergencies. The production of shoats is hampered by traditional knowledge, poor breed selection, poor management, and poor feeding practice. These farmers mostly sell male shoat from their herd or sell old stock for culling purpose. Production is not business oriented and animals coming to the market by smallholder farmers are in poor condition. These limits the benefit farmers receive. Most of the farmers' production cycle is on a yearly basis, but farmers engaged in fattening have two cycles of production. All members of the family are involved in the production of sheep and goats. Children and adult female members of the household play a major role in sheep and goat production, while males (commonly husbands) are mainly involved in marketing activity and control most of the income from shoat production. In the woreda women are not allowed to sell shoats, because it is considered a high value commodity, even if she is the female head of the household she should take male family members or a neighbor to sell her shoat in the market.

Collection and Trading

Farmers in the Malga woreda mostly use three spot markets located in different kebeles in the woreda (Hagiso, Watara, and Gugguma) market. However, farmers in the woreda also take their shoats to Tula, Hawassa, Shashamane and Kofle markets in search of better price. There are many intermediaries involved in trade and collection of shoat. According to respondents of the FGD and KII, there are at least 60 traders and brokers in the 3 spot markets of Malga Woreda. However, brokers mostly dominate marketing and set the price. It is very rare to see a farmer directly selling its shoat to a trader or consumer. All the market actors including the producer, trader and consumer think that they get a better price though brokers, but this is not actually true. In the shoat value chain brokers add no value for the producers or other

output market actors. Due to the long chain of intermediaries in the shoat value chain most of the profit margin goes to the intermediaries.

The price of shoat fluctuates depending on season. The peak season for shoats is during the major Ethiopian Public holidays (New Year, Christmas, and Easter). The price of shoats will hit the lowest point during start of rainy season. Most of the farmers' sell their shoats during this time for purchase of agricultural inputs in addition to food to survive the lean season.

Processing

There is not any value addition at farmer's level in this value chain. The value addition starts at hotels, restaurants and abattoir houses. Shoats produced at Malga are supplied to hotels and restaurants at Malga, Kofale, Shahsamane, Hawassa, and along the chain to Addis Ababa. Moreover, there are special "Tibs" houses in Hawassa that uses goats as main input and add value by slaughtering and roasting them. The second level of value addition is done at the abattoir when they export the shoats. Slaughterhouses are mostly concentrated around Modjo and they are exporting Shoat carcass to the Middle East. Few of them also do have retail shops in main cities of Ethiopia.

Consumption- Domestic and Export

There are domestic and export level consumers for shoats. The requirement of these consumers varies accordingly. The domestic consumers are classified into three, depending on their requirement of shoat type (criteria for buying shoats). The first category of consumers is those who require shoats removed from the herd due to culling to maximize their profit and serve their customers (low – medium level hotels and restaurants). The second category choose shoats that are not castrated, in good condition, and have a high content of red meat. The third category of consumers look for shoats that are castrated, in good condition and have a high fat content. For the export market, abattoir houses seek shoats that are 2-3 years old and weigh 25-28 kg. These different classes of consumers create different market opportunities for the farmers. However, the production calendar for smallholder farmers rarely consider the seasons for better prices nor the preferences of the different categories of consumers.

3.4.2 **Relationships Between Actors**

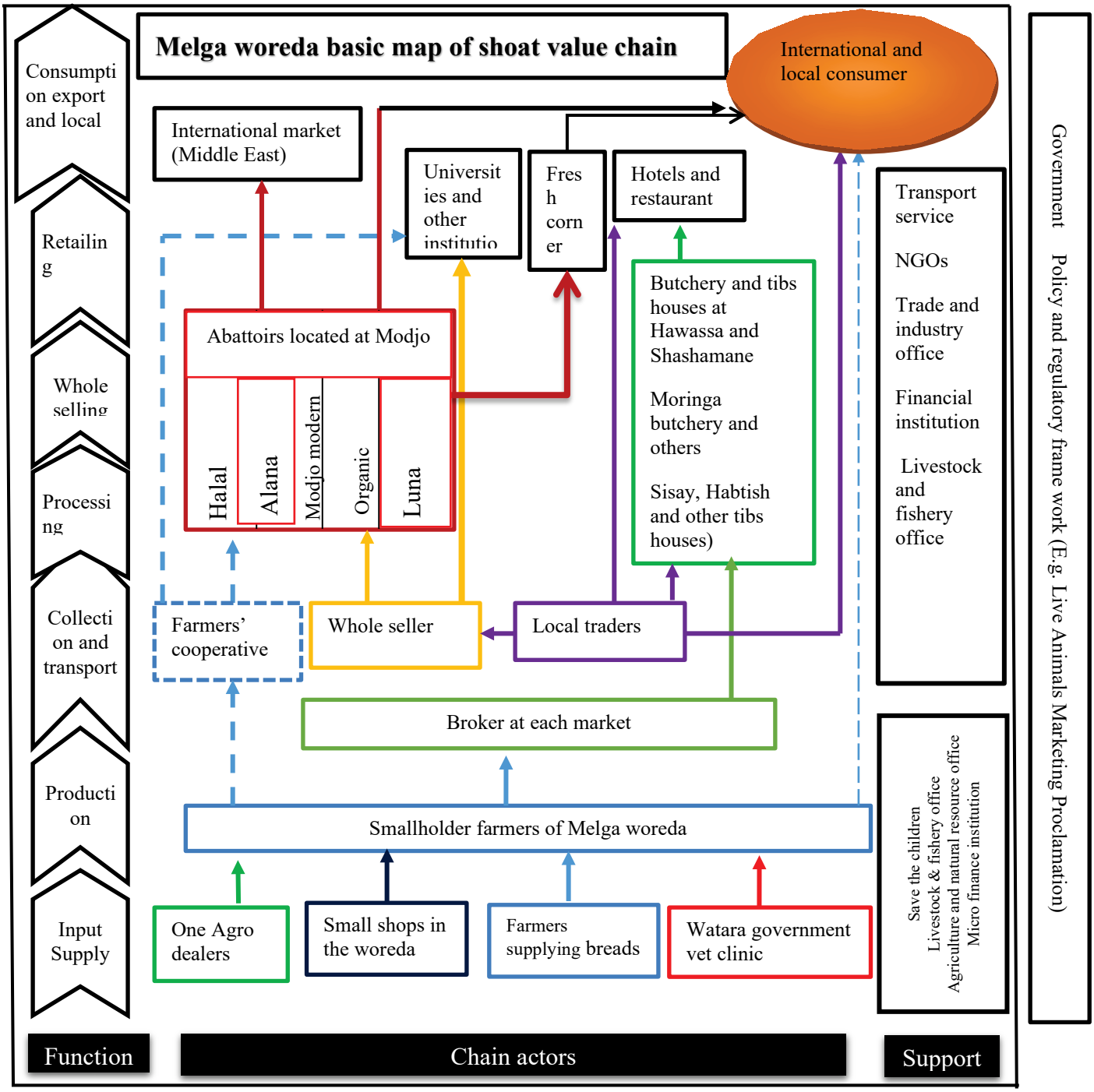
The relationship that is existing between the value chain actors is informal and mainly characterized by spot transaction. However, there is an informal relationship between small collectors, medium collectors, and Abattoir houses. The information flow that exists in the channel is very disconnected; the collectors are aware of the criteria of their buyers but the farmers are not. All the respondents reported that they have never received any kind of information from their buyers or suppliers about quality requirement of buyer or input utilization procedures.

However, the farmers have traditional way of collecting market information. The participants in the FGD reported that they go to at least one of the woreda markets before they set the price for their shoats and take them to market. Farmers also check for the daily price when their first arrive in the market before they sell their shoats.

3.4.3 Value Chain Map and Market Channels

Value Chain Maps

Value chain map of shoat is drawn based on information collected from farmers and woreda level stakeholders. The map constitutes functions, value chain actors and support providing institutions in shoat value chain of Malga woreda. The map illustrates the relationship that is existing between each actor, their role in the value chain and institutions providing support to the value chain.



Market Channels

Based on the market routes and value chain map different market channels are identified. The margin that the farmers get from shoat value chain depends on the type of channels he/she uses and the number of intermediaries involved. The higher the number of channels, the lower the margin that the farmers will get. Farmers get a better price selling at terminal markets and when brokers are not involved.

Shoat Meat Market Channels in the Woreda

1. Farmers – Consumers
2. Farmers – Farm Gate Collectors – Consumers
3. Farmers – Farm Gate Collectors – Hotels and Restaurants
4. Farmers – Farm Get Collectors – Small Traders
5. Farmers – Brokers – Consumers
6. Farmers – Brokers – Small Traders – Consumers
7. Farmers – Brokers – small traders– butchers, big/small hotels – consumers.
8. Farmers – Brokers – Small Traders – Medium and Big Traders – Butchers, Big/Small Hotels – Consumers
9. Farmers – Brokers – Small Traders – Medium and Big Traders – Export Abattoirs – Consumers
10. Farmers – Farmers' Cooperative – Medium and Big Traders – Export Abattoirs-Consumers

Key:

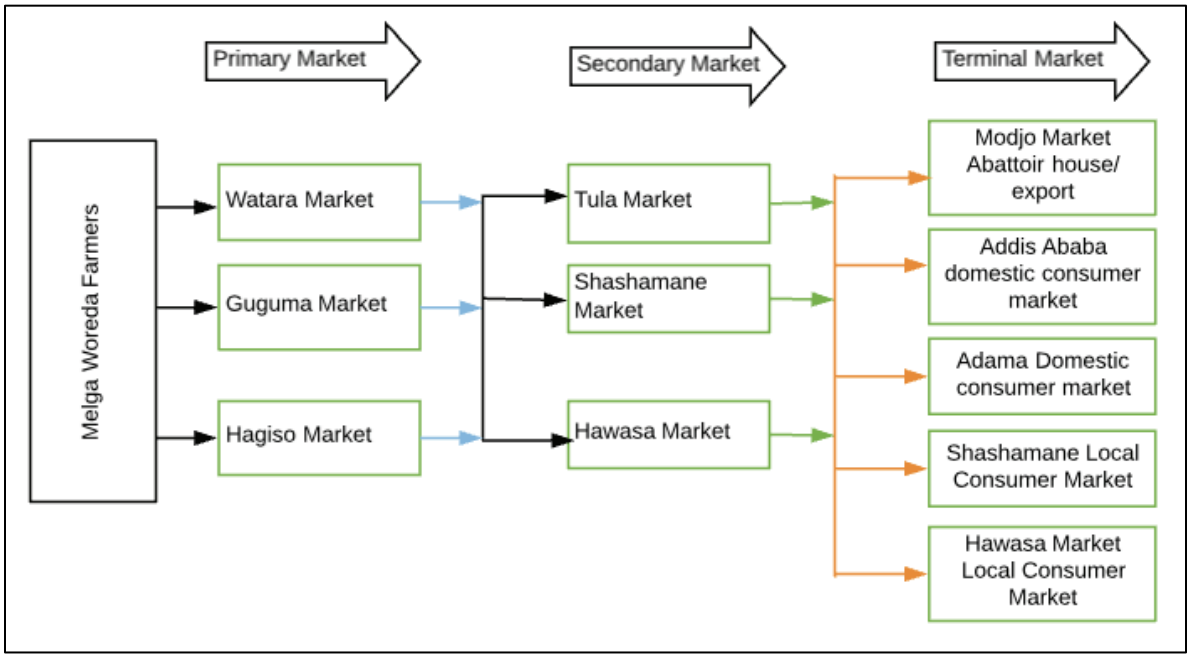
- ✓ Farm have collectors going from house to house buying shoats and supplying to the above channels
- ✓ Small traders are traders that are buying five to 20 shoats at time (single market)
- ✓ Medium traders that collect 21-80 shoats at a time (single market)
- ✓ Big traders are traders that collect more than 80 shoats at a time (single market)

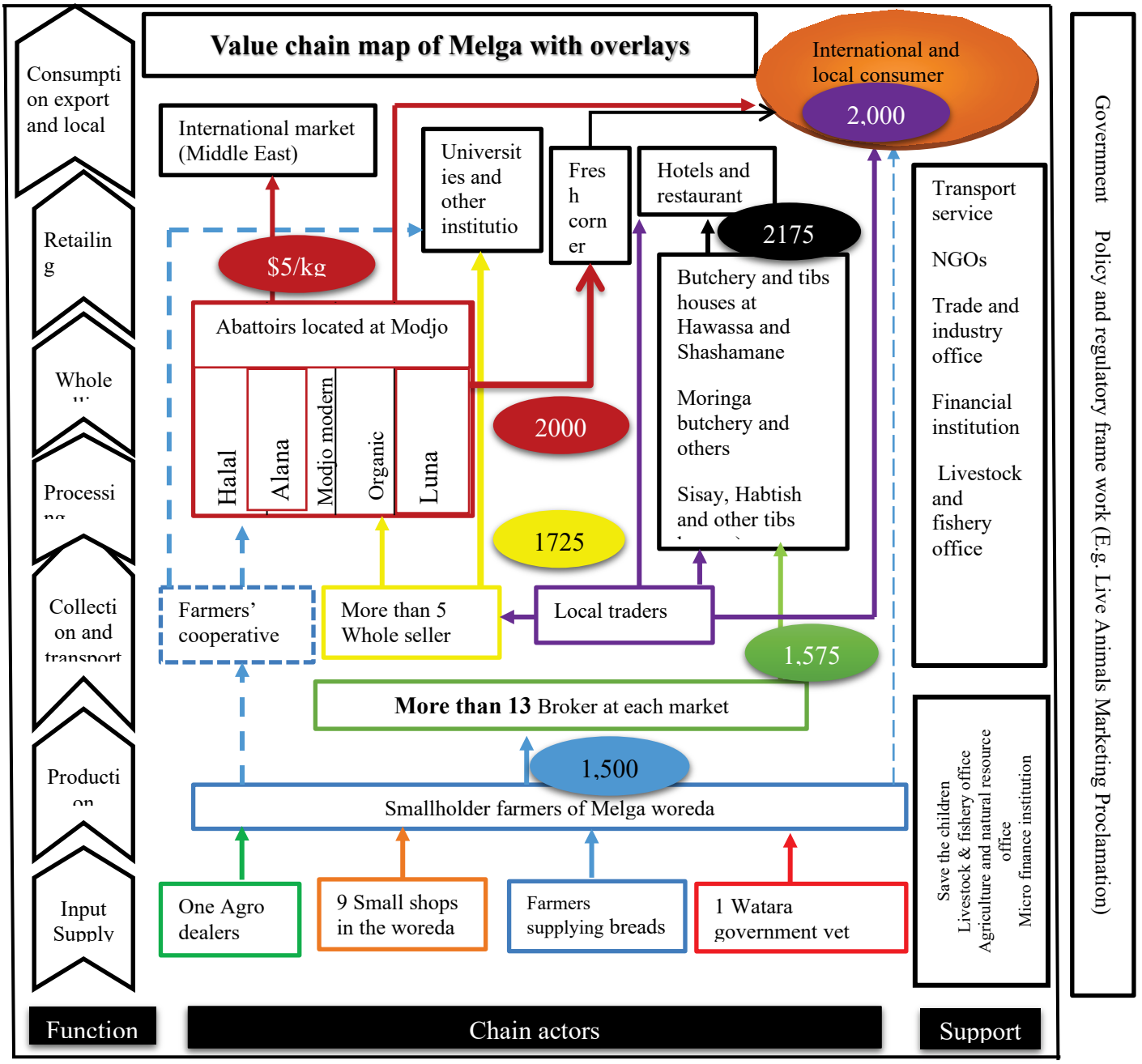
3.4.4 **Overlays: Number of Actors, Volumes and Transaction Cost**

The shoat value chain is a significant livelihood activity in the Malga woreda. There are many actors involved at each level of production and marketing of shoats. According to the data obtained from livestock and fishery office of the woreda, on average farmers have two shoats. In the woreda there are more than nine wheat bran and other input suppliers. There are more than 12 small collectors and more than three medium traders in the woreda. In addition, there are more than five big buyers coming to Tulla market who supply to export abattoir houses located at Modjo.Transaction costs vary across the marketing hierarchy depending on the location. These include transport, labor, broker, tax, herders/shepherds, water, feed, and the collector's/trader's own expenses. Accordingly, price of shoat varies across the channel.

Market Routes

There are different market routes for marketing of shoats produced in the Malga Woreda. Shoats produced in the woreda flow through different routes to reach the market. Most of the farmers use the three big spot markets in the woreda, but there are farmers who take their shoat to Tulla and Shashamane to find a better price. Sheep and goats marketed from Malga passes through different market routes: Kofle-Shashamane-Modjo-Addis Ababa or Tulla-Hawassa-Modjo- Addis Ababa.





- ✓ $5 per kg for goat meat was set as floor price in 2015, by Ethiopian Meat Producers & Exporters Association (EMPEA) [9]
- ✓ All price written in the oval indicates the average price of sheep and goat sold towards the direction of the arrow

[9] allafrica.com/stories/201512091539.html

3.4.5 **Analysis of Opportunities, Constraints Market Based Solutions and Proposed SPIR Activities at Farmers Level**

Opportunities:

1. Malga woreda has the largest population of sheep and many farmers practice sheep rearing and fattening
2. There is a known breed of sheep called "Abara" coming from a neighboring woreda
3. The woreda has traditional knowledge of preparing supplementary feeding called "Bole" which is made from soil and salt

Constraints:

1. Poor awareness of farmers on treating crop and plant residue with EM and Molasses to increase palatability and nutritional value.
2. In accessibility of inputs like vet service, concentrate feed, EM and Molasses
3. Reduction of free grazing land is due to increased population and increased land for cultivation
4. A long chain of intermediaries in shoat marketing and a high involvement of brokers in shoat value chain reduces the profit margin farmers get from shoats
5. Poor awareness of farmers on improving breed productivity through selection
6. Health professionals don't come to the clinic most of the time, because they are living in the center of the woreda

Market based solutions

1. Private sector actors start supplying inputs (feed, EM, molasses, and vet service)
2. Farmers organize themselves into Producer Marketing groups to market their produce
3. Private sector actors engage in preparation of feed from locally available material and supply it to farmers
4. Private sector actors engage in production and marketing of improved breeds like Abara and Bonga

Recommended and prioritized list of SPIR DFSA Activities:dise

1. Provision of full-fledged training for farmers on shoat production and management (shoat selection, treating crop and plant residue with EM and molasses, and animal health)
2. Promote backyard forage development and cut and carry system to feed shoats
3. Enhance the current use of wheat bran, which is only a carbohydrate, to also consider new technologies like the Effective Microorganism (EM) to improve nutritional and palatability of plant residue.
4. Introduce concentrate feed
5. Work with farmers to improve the breeds. The government Agriculture Offices are promoting the Abara and Bonga breeds. SPIR could link program participants into this effort.

3.4.6 Analysis of Opportunities, Constraints, Market Based Solutions and Proposed SPIR Activities for Input Suppliers, Collectors, Traders, and Wholesalers

Opportunities

1. The woreda is close to Hawassa the capital of SNNPR and Shashamane to allow farmers to easily purchase inputs in bulk and transport to the two woredas
2. There are two big end markets (Hawassa and Shashamane) for shoat in very close distance for the two woredas
3. Existence of concentrate feed producing companies (Sidama Elto and Abay feed) provides for easily accessible concentrate feed for retailers to purchase and sell to farmers
4. Increasing demand of concentrate feed and industrial byproduct by farmers
5. Increasing demand of farmers to utilize new technologies (e.g. improved seed, concentrate feed, post-harvest technologies, and small-scale irrigation technologies)
6. Existence of export abattoirs in close by. Export abattoirs have constant demand from day to day which is a good opportunity for collectors and wholesalers willing to supply to these companies

Constraints

1. Low purchasing power of farmers
2. Low awareness of farmers how to utilize improved technologies
3. Switching of agricultural input brands from time to time, which makes it difficult for the traders to introduction cost of the product high
4. Free or subsidized provision of agricultural inputs by government and Nongovernmental Organizations is hindering farmers to buy products at the market price. Therefore, farmers do not purchase improved seed, but kind wait for provision
5. Farmers travel long distance to get to the input suppliers and market which discourages them from participating in input or output market. They prefer to buy less quality input or sell at a lower price than traveling long distances
6. Irregular supply of agricultural inputs, specially imported ones
7. Absence of farmers' cooperative and irregular supply of fattened shoats from the farmer is challenging whole sellers to carry out their regular activity
8. Farmers do not produce based on the requirements of export abattoir houses. Thus, shoats coming to the market does not meet the criteria demanded by the customers.
9. Absence of collection center close to intervention woreda

Market Based Solutions

1. Input suppliers open shops close to farmers
2. Input suppliers use appropriate packaging to meet the s
3. Input suppliers collaborate with importers to prepare promotional materials in local language
4. Collectors, traders and whole sellers share information for farmers on requirement of different buyers (export abattoirs, hotels and restaurants, and local consumers)
5. Collectors, traders and whole sellers have collection centers close to woredas with potential for shoat production

SPIR Proposed List of Prioritized Activities

1. Support existing/establish new input suppliers in the woreda. The support may be in the form of linking input suppliers to program participants and importers, Proper packaging, conducting field demonstration, and organizing market activation event
2. Linking collectors, traders and whole sellers to producer marketing groups. SPIR staff will utilize the "Producer to Market Actor Linkages Facilitation Worksheet" in the "Integrating Extremely Poor Producers into Markets Field Guide."[10]
3. Organizing event in which collectors, traders and wholesalers share information of buyers' requirement.
4. Organizing multi stakeholder platform and B2B to facilitate the linkage between producers, input suppliers and traders

3.5. Business Development Environment and Support Service

Considering the livestock population and potential of the sector in contributing to poverty reduction and country economy, less emphasis given to the sector by the government in the past. However, recently lots of focus is coming to the livestock sector. Indication of recent attentions are; ratification of Live Animals Marketing Proclamation No. 8191/2014, development of Ethiopian livestock master plan, focus is given for development of livestock sector in GTPII, Big donor projects focusing on livestock development (AGLP-LMD, GRAD, PRIME, FEED I and II, LIVES, etc.), and creation of Livestock and Fishery as ministry office from Ministry of agriculture. These all give a big push to the development of the livestock sector and increase farmers and country economic gain from the sector.

The structure of the Ministry of Livestock and Fisheries has given more attention in improving production and productivity of the livestock sector. The office is working on improving breeds, animal health service, feed and forage development and marketing of livestock. However, there are still gaps in delivering all this service especially concerning breed improvement and animal health service. Veterinary clinics located at woreda and kebele level are not well equipped. There is high turnover of animal health professionals and there is limited work regarding breed improvement.

Engagement of private sector actors in livestock sector is also improving from time to time. In the SPIR area of implementation, there are four feed processing companies (Abay Feed, and Sidama Elto in Hawassa, Hamaresa in Harar, Wag development association in Sekota). There is also veterinary pharmacy in the city of Dire Dawa, Chiro, Harar, and Hawassa. However, these service providers and feed processing companies are restricted to main towns and selling to government, NGO and big traders. The relationship between farmers and these private sector actors is very limited.

There are four microfinance institutions providing financial service to the farmers of SPIR implementation woreda. These microfinance institutions are OMO, Sidama, OCSSCO, and ACSI. The first two are operating in Sidama woredas of Wondo and Malga, the third is operating in East and west Hararge, and the fourth is operating in North Wollo and Waghimra

[10] https://agrilinks.org/post/integrating-extremely-poor-producers-markets-field-guide-fourth-edition. page30.

zone of SPIR implementation area. The MFIs are providing agricultural loan to the farmers based on group collateral. From the FGD conducted with community less than 20percent of the respondents accessed loan from these institutions. There are many reasons why farmers are not utilizing financial services provided by these MFI. Among these are high interest rate, absence of insurance, long process to take loan, outstanding loan, all size fit loan amount, mismatch of loan dispersion and collection time with production and marketing calendar.

The micro finance institutions are offering loan at 18percent flat rate, which is huge for farmers to repay. In addition, the time of loan disbursement and repayment time is not matching with production and marketing calendar. This has created two different problems on the farmers, first it made the farmers to divert loan from the intended purpose, and farmer do not have money to repay during repayment period, since they did not invest the credit in productive business. Second, since there is mismatch between loan disbursement and production and marketing calendar of the intended agricultural business: the farmers need more time to repay their loan, which increases the interest on the farmers and contribute for their indebtedness.

These micro finance institutions are offering insurance in case of death of the loan recipient, but they are not offering insurance for risks happening to the business of the recipient. Participants in all regions said that there is high risk of taking micro finance loan. The reason is they borrow the money to do shoat fattening and rearing, but sometimes due to disease or some other reason shoats purchased for fattening or rearing die, all together. At this time all the group member, become indebted. In Amhara, they told us story that the entire group member flew to city to repay their loan, while in Hararge the entire group member repaid their loan by adding other money from their pocket to cover the death of their friends' shoat.

The other problem farmers are facing in accessing and utilizing micro finance loan are outstanding loan, and all size fit loan amount. To access loan from MFI there are many criteria the farmers must fulfill. One of these criteria is the farmer should not be indebted with other loan. However, many farmers have received loan through different packages, which even they did not know it is loan. The other problem is the size of loan, size of loan is the same for everyone. Even though each farmer has different capacity and needs different size of loan requirement. Due to this some of the farmers are not getting loan amount they require and they are not running their business properly, while the other have taken loan amount which is greater than their plan and add unnecessary interest to them.

To increase the outreach of these micro finance institutions to farmers and to remove some of the barriers. Government and non-governmental organizations are collaborating with micro finance institutions operating in Ethiopia. Indicators of these are recently released youth revolving fund by Ethiopian government, offered at 8percent interest rate, reduction of interest rate for PSNP beneficiaries by ACSI from 18percent to 15percent, and different NGOs are providing loan guaranty fund and assisting micro finance institutions in developing appropriate loan product for different agricultural businesses. This support has created better opportunity for women and youth to access credit than other farmers.

To improve production and productivity of the sector and ensure the gain of farmers and country from livestock sector there is also number of undergoing researches by government, international research institutes and nongovernmental organizations engaged in the sector. In SPIR implementation area, Sekota Dry Land Agricultural research center and Haramaya University are conducting research on improving production and productivity of sheep and goat. There two organizations are working on improving carcass yield, milk yield, health and marketing of sheep and goat.

3.6. Critical success factors

Critical success factor for shoat value chain lies in few core pillar issues; Increasing accessibility and affordability of inputs (feed, animal health service, and breed), Improvising well-functioning of markets (access to market information, facilitation of market linkages, and infrastructure improvement), and improved knowledge of farmers in shoat production and marketing.

In SPIR implementation area, the farmers have poor access to inputs required to engage in shoat production and marketing. There are no supplier of concentrate feed and other technologies like effective microorganism (EM) and molasses at all, but there are suppliers of industrial by product in some of the woredas. In addition, there is poor animal health service provision and less attention given to breed improvement and its extension. Improving accessibility and affordability of inputs required for production of shoat will highly improve the gain of farmers from the sector. Moreover, private sector role in improving input supply system is very crucial.

In the implementation, area there is no formal contracts between producers and input or output market actors, there is no information sharing, or any form of embedded service provided to producers. The transaction bases on spot and farmers are price takers, because they take their shoats to the market in time of need and they do have little influence in the value chain governance system. Improving the relationship that is currently existing between producers and input and output market actors though organizing B2B, multi-stakeholder platforms (MSPs), Establishing and supporting cooperatives will play vital role in increasing gain of the farmer in the implementation area from the sector.

Farmers in the implementation woreda have low awareness on improved production and marketing of shoat (selecting animal, provision of supplementary feeding, shade and feed trough construction, animal health service, and access and utilization of market information). Improving extension service in this regard will enhance the capacity of farmers to produced and market shoat.

4. Honey Value Chain

4.1. Overview of Honey Production in Ethiopia

With over one million households that keep honeybees and with over an estimated 5.15 million hives in Ethiopia, the honey sector acts as an integral part of the agricultural sector (Desalegn, 2012). Due to the little investment, land, and labor needed, many households, especially in rural Ethiopia, use it as a secondary source of income, with 90percent of honey produced exported and 10percent used by the country for mostly brewing *tej*, a honey wine, and for table honey. Honey production is also environmentally friendly because, instead of eradicating forests to make room for crop cultivation, forests need to be maintained so that honey can be produced (Gidey & Mekonen, 2010, cited in Ito, 2014). Because of absence of pesticides used, honey from Ethiopia is considered pure and is highly sought after by the United States, the European Union, and the Middle East. With an increasing demand for organic honey and with the Colony Collapse Disordered (CCD), which caused a large-scale of honey bee losses and a 2percent decline in honey bee production in 2006 – 2007 (USAID, 2012), Ethiopia could serve as the country to meet those needs, especially because Ethiopia meets the requirements necessary to export honey by the European Commission in 2008 (Desalegn, 2012). As Ethiopia begins to strengthen its honey market, it will be in a stronger position to enter different markets like the United States to continue growing its honey sector (USAID, 2012).

Ethiopia produced 45,300 tons of honey in 2010 and is considered the largest producer of honey and beeswax in Africa and third largest producer of honey in the world (Oxfam, 2011). However, like many of the other crops in the agriculture sector, the honey sector's huge potential is unmet largely due to the traditional beekeeping practices that have been in use for centuries. With the lack of improved technologies and techniques, beekeepers lose the ability to produce around 500,000 tons of additional honey as well as 50,000 beeswax (Oxfam, 2011). The lack of technique has also resulted in poor quality of honey, and limited market access has forced farmers to sell at low prices to the local intermediaries. As these limitations become resolved, Ethiopia's production numbers should skyrocket compared to what it is producing right now, positioning the country as a stronger market for honey as well as serving as a stronger source of income for small-scale farmers.

4.2. Honey Value Chain in North Wollo and Waghimra Woredas of Amhara

4.2.1 Functions and Actors

Honey value chain involves different functions and actors. In all the SPIR implementation woreda where honey value chain is selected, five different functions have been identified. Along the functions there are number of actors playing different functions.

Input Supply

Major inputs required for Honey value chain are: colony, hive, equipment's, credit and management skills. The farmers obtain colony and hive from fellow farmers. Skilled farmers can also make traditional hive and hunt for swarming bees to get a colony. However, there are

small and micro enterprises engaged in production of transitional and modern hive, but they do not have direct relation with producers. The small and micro enterprises produce based on the order they get from governmental or non-governmental organization. In addition, these organizations provide it free for producers. Due to this fact, farmers do not have access to buy and they are not motivated to buy because there is expectation that they might get it free. This also discouraged private sector actors not to engage in input supply for the sector.

Honey is among agricultural activity that is considered as side activity by farmers. It is not only famers but even less attention is given to the sector by respective government organization. There is poor extension service on the commodity. In addition, the extension service provided targets farmers already engaged in honey production there is less work in engaging new farmers in honey production.

North Wollo and Waghimra zone is classified as potential for production of livestock. In addition, special attention has been given to this area to produce and market honey produced in this area. Among the diverse flora types in this area, becium grandiflorum "Mentese" constitutes major share and it is main source for production of white honey.

Recently there is honey museum that are built and inaugurated at Lalibela town. This museum serves to demonstrate different types of honey produced in this area and center of excellence.

There is only Amhara Credit and Saving Institute operating in the region for provision of financial service. The institute is willing to provide credit for farmers who have no outstanding loan and able to group themselves and fulfill the MFI requirement. However, high interest rate, outstanding loan, and absence of appropriate loan product is major obstacles for farmers not taking advantage of the credit provided by the institute.

Farmers, Small and micro enterprises, government, Nongovernmental organizations and Amhara Credit and Saving Institute, play input supply role in the value chain.

Production

Smallholder famers dominate honey production; however, there are small and medium commercial farms engaged in honey production in Lasta and Gazigbla woreda. Production is mostly based on traditional hive and traditional method of production. Utilization of transitional and modern hive or construction of apiary and utilization of modern equipment is at early stage. Farmers produce honey annually following the major rainy season. Main season of production varies depending on agro ecology of the woreda or zone. Major season of production for lowland areas is from September to October 30, midland area October to November, and high land area is November to December 30. In midland areas, there is two season of production major and minor; the minor season for harvesting honey is on March.

Farmers are producing and selling only honey from hive products. Even though the price of Propolis and wax is by far higher than honey, farmers are focused in production and marketing of crude honey. Adult Male mainly dominates production of honey; women are involved in cleaning apiary and sometimes in making of traditional hive. Production and productivity of farmers is very low. Farmers produce from 2kg- 30kg in one season of production; these

happened due to skill gap in flora plantation, hive management, poor extension service, poor harvesting and storage.

North Wollo and Waghimra zone is area clustered for honey production and agro chemical application is forbidden in the area. However, due to poor of enforcement of this regulation, farmers apply agro chemicals to crops and it is threatening life of bees. Moreover, poor adoption of technologies to the local context, Wax moth, birds, honey badger are high threat for production of honey.

Collection and Trading

Farmers in the implementation area of SPIR takes their honey for marketing to the central market located in the woreda town (Ayana Bugna, Sekota , Ass ketama, Amdework, and Lalibela) and other smaller markets in the woreda like, Birko, Lalkiew, Bilbala, Azila, and Hamusit. However, farmers of the woredas also take their honey to Sekota and Lalibela markets in search of better price. Sekota serves as center for collecting and transporting of honeys towards the main channel of honey flow (Mekele, Dessie and Woldia). There are more than six big traders engaged in collecting and trading of honey in Sekota and Lalibela. These big traders have small collectors who are supplying to them from all the five woredas of implementation. All the big traders supply to Mekele, Dessie and Woldia Market. However, there are traders directly coming from the terminal markets, collect honey at each woreda market, and transport to terminal market directly. Lalibela market is also the closest terminal market for three of the implementation woreda Gazigbla, Bugna, and Lasta. Mostly honey produced around Lasta woreda is consumed in Lalibela in the form of Tej.

The price of honey fluctuates depending on season. Peak season for honey is during the major Ethiopian Public holidays (New Year, X-mass, and Easter). Most of the farmers' sale their honey at the time of production; which hinders them from getting good price for produce. Honey is not like other agricultural commodities. It has a longer shelf life. However, due to immediate cash need by program participants they are forced to sell at time of production.

Due to skill, gap honey produced in this area is poor quality; it is common to find bee debris, pollen and other foreign materials in honey. The material in which honey is stored and way it is transported also contributed for reduction in quality of honey. This day's adulteration of honey is becoming common trend in farmers due to absence of price difference for different quality of honey. The price of honey difference based on color of honey in the area white honey is top expensive, yellow is second and red honey is third in price.

Processing

Apart from other agricultural commodities, there is value addition conducted at farmers' level on honey. Private business located in main town of the woredas are also engaged in processing of honey traditionally. There are also farmers' cooperative, unions and corporations engaged in processing of honey in the region. Tiret Corporation, Zenbaba Mar, and Yeju Mar are among the farmers union engaged in processing of honey.

Consumption- Domestic and Export

Honey produced in the area is mostly used for production of traditional drink called "Tej and Birz". Tej is alcoholic while Birz is Nonalcoholic form of the drink. It is also consumed as table honey domestically. However, honey produced in the area also feeds to the export market of the country. Honey produced in the area has huge demand in export market due to its moisture content and organic nature. There are companies engaged in processing and export of honey in Bahirdar, Mekelle and Addis Ababa who sources their inputs from these two zones.

4.2.2 Relationships Between Actors

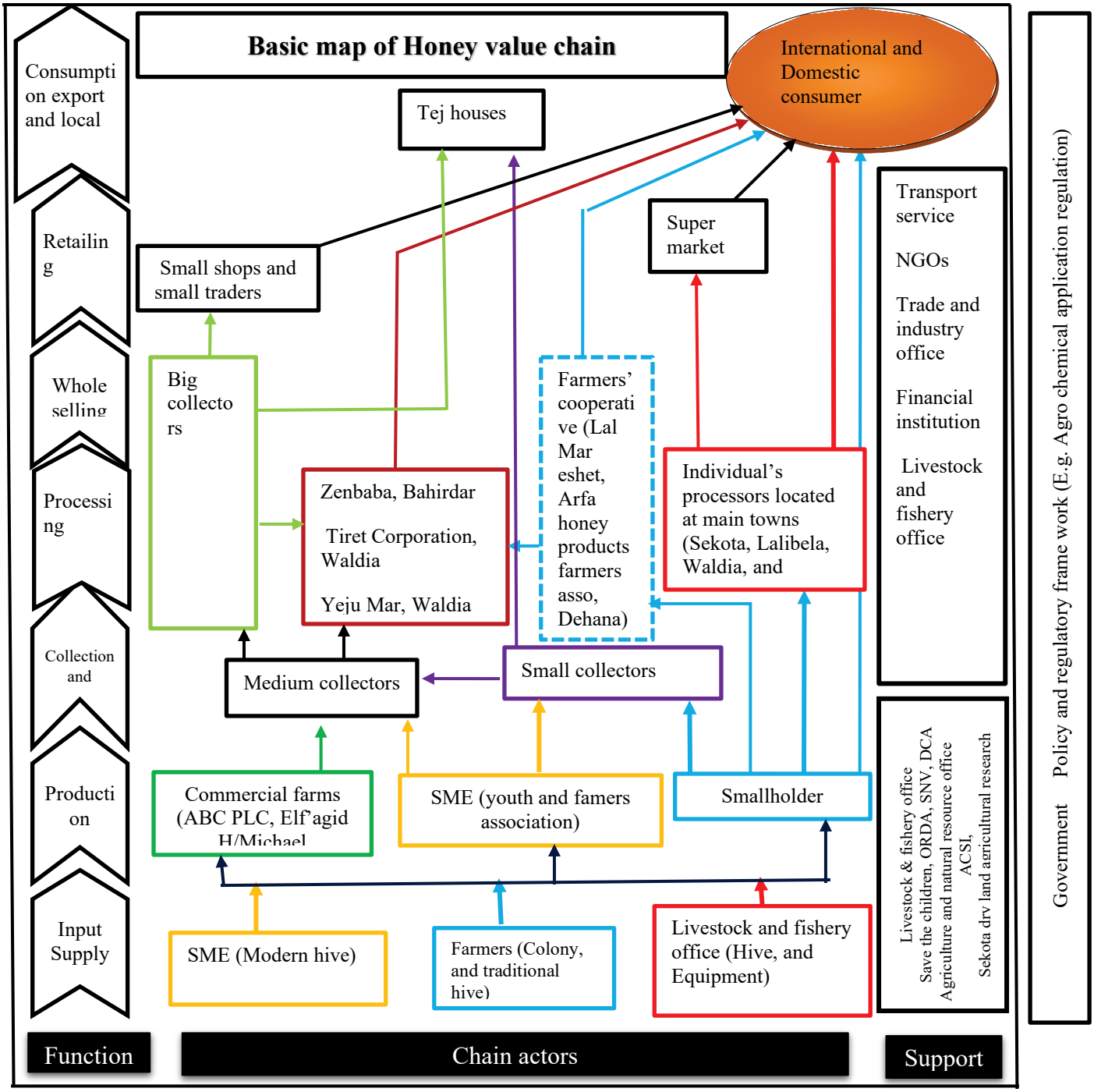
The relationship that is existing between value chain actors is informal and mainly characterized by spot transaction. However, there is informal relationship between small, medium, big collectors and processors. The information flow that exists in the channel is very disconnected, the collectors are aware of the criteria of their buyers but the farmers are not. All the respondents reported that they have never received any kind of information from their buyer or supplier about quality requirement of buyer or input utilization procedures.

However, the farmers have traditional way of collecting market information. The participants in the FGD reported that they go to at least to one of woreda market before they set price for their produce and take it to market, farmers also check for the day price before they sale as they arrived in the market

4.2.3 Value Chain Map and Market Channels

A) Value Chain Map of North Wollo and Waghmara Zone Woredas

Value chain map of honey is drawn based on information collected from farmers and woreda level stakeholders. The map constitutes; functions, value chain actors, and support providing institutions in Honey value chain. The map illustrates the relationship that exists between each actor, their role and institutions providing support to the value chain. Value chain map of all the woredas of SPIR implementation in Amhara is similar.



Market Channels

Based on the market routes and value chain map, different market channels identified. The margin that the farmers get from honey value chain depends on the type of channels he/she uses and the number of intermediaries involved. If the channels are too long, the farmers get lower margin from honey value chain. If the numbers of intermediaries involved is small or if the farmers get their honey to terminal market, they fetch better profit margin for their honey.

Honey Value Chain Market Channels in the Woreda

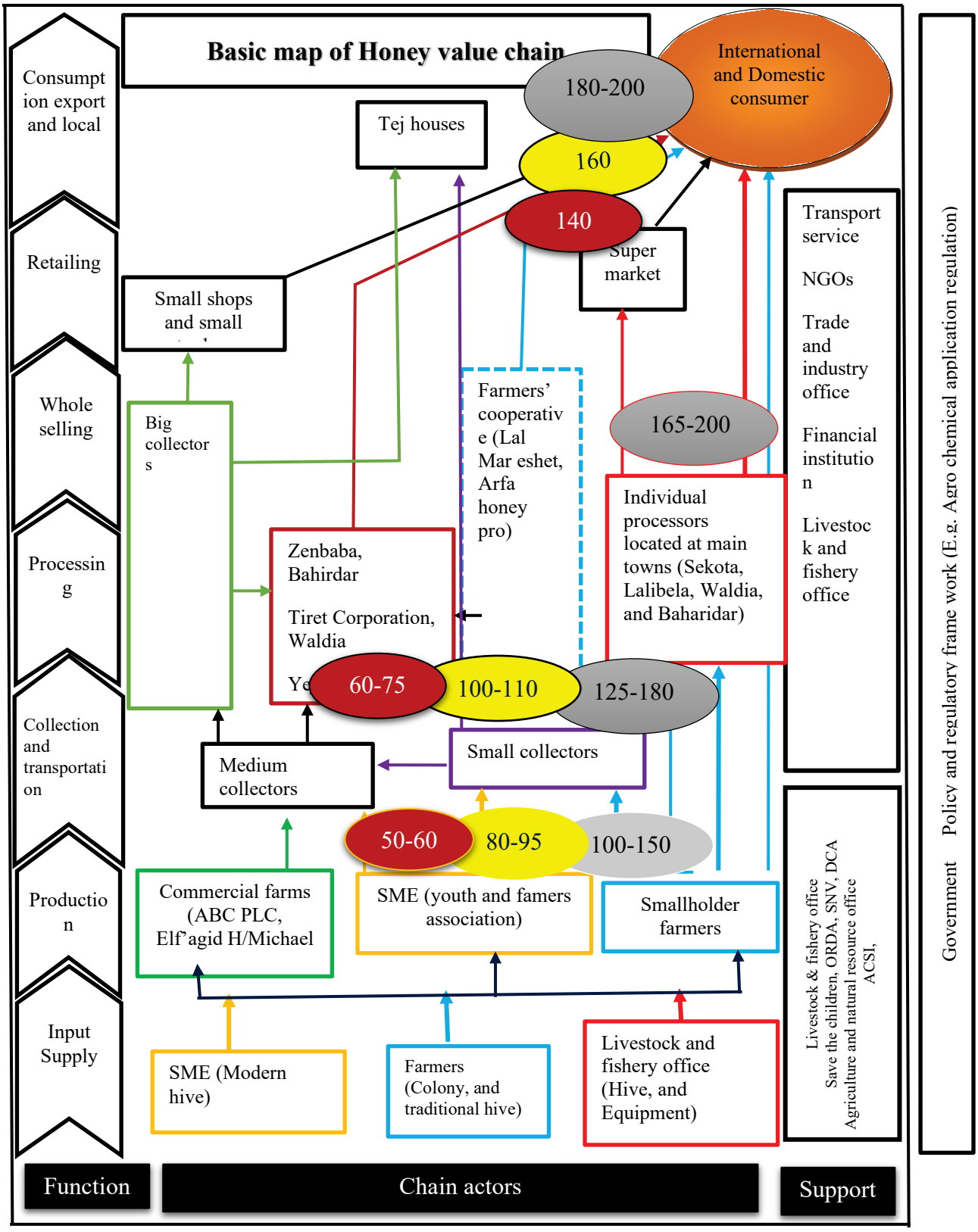
1. Farmers – Consumers
2. Farmers – Small Traders – Consumers
3. Farmers – Small Traders– Tej Houses – Consumers.
4. Farmers– Small Traders – Medium and Big Traders – Tej Houses – Consumers
5. Farmers – Small Traders – Medium and Big Traders – Honey Processors – Consumers
6. Farmers – Farmers' Cooperative – Medium and Big Traders – Honey Processors - Consumers

Key:

- ✓ Small traders are traders that are buying fewer than two quintal Honeys at time (single market).
- ✓ Medium traders are traders that collect two-five quintals of Honeys at a time (single market).
- ✓ Big traders are traders that collect more than five quintals of Honeys at a time (single market).

B) Overlays: Number of Actors, Volumes and Transaction Cost

There are number of actors involved at each level of production and marketing of Honey. In all the woreda, there are no private input suppliers. However, there are small and micro enterprises engaged in production of transitional and traditional hives. At each woreda market there are a minimum of three small collectors, and two medium collectors. Transaction costs vary across the marketing hierarchy depending on the locations. These include transport, labor, tax, and trader's own expenses.

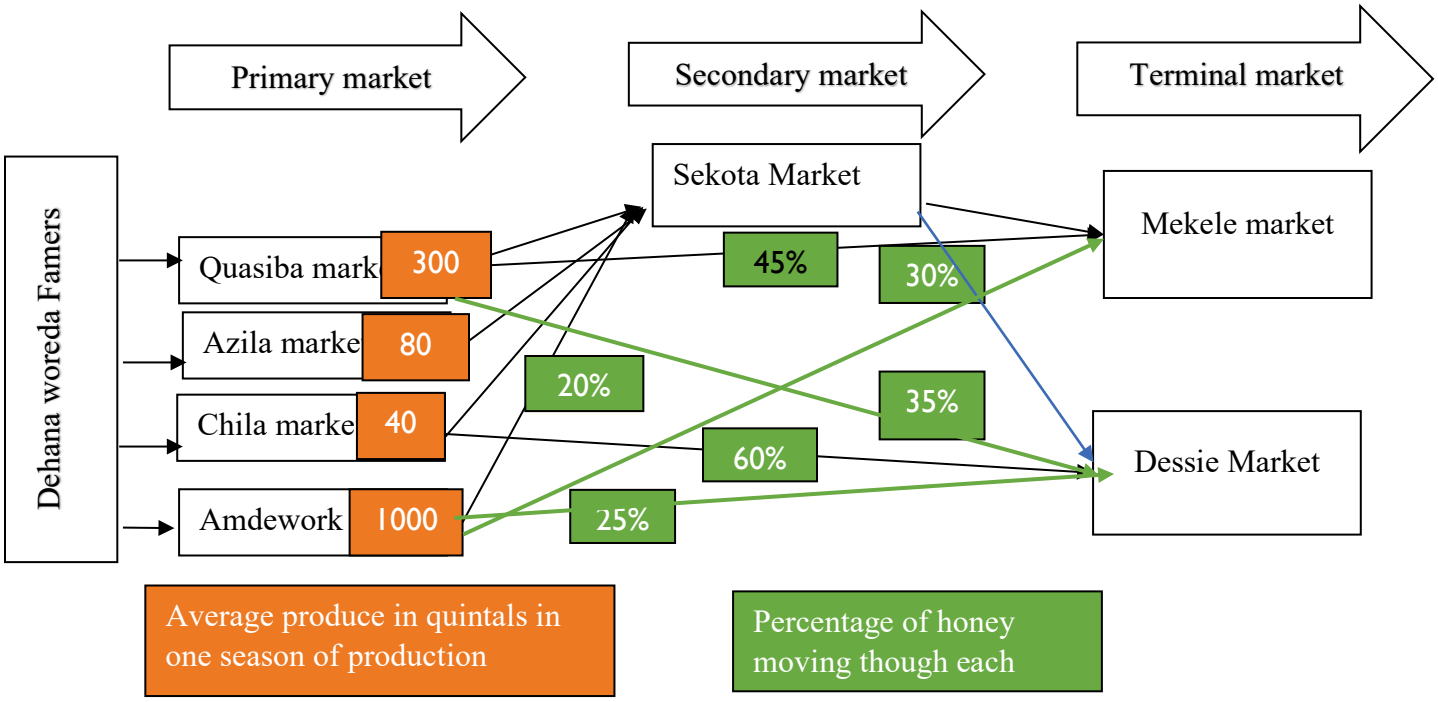


The red oval indicate price of red honey in ethiopian birr at each level
The yellow oval indicate price of yellow honey in Ethiopian birr at each level
The gray oval indicate price of white honey in Ethiopian birr at each level

Dehana Woreda

There are different market routes for marketing of honey produced in Dehana woreda. Honeys Produced in the woreda flow through different routes to reach the market. Most of the farmers use spot market in and close to the woreda (Quasiba, Chila, Amdework and Azila) Markets, but there are farmers who take their Honey to Sekota in search of better price. Honey marketed from Dehana passes through different Market routes: Amdework-Sekota -Mekele or Amdework- Sekota - Dessie.

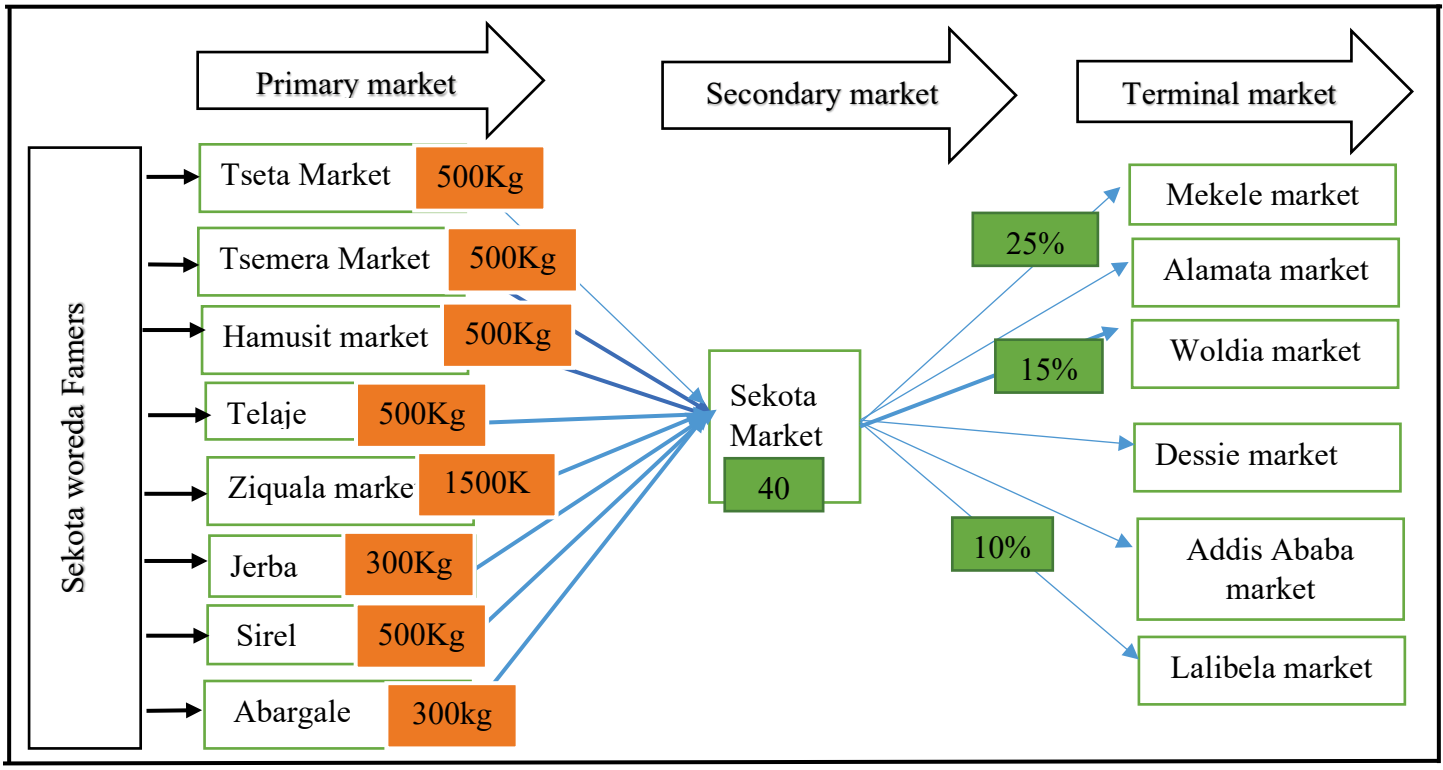
Volumes Moving Through Each Channel



Sekota Woreda

There are different market routes for marketing of honey produced in Sekota woreda. Honey produced in the woreda flow through different routes to reach the market. Most of the farmers use spot market in and close to the woreda (Hamusit, Sirel, Tsemera, Tseta, Ziquala, and Abargale) Markets. Honey marketed at Sekota woreda passes through different Market routes: Hamusit-Sekota -Mekele, or Tsemera- Sekota Mekele, or Sekota to Mekele.

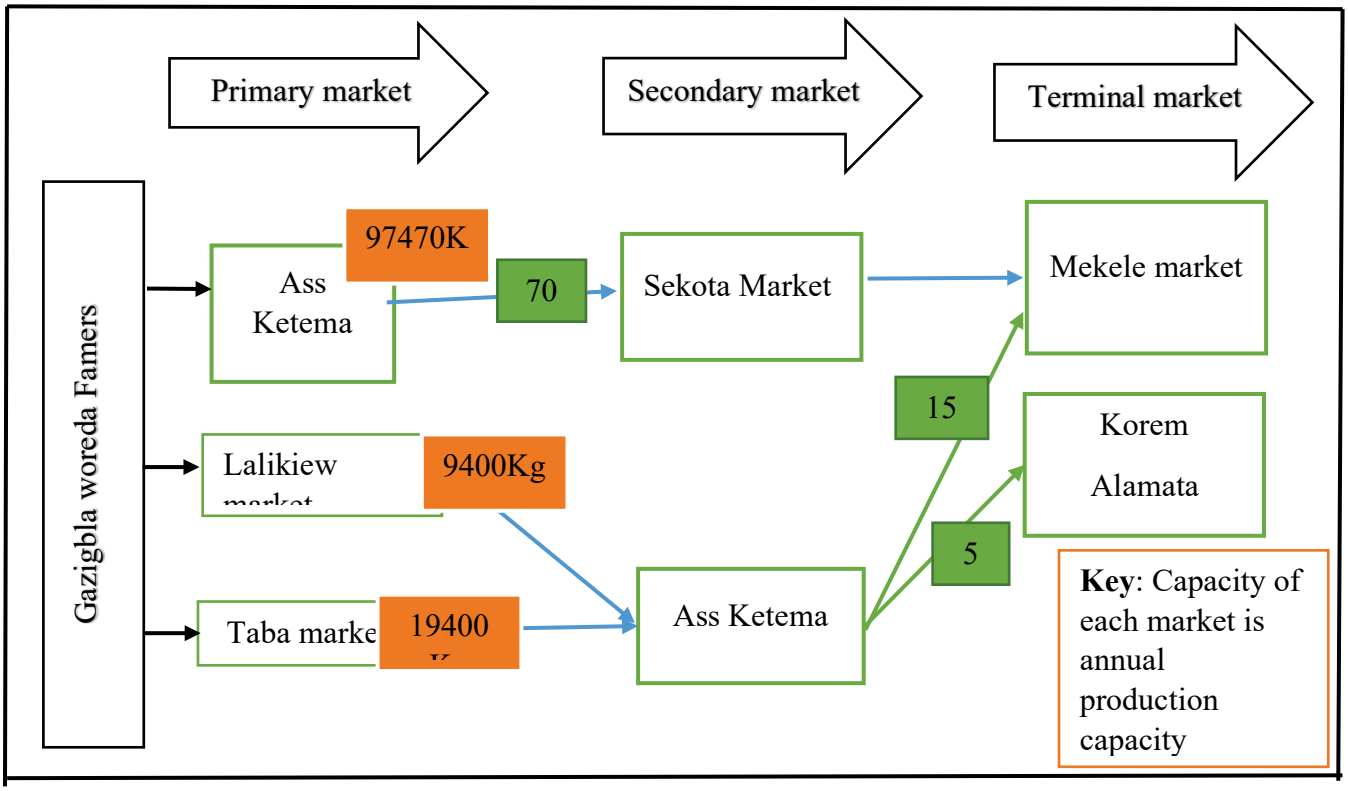
Volumes moving through each channel



Gazigbla Woreda

There are different market routes for marketing of honey produced in Gazigbla woreda. Honey produced in the woreda flow through different routes to reach the market. Most of the farmers use spot market in and/or close to the woreda (Lalkiew, Taba, and Ass Ketema markets), but there are farmers who take their honey to Sekota and Lalibela in search of better price. Honey marketed from Gazigbla woreda passes through different market routes; Ass Ketema-Sekota - Mekele, or Ass Ketema-Korem-Alamata, or Ass Ketema- Lalibela.

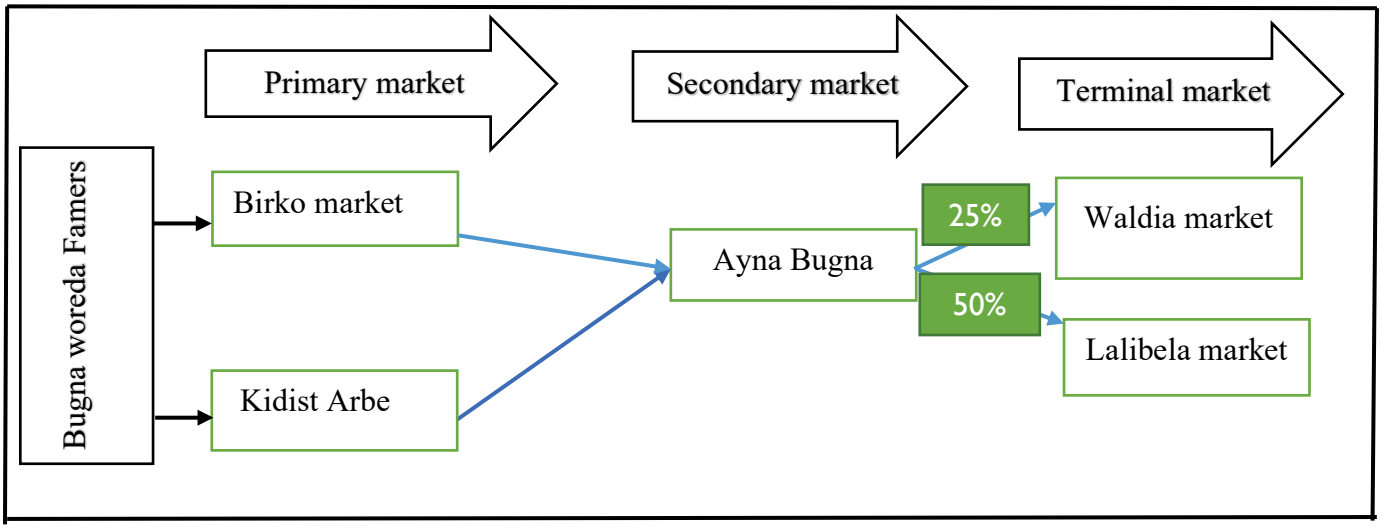
Volumes moving through each channel



Bugna Woreda

There are different market routes for marketing of honey produced in Bugna woreda. Honey produced in the woreda flow through different routes to reach the market. Most of the farmers use spot market in and/or close to the woreda (Kidist Arbe, Birko, and Ayana Bugna markets). However, there are farmers who take their honey to Lalibela in search of better price. Honey marketed from Bugna woreda passes through different market routes; See figure below

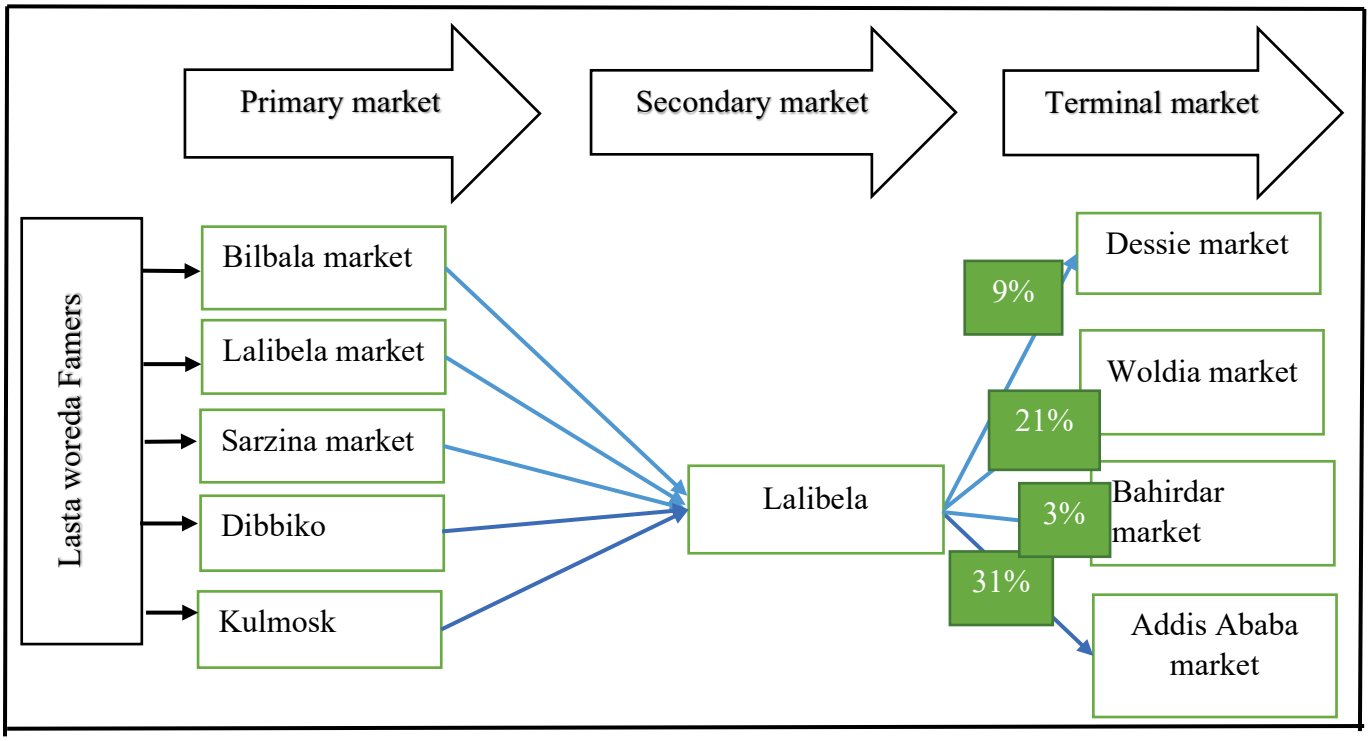
Volumes moving through each channel



Lasta Woreda

There are different market routes for marketing of honey produced in Lasta woreda. Honey produced in the woreda flows through different routes to reach the terminal market. Most of the farmers use spot market in and close to the woreda (Bilbala, Kulmosk, Dibiko, and Sarzina) Markets. Honey produced in the woreda passes through different market routes; See figure below. However, 36 percent of honey produced in the woreda is consumed with in the woreda.

Volumes moving through each channel



C) Opportunities, Constraints, Possible Solutions, and DFSA Proposed Intervention Activities for Honey Value Chain

Opportunities

1. Conducive agro-ecology (diverse bee forage, water, local materials for hive construction).
2. Tekeze basin initiative [11]gives high priority for production of livestock in the area (livestock cluster).
3. Government and NGO attention for the sector (input supply, training, exhibitions, etc.).
4. Increasing demand and price of honey from time to time.
5. Ample production of honey for bulk buyer, using Sekota as center.
6. Credit availability from ACSI for farmers and input suppliers.
7. Government focus on natural resource management.
8. Increasing trend of farmers in honey production and considering honey as a viable business.
9. There is trained SME on hive making in each woreda.
10. Less costly and less space requirement compared to other livelihood activities in the area.

[11] http://www.mediafire.com/file/xtjth9wcpq76368/Apiculture_resouces_developlment_and_protection_proclamation_No_660_2009.pdf

11. Existence of Sekota dry land agricultural research center in the area, which is center of excellence for beekeeping and shoat research is an advantage for the farmers to easily access new technologies.
12. The value chain can easily be handled by youth, women and men (skill, labor, time, and capital requirement) Suits them.
13. Long shelf life of honey and other hive products.
14. Flowering cereal crops that can serve as bee forage (safflower, fava bean, Niger, linseed etc.).
15. Honey is store house of nutrients (Folate, Iron, vitamin c, Vitamin B6, Protein, Calcium, potassium, dietary fiber and others) its consumption will benefit program participants in addition to high income it raises.

Constraints

1. Government and NGOs are the only suppliers of inputs (hives, equipment, and other inputs). This has contributed to irregular supply of inputs and blocked direct relation between farmers and private input suppliers.
2. There is no training targeting new entrants in the value chain; most of the training provided through government and NGO is targeting farmers who are already engaged in honey production.
3. Adulteration of honey (Sekota) at collectors' level. This has big impact on human health and quality of honey.
4. Skills gap in honey production and management (hive making, apiary management, supplementary feeding, colony transferring, harvesting, wax and honey extraction, etc.).
5. Low adoption of transitional and modern hives due to different reasons (hive turns the honey yellow, high absconding rate, absence linkage between hive producers and farmers, cost of modern hive etc.).
6. There is no value addition conducted at farmers' or collectors' level in each woreda.
7. Collectors in each woreda have very limited capacity, purchase only a small amount, and their purchase depends on orders they get from consumers or traders located at Mekele.
8. Lack of awareness on supplementary feeding for bees during drought.
9. Illegal agro-chemical application, and poor execution of Apiculture Resources Development and Protection Proclamation, No. 660/2009[i].
10. Deforestation caused by increasing arable land.
11. Predator and disease (bird, honey badger, ant, wax moth).
12. Poor access to beekeeping equipment and this is contributing for poor quality and quantity of honey harvest.
13. From hive products (honey, wax, and propolis), farmers are producing only honey.

Market Based Solutions

1. Engaging private sector in providing inputs (hive, colony, equipment, etc.).
2. Private sector providing services (honey extraction, wax molding, honey harvesting, Coaching, etc.).

3. Private sector engages in bulk honey collection, processing, branding and marketing.
4. Honey value chain actors form association and create platform for discussion on issues like (agro-chemical application, create linkage between producers, input suppliers and buyers, adulteration and other related matters).
5. Producers and /or producer association upgrading their function (start collection, processing, input supply etc.).

Prioritized List of Proposed Activities for SPIR

1. Provision of fully fledged training (hive making, colony splitting, bee forage, honey harvesting, management, local processing, etc.) for new and existing farmers in the value chain.
2. Strengthening existing/establishing new agricultural input suppliers (glove, hive, wax, frames, brush, veil, and other accessories).
3. Strengthening existing collectors and arranging business to business meeting between producers, input suppliers, and buyers.
4. Establishing multi stakeholder platform that can be led by research institutes, sector association, or any sustainable value chain actors.
5. Identifying model farmers or private sector market actors who are interested in providing different services in the value chain and equipping them with necessary training and materials on a cost share basis (these services might include honey harvesting, transitional hive marking, colony splitting, wax molding, wax printing for modern hives, honey extraction, packaging of honey, etc.).
6. Introducing bee forage planting, supplementary feeding and transitional hive in collaboration with Sekota dry land agricultural research institute.
7. Provide basic training in honey processing and quality testing for collectors and/or farmers who are willing to engage in honey value addition.
8. Increasing women and youth participation in the value chain though focused targeting and providing the necessary support.
9. Facilitation of market linkages between producers, collectors, buyers, processing companies and consumers.
10. Introducing simple honey packaging material that can be handled by farmers and/or collectors.
11. Provision of continuous technical assistance and monitoring for farmers to increase quality and quantity of honey produced.

5. Oxen Fattening Value Chain

5.1. Overview of Ox Fattening in Ethiopia

With the largest livestock population in Africa, oxen (or cattle) fattening has paved way as a potential source of income and employment for rural farmers in Ethiopia and the agriculture sector in general (Halala, 2012). There are three different fattening systems used in Ethiopia, although in rural Ethiopia, the basis depends on the local availability of cattle feed resources. The three types are traditional system, by-product based system, and the Hararge fattening system (Ayalew, Duguma and Tolemariam, 2013). In the traditional system, the main role of the cattle is for draft power, milk, and manure production and are usually only sold when the cattle are unable to perform these tasks, during shortage of cash when farmers are forced to sell, or after plowing season when they are in poor condition (Gobena, 2017). The beef from these cattle are typically poor in meat quality, low in meat quantity, and low in profit. Farmers are not able to buy replacement ox based on the profit made from this exchange.

In the by-product based system, cattle are handled and mechanically fed in a confined yard area for production (Gobena, 2017). They are fed agro-industry by-product such as molasses, cereal-milling byproduct, and oilseed meals for fattening. Though more popular in urban and per-urban area and effective only if oilcake seed is available and cheap, there has been noticeable growth in income for farmers who practice this system. In Bishoftu woredas, the Ministry of Agriculture (MOA) assisted farmers by fattening purchased cull oxen using the agro-industry by-products. Farmers benefited from the profit gained from selling and the number of animals fattened has increased each year by 2,000 head (MOA, 2004, cited by Birhan and Manaye, 2013).

In the Hararge fattening system, famers purchase young oxen from the lowlands, use them for plowing for several years, fatten and sell them before they lose their value through body wear and emaciation (Gobena, 2017). Individual cattle are tethered and fed crops obtained from crop production like maize and sorghum according to a cut-and-carry (zero grazing) method (Birhan and Manaye, 2013).

Though these three different options exist, according to a study done in three districts of Ilu Aba Bora zone of Oromia Regional State, many smallholder farmers practice the traditional system (Ayalew, Duguma and Tolemariam, 2013). Some of the constraints include lack of initial capital, shortage of feed and water, land shortage, occurrence of diseases, and lack of awareness (Mekuria, 2016). The feed quality is also poor and there is a lack in knowledge and expertise. The farmer-to-market link is also relatively weak. Limited supply of feed has led to high feed and domestic prices as well as reduced competitiveness on international export markets (Carina, 2013, cited in Halala, 2015). Though Ethiopia exports about 200,000 livestock annually, there have been reports of illegal flow of livestock through boundaries reaches as high as 320,000 cattle (Workneh, 2006, cited in Alemayehu and Getu, 2015). Credit service, training, feed improvement strategies, more efficient fattening methods, and knowledge of the market system, value chains, competitors, and consumer preference can help shape a stronger ox fattening economy in Ethiopia (Birhan and Manaye, 2013).

5.2. Ox Fattening Value Chain in Gemechis Woreda West Hararghe Zone Oromia

5.2.1 Functions and Actors

Ox value chain involves different functions and actors. In Gemechis, woreda of west hararge zone, ox was selected as a one of the value chain commodities. Five different functions have been identified along the value chain. There are different actors who are playing different roles along the value chain functions.

Input Supply

Major inputs required for ox fattening value chain are, breeding stocks, fattening animals, feeds, health service, credit and management skills. The farmers obtain breeding stocks and animal for fattening from their own herd or from other farmers in spot market. There are four local markets surrounding the woreda Siregudo, Kaseja, Dingete and Kuni that is the woreda town. These markets serve farmers as main source of oxen for fattening.

For farmers who are engaged in fattening cut and carry system is a common practice. There are also "furska" (wheat bran) suppliers in the woreda. These are ordinary consumer good supply shops in the kebeles of Gemechis woreda. According to KII from livestock office, the quality of feed sold by private suppliers in the woreda is not as to the standard due to poor storage and transportation with unnecessary items. Considering the capacity of farmers, the price of feed found to be high. On the other hand, there are business who are engaged in commercial oxen fattening. These businesses mostly provide concentrate feed for their ox to fatten them in short period and to get better profit margin.

In the woreda, there are government veterinary clinics, providing animal health service. However, the clinic is not equipped with necessary equipment, medicine and professionals. Besides the animal health, service professionals' turnover is high. Moreover, the farmers have poor awareness on vaccination and preventive approach; they only take their livestock when they are sick.

OCSSCO is the only micro finance that can provide financial service for the woreda community. The MFI is committed to provide credit for PSNP beneficiaries. The institute is willing to provide credit for farmers who have no outstanding loan and able to group themselves and fulfill the MFI requirement. However, high interest rate, outstanding loan, and absence of micro insurance is major obstacles for farmers for not taking advantage of credit provided by the institute. Rural Saving and Credit Cooperatives (RUSACCos) are the other financial service providers owned by the community themselves. In addition, rural job creation office has also a fund for youth who are interested to operate different kind of businesses.

Farmers, government, and financial institutes (RUSACCO and OCSCCO) play input supply role in the value chain. CARE Ethiopia and Household Asset Building Program (HABP) (previously) are also supporting the ox fattening value chain.

Production

Smallholder farmers in Gemechis woreda commonly practice ox fattening. However, there are few small feedlot operators and SME engaged in oxen fattening. Five months is the average oxen fattening period in the woreda. The famers use the ox for draft power for one season and then fatten to sale. In the area it is common to keep at least one oxen per household for fattening.

Both husband and wife participate in the fattening process in which the husband main responsibilities rely on purchase of ox for fattening and purchase of feed. While, the woman is responsible for feeding and cleaning activities.

Collection and Trading

There are two ways of selling out the fattened oxen. One is that, brokers in the woreda went to the villages and connect farmers with collectors (most of the time mini collectors) by going door to door. The second method is a farmer himself take the oxen to nearby market places and sell to collectors for mini/medium level collectors with the facilitation role of brokers. The collectors purchase the ox from each farmer's house mainly on cash basis exchange and there are times in which the broker being with collector buy with credit terms with informal (non-written) agreements. These credit terms bring complaints because of the late repayment of money created from the broker side.

The huge challenge in case of oxen marketing system is the involvement of the middle man's/brokers. The broker determines the price for fattened oxen and the farmer do not have a chance to negotiate. There are times that the farmers refuse to accept the price offered by the brokers however even if the farmers take out the ox to market, the broker inform to collectors not to buy the farmer's ox above the price provided by the broker.

There are around 10 medium collectors (such as Abdurhaman, Belew and Lule) where most of them are located at kuni town. These medium collectors purchase the oxen from both from market and at the farm gate.

After these medium traders collected the oxen, they supply to different locations, which includes Chiro woreda other big traders/collectors, hotels, butcheries; these big collects are also serving as agents for exporters, big hotels and butcheries in big towns located out of Gemechis woreda.

The price of oxen fluctuates depending on the seasons. Especially during holiday season, the price goes higher. With this value, chain farmers are getting very low price as compare to the end market. The brokers in the woreda are gaining from 200 to 1000 ETB per ox depending on the location of the market and type of ox.

Processing

There is no any type of value addition at farmer's level. However, there are medium/big traders who are involved in collection and fattening of oxen. These traders purchase ox from farmers and fatten before sale to get higher price.

The processing of oxen started at hotels, restaurants, butcheries and abattoir houses. The Oxen produced in these woreda are supplied to hotels and restaurants at Kuni, Chiro, Adama, and along the way to Addis Ababa. In addition, abattoir houses located at Modjo, Debrezeit and Metahara also source from this area.

Consumption- Domestic and Export

There are domestic and export level consumers for oxen. According to FGD participants' well-conditioned, attractive colors and good heights are the major criteria those buyers considering most to choose good quality ox. Oxen are exported live and in carcass form to Middle East countries.

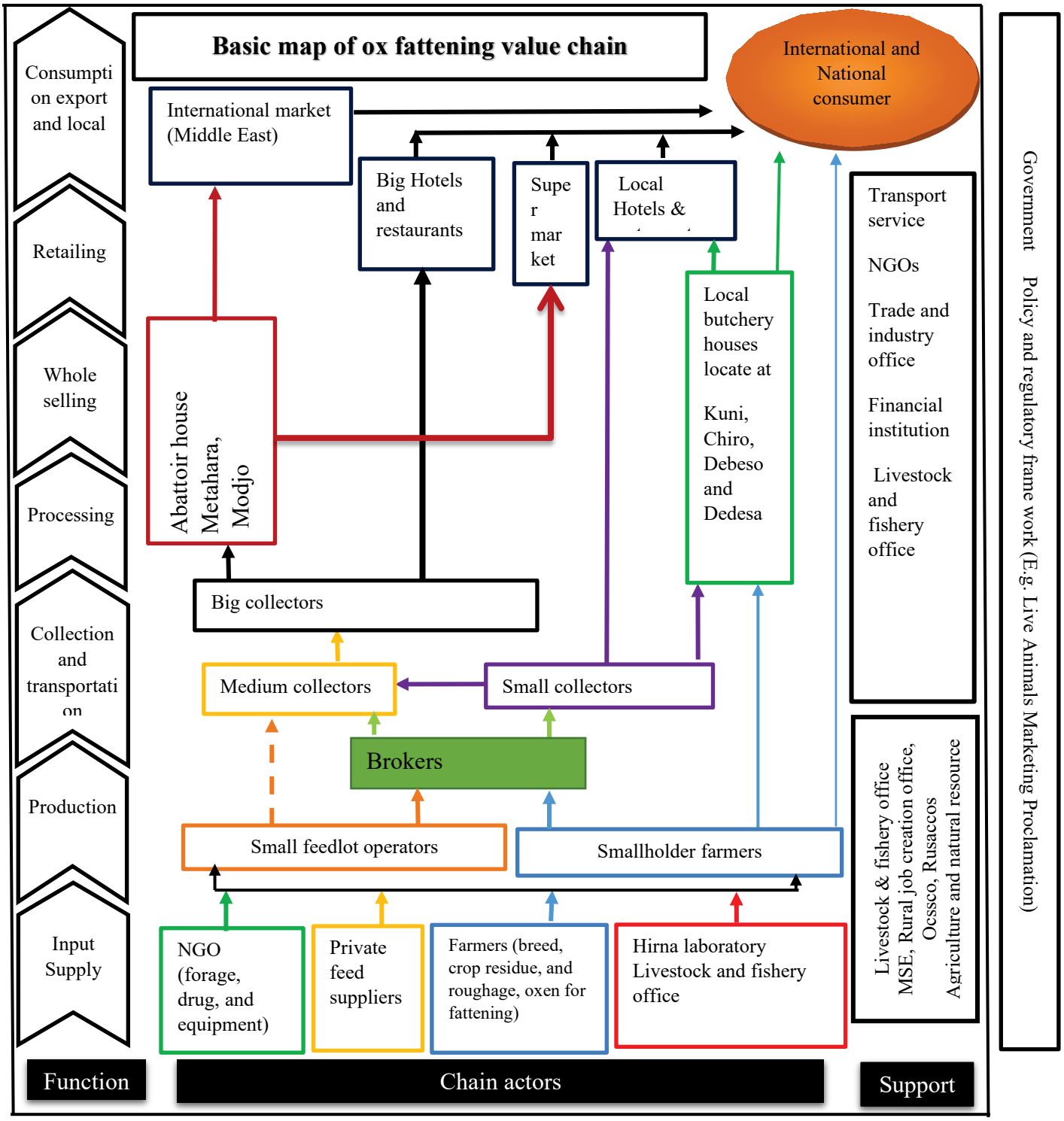
b) Relationships Between Actors

The relationship that is existing between the value chain actors is informal and mainly characterized by spot transaction. However, there is informal relationship between medium collectors, big collectors, and Abattoir houses. The information flow that exists in the channel is very disconnected, the collectors are aware of the criteria of their buyers but the farmers are not. All the respondents reported that they have never received information from their buyer. However, the brokers highlights about the market/price situation and demand. The farmers do not even have a direct communication with big traders.

5.2.2 Value Chain Map,Market Channels and market routes

Value Chain Map of Gemechis Woreda

Value chain map of ox fattening is drawn based on information collected from farmers and woreda level stakeholders. The map constitutes functions, value chain actors and support providing institutions in ox fattening value chain. The map illustrates the relationship that exists between each actor, their role and institutions providing support to the value chain.


Basic map of ox fattening value chain
Consumption export and local
Retailing
Whole selling
Processing
Collection and transportation
Production
Input Supply
International market (Middle East)
International and National consumer
Big Hotels and restaurants
Super market
Local Hotels &
Abattoir house Metahara, Modjo
Local butchery houses locate at
Kuni, Chiro, Debeso and Dedesa
Big collectors
Medium collectors
Small collectors
Brokers
Small feedlot operators
Smallholder farmers
NGO (forage, drug, and equipment)
Private feed suppliers
Farmers (breed, crop residue, and roughage, oxen for fattening)
Hirna laboratory Livestock and fishery office
Transport service
NGOs
Trade and industry office
Financial institution
Livestock and fishery office
Livestock & fishery office
MSE, Rural job creation office,
Ocssco, Rusaccos
Agriculture and natural resource
Government Policy and regulatory frame work (E.g. Live Animals Marketing Proclamation)
Function
Chain actors
Support

Market Channels

Based on the market routes and value chain map different market channels are identified. The margin that the farmers get from ox value chain depends on the type of channels he/she uses and the number of intermediaries involved. If the channels are too long, the farmers get lower margin from ox value chain. If the numbers of intermediaries involved is small or if the farmers get their ox to terminal market they fetch better profit margin for their ox.

Ox Fattening Value Chain Market Channels in the Woreda

1. Farmers – Brokers -Consumers
2. Farmers – Brokers- Small Collectors--Medium Collectors – Butchers/Hotels and Restaurants- Consumers
3. Farmers – Brokers-Small Collectors -Medium and Big Collectors – Export Abattoirs – Consumers

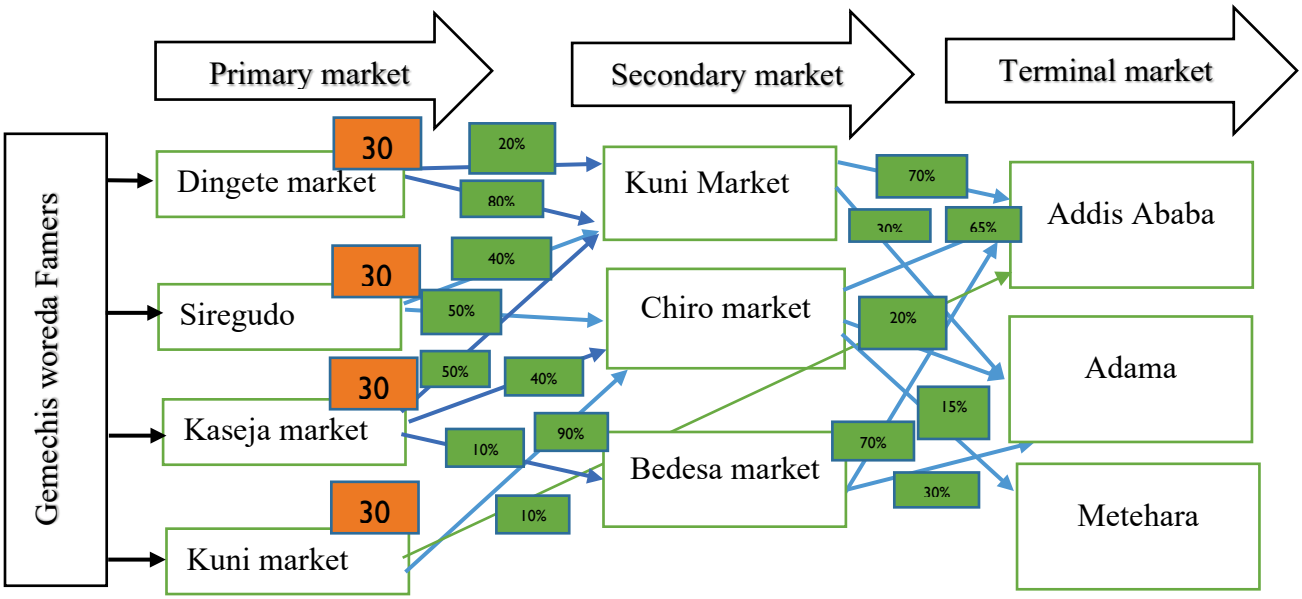
Key:

- ✓ Small collectors are traders that collect around 4four - five oxen from Single market
- ✓ Medium Collectors are traders that collect an average of five - 10 oxen at a time (single market)
- ✓ Big traders are traders that collect more than 10 or more oxen at a time (single market)

Market Route Gemechis Woreda

There are different market routes for marketing of ox produced in Gemechis woreda. Oxen produced in the woreda flow through different routes to rich to the terminal market. Most of the farmers sell their ox at their own farm gate and some at nearby markets such as (Dingete, Sire gudo, Kaseja and Kuni) markets, but there are farmers who take their oxen outside of the woreda in places like Chiro and Bedesa in search of better price. Oxen marketed from Gemechis woreda passes through different market routes such as Kuni, Chiro, and Bedesa etc. to reach to the terminal market.

Volumes moving through each channel



5.2.3 Overlays: Number of Actors, Volumes and Transaction Cost

Oxen value chain is significant livelihood activity in all the woreda. There are number of actors involved at each level of production and marketing of oxen. Wheat bran is supplied by private Business who owns small consumers shops at each kebele. Moreover, there are around 10 collectors in the woreda and three coming from other woredas such as Debeso and Bedesa.

Transaction costs vary across the marketing hierarchy depending on the locations. These include transport, labor, broker, tax, herders/shepherds, water, feed, and the collector's/trader's own expenses.

5.2.4 Opportunities, Constraints, Possible Solutions, and DFSA Proposed Intervention Activities for Oxen Value Chain

Opportunities

1. The farmers have indigenous knowledge for fattening ox and oxen fattening is widely practiced. Farmers use a combination of different feed that is available locally to fatten their ox.
2. Demand for Harar (East and West hararge) fattened ox is very high locally and nationally.
3. Farmers fatten ox after using it for ploughing (draft power) purpose for one season, which gives them double benefit.
4. High potential for increasing frequency of fattening in a year. Possible to fatten four times a year even though most of the farmers are using once or twice a year currently.
5. Focus by government to reach each of kebeles in the woreda with veterinary service, by establishing vet clinics in each kebele.
6. Support from livestock and fishery office to develop the sector.

7. Accessibility of crop residue that can be used for fattening of ox (Sorghum and maize straw).

Constraints

1. High involvement of brokers in marketing of ox (price is set by the broker) which puts buyer and seller in a disadvantaged position.
2. Low awareness on improving palatability and nutritional value of crop and plant residue by treatment.
3. Absence of private input suppliers (feed and vet service).
4. Coverage and quality of veterinary service in the area is not enough.
5. Poor access to financial services to engage in oxen fattening (loan and insurance).

Proposed Market Based Solution

1. Private sector market actors engage in milling and treating of sorghum and maize straw and supply it to farmers engaged in oxen fattening.
2. Private sectors engage in mobile vet service provision.
3. Implementation of Live animal marketing proclamation No. 819/2014[12].

Proposed SPIR Intervention Activities

1. Organize farmers into producer marketing groups to increase their bargaining power and help them sell directly to larger buyers.
2. Provision of fully-fledged training (production cycle, animal health, selection, feeding trough and shade construction, feeding, marketing.) to improve farmers gain from the sector.
3. Supporting government and private vet clinics to improve their service and address the last mile.
4. Strengthen or establish input suppliers.
5. Organize MSP for engaging all actors involved in the oxen value chain for proper marketing system which benefits all fairly.
6. Facilitate business to business to directly link program participants to output market actors.

[12] https://chilot.files.wordpress.com/2014/09/proclamation-no-819-2014-live-animals-marketing-proclamation.pdf

6. Vegetable Value Chain

6.1. Overview of Vegetable Production in Ethiopia

6.1.1 Importance of Vegetable Production, Dynamics & Trends

In Ethiopia, the vegetable subsector has a vital role in human nutrition and health, farm income generation, poverty alleviation and foreign currency earnings through export and foreign direct investment.

Processed products such as tomato paste and tomato juice are produced for export to Somalia, Djibouti and Saudi Arabia, making a significant contribution to the national economy. Ethiopia's wide range of agro-climatic conditions and soil types makes it suitable to produce vegetables. Vegetable crops are suitable for production under intensive systems, where some farmers produce two to three times within a calendar year in Ethiopia. However, vegetable production and marketing in the country is constrained by several challenges. Among these are scarcity of improved seed, poor agronomic practice, high influence of brokers, and post-harvest loss.

Vegetables make up a smaller portion of the agriculture sector, producing only 350,000 metric tons during a five-year period (2004-2009) compared to cereal, which produced 15.2 million metric tons in 2009 alone (USAID, 2010) and making up 2.18percent of total crops in 2016 (CSA, 2016). Some of the reasons for such low yield include poor crop management due to the low use of fertilizers and crop protection chemicals, lack of knowledge in production, and inadequate land cultivation. However, vegetables have a high potential due to the "favorable climate, proximity to European and Middle Eastern markets, and cheap labor" (Ethiopian Investment Agency, 2012). There has also been growing interest and demand from Ethiopians because of its health and nutritional benefits as well as from countries in Europe and the Middle East.

There are two seasons in which vegetables are usually grown in: the wet season and dry season. The wet season usually lasts about 6 months from June to November with June through August bringing heavy rain (*meher* season). Along with controlled irrigation, pumpkins, Ethiopian mustard, hot pepper, and sweet potato are mainly grown in this condition. Dry seasons rely on full irrigation with green beans, Irish potato, kale, cabbage, tomato, and onion being the main vegetable crops grown. However, vegetables in the dry season is less favorable because of the high cost from intensive irrigation use, diesel fuel for pumping water, and hired labor (Emana et al, 2015).

In a survey conducted by CSA in 2016 for private peasant holdings, red pepper and Ethiopian cabbage had the highest production at 35.30 percent and 44.29 percent as well as the largest area at 70.93 percent and 16.86percent among vegetables for the 2015/2016 season (CSA, 2016). The total production of vegetables overall was 744,446.84 metric tons. Red peppers' total production was 262,790.83 metric tons and Ethiopian cabbage's overall production was 329,696.01 metric tons. Tomatoes produced the third most at 59,156.34 metric tons and head cabbage at 46,317.72 metric tons.

In a study done from 2010 to 2013 in three zones and one special district (West Shewa in Oromia National Regional State; Gurage, Hadiya and Yem-Special district in Southern Nationals, Nationalities and Peoples Region), which are among the major vegetable producers, the most produced were tomato, Irish potato, onion, and cabbage. However, as mentioned above, poor management and lack of knowledge as well as current the market structure and inadequate transport and warehouse facilities damage the yield and value of the vegetables. Because these warehouses are not able to keep the vegetables fresh, numerous farmers are forced to sell their crops at low prices. Though there has been an increasing sentiment for vegetables because of its health benefits, many are still not completely aware of exactly what benefits they bring (Emana et al, 2015). As farmers become more educated in the best practices for crop management and marketing, vegetables will continue developing into an important source of income and diet for the farmers and domestic consumers alike.

Ethiopia has a population of over 100 million people but the average land holding is about 1 hectare (Hirpa et al, 2016). Due to the low productivity of crops as well as the hot climate and the occurrences of drought, food insecurity is one of the major concerns in the country, resulting in the type of crops grown to be a crucial component. Potatoes have the potential to meet these demands due to "its high yielding ability in a short season, presence of suitable agro-ecological zones within the country, the availability of labor for its production on large area of land, and the availability of a potential market with considerable added value for its produce" (FAO, 2008, cited in Hirpa et al, 2016). However, many small farmers still consider potatoes as a secondary non-cereal crop to their main food crops even though 70percent of the agricultural land is suitable for potato production and improved varieties of potatoes have been distributed to farmers by various research centers, cooperatives, and private suppliers, albeit the seeds are not readily available for all farmers (Alemu, 2015). Until recently, farmers could not grow potatoes during the long, rainy season because of late blight. The availability of late blight-resistant varieties has allowed farmers to extend potato production (Gromme et al, 2010).

Many are also hesitant to dedicate their limited land space to vegetable production because of the lack of knowledge in the importance of nutrition, the emphasis on growing other type of crops like pulse and maize, and low production rates among vegetables due to restricted use of irrigation, inadequate training, and poor land preparation (USAID, 2013). With access to irrigation, capital, and adequate training, farmers may be able to invest into improved potato seeds and yield higher quality potatoes and increase household income (USAID, 2013).

Potatoes are rich in vitamins and nutrients like vitamin C, potassium, carbohydrates, and anti-oxidants among other important daily sources (Vita, no date). Because of the little importance placed on vegetables, most locals are not able to maintain a healthy lifestyle and are severely lack those components in their daily lives. However, as locals become more informed about the importance of vegetables in daily consumption, there will be added emphasis on the production of potatoes.

6.1.2 **Importance of Vegetable Production in SPIR Woredas**

In all the SPIR, implementation area farmers practice mixed farming. Most of the farming households practice Vegetable production as one of their livelihood activities. Accordingly, in

some of the SPIR project implementation woredas vegetable production is selected as value chain commodity in varying order of priority. Vegetable production is an important source of income and nutrition for poor rural households.

Vegetable production in all the woredas fall under the classification of backyard vegetable production. Cabbage, carrot, beetroot, onion and tomato dominate production of vegetables in the implementation areas. Farmers mostly produce vegetables for household consumption and sell the remaining amount.

Vegetable production requires very little capital and land. Vegetables can be produced up to four times a year. Moreover, vegetables are classified as a woman domain livelihood activity. Women and children play major role in production of vegetables. Women are responsible for managing production and marketing of backyard vegetables in all the woredas. They have full control over income earned from vegetables. Hence, engaging program participants in vegetable will contribute to increased income and assets of program participants. Since women are the sole responsible spouse to run the business and manage income earned from the business: it contributes to women economic empowerment and child nutrition.

6.2. Vegetable Value Chain in SPIR Implementation Woreda

6.2.1 Functions and Actors

The vegetable value chain involves different functions and actors. In all the SPIR implementation woredas where the vegetable value chain is selected, five different functions has been identified. There are several market actors playing different functions.

Input Supply

Major inputs required for the vegetable value chain are seeds, agro-chemicals, fertilizer, farm tools, and finance. In addition, farmers need production and marketing skills. Farmers obtain these inputs from input suppliers in major towns or from other farmers and retailers in spot markets. There are at least three local markets surrounding the main woreda markets of SPIR implementation areas. Markets that serve farmers as a main source of inputs and output market outlet is shown in market channel of each woreda in the value chain map below.

In all the woreda there is a crop production and protection expert in Agriculture office in each of the kebele, local government units there are development agents who are there to support farmers in vegetable production. These experts provide technical support to the farmers. However, in case of occurrence of disease, pest, or controlling weeds these individuals do not have enough equipment and access to the required agro-chemicals. Equipment like sprayers and agro-chemicals are too expensive for smallholder farmers especially for PSNP beneficiary to purchase and utilize. Even if the farmers have the capacity to purchase there are no suppliers of these equipment and agro-chemicals in the SPIR implementation area.

Most of the farmers produce vegetable in their backyard. Hence, the farmers need very small amounts of seed for covering their land. However, there is no appropriate packaging available for the small fields the farmers are farming. Moreover, there are no vegetable seed suppliers in any of the woreda of implementation. This forces the farmers to purchase their seed from

retailers in the spot market. The seed supplied by these spot market retailers is mostly adulterated, sometimes expired, and no brand on the package. This has contributed for low productivity in vegetable production.

Amhara credit and saving institution, OMO Microfinance, Sidama microfinance, and Oromia Credit and Saving Share Company are financial institution providing financial services for farmers in implementation areas. However, representatives of the institutions in Key Informant Interviews stated that it is not common in their institutions to provide loans for vegetable production to farmers.

Farmers, Government, Nongovernmental organization and Microfinance institutions play input supply role in the value chain. Government development agents are collecting money from farmers, buying seeds, and supplying to them. They are playing facilitation role in collective input marketing. Nongovernmental organizations are purchasing and distributing seeds free to farmers.

Production

Production of vegetables is mostly limited to the smallholder production level like any of the value chains. Production of vegetables by program participant are backyard vegetable production and it is mostly dependent on rain. However, there are different types of irrigation schemes used by farmers to produce vegetables. For example, in the Amhara region implementation area there are irrigation schemes developed by different programs (Like PSNP) which has created access to irrigation for farmers. There are also small-scale irrigation technologies like roof water harvesting, small ponds, pumps (diesel pump, treadle pumps, rope pumps, and washer pumps) which are used by the farmers to produce vegetables by irrigation schemes.

Women, men, and children take part in the production of vegetables. However, women dominate marketing of backyard vegetable production. Farmers have inadequate skill in production and marketing of vegetables. Even though it is possible to produce vegetables four times a year and the crop has a high value farmer bases their production in rain fed one or twice a year and they allocate small amounts of land for vegetable production.

Respondents of FGD and KII interview mentioned that access to inputs (irrigation technologies, seeds, fertilizer, agro-chemicals and farm tools) required for production of vegetables is not accessible to farmers. Moreover, the farmers have poor awareness of vegetable production and marketing, especially using inputs that can improve their production and productivity.

Collection and Trading

Farmers market their produce right after harvesting, because there are no cold storage facilities that the farmers can use for storing the vegetables. This has contributed for high price variability of vegetable during season of production and off-season. Smallholder farmer production is rain fed. Thus, all the farmers produce vegetables at the same time and market at the same time. During this time, the price of vegetables is very low which reduces the financial gain that farmers receive from the sector. Moreover, due to overflowing of the output market during this time the farmers are constrained to sell their produce. This increases their

vulnerability and reduces their bargaining power. During the time, the farmers are forced to take price offered by brokers or buyers.

In vegetable marketing, many intermediaries are taking part. However, the role of brokers in the sector is very high. Brokers are those who set the price, complete the collection and transportation of vegetables from the farm and sometimes they provide input or cash credit thereby increasing their financial influence on the producer. Women oversee marketing backyard level vegetable production and they are full entitled to make spending decision for income raised from vegetable marketing.

In vegetable marketing, the utilization of inaccurate measuring instruments is very common in all the implementation regions. For example, onions and potatoes are marketed with sachet called "Gonfa" in East Hararge and "Wasila" in Wondo-Genet and Malga. This sachet is commonly known as a "quintal" in Ethiopia . However, quintal weights 100kg while Gonfa or Wasila weighs on average 150kg. This form of measurement is even used on large vegetable farms.

Processing

There is very little value addition at the farmer's level in this value chain. The value addition starts at hotels and restaurants. Vegetables produced in the Amhara implementation woredas are supplied to hotels and restaurants at Amdework, Ass Ketema, Ayna Bugna, Woldia, Alamata, Lalibela, Korem, and Sekota . While vegetables produced in East and West Hararge are supplied to Chiro, Diredawa, Haramaya, and Harar. Vegetable produced in Malga and Wondo-Genet are supplied to Hawassa, Shashamane, Wondo, and Malga.

However, the value chain has the potential to start processing at a different capacity and level (small, medium and large). Following the increase in urbanization, perishability of the product, and seasonal production there is a huge need of processed vegetables in the lean season. There are also different technologies for processing vegetables at local level and advanced agro-processing industries.

Consumption

Vegetables are a vital source of nutrition for Ethiopian consumers. And households use vegetable in day to day dish as an ingredient in different types of traditional sauce w*ot*. Farmers consume a majority of their production at home, which has huge contribution in child and household nutrition. Hence, increasing production and productivity of vegetable and engaging more farmers in vegetable production has huge contribution to food security and poverty alleviation.

6.2.2 **Relationships Between Actors**

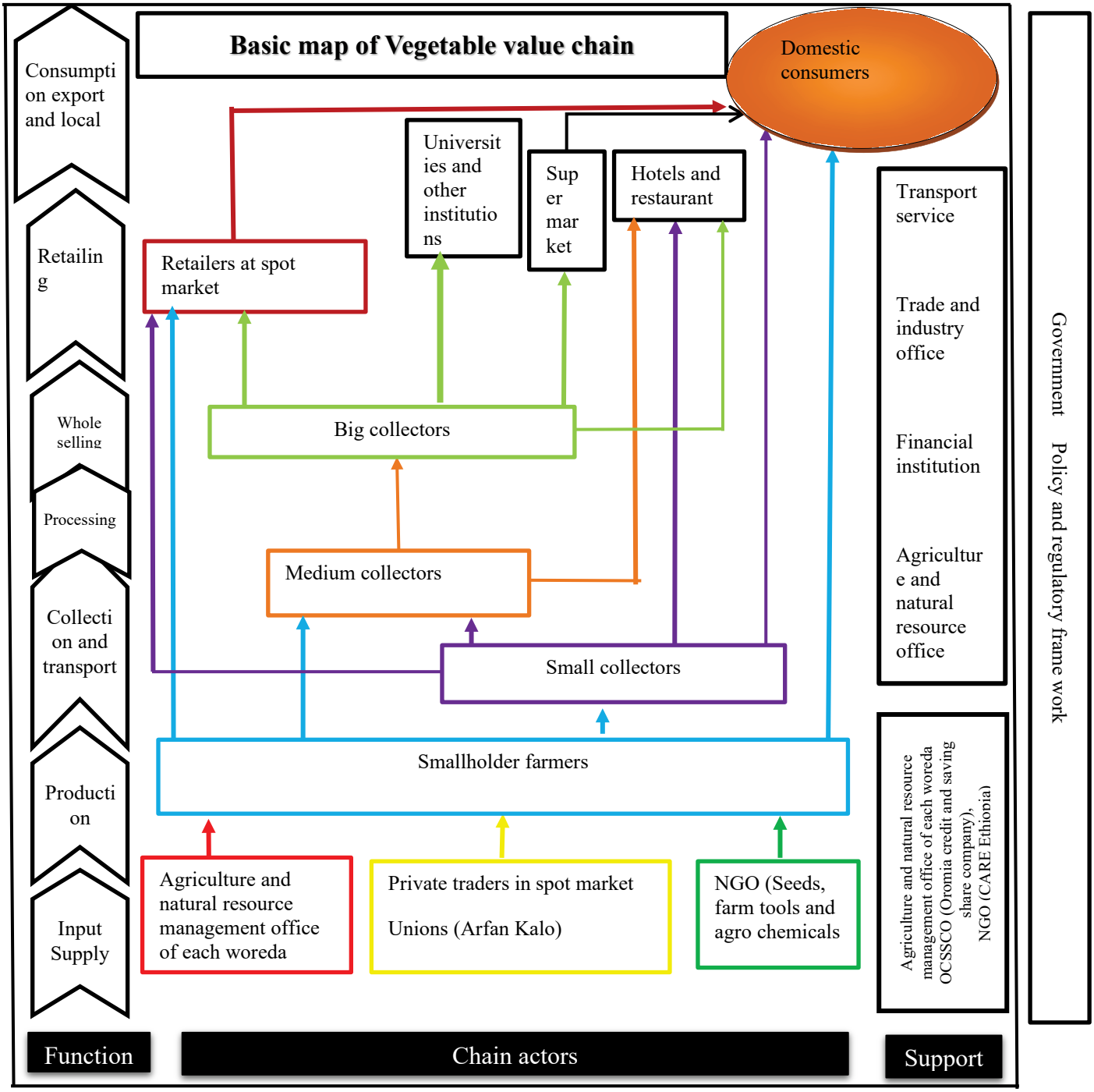
The relationship between value chain actors is informal and mainly characterized by spot transaction. However, there is informal relationship between small, medium, big collectors. The information flow that exists in the channel is very disconnected, the collectors are aware of the price and demand of buyers but the farmers are not. All the respondents reported that they have never received any kind of information from their buyer or supplier about market information, sources of input, and how to use these inputs.

However, the farmers have a traditional way of collecting market information. The participants in the FGD reported that they go to at least to one of the woreda markets before they set the price for their vegetables and take them to market. Farmers also check for the daily price before they sell as they arrive in the market.

6.2.3 Value Chain Map and Market Channels for Vegetable East and West Hararge Woredas

A) Value Chain Map of East and West Hararge Woredas

The below value chain map of Vegetable is drawn based on information collected from farmers and woreda level stakeholders. The map constitutes Functions, value chain actors and support providing institutions in Vegetable value chain. The map illustrates the relationship that exists between each actor, their role and institutions providing support to the value chain. Value chain map and market channels of all the woredas of SPIR implementation in East and West Hararge is very similar, but the market roots are different.



Market Channels

Based on the market routes and value chain map, different market channels are identified. The margin that the farmers get from Vegetable value chain depends on the type of channels he/she uses and the number of intermediaries involved. If the channel is too long, the farmers get lower margin from Vegetable value chain. If the number, of intermediaries involved is small or if

the farmers get their Vegetable to terminal market, they fetch better profit margin for their produce.

Vegetable Value Chain Market Channels in the Woreda

1. Producers – Consumers
2. Producers – Small Traders – Consumers
3. Producers – Small Traders– Retailers/ Hotels and/or Restaurants – Consumer
4. Farmers– Small Traders – Medium and/ or Big Traders – Hotels and Restaurants Institutions – Consumers

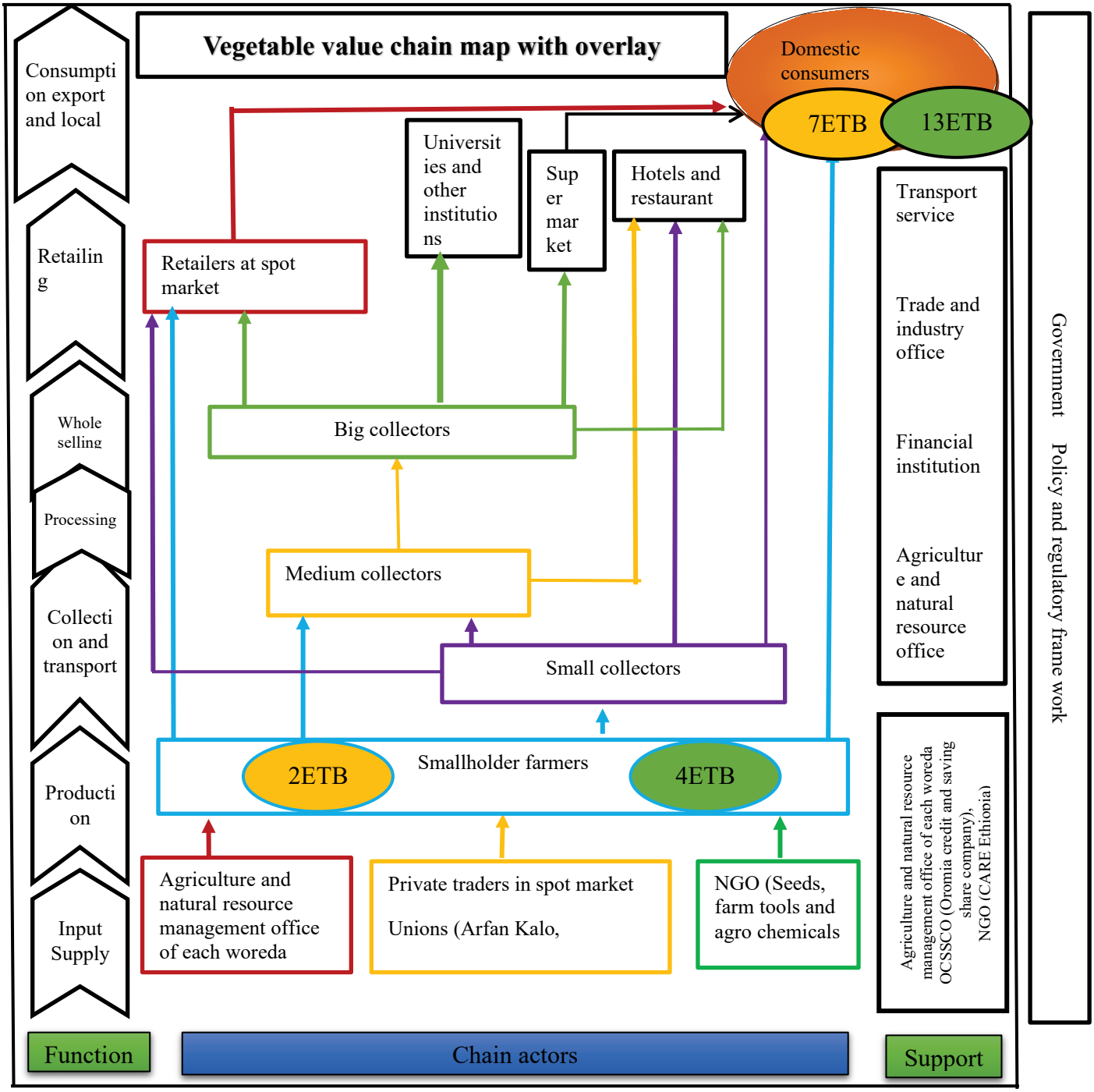
Key:

- ✓ Small traders are traders that collect one to 10 quintals of vegetable at time (single market).
- ✓ Medium traders are traders that collect 10- 25 quintals at a time (single market).
- ✓ Big traders are traders that collect more than 25 quintals at a time (single market).

B) Overlays: Number of Actors, Volumes and Transaction Cost

Vegetable value chain is significant livelihood activity in all the woreda. There are number of actors involved at each level of production and marketing of Vegetable. According to the data obtained from agriculture and natural resource management office of each woreda, averagely farmers have land holding of 0.25 Hectares. This land is used for production of chat, major staple crops (sorghum, maize, wheat, barley) and vegetables. In all the woredas, there are no private input suppliers. Mostly vegetable in flows to this area from other areas because the area does not have enough production of vegetable throughout the year that can satisfy woredas demand. However, during Mehir production season there is small surplus production. During this time, big traders and medium traders come from Dire Dawa and Kombolcha collect and transport the produce to Dire Dawa and Kombolcha.

Transaction costs vary across the marketing hierarchy depending on the locations. These include transport, labor, tax, and the collector's/trader's own expenses.



- ✓ All prices written in the ovals indicate average price of Potato and onion sold towards the direction of the arrow
- ✓ Orange represents the price of potato and green represent price of onion

C) Opportunities, Constraints, Possible Solutions, and DFSA Proposed Intervention Activities for Vegetable Value Chain

Opportunities

1. There is a huge unmet local market demand for any type of vegetable.
2. There is potential to produce vegetable at least once a year.
3. Vegetable can be produced in small amounts of land and requires less water compared to other crops.
4. The commodity is classified as women dominated crop, hence has great impact on improving women empowerment and child nutrition.
5. There are traders engaged in marketing of potato seed.
6. There is huge market and production potential for pumpkin. From one plant of pumpkin farmer can harvest up to 50 pumpkin heads with current practice. This has huge economic and nutritional contribution for program participants and very is to produce in back yard with small amount of water.
7. Existence of Haramaya University in the area. The university is conducting wide variety of research in agriculture which can benefit program participants.
8. Many farmers are interested to engage in vegetable production.

Constraints

1. Very few Kebeles have irrigation scheme and under group water potential for small scale irrigation.
2. Poor access to vegetable seeds.
3. Vulnerability to pest and disease.
4. High cost of inputs required for production of vegetables.
5. Low accessibility of post-harvest technologies and poor post-harvest handling by farmers.
6. High involvement of brokers in the sector is reducing farmers gross margin from the production.
7. Poor access to market information.
8. Limited technical support on agronomic practice and post-harvest handling of vegetables.
9. Production of vegetable is rain fed, as there is recurrent drought in the area.

Market Based Solution

1. Private sector market actors engage in input provision, especially vegetable seeds, agro chemicals, small scale irrigation technology and farm tools.

Prioritized List of Proposed SPIR Activities

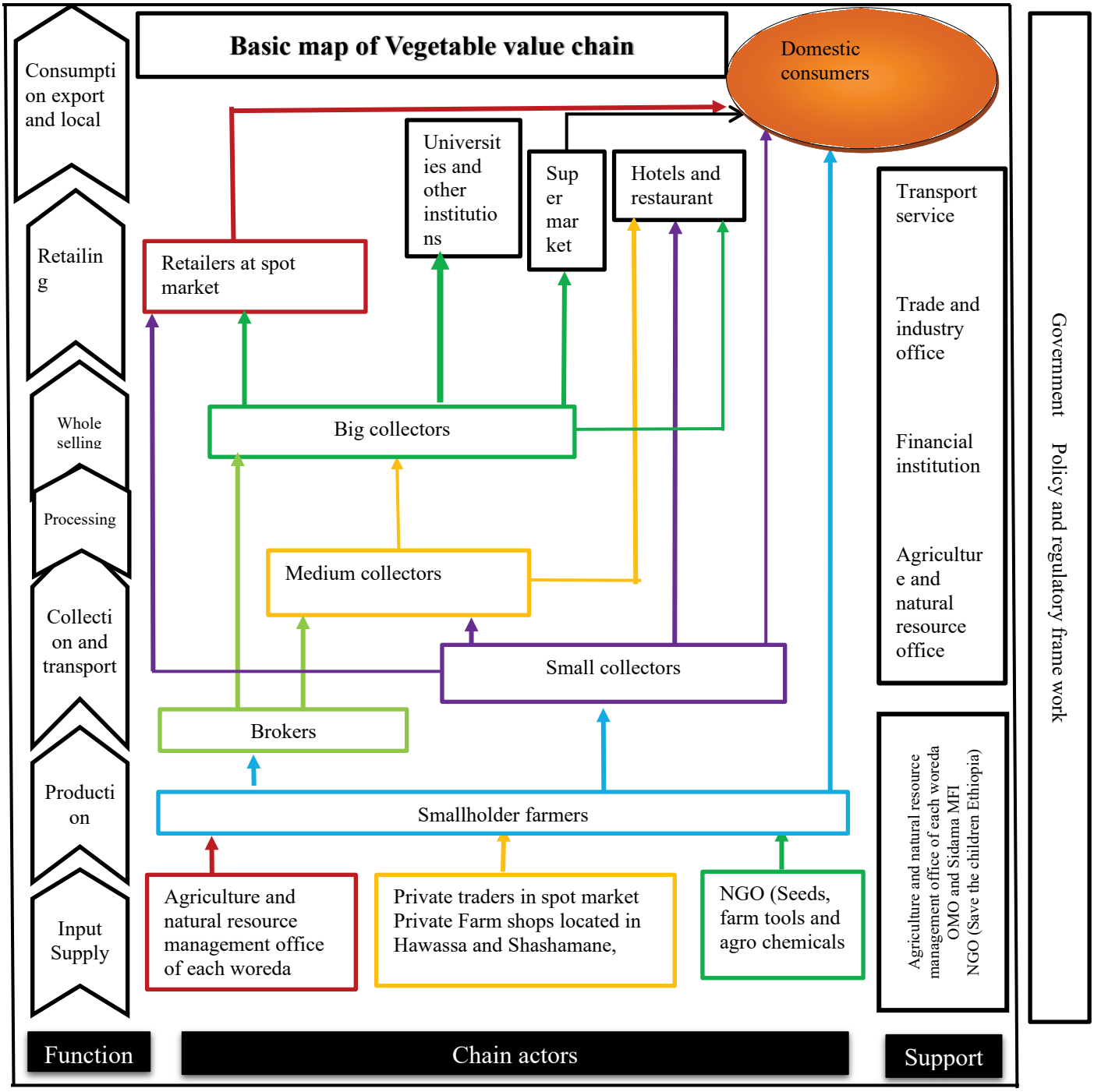
1. Provision of fully fledged training for program participants who are willing to engage in vegetable value chain.
2. Supporting establishment of input suppliers.
3. Promotion of appropriate small-scale irrigation technologies and training farmers on the selected appropriate technology (Solar pump, Rope and washer pump, roof water harvesting structure, etc.).

4. Strengthening/establishing production and marketing group.
5. Facilitate input and output market linkage for vegetable producer famers.
6. Promotion of pumpkin as income earning and high nutrition commodity.
7. Facilitate access to market information for program participants.
8. Continued monitoring and support for program participants engaged in Vegetable production.

6.2.4. Value Chain Map and Market Channels for Vegetable SNNPR Pilot Woredas

A) Value Chain Map of SNNPR Pilot Woreda (Wondo-Genet and Malga)

Value chain map of vegetable is drawn based on information collected from farmers and woreda level stakeholders. The map constitutes functions, value chain actors and support providing institutions within the vegetable value chain. The map illustrates the relationship that exists between each actor, their role and institutions providing support to the value chain. Value chain map and market channels of all the woredas of SPIR implementation in Wondo-Genet and Malga is very similar, but the market roots are different.


Basic map of Vegetable value chain
Domestic consumers
Consumption export and local
Retailing
Whole selling
Processing
Collection and transport
Production
Input Supply
Universities and other institutions
Super market
Hotels and restaurant
Retailers at spot market
Big collectors
Medium collectors
Small collectors
Brokers
Smallholder farmers
Agriculture and natural resource management office of each woreda
Private traders in spot market
Private Farm shops located in Hawassa and Shashamane,
NGO (Seeds, farm tools and agro chemicals
Transport service
Trade and industry office
Financial institution
Agriculture and natural resource office
Agriculture and natural resource management office of each woreda
OMO and Sidama MFI
NGO (Save the children Ethiopia)
Government Policy and regulatory frame work
Function
Chain actors
Support

Market Channels

Based on the market routes and value chain map, different market channels are identified. The margin that the farmers get from vegetable value chain depends on the type of channels he/she uses and the number of intermediaries involved. If the channel is too long, the farmers get lower margin from vegetable value chain. If the number, of intermediaries involved is small or if the farmers get their vegetable to terminal market, they fetch better profit margin for their produce.

Vegetable Value Chain Market Channels in the Woreda

1. Producers – Consumers
2. Producers – Small Traders – Consumers
3. Producers – Small Traders– Retailers/ Hotels and/ Restaurants – Consumer
4. Producers – Small Traders – Medium/Big Traders – Hotels/Restaurants/Institutions – Consumers
5. Producers – Brokers- Medium/Big traders- Retailers-Consumers

Key:

- ✓ Small traders are traders that collect one to 10 quintals of vegetable at time (single market)
- ✓ Medium traders are traders that collect 10- 25 quintals at a time (single market)
- ✓ Big traders are traders that collect more than 25 quintals at a time (single market)

B) Overlays: Number of Actors, Volumes and Transaction Cost

Vegetable value chain is significant livelihood activity in all the woredas. There are number of actors involved at each level of production and marketing of vegetable. According to the data obtained from agriculture and natural resource management office of each woreda, averagely farmers have land holding of 0.5 Hectares. This land is used for production of chat, coffee, maize, barley, false banana and vegetable. Both woredas are located close to Hawassa and Shashamane town where private input suppliers and big output market actors are located. There is also high pressure of brokers in vegetable value chain in both Wondo-Genet and Malga. Brokers have high influence in price setting and linking of buyers and sellers.

Transaction costs vary across the marketing hierarchy depending on the locations. These include transport, labor, tax, and the collector's/trader's own expenses

C)Opportunities, Constraints Market Based Solutions and Proposed SPIR Activities Vegetable Value Chain

Opportunities

1. Suitable agro ecology for production of vegetables.
2. The woreda are close to biggest input and output market for vegetables.

Constraints:

1. Many farmers in the targeted kebeles in the two-targeted woredas are growing chat instead of growing vegetables because it is perceived to be more profitable. In addition, farmers are not considering the harm that chat is causing to the end user.
2. In-appropriate packaging of vegetables which smallholder farmers cannot afford.

Market Based Solution

1. Private sectors engage in appropriate packaging of vegetable seed.

Possible SPIR Activities:

1. Training on the technical aspects of growing vegetables.
2. Facilitating small-scale irrigation for vegetable farming. For example, VESA groups could buy one or more solar pumps, possibly using a loan from Vision Fund Ethiopia (VFE). SPIR could work with the solar products provider Lidetcoo Company.
3. Vegetable seed – Leveraging the existing input market system network or agro-dealers and agents to extend even closer to the targeted households in the targeted kebeles.
4. Demonstration Plots – SPIR could work with lead firms to provide seed to farmers for demonstration plots on seeds they want to promote. SPIR may need to finance the renting of the land and some of the costs of the lead firm such as their training staff.
5. Post-harvest – Given the large loss from post-harvest handling, SPIR may want to promote different techniques.
6. Purpose 1 Livelihood staff will need to work closely with the SPIR nutrition experts to determine which vegetables to promote SPIR participants to grow. In addition, the SPIR nutrition experts can provide recipes to SPIR participants. For example, head cabbage could be prepared in many more ways than are currently done.
7. SPIR could link with the lead buyer(s) in Hawassa like Game to link producers to more collectors. These collectors could provide to SPIR participants information on quality and production requirements for vegetables.
8. Promote changing chat production to vegetables. If farmers are not willing to stop growing chat, the SPIR could promote inter-cropping vegetables with the chat.

6.2.5. Value Chain Map and Market Channels for Vegetable in North Wollo and Waghimra Zone

A) Vegetable Value Chain in ORDA Implementation Area

Vegetable value chain is significant livelihood activity in all the woredas. There are a number of actors involved at each level of production and marketing of vegetables. According to the data obtained from agriculture and natural resource management office of each woreda, averagely farmers have land holding of varies from 0.25-0.65 hectares. This land is used for production of teff, wheat, barely, sorghum, maize, lentil, and vegetable.

Vegetables produced in the woredas are consumed with in the woreda and the woredas in North Wollo and Waghimra zone take vegetable from surplus producing areas. The price of vegetables is extremely high in implementation woredas and farmers engaged in production of vegetables through irrigation scheme are getting premium price for their produce.

Transaction costs vary across the marketing hierarchy depending on the locations. These include transport, labor, tax, and the collector's/trader's own expenses.

B) Opportunities, Constraints Market Based Solutions and Proposed SPIR Activities Vegetable Value Chain

Opportunities

1. Availability of irrigation schemes developed by government and different projects including SPIR
2. High demand of vegetable on the market
3. High contribution to nutrition security
4. Better culture of developing private water harvesting structure and its utilization

Constraints

1. Low accessibility of vegetable seed, watering can, pumping technologies and other farm tools
2. Skill gap of farmers in agronomic practice, producing multiple times, post-harvest handling and others
3. Poor consumption of vegetables at household level

Possible Market-based Solutions

1. Private sector actors engage in supply of agricultural inputs (vegetable, farm tools, technologies and agro chemicals)
2. Private sectors engage in output market and provision of post-harvest technology service

Prioritized List of Possible SPIR DFSA Activities

1. Provision of full-fledged training (agronomic practice, compost preparation, post-harvest handling, and marketing)
2. Conducting nutrition education and cooking demonstrations
3. Promotion of small scale technologies and pumping technologies
4. Supporting existing/establishing input suppliers to reach to the last mile

6.3. Pumpkin (Fruit/Vegetable) as Part of Vegetable Value Chain

In the process of value chain commodity selection, Pumpkin is among the list of vegetables mentioned by the farmers to be considered.

Opportunity

1. Requires small land and can be grown during dry season/ off season using drip irrigation
2. From single plant farmer can harvest averagely 20 pumpkin heads with currently available seed varieties and agronomic practice.
3. One pumpkin head can be sold averagely to 40 ETB, which has huge potential to increase income of households.
4. Almost all parts of pumpkin are edible (leaves, seed, cover, and flesh), which has huge impact on nutrition security.
5. Farmers are using currently pumpkin as Sauce (*Wot*), Roasted, and part of potage. It is also used to fatten ox or sheep or feed livestock as source of water during drought.
6. Pumpkin is grown in all woredas of implementation of SPIR-DFSA and it is used majorly for home consumption.

7. There are varieties of recipe to use pumpkin as ingredient in food preparation.

Constraints

1. Low attention is given for production, marketing and consumption of the commodity by farmers.
2. It is barely considered as vegetable or fruit by agriculture office, hence there no extension service targeting pumpkin.
3. Poor awareness of farmers on nutritional value of pumpkin and considering it as food for the needy.

SPIR Proposed Activities

1. Collaborating with Harmaya University to select better seed from locally available varieties or introduce new variety from different parts of the country.
2. Training Program participants on agronomic practice and post-harvest handling.
3. Conduct farmers field day on farmers performed better to disseminate good learning.
4. Conducting cooking demonstration at VESA level to introduce new ways of consuming pumpkin and creating awareness on nutritional value of the fruit/vegetable.
5. Facilitation of market linkage for program participants engaged in production of pumpkin.

6.5. Critical Success Factors

Critical success factor for Vegetable value chain lies in few core pillar issues; Increasing accessibility and affordability of inputs (Seed, Agro chemicals, fertilizers, farm tools and small-scale technologies), Improvising well-functioning of markets (access to market information, facilitation of market linkages, and infrastructure improvement), and improved knowledge of farmers in Vegetable production and marketing.

In SPIR implementation area, the farmers have poor access to inputs required to engage in Vegetable production and marketing. There are no suppliers of inputs for Vegetable production in any of the woreda. However, there are agricultural input suppliers are found in main towns like Hawassa, Shashamane, Chiro, and Diredawa. Improving accessibility and affordability of inputs required for production of Vegetable will highly improve the gain of farmers from the sector. Moreover, private sector role in improving input supply system is very crucial.

In the implementation, area there is no formal contracts between producers and input or output market actors, there is no information sharing, or any form of embedded service is

provided to producers. The transaction bases on spot and farmers are price takers, because they take their vegetables to the market in time of production and they do have no storage to increase shelf life of the product. Moreover, producers have little influence in the value chain governance. In vegetable value, chain brokers have vital role in price decision and market linkage. Improving the relationship that is currently existing between producers and input and output market actors and reducing role of brokers though organizing B2B, MSP, Establishing and supporting SME that will supply agro inputs and will play vital role in increasing gain of farmers in implementation area from the sector.

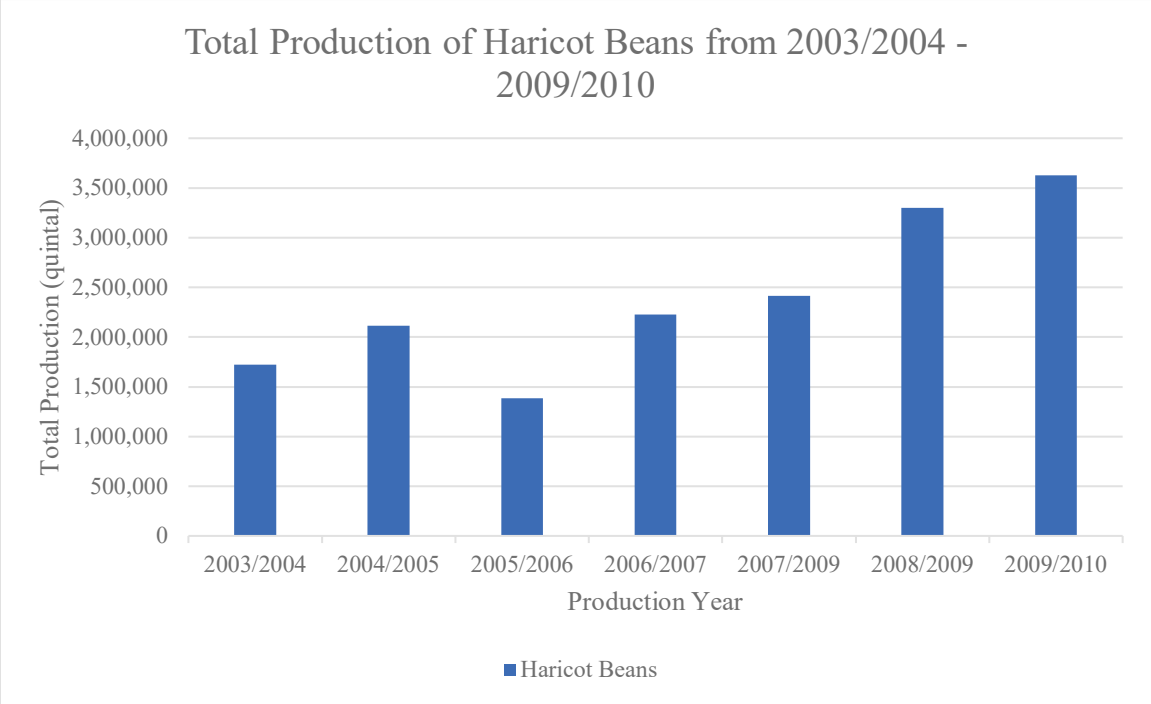
Farmers in the implementation woreda have low awareness on improved production and marketing of Vegetable (Utilizing improved seed, small-scale irrigation technologies, improved agronomic practice, and access and utilization of market information). Improving extension service in this regard will enhance the capacity of farmers to produce and market Vegetable.

7. Haricot Bean Value Chain

7.1. Overview of Haricot Beans

The pulse crop sector in Ethiopia has grown tremendously in the recent years, as it is now one of the top ten producers of total pulses in the world. One of the key exports, haricot beans (or *Phaseolus valgaris),* is the second most produced crop at 17.8percent after faba beans (USAID, 2010). Most of the beans are produced within the Rift Valley area, specifically in the Amhara and Oromiya region, accounting for 79percent of total production (IFRPS, 2010) and is consumed largely by the rural sector. There are two main types of haricot beans, based on color: red and white (Ferris and Kaganzi, 2008). White beans are grown mostly in the Central and East Rift Valley area and 90percent of total production is for export with farmers saving 10percent for seed (Broek et al, 2014). Red beans are preferred over white beans domestically due to its lower production cost (more labor, more land needed and bird keeping) and its popularity amongst the local due to its nutritional benefits, especially in the southern Rift Valley area.

Haricot beans have two production seasons: *Belg*, or the short rain season from March to May, and *Meher*, the longer rain season from June to August (Ferris and Kaganzi, 2008). It is usually intercropped with other commodities like coffee, inset, maize, or sorghum due to its ability to resist moisture stress and quickly mature, which results in increased production (Mulugeta, 2010). Total production has significantly gone up over the years due to the market demand both domestically and internationally. In 2003/2004, there was 1,721,529 quintals of haricot beans produced but in 2009/2010; 2,398,151 quintals of haricot beans were produced for an increased in 39.3 percent during that period (Mulugeta, 2010).



*Source: CSA Annual Agricultural Sample Survey Results

As with most sectors in Ethiopia, haricot bean production is hindered due to the limited use of inputs, lack of market accessibility/information for traders, lack of proper warehouse for storage, poor quality due to limited knowledge of best practices for modern agronomic practices, and financial constraints. Small farmers are also only able to allocate a small portion of their land to haricot beans. However, with institutions like the Ethiopian Institute of Agricultural Research (EIAR) and the government taking more actions in implementing policies and developing different bean varieties, Ethiopia's haricot bean market has the potential to produce a large amount and sell at a cheaper price than its competitors

7.2. Haricot Bean Value Chain in Chiro Zuria Woreda West Hararghe Zone of Oromia

7.2.1 Functions and Actors

Haricot bean is selected as the only crop value chain in Chiro Zuria woreda of SPIR implementation. This value chain involves different functions and actors, which includes all the main value chain functions starting from input to consumption. Along the functions there are number of actors playing different roles.

Input Supply

Major inputs required for haricot bean value chain are seed, fertilizer, farm tools, and credit and management skills. A majority of the farmers use local seed called "Kenya," a variety that has been in use for more than 10 years. Saving seed from harvested grain for the next season is a common practice in the woreda. The main source of seed for producers is fellow farmers. Improved variety seed named Awash 1 is in use in the area for many years and it is widely planted by many farmers. Farmer's access improved seed and fertilizer from multipurpose cooperatives located in woreda towns, which mainly sources inputs from unions.

Production

The white haricot bean is the widely produced bean in kebeles of Chiro woreda. As with other types of crops, haricot bean production is highly dependent on rain fed system. Inter cropping the haricot bean with maize and sorghum is a common practice in the woreda. The average land holding in the area is 0.375 hectare per individual and farmers produce haricot bean in all available land with intercropping. Farmers saw haricot bean when maize and sorghum reaches flowering stage.

The major production activities that haricot bean growers perform include ploughing, planting, fertilization, weeding, pest/disease controlling and harvesting. Smallholder farmers are the major producers for haricot bean in Chiro woreda.

Most of the famers' production cycle is yearly bases. Broadcasting is a commonly practiced planting method used by farmers. On average, the production process takes about four months. Haricot bean production process; such as land preparation, ploughing, planting, and fertilizer application are mainly the responsibility of adult men. Boys will provide support to their fathers by carrying farm tools and other related works. Women contribute to most aspects of

agricultural work such as seed selection and preservation, weeding, harvesting, threshing, and transporting produce from farm to home.

Collection and Trading

The main purpose of haricot bean production in the woreda is commercial purpose. The majority of farmers sell their product at local market (Dhega Chebsa, Aroge Gebeya, Merewa Rebisu and Beka) and some farmers sell to small collectors at village level. These small collectors will supply to big aggregators located at Debeso and Chiro towns.

Besides there are primary cooperatives located at kebele level, which collect haricot bean produced in the area and supply it to cooperative union called Burka Geneti located at Hirna town.

Haricot bean is one of the export commodity of Ethiopia and it is among crops traded at Ethiopian commodity exchange (ECX). Big collectors and unions collecting produce of this area trade the produce to ECX.

Price of white haricot bean depends on the international market price. On average a quintal of haricot bean costs between 1000 to 1300 ETB. Most of the time farmers' decision for production of haricot bean depends on previous year market price.

Processing

There is no value addition conducted at farmer's level. Value addition starts at hotels, restaurants and food processing companies. There are few companies using Haricot bean to blend it with other crops and prepare child food or animal feed.

Consumption- Domestic and export

White haricot bean is dominant variety produced in the area and it is export commodity. Farmers consume around 30percent of their produce and sale the remaining according to agriculture office of the woreda. Haricot bean is consumed in different forms in the woreda, and majority of farmers use to prepare *wot* local sauce consumed with *injera*. The commodity is also exported to Sudan, Yemen, South Africa, UAE, USA, UK, Italy, Germany, Belgium and the Netherlands.

7.2.2 Relationships Between Actors

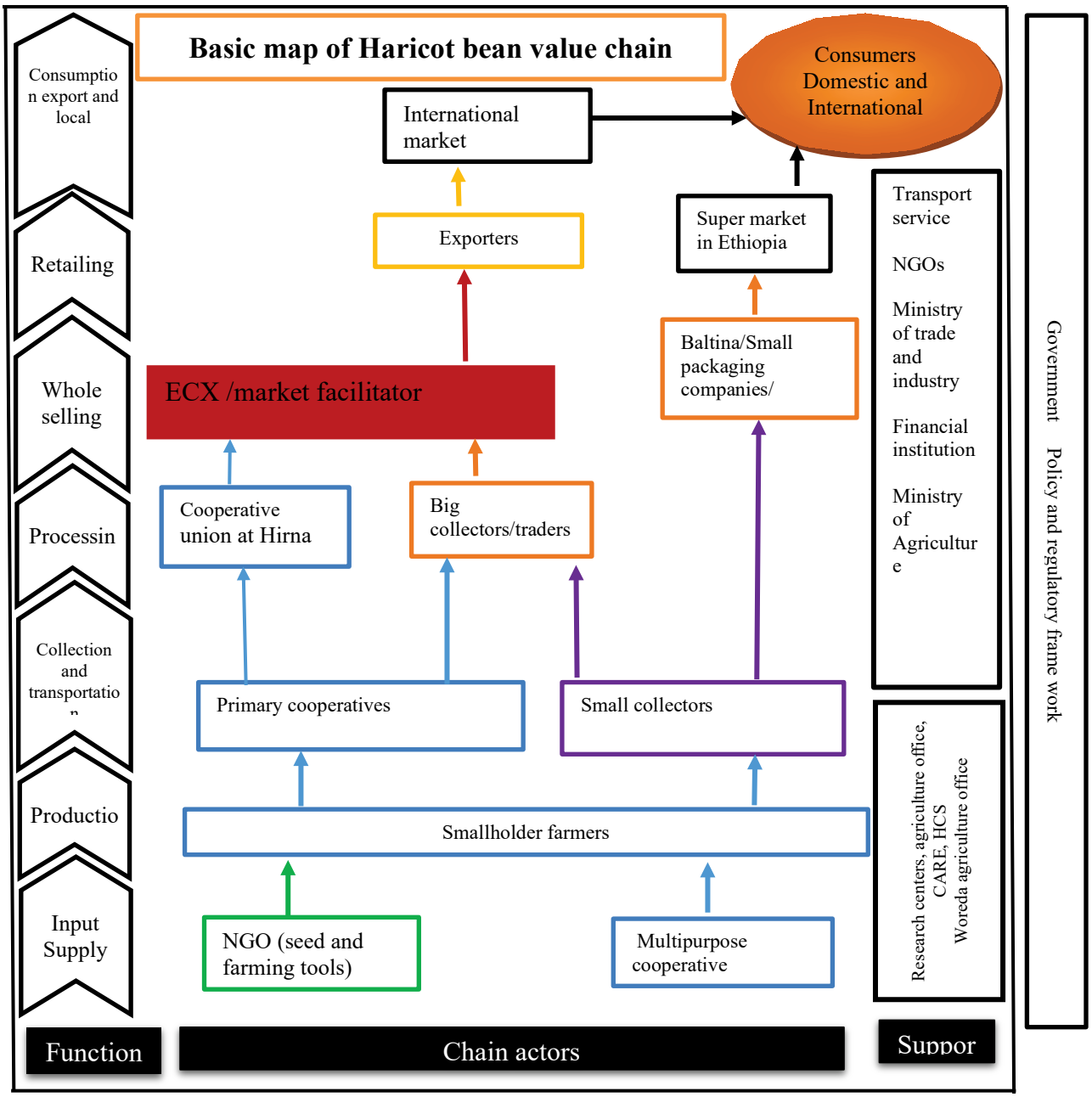
The relationship that is existing between the value chain actors is more of informal and mainly characterized by spot transaction. However, there is formal relationship between large level collectors, ECX and exporters. Even if farmers are getting information regarding buyers' requirement it is in limited and disorganized manner.

Producers and collectors meet once in a week during production season at market place. In addition, there is informal information exchange between buyers and producers and among producers themselves regarding price for the product.

7.2.3 Value Chain Map and Market Channels

Value chain map of Haricot bean in Chiro Zuria woreda

Value chain map of haricot bean is drawn based on information collected from farmers and woreda level stakeholders. The map constitutes functions, value chain actors and support providing institutions in the value chain. The map illustrates the relationship between each actor, their role and institutions providing support.



Market Channels

Based on the market routes and value chain map different market channels are identified. The margin that the farmers get from haricot bean depends on the type of channels he/she uses and the number of intermediaries involved. If the channels are too long, the farmers get lower margin from haricot bean.

Haricot Bean Market Channels in the Woreda

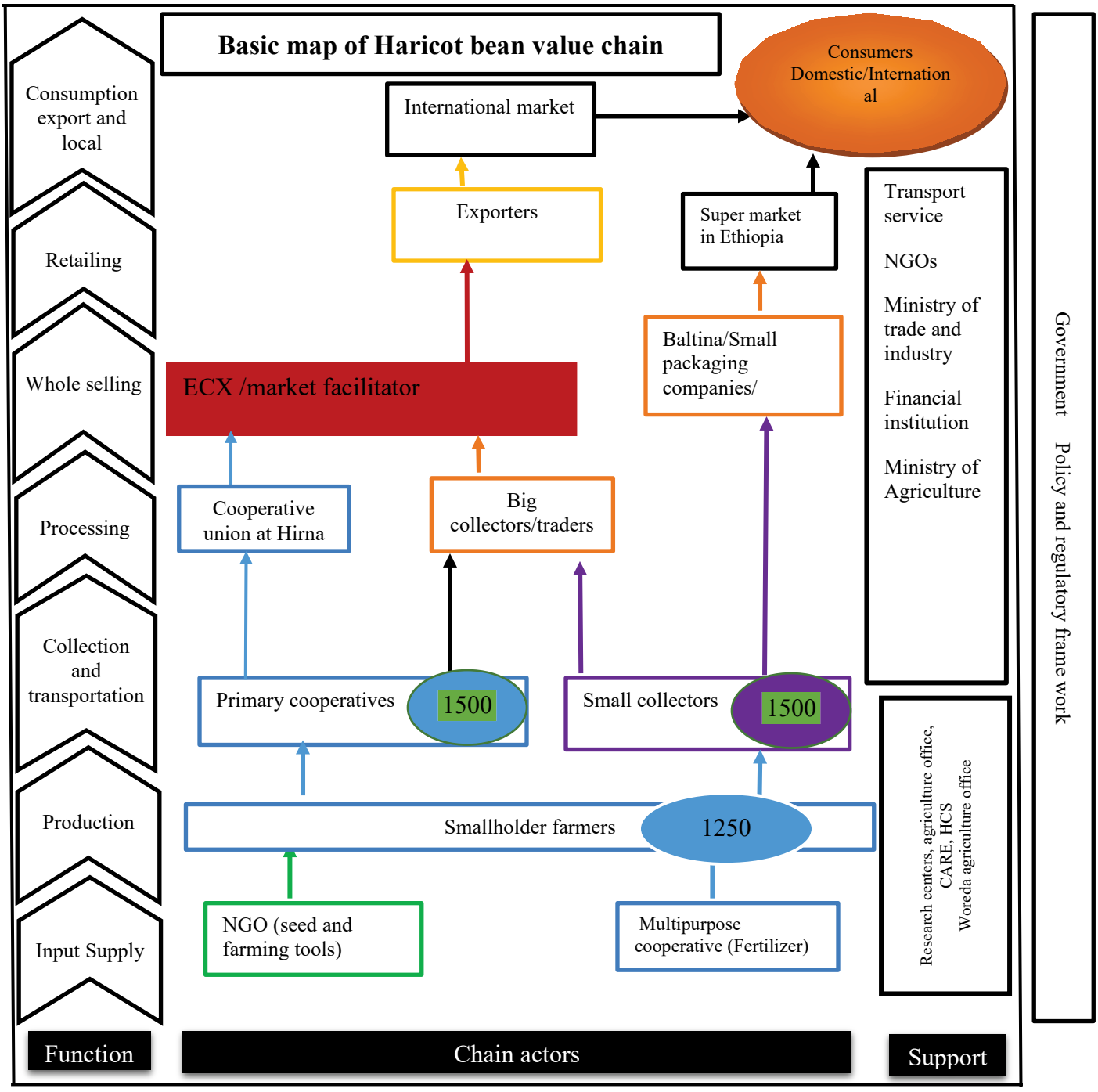
1. Farmers – Consumers
2. Farmers – Small Traders – Consumers
3. Farmers – Small Traders– Super Markets – Consumers
4. Farmers – Small Traders –Big Traders – ECX – Exporters – International Consumers
5. Farmers – Farmers' Cooperative – Union – Exporters – International Consumers

Key:

- ✓ Small collectors/small traders are traders that are buying an average of 20 quintals of haricot bean at time (single market)
- ✓ Large collectors/Big traders are traders that collect more than100 Quintals of haricot bean at a time (single market)

7.2.4 Overlays: Number of Actors, Volumes and Transaction Cost

There are number of actors involved at each level of production and marketing of haricot bean. In the woreda, there are at least 30 small collectors. In addition, three big collectors at Debeso and Chiro towns directly supply haricot bean to ECX warehouse at Adama.

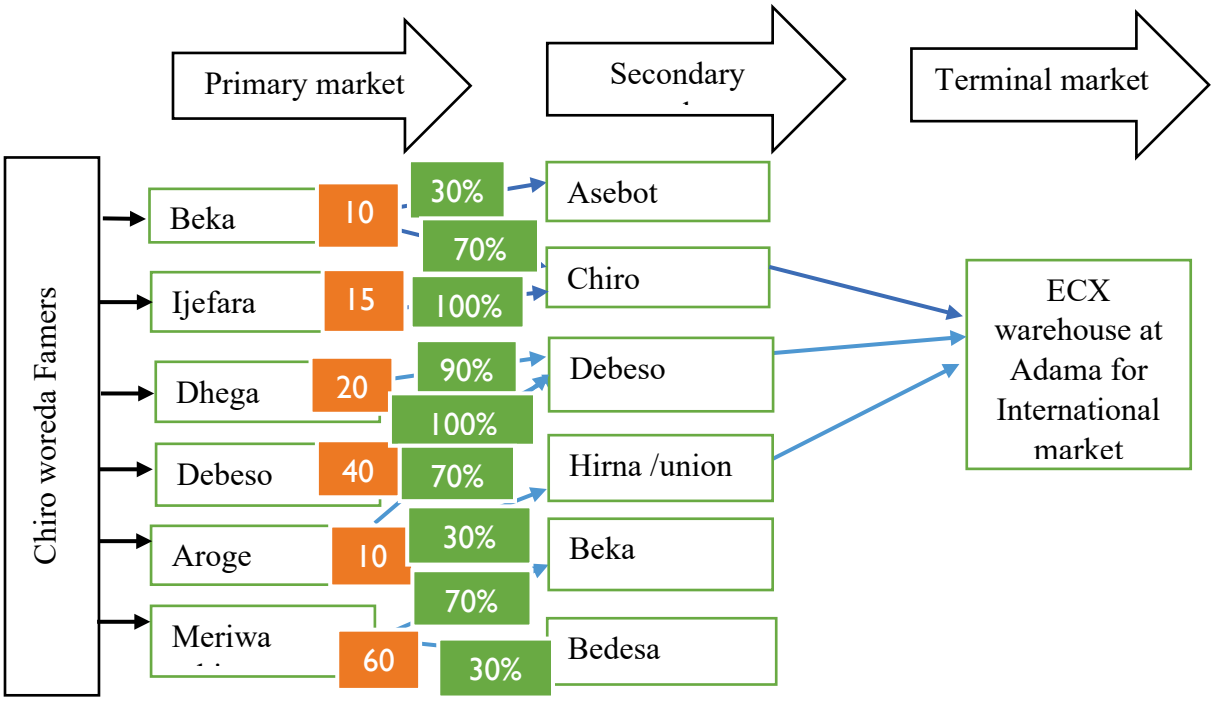


- ✓ 1250 birr per quintal of haricot bean was the floor price in the woreda and the international market price is 1470 birr in January 2018
- ✓ All price written in the box indicate the average price of haricot bean was sold towards the direction of the arrow

Market Routes

There are different market routes for marketing of haricot bean produced in Chiro woreda. Haricot bean produced in the woreda flow through different routes to reach the market. Most of the farmers use spot market in and close to the woreda (Ijefara, Beka, Meriwa Rebisu, Dhega Chebisa, and Aroge Gebeya) the haricot bean from Chiro woreda passes through collectors at Chiro, Debeso, Asebot, Beko and Bedesa market to reach to international market.

Volumes Moving Through Each Channels



7.2.5 Opportunities, Constraints, Possible Solutions, and DFSA Proposed Intervention Activities for Haricot Bean Value Chain

Opportunities

1. There is a cooperative engaged in collection and marketing of Haricot bean.
2. It requires small startup capital compared to other crops.
3. Suitable for intercropping with Sorghum, maize and chat.
4. It is early maturing crop and can be produced twice a year using short and long rainy season periods.
5. Rich in potassium, magnesium, phosphorus, Energy, Iron, and others, which will highly contribute to nutrition security.
6. Well-developed output market, white pea bean and red kidney bean is traded by ECX.
7. Existence of well-developed research institution working on improving production and productivity of Haricot bean (Malkasa and South agricultural research institution).
8. Existence of 'Menagesh bio fertilizer producing PLC' engaged in production of Organic fertilizer (inoculant) used for production haricot beans.

Constraints

1. Low awareness of farmers on agronomic practice and post-harvest handling of Haricot beans. Farmers use traditional way of threshing and storage, which expose them to high post-harvest loss.
2. Poor access to improved seed varieties and other inputs.
3. Price fluctuation in the local market makes market linkage difficult.
4. Very small surplus production which makes output marketing very difficult.
5. Recurrent drought.
6. Low attention is given to haricot bean by government extension workers.

SPIR Proposed Activities

1. Introducing community based seed multiplication system to improve access to quality seed.
2. Provision of fully-fledged training on agronomic practice and post-harvest handling (Harvesting, threshing, and storage) of Haricot bean.
3. Introduce drought resistant variety of Haricot beans in collaboration with research institutes.
4. Introduce inoculant to improve production and productivity of famers.
5. Strengthen the existing cooperative to include program participants and play better role in marketing of Haricot bean.
6. Facilitate business to business and Multi stakeholder platform to improve input and output market of Haricot bean.

8. Women's Roles in the Selected Value Chains and SPIR Activities to Improve Women's Participation and Economic Empowerment

Women in the SPIR implementation area participate in production process of each of the selected value chains. In commodities like shoat, poultry and dairy, the major role of production and processing falls on women. Whatever commodity farmers produce, women have the major share of the work in production. However, women's participation in marketing and decision-making on spending of revenue raised from the sale of assets is limited due to different reasons.

In all the targeted woredas, women are not allowed to sell assets of high value. However, the type of asset that is considered as high value differs slightly from region to region. In Amhara and SNNPR, women do not sell shoats and assets having greater value. However, in East and West Hararge, women can sell shoats, but not other assets that have greater value such as cattle or large fields of chat.

In SPIR implementation areas, there is common behavior regarding women's participation in markets. If a woman sells shoats, honey, or anything that is considered of high value for the households, they still do not have the power to decide on what the money is spent on. They may negotiate and decide together, but the husbands have the final say in case of disagreements. Women are considered as "saving boxes". In other words, they save money that their husbands

give them or revenue raised from the sale of assets, but do not have right to use the money, even for critical household matters without the permission of their husbands.

Assets that have lesser value than shoats like chicken, egg, milk, butter, false banana, and others are under the control of women for selling and decision making on spending. However, if the income earned from the commodity is significant, then men will control the income. For example, if the earnings from production of vegetable increases or is conducted on a significant amount of land, the sale is conducted by men. Respondents mentioned that it is beneficial for the household if women sell assets and decide on the spending. Because women do not spend any money from the sales, they take the money home to discuss how to spend the money with their spouses. However, the men start spending just after the sale without consulting their wives, by inviting friends for a drink to celebrate the sale. If men do the selling then a very limited part of the revenue goes to household necessities and women do not have information about income raised from sales, they only accept what their husbands give them.

Opportunities

1. Women have the majority of the share of work in production of all the selected agricultural commodities. They do have good skills in production.
2. Income earned by women is used fully for household level expenditures. This income enhances food security and nutrition.

Constraints

Women do not sell high value assets. There are many reasons why women are not allowed to sell assets. The major ones raised by the FGD and KII respondents are:

1. **Distance to markets and work overload.** The market is located far from households. Hence, they must travel long distances from home. This makes it hard for women to travel with shoats or any of the assets that has high value to sell at the market. In addition, women have additional household chores to attend to. These two factors limit participation of women in marketing production.
2. **Poor bargaining power and poor access to market information.** According to the respondents, women have poor bargaining power/skills in sales. This is a result of two things. First, women do not have access to market information, which diminishes their bargaining power and setting prices. Second, there is a tradition that requires women to present a witness during sales of assets like shoats, or the expectation that women are not supposed to sell the assets, diminishes the bargaining power of women. For example, honey is considered a male product in some woredas of Amhara. It is considered inappropriate for women to sell it.
3. **Community attitude that women always sell cheaper and males sell at higher prices.** There is a norm in most communities that women always sell assets at a cheaper price than men do. This opinion reduces the participation of women in markets and economic activities.
4. **Traditional classification of women and male value chain commodities.** There is a tradition of classifying agricultural activities into male and female domains. For example, out of the value chains, selected under SPIR Oxen fattening, Beekeeping, and

Haricot bean is classified as male and poultry, vegetable are female domian. Shoat is considered female domain in east and west Hararge while condered male domain in North wollo, Waghimra, and SNNP. Women have full control over income raised from women domain value chain acitivities, but if the income raised from the women domain value chain is significant for the household the decision on the income is made jointly. This limits participation of women in production and marketing of out of domain agricultural activities. This has overall impact in food and nutrition security of households.

5. **Exclusion of women from agricultural extension.** Women are excluded from agricultural extension in several ways. Most of the trainings, field demonstrations, and other agriculture related facilitation by Government and NGOs targets household heads, which by default are mostly men. Second, the time and venue location for agriculture related training activities are not conducive for female farmers, due to their workload and traditional mobility restrictions. Thirdly, almost all trainings facilitated by NGO and government do not have day care services so that women with children under five can participate in the training.

Prioritized List of Proposed SPIR Activities to Improve Women Participation in Market and Livelihood Activities

1. Training women on production and marketing of male domain value chain commodities (e.g. shoats and honey).
2. Improving the production and marketing of female domain value chains (like poultry and vegetable) by improving women access to inputs and extension service.
3. Provision of fully-fledged training for women farmers on production and marketing of selected value chain commodities. Utilize the "Women's Participation Improvement Worksheet" in the 4th edition of the "Integrating Extremely Poor Producers into Markets Field Guide."[13]
4. Applying Social Analysis and Action(SAA)[14] tools to improve norms like women are not supposed to sell high value assets (Shoats, and cattle), gender specific value chains (e.g. Honey for male and poultry for women), and women sell prices are cheaper and male sell prices are more expensive.
5. Create conducive environment for women to participate in all agricultural extension by providing training at nearby location, conducive time, inviting women specifically, and arranging rooms for day care for farmers coming with children to the training.
6. Mainstreaming women in Business to Business and Multi-stakeholder platforms to improve their bargaining power and expose them to optional markets.
7. Introducing technologies that can reduce time and energy for production and marketing of the selected value chain commodities.

[13] https://agrilinks.org/post/integrating-extremely-poor-producers-markets-field-guide-fourth-edition pages 130-132.

[14] http://familyplanning.care2share.wikispaces.net/Social+Analysis+and+Action

9. Areas for Collaboration and Layering with Other USAID Funded Projects

There are several projects funded by USAID working in value chain and market systems development and in the same region with SPIR. The project mapped out other projects working on similar value chain or the same value chain in the same zone and/or region. SPIR proposes the following areas to collaborate with these organizations to create synergy among the different projects and avoid duplication of effort:

1. Organize multi-stakeholder platforms and B2B to facilitate the linkage between producers, input suppliers and traders. Organizing Multi stakeholder platform and B2B is plan of most of the projects funded by USAID and it is conducted mostly at regional level. All the stakeholders coming to multi-stakeholder platform is mostly the same except for farmers coming from specific woreda of implementation. Hence, it will reduce duplication of effort and helps to give more attention to issues identified as challenges, solutions, and best practices raised on the platform. Conducting B2B together also gives more bargaining power to program participants under different projects and will attract big buyers to the meeting, due to the potential to aggregate produce from all the woredas under different project implementation area. This could highly contribute in improving the well-functioning of market system for all level of market actors.
2. Support existing/establish new input suppliers in the woreda. The support may be in the form of linking input suppliers to program participants and importers, Proper packaging, conducting field demonstration, and organizing market activation event

3. Facilitate credit for farmers from MFIs and other financial institutions and align time of loan dispersion with season of production
4. Introduce technologies that can reduce time and energy for production and marketing of the selected value chain commodities. All the projects have plan in some way to improve participation of women in livelihood activities. However, most of women time is occupied by household chores. To improve participation of women in livelihood activities such technologies are very important. SPIR propose if projects come together in identifying and promoting such technologies together.
5. Work in collaboration with government in implementing Live Animals Marketing Proclamation No. 8191/2014. Implementation of this project will help farmers get better profit margin by removing intermediary that do not add value for the sector. Implementation of this project is hard to implement only by projects also needs government collaboration. These projects can form steering committee and facilitate implementation of the proclamation.
6. Capacity building for collectors, meat processing companies, and feed producing firms to increase their outreach to farmers
7. Train farmers on making of yogurt from goat milk, from which they can extract cream

8. Promote the new indigenous poultry breed that government research centers will be releasing. Work with breeders who could multiply the chickens in the woredas. Link the breeders to buyers who could sell to the woreda farmers
9. Collaborate with government to increase control over illegal chemical application and enforcing Apiculture Resources Development and Protection Proclamation, No. 660/2009. Enforcing of proclamation is hard to do for single project and enforcing it in few woreda is hardly possible and ineffective. Hence, to enforce the implementation of this proclamation, contribute to enhancement of honey production, and protect bees' the different USAID funded projects need to work together.
10. Promote appropriate small-scale irrigation technologies and training farmers on the selected appropriate technology (Solar pump, Rope and washer pump, roof water harvesting structure, etc.)
11. Introduce community based seed multiplication system to improve access to quality seed
12. Establish private business who can produce treated crop residue and sell to farmers
13. Work in collaboration with Sekota Dry Land Research Institute in management of bee predators and diseases. The research institute has been working on methods of controlling predators and disease. However, there is gap in introducing this methods to producer farmers and further investigate the effectiveness of the methods. This might be also one area in which all USAID funded projects working in the honey value chain collaborate and work together to create synergy and bring impact rather than working separately.
14. Work with government and NGOs in branding honey produced in North Wollo and Wagmra zone
15. Increase farmers' awareness on honey adulteration and providing training to collectors on testing the quality of honey. Adulteration of agricultural produce is becoming common trend and it is contributing to lots of problems (produce loss, human health, low price, and loss of trust between buyers and sellers). Bringing change in this issue also needs collaboration of government and all projects working on the sector.
16. Identify model farmers or private sector market actors who are interested in providing different services in the value chains and equipping them with necessary training and materials on a cost share basis (these services might include honey harvesting, transitional hive marking, colony splitting, wax molding, wax printing for modern hives, honey extraction, packaging of honey, etc.)
17. Introduce simple honey packaging material that can be handled by farmers and/or collectors
18. Create conducive environment for women to participate in all agricultural extension by providing training at nearby location, conducive time, inviting women specifically, and arranging rooms for day care for farmers coming with children to the training

Summary Table Indicating Value Chain of Focus for Different USAID Funded Projects					
Value chains	**Region**				**Projects**
	Oromia	**Amhara**	**SNNPR**	**Tigray**	
Poultry	1. Fintrac 2. World Vision 3. CARE 4. CRS	1. Fintrac 2. World Vision 3. CARE	1. Fintrac 2. World Vision 3. CARE	1. Fintrac 2. CARE	**Fintrac** Value chain activity
Shoat	1. Fintrac 2. World Vision	1. Fintrac 2. World Vision 3. CARE	1. Fintrac 2. World Vision 3. CARE	1. Fintrac	**CRS** LRO/DFSA
Honey		1. World vision	1. CARE	1. CARE	**World vision** SPIR
Oxen fattening	1. Fintrac 2. World Vision	1. Fintrac 2. World Vision	1. Fintrac 2. World Vision	1. Fintrac 2. World Vision 3. CARE	
Haricot bean	1. World Vision 2. CRS			1. CARE	CARE Livelihood for resilience Activity
Vegetable	1. World Vision 2. CRS	1. World Vision 2. CARE	1. World Vision	1. CARE(Onion)	
Dairy	1. Fintrac	1. Fintrac	1. Fintrac	1. Fintrac	
Chick pea	1. Fintrac	1. Fintrac		1. Fintrac	
Maize	1. Fintrac 1. CRS	1. Fintrac	1. Fintrac	1. Fintrac	
Coffee	1. Fintrac	1. Fintrac	1. Fintrac		
Wheat	1. CRS	3. CARE	1. CARE	3. CARE	
Pepper				1. CARE	
Potato		1. CARE	1. CARE	2. CARE	
Lentils		1. CARE			

Annex 1. Selection Criteria for Value Chain and Off-Farm/Nonfarm Commodity

DFSA Value Chain Selection Tool (Scoring and Ranking Matrix)

Selection Criteria	Weight	Score									
		Commodity 1		Commodity 2		Commodity 3		Commodity 4		Commodity 5	
Economic	**50 percent**	**Score**	**Weighted Score**	**Score**	**Weighted Score**	**Score**	**Weighted Score**	**Score**	**Weighted Score**	**Score**	**Weighted Score**
1.Potential for increasing Productivity and quality	**10 percent**										
2. Potential for increasing Market opportunities	**10 percent**										
3. Potential to engage PSNP households	**10 percent**										
4. Potential to ensure food security and income for PSNP HHs	**20 percent**										
Sub total											
Nutrition	**25 percent**										
1 Availability year-round	5 percent										
2. Affordability year-round	5 percent										
3. Desirability	5 percent										
4. Time and energy expenditure	10 percent										
Sub total											
Mandatory Criteria	**20 percent**										
3.1 Potential to engage youth and women	10 percent										
3.2 Potential for scale up and replication	5 percent										

3.3 Existence of enabling environment	5 percent										
Sub total											
Environmental	**5 percent**										
Potential to build resilience and resources use efficiency of PSNP HHs	5 percent										
Sub total											
Total mark	100 percent										
Frequency											
Grand total											
Rank											

DFSA Off-Farm/Nonfarm IGA Tool (Scoring and Ranking Matrix)

Selection Criteria	**Weight**	**Score**									
		Activity one		**Activity two**		**Activity three**		**Activity 4**		**Activity 5**	
Economic	**60 percent**	**Total**	**WS**	**Total**	**WS**	**Total**	**WS**	**Total**	**WS**	**Total**	**WS**
1.Resource potential	**20 percent**										
2. Potential for increasing market opportunities	**10 percent**										
3. Potential to engage PSNP households	**10 percent**										
4. Contribution to increased income and asset accumulation	**20 percent**										
Subtotal	60 percent										
Mandatory Criteria	**30 percent**										
1. Potential to engage women and youth	30 percent										
Sub total	30 percent										
Environmental	**10 percent**										
1. Potential to build resilience and resources use	10 percent										

efficiency of PSNP HHs											
Sub total	10 percent										
Total mark											
Frequency											
Grand total											
Rank											

Annex 2. Wondo-Genet and Malga Woreda Respondents

Table 1. Respondents for Value Chain Commodity and Off-Farm/ Nonfarm Selection Key Informant

No	Name of Respondent	Sex	Woreda	Organization	Position	Contact
1	Dr. Birhanu Chala	M	Malga	Livestock and Fishery	Vet Dr.	0915465047
2	Almaz Hirpho	F	Malga	Livestock and Fishery		0916072299
3	Tigist Midhaksa	F	Malga	Health office	HEW	0935932109
4	Yinebeb Tesfaye	M	Malga	Agriculture and Natural Resource Management	Crop Production Expert	0916036632
5	Mekonnen Shito	M	Malga	Kebele Administration	Manger	0916974597
6	Kassahun Tesfaye	M	Wondo	Cooperative Office	Organizer	0972650755
7	Likinesh Assefa	F	Wondo	Agriculture	DA	0972650755
8	Adanech Harka	F	Wondo	Livestock and Fishery	DA	0926957100
9	Dr. Birhanu H/Michael	M	Wondo	Livestock and Fishery	Vet dr.	09 60 90 94 37
10	Tigst Godana	F	Wondo-Genet	Trade and Industry	Market Collector	09 16 04 87 00
11	Derese Geletu	M	Wondo-Genet	Trade and Industry	Inspection	09 41 40 29 29
12	Kasech Menna	F	Wondo-Genet	ANRO	Agronomist	09 35 48 70 88
13	Bayu Berassa	M	Wondo-Genet	W/Kechema Kebele	Kebele Manager	09 16 62 23 15
14	Nenguli Amaul	M	Wondo-Genet	ANRO		
15	Birhane Gishie	F	Wondo-Genet	Health office	HEW	
16	Alem Abebe	F	Wondo-Genet	LSFDO	Animal Health DA	
17	Kidist H/Michael	F	Wondo-Genet	ANRO	Natural Resource	
18	Zemari Abera		Wondo-Genet	LSFDO	Livestock	
19	Abreham Bushra	M	Wondo-Genet	ANRO	Crop Production	
20	Mokuria Kebede	M	Wondo-Genet	ANRO	Crop Production	

21	Addisu Kiche	M	Wondo-Genet	LSFDO	LS Production	
22	Eyuel Gangeso	M	Wondo-Genet	Eddo Kebele	Kebele Manager	09 16 07 51 31
23	Degfie Heliso	M	Malga	ANRO	DA	09 13 45 30 47
24	Hassen Ahmed	M	Malga	LSFDO	LS Production	09 16 15 73 91
25	Abreham Lemma	M	Malaga	ANRO	Crop Production DA	09 26 04 57 21
26	Bizuneh Bulaka	M	Malga	Trade& Industry	Marketing Expert	09 26 04 32 83
27	Tantu Tafese	M	Malga	ANRO	Crop Production	09 16 12 64 04
28	Kitessa Kachara	M	Malga	F/Ketemuna KA	Kebele Manager	09 16 41 41 66
29	Abush Bosha	M	Malga	Cooperative office	Coordinator	09 16 02 91 45

Table 2. Respondents for FGD in Wondo-Genet Date 22/08/2017

No	**Name of Respondent**	**Sex**	**Kebele**	**Contact**
1	Kanafa Hirbora	F	Wotera Kechema	
2	Abebech Gota	F	Wotera Kechema	
3	Burchuko Bora	F	Wotera Kechema	
4	Birhannesh Hiresa	F	Wotera Kechema	
5	Bekelech Hanakamo	F	Wotera Kechema	
6	Kamitu Kare	F	Wotera Kechema	
7	Tsehay Ahimed	F	Wotera Kechema	
8	Genet Ajo	F	Wotera Kechema	
9	Bekelech Girma	F	Wotera Kechema	
10	Bukura Wirsa	F	Wotera Kechema	
11	Kora Ankena	M	Wotera Kechema	
12	Tibo Baremo	M	Wotera Kechema	
13	Geleto Wakeyo	M	Wotera Kechema	09 42 48 38 30
14	Shuka Beyene	M	Wotera Kechema	
15	Hirpo Megene	M	Wotera Kechema	
16	Temesgen Negash	M	Wotera Kechema	09 26 17 94 23
17	Nese Fara	M	Wotera Kechema	
18	Desta Rikiba	M	Wotera Kechema	09 26 07 97 19
19	Tsehay Buto	M	Wotera Kechema	
20	Halchamo Hade	M	Wotera Kechema	09 16 35 91 90
21	Fajira Retiso	M	Wotera Kechema	09 16 45 73 12
22	Assefa Argo	M	Wotera Kechema	09 26 07 96 81

23	Gebrie Boro	M	Wotera Kechema	
24	Taye Teshie	M	Wotera Kechema	
25	Musie Saro	M	Wotera Kechema	
26	Tamase Negash	M	Wotera Kechema	
27	Nase Tura	M	Eddo	09 84 94 74 17
28	Wondmu Worana	M	Eddo	
29	Eshetu Mulneh	M	Eddo	
30	Ayele Gebiso	M	Eddo	
31	Tafese Hayiso	M	Eddo	
32	Motosa Furisa	M	Eddo	09 65 02 62 36
33	Egu Bore	M	Eddo	
34	Mankana Rike	M	Eddo	
35	Eyob Jarso	M	Eddo	
36	Buro Bushura	M	Eddo	
37	Danbaba Bariso	M	Eddo	
38	Urgesa Ueamo	M	Eddo	
39	Sitota Iraso	M	Eddo	
40	Fantu Kebede	F	Eddo	09 34 71 22 24
41	Burtukan Bareda	F	Eddo	
42	Buzunesh Mengistu	F	Eddo	
43	Worke Bekele	F	Eddo	
44	Masha Shaisa	F	Eddo	
45	Lamitu Meta	F	Eddo	
46	Hamsaye Sanbato	F	Eddo	
47	Edati Eyamo	F	Eddo	
48	Ekite Dalacha	F	Eddo	
49	Matala Fotonka	F	Eddo	
50	Tejitu Dalacha	F	Eddo	
51	Sarmitu Sakuma	F	Eddo	
52	Meseret Gosa	F	Eddo	
53	Radaya Eda'o	F	Eddo	
54	Fatuma Eda'o	F	Eddo	
55	Lengitot Keyamo	F	Fito Ketemuna	
56	Tigst Kiya	F	Fito Ketemuna	
57	Almaze Liedamo	F	Fito Ketemuna	
58	Shukarie Dido	F	Fito Ketemuna	
59	Dansitu Bariso	F	Fito Ketemuna	
60	Aster Tseyas	F	Fito Ketemuna	
61	Shura Ledamo	F	Fito Ketemuna	
62	Sharbatu Hentala	F	Fito Ketemuna	
63	Mata Dila	F	Fito Ketemuna	
64	Alamitu Kayamo	F	Fito Ketemuna	
65	Marta Gamarssa	F	Fito Ketemuna	
66	Santie Sarmisa	F	Fito Ketemuna	

67	Milkessa Harka	M	Fito Ketemuna	
68	Gadiso Gardido	M	Fito Ketemuna	
69	Asha Gatiso	M	Fito Ketemuna	
70	Milkiyas Ledamo	M	Fito Ketemuna	
71	Kassa Kashe	M	Fito Ketemuna	
72	Ermias Gemeda	M	Fito Ketemuna	
73	Samuel Fana	M	Fito Ketemuna	
74	Shokora Tesa	M	Fito Ketemuna	
75	Kebede Gedano	M	Fito Ketemuna	
76	Kefela Hirpato	M	Fito Ketemuna	
77	Iyasu Hankarso	M	Fito Ketemuna	
78	Shimeles Shibiru	M	Fito Ketemuna	
79	Marta Hayiso	F	Woteraresa	
80	Marta Letemo	F	Woteraresa	
81	Dinknesh Desellgn	F	Woteraresa	
82	Hirpitu Bunka	F	Woteraresa	
83	Duret Adela	F	Woteraresa	
84	Rade Haj	F	Woteraresa	
85	Marta Yonamo	F	Woteraresa	
86	Kayitu Budala	F	Woteraresa	
87	Worknesh Kayumo	F	Woteraresa	
88	Marta Amane	F	Woteraresa	
89	Asha Rametu	F	Woteraresa	
90	Meselech Sidu	F	Woteraresa	
91	Almaz Mamo	F	Woteraresa	
92	Almaz Basha	F	Woteraresa	
93	Womitu Ledemo	F	Woteraresa	
94	Kawajo Yosef	F	Woteraresa	
95	Bontu Siamo	F	Woteraresa	
96	Markos Fetera	M	Woterarisa	09 79 78 60 48
97	Kefela Dogiso	M	Woterarisa	
98	Desellng Dika	M	Woterarisa	
99	Negash Legide	M	Woterarisa	09 15 67 54 52
100	Ayano Awaje	M	Woterarisa	
101	Kefala Kayamo	M	Woterarisa	
102	Tashora Megerie	M	Woterarisa	
103	Yoseph Dombowa	M	Woterarisa	
104	Biru Bitu	M	Woterarisa	
105	Borchie Bunato	M	Woterarisa	
106	Hayiso Dika	M	Woterarisa	09 34 47 32 79
107	Basha Bitie	M	Woterarisa	
108	Borsamo Bole	M	Woterarisa	

Annex 3. Respondents for Value Chain Commodity and Off-Farm/ Nonfarm Selection Key Informant Respondents in North Wollo and Waghra Woreda

No	Name of Respondent	Sex	Woreda	Organization	Position	Contact
1	Getachew Desell	M	Bugna	Cooperative Office	Office Head	0965140614
2	Temesgen Kafyalew	M	Bugna	Agriculture Office	DA	0938694379
3	Nega Dejene	M	Buguna	03 Kebele	DA	0925332799
4	Getu Melaku	M	Buguna	Woreda Agri & NR Devt	D/ head of the office	0921264703
5	Tigabu Melkamu	M	Buguna	Woreda Agri & NR Devt	Input expert	0912711961
6	Ayalew Bewunetu	M	Lasta	Agriculture Office	DA	0933518931
7	Solomon B/Meskel	M	Lasta	Agriculture Office	Crop Production Expert	0920190259
8	Shimeles Asefa	M	Lasta	02 Kebele	Kebele Manager	0986935615
9	Mesfin Akalu	M	Lasta	Woreda Agri & NRD	Input Supply & Distribution Expert	0913231597
10	Rahima Yasin	F	Lasta	Woreda Coop Promotion Office	?	0913512319
11	Girumnesh Gelaw	F	Gazgibla	Kebele Administration	Kebele manager	0914340561
12	Hagos Tedla	M	Gaz gibla	018 Kebele	DA	0914554317
13	Shignu Mekonnen	M	Sekota	Livestock and Fishery	Process Owner	0914082766
14	Eniyewu Mitiku	M	Sekota	Kebele Administration	Kebele Manager	0914171799
15	Mulu Desse	M	Dehana	Agriculture Office	DA	0905102092
16	Atena Wedaj	M	Dehana	Livestock and Fishery	Office Head	0920199238
17	Yohani Walde	M	Dehana	"	Input Expert	0910355039
18	Fantaye Worku	F	Dehana	"	Fish Expert	0977173662
19	Habtamu Falake	M	Gizagibella	Agriculture Office	DA	0928338045
20	Sisay Adana	M	Gizagibella	Agriculture Office	Input Supply	0913809226

21	Marki Adugne	M	Gizagibella	Marketing and Trade Office	Marketing and Trade Officer	0919001523
22	Almaz Misganu	F	Gizagibella	Kebele Administration	Kebele Manager	0906423046
23	Fisha G/Gezabher	M	Gizagibella	Agriculture Office	Agriculture Officer	0914345934
24	Engidasew Yalew	M	Lasta	Agriculture Office	Agriculture Officer	0920478684
25	Sisay Dejene	M	Lasta	Livestock and Fishery	Head Livestock and Fishery	0913506785
26	Melese Mandefro	M	Lasta	Livestock and Fishery	Expert	0913353916
27	Habtamu Yosef	M	Bugena	Livestock and Fishery	officer	0918713616
28	Selam Bekele	F	Bugena	Livestock and Fishery	Officer	0913776235
29	Mabre Wodajie	M	Bugena	Kebele Administration	Kebele Manager	
30	Getiye Molla	M	Lasta	TVED	Industry Expert	0913900842
31	AdugnaDawit	M	Lasta	Agriculture Offfice	DA	0963576080
32	Tegegne Wassihun	M	Lasta	TVED	Technology Transition Expert	0913903385
33	Amibachew Getie	M	Bugina	Micro & Small Office	Job Creation Expert	0912813144
34	Desalu Addis	M	Bugina	Kebele Manager		0968973262
35	Amare Sefew	M	Gazgbila	Co-operative	Saving & Credit Expert	0945708783
36	Hawuz Derib	M	Gazgbila	TVED	Head	0912372296
37	Moges Tadess	M	Gazgbila	Livestock & Fishery Office	Input Expert	0919593528
38	Tewold G/Tsaddik	M	Gazgbila	Livestock & Fishery Office	Head	0963596106
39	Kegyalew Alemu	M	Dahna	Marketing and Trade Office	Marketing and Trade Officer	0921524974
40	Tesfaye Ayalew	M	Dahna	Youth Job Creation Office	Youth Job Creation Expert	0920199500
41	Addisu Bihonegn	M	Sekota	Sekota Dry Land Agriculture Research	Apiculture Researcher	0911062859
42	Bekalign Wendim	M	Sekota	>> >> >>	Shoat Researcher	

43	Moges Mengistu	M	Sekota	Livestock and Fishery	Feed Development Expert	0914603215
44	Shegenu Mekonnen	M	Sekota	Livestock anf Fishery	Animal Production Expert	0914082766
45	Sisay Dejene	M	Lasta	Livestock and Fishery	Office Head	0913506785
46	Rama Yasin	F	Lasta	Marketing and Cooperative	Marketing Exepert	09135123 19
47	Yemer Mekonnen	M	Lasta	Livestock and Fishery	Livestock Process Owner	0933520845
48	Meles Mandefro	M	Lasta	Livestock and Fishery	Animal Production Expert	0913357916
49	Tsige G/Silase	F	Gazigbla	Agriculture	Input Exepert	0920135247
50	Adenek Beyene	F	Gazigbla	Agriculture	Crop Production Expert	0935216485
51	Wendifraw Abebe	M	Gazigbla	Livestock and Fishery	Livestock Expert	0913379647
52	Sisay Adane	M	Gazigbla	Livestock and fishery	Input Exepert	0912375093
53	Kibru Abara	M	Sekota	Trader	Live Animal Trader	0938633722
54	Abaye Kassu	M	Sekota	Trader	Live Animal Trader	0977154895

Respondents for FGD in Bugna Date 24/09/2017

No	**Name of Respondents**	**Sex**	**Kebele**	**Contact**
1	Abebe Reta	M	Gulha	09 31 19 04 23
2	Abebe Mariye	M	Gulha	0937581991
3	Eshetu Kassa	M	Gulha	09
4	Abebe Kassa	M	Gulha	0968975090
5	Mariye Shambal	M	Gulha	0988300895
6	Tseda Melaku	M	Gulha	
7	Belihatu Melaku	M	Gulha	
8	Gizew Almneh	M	Gulha	0931153963
9	Tseganesh Sisay	F	Gulha	
10	Tilhune Reta	F	Gulha	
11	Asdenik Arega	F	Gulha	
12	Debisa Demeke	F	Gulha	
13	Yesharegi Mesifine	F	Gulha	

14	Yekaba Abebe	F	Gulha	
15	Yeshitu Desell	F	Gulha	
16	Mulluye Menigesha	F	Gulha	
17	Yekaba Berie	F	Gulha	
18	Belaynesh Desell	F	Gulha	
19	Yeworkwuha Abebe	F	Gulha	
20	Debisa Abebe	F	Gulha	
21	Yeshum Maregu	F	Meskele Kirstos	
22	Akelu Mequanint	F	Meskele Kirstos	
23	Mulalem Zegeye	F	Meskele Kirstos	
24	Titina Dereje	F	Meskele Kirstos	
25	Muliye Kefyalew	F	Meskele Kirstos	
26	Tamir Adise	F	Meskele Kirstos	0935567018
27	Imaway Asres	F	Meskele Kirstos	
28	Imaway Demisse	F	Meskele Kirstos	
29	Asrebeb Dinku	F	Meskele Kirstos	
30	Sinide Mamo	F	Meskele Kirstos	
31	Debre Tezera	F	Meskele Kirstos	
32	Desalgen Nibtete	M	Meskele Kirstos	
33	Abebe Amlaku	M	Meskele Kirstos	
34	Adana Bibayil	M	Meskele Kirstos	
35	Beleta mengista	M	Meskele Kirstos	
36	Habtamu yalew	M	Meskele Kirstos	
37	Baharu Getu	M	Meskele Kirstos	
38	Awake mamo	M	Meskele Kirstos	
39	Habtmu Birhane	M	Meskele Kirstos	
40	Wasihun Haile	M	Meskele Kirstos	

Lasta Woreda, 25/09/2017

No	**Name of Respondant**	**Sex**	**Kebele**	**Contact**
1	Belayneh Beyene	M	Bilbala (02)	
2	Abe Argew	M	Bilbala (02)	
3	Alebel Medfu	M	Bilbala (02)	
4	Yaregal Sisay	M	Bilbala (02)	0986416885
5	Zinabu Tadesse	M	Bilbala (02)	
6	Amano Amare	M	Bilbala (02)	0920185813
7	Debash Berihe	M	Bilbala (02)	
8	Lule Kasse	M	Bilbala (02)	
9	Ababu Amari	M	Bilbala (02)	
10	Hailu Maregu	M	Bilbala (02)	
11	Membere Gorbit	F	Bilbala	
12	Sisaynesh Assefa	F	Bilbala	0918552865
13	Wude Assefa	F	Bilbala	0931471595
14	Tsegaynesh Ase	F	Bilbala	0939513479

15	Anguch Yimiyamrew	F	Bilbala	
16	Zewude Sisay	F	Bilbala	
17	Bayush Anega	F	Bilbala	
18	Adina Gelaw	F	Bilbala	
19	Eterge Addisu	F	Bilbala	
20	Nana Gela	F	Bilbala	
21	Setiye Desta	F	Bilbala	
22	Zerfe Birara	F	Bilbala	
23	Desta Birku	F	Bilbala	
24	Belayinesh Geze	F	Bilbala	
25	Mado Destaw	F	Dagosech	
26	Bose Beyeno	F	Dagosech	
27	Genet Ashenafi	F	Dagosech	
28	Hindaye Birrara	F	Dagosech	
29	Hatam Bililign	F	Dagosech	
30	Zewde Habta	F	Dagosech	
31	Balayi Beyene	F	Dagosech	
32	Sajanach Assefa	F	Dagosech	
33	Muliye Segagn	F	Dagosech	
34	Ayal Ayenew	F	Dagosech	
35	Baye Gena	F	Dagosech	
36	Addise Adamew	F	Dagosech	
37	Tikunesh Bisrat	F	Dagosech	
38	Yamrot Tesfae	F	Dagosech	
39	Mame Molat	F	Dagosech	
40	Tare Kofe	F	Dagosech	
41	Asmare Yared	F	Dagosech	
42	Alebel Getie	M	Dagosech	
43	Yaregal Hailu	M	Dagosech	
44	Eshetu Kassaye	M	Dagosech	
45	Sefew Adinie	M	Dagosech	
46	Tazezi Kentigern	M	Dagosech	
47	Amare Beyino	M	Dagosech	
48	Amilaku Ludie	M	Dagosech	
49	Masireshi Tizzy	M	Dagosech	
50	Eshetie Arega	M	Dagosech	
51	Tesfaw Adi new	M	Dagosech	
52	Derebe Seta	M	Dagosech	
53	Abaye Derebe	M	Dagosech	
54	Geta Mamo	M	Dagosech	
55	Temesigen Abate	M	Dagosech	
56	Redie Woriku	M	Dagosech	

Respondents for FGD in Gazigbla Date 26/09/2017

No	Name of Respondents	Sex	Kebele	Contact
1	Agenchew Dray	M	Zarota	0988304449
2	Migganaw Birha	M	Zarota	
3	Kassaye Abebe	M	Zarota	
4	Mamo Wedaj	M	Zarota	
5	Desse Nega	M	Zarota	
6	Zerifu Fekadu	M	Zarota	
7	Wagnew Tekele	M	Zarota	
8	Getawe Melak	M	Zarota	0948880188
9	Ayalew chekol	M	Zarota	
10	Getawe Mirete	M	Zarota	0968975208
11	Bayoush Tareke	F	Zarota (018)	
12	Keleb Mamo	F	Zarota (018)	
13	Melkamayehu Chekol	F	Zarota (018)	
14	Gebyanesh Berhanu	F	Zarota (018)	
15	Worash Mamo	F	Zarota (018)	
16	Workinesh Debash	F	Zarota (018)	
17	Hululanchi Siyoum	F	Zarota (018)	
18	Asnaku Abere	F	Zarota (018)	0909657317
19	Mulu Tsehay	F	Zarota (018)	
20	Aberu desse	F	Zarota (018)	
21	Abeb Girmay	F	Zarota (018)	0977194701
22	Ababu Magna	F	Zarota (018)	
23	Ilfu Girmay	F	Zarota (018)	
24	Amkel Kssie	F	06	
25	Tolessa Malada	F	06	
26	Tirngo Geru	F	06	
27	Seboye Semere	F	06	
28	Birku Mesele	F	06	
29	Bayush Berhe	F	06	
30	Asmare Derbie	F	06	
31	Belyinesh Agizew	F	06	
32	Checkole Kasse	F	06	
33	Gener Chanie	F	06	
34	Tiwrse Zihune	F	06	
35	Dembre Wossen	F	06	
36	Belaynesh Gtaw	F	06	
37	Almayhu Tafete	F	06	
38	Enanu Fisha	F	06	
39	Fantanesh Wossen	F	06	
40	Endalamaw Tassew	M	06	
41	Mulatu Massell	M	06	
42	Tadesse Demeke	M	06	

43	Tadesse Tassew	M	06	
44	Redu Malke	M	06	
45	Abebe Eshete	M	06	
46	Kassa Alemyhu	M	06	
47	Tagegn Endalamaw	M	06	
48	W/Dawit Algaw	M	06	
49	Aginche Demeke	M	06	
50	Zegeye Barihun	M	06	
51	Wase Sistay	M	06	
52	Kassa Bikes	M	06	
53	Baye Seyoum	M	06	

Sekota Woreda, 28/09/2017

No	Name of Respondents	Sex	Kebele	Contact
1	Dabre Tafete	F	Abiyan Libanos	
2	Teje Mingiste	F	Abiyan Libanos	
3	Genet Mengiste	F	Abiyan Libanos	
4	Mame Adnew	F	Abiyan Libanos	
5	Adanu Tamirat	F	Abiyan Libanos	
6	Tewures Birhanu	F	Abiyan Libanos	
7	Wubit Gessese	F	Abiyan Libanos	09 68 97 75 78
8	Meselu Abera	F	Abiyan Libanos	
9	Meyitu Agnew	F	Abiyan Libanos	
10	Etiwe Mengiste	F	Abiyan Libanos	
11	Almitu Mamo	F	Abiyan Libanos	
12	Werk Baye	F	Abiyan Libanos	
13	Zewuditu Dinkayehu	F	Abiyan Libanos	
14	Getu Wondimu	M	Abiyan Libanos	0967171869
15	Getaneh Wase	M	Abiyan Libanos	0945147378
16	Mesele Mesfin	M	Abiyan Libanos	
17	Kes Zewdu Aderaj	M	Abiyan Libanos	0931763378
18	Teferi Eshetu	M	Abiyan Libanos	
19	Argaw Desse	M	Abiyan Libanos	
20	Getawey Negaw	M	Abiyan Libanos	
21	Mola Tafete	M	Abiyan Libanos	
22	Abate Birhanu	M	Abiyan Libanos	
23	Mengesha Fente	M	Abiyan Libanos	
24	Shumet Desse	M	Abiyan Libanos	
25	Haile Bimirew	M	Abiyan Libanos	
26	Yeshi Wondimu	F	Tsemera 019	
27	Mikailu Tarake	F	Tsemera 019	
28	Adanu Likye	F	Tsemera 019	
29	Genet Mamicho	F	Tsemera 019	
30	Dabas Charkos	F	Tsemera 019	

31	Almaz Tadesse	F	Tsemera 019	
32	Mulu Enayi	F	Tsemera 019	
33	Maria Tarake	F	Tsemera 019	
34	Etiabe Mesfin	F	Tsemera 019	
35	Asefu G/Goirgis	F	Tsemera 019	
36	Aletu Getawa	F	Tsemera 019	
37	Aletu Kasie	F	Tsemera 019	
38	Aberha Birhanu	M	Tsemera 019	0945145405
39	Mesfin Bitew	M	Tsemera 019	-
40	Miruts G/Meskel	M	Tsemera 019	-
41	Mishne Desalgn	M	Tsemera 019	-
42	Welele Birmerew	M	Tsemera 019	-
43	Akisu Hailu	M	Tsemera 019	0906120775
44	Wodaje Abate	M	Tsemera 019	-
45	G/Michaeal W/Egizi	M	Tsemera 019	-
46	Chekole Awota	M	Tsemera 019	0922940725
47	Moges Kassie	M	Tsemera 019	0938167127
48				
49	G/kidane Dessie	M	Tsemera 019	0909757855
50	Emiru Tadesse	M	Tsemera 019	0977895161

Dehana Woreda, 29/09/2017

No	**Name of Respondents**	**Sex**	**Kebele**	**Contact**
1	Beyinesh Melesh	F	21 (Birbira)	
2	Yeshiwe Ferede	F	21 (Birbira)	
3	Muluwerk Tegegn		21 (Birbira)	
4	Yezam Indalew	F	21 (Birbira)	
5	Wubresh Tsegaw	F	21 (Birbira)	
6	Werke Wala	F	21 (Birbira)	
7	Bitareg Abay	F	21 (Birbira)	
8	Misawe Melash	F	21 (Birbira)	
9	Denbere Abraha	F	21 (Birbira)	
10	Asresu Fante	F	21 (Birbira)	
11	Mame Adanu	F	21 (Birbira)	
12	Kasu Ayale	F	21 (Birbira)	
13	Birhane Nagnew	F	21 (Birbira)	
14	Alemitu Melash	F	21 (Birbira)	
15	Melgitu Mamuye	F	21 (Birbira)	
16	Birhane Tsetargew	F	21 (Birbira)	
17	Girmay Moges	M	21 (Birbira)	
18	Desell Getan	M	21 (Birbira)	0949937833
19	Mitiku Mamo	M	21 (Birbira)	
20	Mamo Tege	M	21 (Birbira)	
21	Asresu Tareke	M	21 (Birbira)	

22	Desellgn Nigatu	M	21 (Birbira)	
23	Birara Chekol	M	21 (Birbira)	
24	Fekede Chekol	M	21 (Birbira)	
25	Debis Amare	F	Guraba 014	
26	Areg Mekete	F	Guraba 014	
27	Denber Beyene	F	Guraba 014	
28	Wyizer Girmay	F	Guraba 014	
29	Yaiynalem Alemu	F	Guraba 014	
30	Belayinesh Mengiste	F	Guraba 014	
31	Engeda Melkamu	F	Guraba 014	
32	Tegegu Biyadgu	F	Guraba 014	
33	Adiet Girmay	F	Guraba 014	
34	Adanech Mekonnen	F	Guraba 014	
35	Tesfaye Adenew	F	Guraba 014	
36	Debas Mesele	F	Guraba 014	
37	Tigest habitu	F	Guraba 014	
38	Birhane melkamu	F	Guraba 014	
39	Melsu Getahun	F	Guraba 014	
40	Wodaji Mamo	M	Guraba 014	
41	Waldaji Boge	M	Guraba 014	-
42	Debash Arage	M	Guraba 014	-
43	Babo Mengistu	M	Guraba 014	-
44	Mengist Alelegn	M	Guraba 014	-
45	Kess Bimer Mamo	M	Guraba 014	-

Annex 4. Respondents for Value Chain Commodity and Off-Farm/ Nonfarm Selection KII Respondents East and West Hararge

KII Respondents of Girawa and Kurfa Chale

No	**Name of Respondent**	**Sex**	**Woreda**	**Organization**	**Position**	**Contact**
1	Iliyas Amme mumed	M	Grawa	Rural job creation office	Expert	0921854269
2	Abdela yusuf hasan	M	Girawa	Cooperative	Expert	0915041447
3	Sufian Mohamed	M	Girawa	Cooperative	Expert	0933212243
4	Derese Taklu		Grawa	Live & fishery	Expert	0925284468
5	Hasen Mussa	M	Grawa	Live & fishery	Expert	0936135073
6	Tegenu Tesfaye	M	Grawa	Agriculture	Expert	0921856043
7	Assefa belay	M	Grawa	Agriculture	Expert	0985095872
8	Kelif Mohamed	M	Grawa	Kebele Manager	Manager	0915709533

9	Juhar Mohamed	M	Grawa	Agriculture	DA	0963411272
10	Jemal Yuye			Cooperative	Expert	0929398524
11	Abdi Ibrahim		Grawa	Kebele manager	Manager	0935384305
12	Abdulaziz Ahmed		Grawa	Agriculture	DA	0906700068
13	Aschalew Debela		Kurfachale	Food security/ Rural job creation	Expert	0915416139
14	Emebet Shawle	F	Kurfachale	Agriculture	DA	0928161027
15	Misro Mohamed	F	Kurfachale	Kebele manager	Manager	0947180470
16	Taju Mohamed	M	Kurfachale	Agriculture	DA	0927929657
17	Bekele Tefera	M	Kurfachale	Agriculture	ANRD	0946426436
18	Amme aliyi	M	Kurfachale	Agriculture	ANRD	0964257089
19	Umer Abro	M	Kurfachale	Kebele Manager	Manager	0921845540
20	Dine Jemal		Kurfachale	Livestock	Extension & input expert	0912910358
21	Kulani Mohamed	F	Kurfachale	Cooperative	Expert	0929322150
22	Sintayew Bekele	M	Kurfachale	Cooperative	Expert	0933356873
23	Siile Dinsa	F	kurfachale	Social affair office	Expert	0961659535

Respondents for FGD Kurfa Chale

No	**Name of Respondent**	**Sex**	**Kebele**	**Contact**
1	Rumia Amad	F	Jiru Gemachu	
2	Aliya Umar	F	"	
3	Safiya Musa	F	"	
4	Ayisha Abdulkadir	F	"	
5	Nure abduraman	F	"	
6	Meymuna Abdula	F	"	
7	Duriya Abdula	F	"	
8	Safiya Abrahim	F	"	
9	Hanifa Ibro	F	"	
10	Fatuma amad	F	"	
11	Nuriya ali	F	"	
12	Shamitu Ibro	F	"	
13	Fatuma Amad	F	"	
14	Halima Umar	F	"	
15	Hamina Abduraman	F	"	
16	Jamila abdo	F	"	
17	Malia Abdulahi	F	"	
18	Aliyi Amado	M	"	
19	Abdujabar Aliyi	M	"	0921243897
20	Abduraman Mahammad	M	"	

21	Abdula Ibrahim	M	"	0937356378
22	Mahammad amad	M	"	
23	Mahammad Ibrahim	M	"	
24	Musba Abrahim	M	"	0920919738
25	Dina Adam	M	Arele Tika	0939129939
26	Abdala Abduraman	M	"	0949824586
27	Ahimad Gazali	M	"	0948663351
28	Anawar Amad	M	"	0973204032
29	Jibril Hasan	M	"	
30	Abduraman Hasan	M	"	
31	Amme abdulkarim	M	"	
32	Mohammed Abdula	M	"	
33	Fatuma yuya	F	Arele tika	
34	Nasima Muktar	F	"	
35	Baya Jirqa	F	"	
36	Fatuma Umare	F	"	
37	Farida Jemal	F	"	
38	Marii Asrar	F	"	
39	Mako umar	F	"	
40	Haqida Mumad	F	"	
41	Aliyi Amad	F	"	
42	Zeynaba Sufi	F	"	

Respondents for FGD Girawa Woreda

No	**Name of Respondent**	**Sex**	**Kebele**	**Contact**
1	Ajaba Ahmed	M	Tokuma Ere	0973567512
2	Caalaa Yaya	M	"	
3	Muzamir Taha	M	"	
4	Adam Mohamed	M	"	0936029184
5	Mohamed Abdelah	M	"	
6	Ahmed Siraj	M	"	0962438988
7	Ahmed Sani	M	"	
8	Samme Mume	M	"	0986313337
9	Afif Hasan	M	"	
10	Musa Amme	M	"	0935789678
11	Mohamed Ahmed	M	"	
12	Kalif Aliyi	M	"	0930299656
13	Mohamed Nibros	M	"	
14	Aysha Umar	F		
15	Fatuma Aliyi	F	Culul Jiru Balina	
16	Alima Bekar	F	"	
17	Mardiayar Mohamed	F	"	
18	Maliya Aliyi	F	"	
19	Rumeyar Sheka	F	"	

20	Fatuma Hame	F	“	
21	Ibratu Hame	F	“	
22	Aysha Abdella	F	“	
23	Fatuma Ibrahim	F	“	
24	Rajias Mohamed	F	“	
25	Kalisar Abdo	F	“	
26	Leyla Mohamed	F	“	
27	Suader Rabi	F	“	
28	Laila Xiyo	F	Tokuma Ere	
29	Fatima Abdurazak	F	“	
30	Haliye Amme	F	“	
31	Mariam durizik	F	“	
32	Nasjeh Layila	F	“	
33	Naymuneh Amed	F	“	
34	Zayneba Gosiye	F	“	
35	Fatuma Abdurazek	F	“	
36	Ilili Abduraman	F	“	
37	Kanzi Abudulahi	F	“	
38	Habibaker Amed	M	Culul Jiru Balina	
39	Aliyi Amed	M	“	
40	Abas Mumed	M	“	0983419146
41	Umar Usmail	M	“	
42	Mohamed Jamal	M	“	
43	Abdi Suleyman	M	“	
44	Eliyas Mume	M	“	
45	Mohamed Ibrahim	M	“	0945380508
46	Eliyas Umare	M	“	09844116224
47	Aliyi Mohamed	M	“	
48	Barudin Kebir	M	“	0962344055
49	Jamal Mohamed	M	“	

Respondents FGD from Gemechis

No	**Name of Respondent**	**Sex**	**Kebele**	**Contact**
1.	Deeynaba Beker	F	Kaseja	0962438444
2.	Abdulla Musa	M	“	
3.	Raso Nedi	F	“	
4.	Aaliya Mohamad	F	“	
5.	Mohamad Ahmad	M	“	
6.	Fetiya Abdula	F	“	0966367698
7.	Hawa Abrahim	F	“	
8.	Fatuma Amed	F	“	
9.	Kedija Yasin	F	“	
10.	Aliya Mehamed	F	“	
11.	Mehamed Aliyi	M	“	

12.	Tjudin Usmael	M	"	0975083365
13.	Abrahim Kemal	M	"	
14.	Abdela Yussuf	M	"	
15.	Abdujaba Adam	M	"	0964377951
16.	Abdela Muhamed	M	"	
17.	Muhamed Ahmed	M	"	
18.	Shamshi Hasan	F	"	0982875387
19.	Fatuma Adem	F	"	
20.	Hasan Abdella	M	"	0967854791
21.	Halima sultan	F	"	
22.	Mammad Adame	M	Sire Guddo	
23.	Dubay Tilahun	F	"	09 09 27 17 18
24.	Misira A/Raman	F	"	
25.	Hawwa Aliyyi	F	"	
26.	Fikire Girma	M	"	09 60 12 42 54
27.	Bayan Mammad	M	"	09 06 23 94 73
28.	Yusuf Mammad	M	"	09 67 94 24 29
29.	Nigiste Fantay	F	"	
30.	Biftu Ibrahim	M	"	
31.	Hindi Aliyyi Ibro	F	"	
32.	Mammad Abrahim	M	"	09 28 22 23 42
33.	Adnan Abrasho	M	"	09 70 36 27 63
34.	Na`ima Mumad	F	"	09 06 23 94 64
35.	Kimiya Abdalla	F	"	
36.	Halima Abrasha	F	"	
37.	Azeb Taye	F	"	
38.	Nasir Amad	M	"	
39.	Mommad Adem	M	"	

Respondents FGD from Chiro

No	**Name of Respondent**	**Sex**	**Kebele**	**Contact**
1.	Ibro Mussa	M	Ifabas	
2.	Mehamed Tahir	M	"	
3.	Hassen Yussuf	M	"	
4.	Asha Adem	F	"	
5.	Tasew Tadesses	M	"	
6.	Kedir Yussuf	M	"	0945045624
7.	Raziya Dawe	F	"	
8.	Meftuha Mume	M	"	
9.	Hawa Adem	F	"	
10.	Abdela Usmane	M	"	
11.	Munteha Mehamed	F	"	
12.	Keyriya Jibrael	F	"	
13.	Abdela Abrahim	M	"	

14.	Shukri Abrahim	M	“	
15.	Terfe Mengisitu	M	“	
16.	Mulatu Gashawu	M	“	0939574760
17.	Musa Abdurhaman	M	“	
18.	Zalariya Ibrahim	M	“	0945920668
19.	Muhamed Adem	M	“	
20.	Shifara Alamayo	M	“	0983664379
21.	Abdalla Usman	M	“	0988389776
22.	Muhamed Ibrahim	M	“	0963850947
23.	Shafi Usmael	M	“	
24.	Jamila Dawud	M	“	
25.	Shume Jemal	M	“	0938871133
26.	Abdurhaman Aman	M	“	
27.	Tarafa Mangistu	M	“	0920901551
28.	Tewolde Alamayo	M	“	
29.	Yasin Mustefa	M	K/Guddina	
30.	Abdi Adem	M	“	09 82 89 22 06
31.	Husen Abrahim	M	“	
32.	Mammad Abdela	M	“	
33.	Nasir Mammad	F	“	09 60 99 80 58
34.	Asna Uso	F	“	
35.	Fatuma Usman	F	“	
36.	Zara Usen	F	“	
37.	Abrahim Maye	M	“	
38.	Hawa Darasa	F	“	
39.	Tayibe Muse	F	“	
40.	Amina mayi	F	“	
41.	Dehabo Hira	F	“	
42.	Zebiya momed	F	“	
43.	Halima Hasene	F	“	
44.	Usso Adem	M	“	
45.	Mume Hussen	M	“	
46.	Husen Ademe	M	“	
47.	Adem musa	M	“	
48.	Fatuma Amed	F	“	
49.	Fatuma Taha	F	“	
50.	Nuriya Usso	F	“	
51.	Fatuma Amed	F	“	

Respondents for Value Chain Commodity and Off-farm/ Nonfarm Selection KII Respondents

No	**Name of Respondent**	**Sex**	**Woreda**	**Organization**	**Position**	**Contact**

1	Zewdu Getachew	M	Chiro	Agri office	Agronomist	0920455377
2	Kebebush Hailu	F	Chiro	Agri office	Seed multiplication expert	0910001218
3	Tesfaye Mosisa	M	Chiro	Agri office	Irrigation/Horticulture expert	0920453960
4	Addisu Nigusse			Private	Poultry Collector	
5	Kebede Kifle		Chiro	Private vet pharmacy	Habon private veterinary	
6	Getachew		Gemechis		Shoat collector	
7	Wendu Alemayehu		Chiro	seed collector cooperative in 2012 @ ifabas	Group established by CARE Ethiopia FSIP project	0915019373
8	Tsedeke	M	Chiro	Private poultry supplier	Owner/manager	
9	Amed siraj Abrahim	M	Gemechis	Sire gudo kebele	DA/plant science	-
10	Ahmed Abrahim	M	Gemechis	Agri office	Horticulture expert	0915132180
11	Ayalew	M	Chiro	Livestock office	Head	0912923579
12	Mohammed Adem	M	Chiro	Livestock office	Poultry expert	0920901554
13	Yinebeb Belew	M	Chiro	Livestock office	Shoat expert	0942695231
14	Belete Dejen	M	Chiro	Agri office	Crop protection expert	0920920181
15	Dereje Wubshet	M	Gemechis	Sire gudo	Kebele Manager	0975766281
16	Sintayehu Fikadu	M	Gemechis	Livestock office	Ox fattening expert	0920466145
17	Habtamu Chewaka	M	Gemechis	Livestock office	AI expert	0912300536
18	Alimaz Yeshitila	F	Gemechis	Livestock office	Expert	0921166126
19	Abrahim Ahmed	M	Gemechis	Livestock office	Poultry and small rum prdn expert	0913284782
20	Abdi Adem	M	Chiro	Kebele Manager	Manager	0985087093
21	Ahmed Muhamed	M	Chiro	Woreda rural job creation	Expert	0923456780
22	Husen Hasen	M	Gemechis		DA	0920495992

KII respondents at regional and national level

No	Name of Respondent	Sex	Location	Organization	Position	Contact
1	Biruk Yemane	M	Adama	Ethio feed	Manger	0911194745
2	Habtamu	M	Bishoftu	Waljaji PLC(effective microorganism producer)	Marketing manager	0911836912
3	Marta Yami(PhD)	F	Bishoftu	National veterinary institute	Director	0911510894
4	Dr. Solomon	M	Bishoftu	Ethiopian agricultural research institute	Researcher	0911647981
5	Mustefa Muktar	M	Diredawa	Fruits and vegetable exporter	Exporter	098692903
6	Negasi Amha	M	Harar	Haramaya university	Researcher poultry	0915750814
7	Major Tom	M	Bishoftu	Alema Kaodais (animal feed)	Manger	0911245308
8	Dr. Asfaw	M	Addis Ababa	Menagesha Bio Fertilizer	Manger	0911411318
9	Dr. Getahun	M	Addis Ababa	Markos PLC	Manger	0911340293
10	Abrar Abdi	M	A.A	Addis International Vet. Drug store	Manager	0911340459
11	Fitsum Abera	M	Harar	Haramaya university	Researcher shoat	0902591764
12	Tegene Kibre	M	Diredawa	Dire Multipurpose farmers' cooperative union	Marketing manager	0915001811
13	Kasahun Seifu	M	Addis ababa	Isacor plc	Manager	09 30 00 05 02
14	Worke Zewudu	M	Adama	Ambasel trading business plc	Marketing manager	968387357
15	Hassen Abdulwahal	M	Adama	Hassen Abduluhal edable oil and animal feed trade	Owner and manager	0911253733
16	Ibrahim Adam	M	Dessie	Gerado poultry farm		091471870

17	Hassen Said	M	Dessie	Ene Hassen Said poultry farm	Founding Partner and manager	935215919
18	Atsnaf Betsela	M	Woldia	Yeju honey and honey products processing PLC	Manager	0333310115/ 0914739094
19	Yimegnusha Melaku	M	Dessie	Merkeb union	Contact person	0918167535
20	Mesfin Tefera	M	Woldia	Jember multipurpose cooperative	Manger	0333313008/ 0913380076
21	Andarge Aweke SME	M	Bahirdar	Andarge Aweke and friends	Owner and manager	918779166
22	Desalegn Debebe	M	Bahirdar	Erikum Multipurpose farmers' cooperative union	Manager	0930373601/ 0331122208
23	Abayneh Aklilu	M	Hawassa	Abay feed SME	Owner and manager	0911553167
24	Yebichaye Degefa	F	Modjo	Organic abattoir house	Contact person	09 11 90 23 09
25	Helen Negash	F	Modjo	Luna abattoir house	Contact person	09 30 03 33 58
26	Samson	M	Bishoftu	EMDDI/Ethiopian meat and dairy development institute	Contact person	0913116750
27	Samuel	M	A.A	Et-Fruit Hawassa	Representative	0922679829
28	Dr. Fekadu Gurmu	M	Hawassa	Hawassa Research center	Researcher	0911743625
29	Gebremedhin	M	Holleta	Holleta research center potato researcher	Researcher	0911633707

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