

**Establishing a relationship between financial institutions and pepper value chain actors: a case study of South West Shewa Zone, Goro District, Ethiopia**



A research project submitted to Van Hall Larenstein University of Applied Sciences in partial fulfilment of the requirements for the Master Degree in Agricultural Production Chain Management – Horticulture Production Chains

By

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**DEDICATION**

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## **ABSTRACT**

Pepper is an important commercial crop for small producers in Goro district. However, its sector is experiencing many constraints with inadequate attention gains financing, productivity and marketing. Therefore, this study was conducted to analyze the pepper chain in order to identify financial constraints of pepper value chain actors, productivity and marketing constraints and opportunities to link pepper value chain actors for sustainable pepper production and marketing value chain in Goro district. Purposive and non-probability sampling techniques were alternatively employed to collect data. The data for small pepper growers were collected from 2 pepper-producing kebeles (Galiye and Sinano) in Goro district. A total of 80 small producers were surveyed using semi-structured questionnaires and 2 collectors, 1 wholesaler, 1 processor and 1 retailer were interviewed using checklists. In addition, 12 producers in one group and from 2 financial institutions 8 experts were included in FGD. an informant from each stakeholder was interviewed to generate data on financial constraints of pepper production, marketing and on how to link pepper chain actors to finance and possible improvements for sustainable pepper production and marketing. economic, social and environmental indicators in terms of 3P were selected sustainability performance of the chain in Goro district. The collected quantitative and qualitative data were used to develop value chain map, stakeholder analysis, sustainability performance assessment, gross margin estimation and SPSS. Results indicate that the existing pepper chain structure includes actors, support and influences. There was an insufficient link pepper chain actor to finance, market and to stakeholders in the chain. Producers were not have organized cooperatives and they do not have better-negotiating power. The smallholder producers did not have a strong relationship between banks and cooperative societies. However, they have a moderate relationship with micro-financial institutions and strong relationship with traders regarding credit. The producers were controlled by collectors, wholesalers, processors on setting the market price. The current pepper chain has 5 different marketing channels in Goro district. Channel that ends with processors share has a high-value share for producers while channel flow with small scale processors and the low-income consumer has a low-value share for producers. Compared to the other traders' channel, the marketing with processor has a high-quality share in the pepper chain. Poor agronomic practice, pests and diseases and climate change were most significant limitations impact on pepper yields while lacking finance, inadequate linkage chain actors to financing institutions, limited market information, lack of inputs, poor post-harvest practice and weak cooperative societies were the most central constraint for pepper marketing in Goro district. Economic, social and environmental indicators have moderate sustainability performance. The chain has an advantage in terms of profitability, employment, emissions of air contaminants and restrictions on coordination, value chare, profit margin, market diversity, product and market information.

**Keywords:** Value chain financing, pepper productivity, profit margin, value chain sustainability

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## LIST OF ABBREVIATIONS

CBE	Commercial Bank of Ethiopia
EEPA	Ethiopian Export Promotion Agency
ETB	Ethiopian Birr
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
FGD	Focus Group Discussion
FTC	Producers Training Centre
FTC	Farmers training centre
GDOCR	Goro District Custom and Revenue
GDP	Gross Domestic Product
GTP	Growth and Transformation Plan
ILO	International Labour organization
m.a.s.l	Meter Above Sea Level
MoA	Ministry of Agriculture
MPP	Minimum Package Project
MPP	Minimum Package Project
NBE	National Bank of Ethiopia
NGO	Non-Government Organization
OACF	Oromia Cooperative Federation Union
OCSSCO	Oromia Credit and Saving Share Company
OSC	Oromia Saving and Credit
PA	Peasant Association
PADEP	Peasant Agriculture Development Extension Project
PADETES	Participatory Demonstration and Training Extension System
PADETES	Participatory Demonstration and Training Extension System
PESTEC	Political Economical Social Technical Economical Cultural
PESTEC	Political Economical Social Technical Ecological Cultural
PPP	Public-Private Partnership
SNNPR	South Nation Nationalities Region
SWOT	Strength Weakness Opportunities Threat
SWOT	Strength Weakness Opportunities Threat
USD	United State Dollar
VCA	Value chain analysis

## CHAPTER ONE: INTRODUCTION

Ethiopia has approximately 51.3 million hectares of agricultural land and currently, more than 20% is cultivated by smallholder producers. more than 50% of all smallholder producers work on one hectare or less. Smallholder producers, who are around 12 million households, represent around 95% of GDP (41.4%). Agriculture production is essentially a livelihood, and a large part of the country's raw material exports is handled by the small sector agricultural crops (Infomineo, 2018). According to (Hermes, 2015) Ethiopia has good climatic and soil conditions for growing peppers. The most cultivated type is the *Mareko Fana* variety, strong long chilli of dark red appearance and also grown the smaller Mitmita peppers, an even hotter, red, small pepper.

Chilli (botanically known as *Capsicum annum L*; *Capsicum frutescent L.*), also known as red pepper, belongs to the genus capsicum, under the Solanaceae family. It is believed to have originated in South America. There are different names that are referred to like peppers, chilli, hot peppers, bell peppers, red peppers, pods, cayenne, bell pepper, chilli and bell pepper in different parts of the world (MoA, 2013). These crops are important cash crops for many developing countries, such as Ethiopia, Nigeria, Ghana, China, India, Pakistan, Bhutan, Indonesia, Cambodia and Thailand (Madhvi , et al., 2015). Chilli peppers contain a substance called capsaicin that gives peppers their characteristic sharpness, with a mild to intense taste when eaten.

Capsaicin is being studied as an effective treatment for sensory nerve fiber disorders, including pain associated with arthritis, soriasis and diabetic neuropathy (Lalbahadur, 2017). The heat feeling after eating hot chilli peppers takes energy and calories to produce. Even sweet red peppers contain substances that significantly increase thermogenesis (heat production) and oxygen consumption for more than 20 minutes after they have been eaten.

Studies have shown that it reimburses for cholesterol build-up and reduces platelet aggregation, thereby reducing the risk of heart attacks and strokes. It also lowers high blood pressure and increases peripheral circulation (Rutgers, 2010). Its importance is not only limited to the point of view of consumption but also very prominent for producers by generating income, creating jobs and ensuring food security. This increases the profitability of those engaged in pepper production (Muhammad, et al., 2017). In general, It is a crop of high value in both domestic and export markets also it generates employment to urban and rural workers (Arnarson, 2015).

The Ethiopian Export Promotion Agency (EEPA) has carried out a Spice Potential Market Study in Amhara, Oromia and SNNPR, and it identified that the land coverage for pepper in the three regions. The total pepper production in the country by the year 2013/2014 Ethiopian main harvest season was estimated at 280 million kg. On average, 72% of pepper production is destined for the market in the study region. In the 2013/2014 production year, the total cultivated land and the production in the region amounted to 61,069 hectares and 158,006,600 kg respectively. The total amount of pepper produced in the 2014/2015 production year was 2860 hectares and 5,148,000 kg in the study area (EEPA, 2016).

Looking at the export of spices including pepper to the destination in 2009/10, Sudan is the largest importer of spices from Ethiopia (with a share of 38.4% of total exports of spices from Ethiopia), followed by India (10.4%) and Yemen (8.6%). Other major importers of spices from Ethiopia are United Arab Emirates (8.3%), Saudi Arabia (6.7%), Morocco (5.8%), while Singapore and Jordan 3.2% and 3, 1% respectively. Household consumption is determined by family size as small household purchase small volume, small to medium traders such as volumes have higher consumption. Processor through are shared with a small percentage with processors and table spice traders such as Selam, Etsub, Abyssinia, Abeba, ESEF have higher consumption especially in urban areas.

Institutional consumers such as the hotels, restaurants, military camps, academic institutions, hospitals to purchase large quantities of spices (ITC, 2010).

There are several challenges, low productivity, illegal actors in the chain, poor product quality, low and fluctuating price, small and limited market place, together with a long market gap, are a major problem negatively affecting production and marketing of agriculture products. of hot pepper (Shumeta, 2012). In recent years, the pepper production area in south-western of Ethiopia has shown low productivity and poor in product quality due to the absence of improved varieties and lack of improved seed supply are among major challenges of production. On the other side, the demand side is characterised by the high price where pepper is in daily consumption of Ethiopian as an adult consumes around 15 grams, which is higher than tomatoes (Dessie & Birhanu, 2017).

### **1.1 Justification of the study**

Pepper production plays an important role in generating income for pepper value chain actors in the south-western region of the country. Pepper chain contributes to food security directly through diversified revenue streams. Pepper is added to Ethiopian meals every day therefore, demand for the product locally is very high. In this region, most producers produce pepper as a source of income. The pepper value chain can be a key to rural development through diversified products and revenue streams, employment creation and attraction of other business to these rural producing communities.

### **1.2 Research Problem**

Ethiopian Ministry of agriculture aims to create a modern and highly productive agriculture system that uses a more advanced technology which enables the society to get rid of poverty (MoA, 2013). South West Shewa Zone, Goro district producers are known for producing pepper production. However, according to (Mekdes, et al., 2018) the pepper chain actors characterised by lack of, storage facilities, transportation, linkages with traders; quality controlling mechanisms, market information and price settings are weak in the study area. In another study mentioned that agricultural financing plays an important role in improving agricultural productivity in developing countries and it is the backbone for every business, even more so for the traditional farming system (Shoaib, et al., 2016). According to the commissioner, the problem is backward and low production of the agriculture system. Based on this, Goro district bureau of agriculture is aiming to improve the pepper value chain by addressing the relationship between pepper chain actors and financial institutions through its generic and specialized extension service to come up with an improved pepper value chain. The goal of the study is to identify possibilities in financing the pepper value chain in order to advise the commissioner on strategies of creating a modern and highly productive pepper value chain in the study area.

### **1.3 Problem Owner**

Ethiopian Ministry of Agriculture (MoA) is the ministry that is primarily responsible for crop production by delivering the relevant policies, extension service and strategy inputs for related crops and marketing spices. In addition, the MoA and its respective offices at regional, zonal and districts level offer a generic and specialized extension service for smallholder producers before and after harvest agronomic practices, so, Goro district bureau of agriculture is aiming to strengthen the relationship between pepper chain actors and financial institutions through its generic and specialized extension service by reorganizing chain actors. In this case, the Goro district bureau of agriculture is the commissioner.

### **1.4 Objective**

To advise the ministry of agriculture (Goro district bureau of agriculture) on strategies to improve pepper value chain and create modern (agricultural marketing system) and high pepper production through establishing/ facilitating linkage to financial institutions in order to have better access to finance for pepper chain actors in South West Shewa Zone, Goro district, Ethiopia.

#### **1.4.1 Main Research Questions**

1. What are the financial constraints of actors (input supplier, producers, traders, processors and retailer) in the pepper value chain?
  - What is the structure of pepper value chain in Goro district?
  - What are the forms of financing options for actors in the pepper value chain?
  - What is the effectiveness of financial institutions in financing the pepper value chain?
  - What are the financial requirements for different chain actors when applying for loans?
  - What are the strategies to improve chain actors access to finance?
2. What is the role of government extension service in building effective financing of the pepper value chain in Goro district?
  - What are the functions of extension service in linking pepper value chain actors to finance?
  - What are the main constraints in the ministry of agriculture in creating a public-private partnership?
  - How can financing institution and extension service develop a sustainable pepper value chain?

#### **1.5 Scope of the research**

The study was conducted in two sub-districts/Kebeles of Goro district. Data from various chain actors such as input suppliers, producers, collector, wholesaler, processor and retailer, financial institutions, experts from Goro district government and non-government were included.

#### **1.6 Limitation of the study**

The producers are scattered and more time was needed to carry out the research. This also increased the research expenses and the budget was limited. Only internal financing was considered in the study.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1. Value chain**

The value chain is a useful method to understand how markets work, for a specific purpose. It is a series of value-added activities that move a product from the original production or design phase to the final delivery to the consumer (Raphael & Mike, 2000) and that can be local, national, regional or global. According to (KIT, 2008) a value chain is a specific type of supply chain one where the actors actively try to support each other so that they can increase their efficiency and competitiveness. They invest time, effort and money, and build relationships with other players to achieve a common goal to meet the needs of consumers so that they can increase their profits. Value chain analysis is a useful analytical tool that provides insight into the general trends of industrial reorganization and identification of change agents and policy leverage points technical interventions. It is increasingly being used by donors and development aid organizations to better target their support and investment in different areas such as trading capacity, entrepreneurship competitiveness, income distribution and equity among value chain actors. It is an innovation that improves or improves an existing product or introduces new products or the use of new products. This allows the farmer to create new markets or distinguish a product from others and thus gains an advantage over competitors. In addition, the farmer may ask for a higher premium (price) or increased market share or access. In Ethiopia, the value chain concept is not yet well understood especially by extension service and the financial sector. Though there are some sectors which starting the value chain concept. According to (Teklegiorgis, 2009) in recognition of the essential role of Integrated Value Chain Analysis (IVCA) to understand the backward and future relationships of actors in both the agricultural and industrial sectors of the economy, the Ministry of Trade and Industry of FDRE is currently implementing this tool, in particular in the development of products for the processing of agricultural products, textiles and clothing and leather and leather products.

#### **2.1.1. Chain Actors**

The chain actors are those who are directly involved with the products, that is, supplying input, producing, processing, trading and consuming (Daniel, 2007). According to (Mekdes, et al., 2017) pepper chain actors are who participate directly or indirectly in the production-to-consumption system of the red pepper. Among which producers, local collectors, wholesalers, retailers, processors and end-users of the product or the consumer are identified. In the study area, the producers are who have a lower profit margin than all the actors. The organization of marketing costs revealed that producers cost the costs of the other actors. This is due to the higher costs of the inputs used by pepper producers for production. So the cost of input is the highest amount followed by processor costs and wholesalers' costs. An actor in the red pepper value chain adds value to the product while the product goes from one actor to another. In a sense, the actors add value to the product by improving quality by sorting and removing dust and other waste, which changes the shape, packaging and time utility. Traders made a total of 87.75% of the total margin of profit; specifically, among traders, the processor's profit margin is the highest share (30.71%) followed by retailers (20.49%). While producers do everything the work of producing red pepper and wearing the related risks, took 12.25% of the profit margin.

#### **2.1.2. Chain supporters**

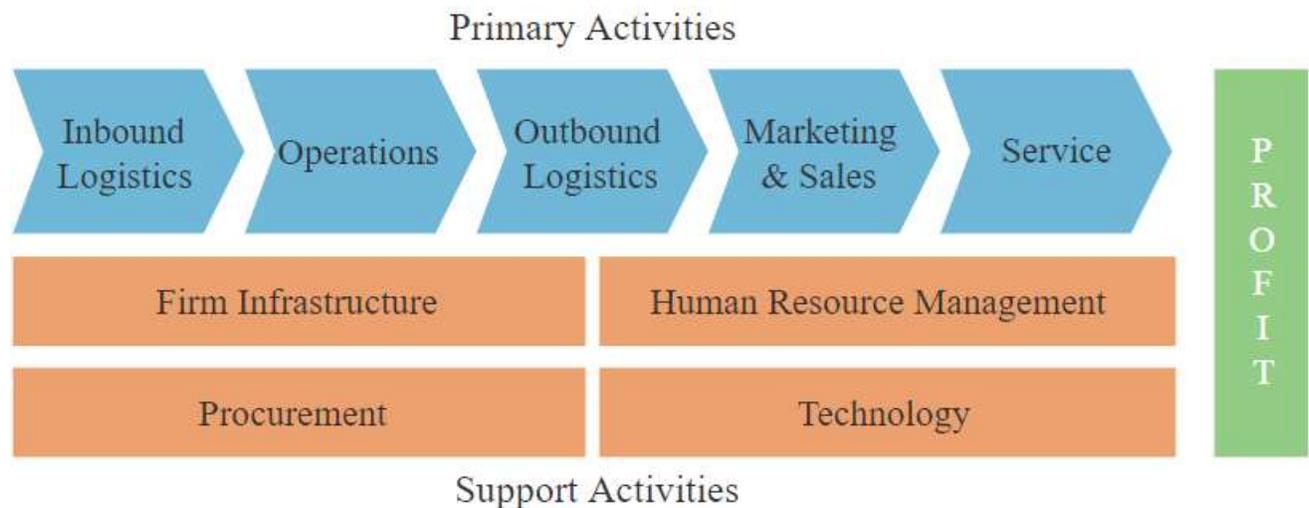
The supporting actors are those who provide support services to the actors in the production system for red pepper consumption. The services they provide include training and expansion, information, financial services, licensing and research services. According to (KIT, 2008) supporters are indirect actors who provide financial or non-financial support services, These are public or private companies such as banks and credit agencies, business service providers, government, researchers and extensionists. Bureau of agriculture which is the sub-ministry of agriculture at district level provide training and extension Services for pepper value chain actors. Banks and microfinance institutions are also providing loans in the study area. In Goro district primary cooperatives, banks,

microfinance and Wolkite University are the main supporting actors who play a central role in offering services such as training and expansion services. Bureau of agriculture is offering various training to the market players of red pepper in the district. District custom and revenue authority office is also the main body responsible for granting licenses for red pepper traders and collecting income through taxes in the district (Mekdes, et al., 2018).

### 2.1.3. Value chain analysis

Value chain analysis is a useful analytical tool that helps to know general trends in the reorganization of production and identifies change agents and points of influence for policy and technical interventions. It is increasingly used by supporters and development aid organizations to better target their support and investments in different areas such as trading capacity, the competitiveness of enterprises, income distribution and equality between chain participants. On other study mentioned that value chain analysis (VCA) is a process whereby actors identifies its primary and support activities that add value to its end product and then analyzes these activities to reduce costs or increase differentiation (Jurevicius, 2013).

Figure 1: Value chain



Source: Porter, (1982) value chain model

Value chain analysis is an innovation that improves or improves an existing product or introduces new products or applications for new products. This allows the farmer to create new markets or distinguish a product from others and thus gain an advantage over competitors. The farmer can ask for a higher premium price or gain a larger market share or access. Adding value does not necessarily mean changing a product; it can be the approval of new products or treatment methods that increase the capacity and reliability of a farmer to meet market demand. Added value can be almost anything that increases the dimensions of an actor (Wosene, 2018).

### 2.1.4 Pepper value chain performance in Ethiopia

**The actors:** The term value chain actor summarizes all individuals, companies and public authorities that are related to a value chain; in particular, those performing the basic functions of a value chain, typical operators being producers , small and medium-sized enterprises, industrial enterprises, exporters, traders and the providers of support services (Wosene, 2018).

**Value chain supporters:** Access to information or knowledge, technology and finance determines the success of actors in the value chain. The primary chain of supporters; agricultural office, promotion agency for cooperatives, microfinance, NGOs and providers of transport services (Dawit, 2017).

**Value chain Map:** Mapping the value chain is a possible first point for including small producers. It has the advantage of showing actors, information flow, money flow, product flow coupling and gaps between actors (KIT, 2008).

### 2.1.5 External Influences

According to (KIT, 2008) The external influence of agricultural value chains includes economic, political, socio-cultural and technological factors. These factors can facilitate, limit or be neutral in the sustainable development of the value chain. It is therefore important to assess how these factors influence the participation of smallholder pepper producers in Goro district.

### 2.1.6 Value share in pepper chain

Calculating profit margins in the value chain is not easy. It requires information about costs (fixed and variables) and revenues of every actor in the chain. (KIT, 2008) Once the costs and revenues of each actor in the chain are known, their financial position can be calculated in the following steps:

Table 1 Value share

Economic Variables	Formula to calculate
Gross income	Deducting variable costs from revenues
Gross margin	Dividing gross income by revenue earned from sales and multiply by 100 to identify the percentage
Added value	Difference between the price paid for the entire production and sold price
Value share	Added value divided by the final retail price by multiplying by 100 to know the percentage

Source: (KIT, 2008)

## 2.2. Value chain financing

The range of actors and activities needed to bring agriculture product from production to the end consumer is often called a value chain. When a credit or other financial services flows through actors along these chains this is rightly called 'value chain financing'. Value chain financing may or may not include support from formal financial institutions. According to (Janice & Bob, 2007) value chain financing has been provided to or by a value chain actor to increase value chain growth and competitiveness. Whether it is provided by a bank, a buyer or a supplier of input, by financing the value chain actors can operate, perform transactions with others and upgrade. The financial flows among actors in the pepper value chain in Goro districts have the characteristics of financed by formal institutions such as banks, microfinance and other chain actors. Without and no formal financial access to financing, many agricultural producers remain trapped in production cycles with low investments / low returns. Lack of finances can prevent a producer from planting his or her crop or reach the optimum market for a crop that is being produced. Similarly, financial limits can have negative consequences for processors, preventing them from expanding and thus limiting the number of products they buy from local producers. The right financing at the right time can lead to more efficiency, improved product quality and higher-income leases to support their capital needs in the short and long term.

According to (ITC, 2010) found out Regulatory support from the government must ensure the efficient and orderly management of the value chain of spices such as pepper, ginger and etc.. Finally, financial services by banks and microcredit institutions and transport and related logistics infrastructure are necessary. An important requirement in the provision of services is timeliness, adequacy and easy access. Default values for delivery or quality are not accepted in this export environment. As a cash crop, the spice subsector is among the important

crops that fit into the agricultural marketing strategy. Spice, which is a cash crop like a pepper which is produced by smallholder producers, has great potential to increase the purchasing power of smallholder producers. This role is of the utmost importance for poverty reduction by making small food-producing producers food safe and reducing food wastage from producers. spice crops that are already being traded internationally on a large scale have great potential for expanding and diversifying Ethiopia's export earnings. It, therefore, fits well in Ethiopia's export strategy.

### **2.3. Financing institution in Ethiopia**

Financial institutions are defined as all regulated or non-regulated institutions whose primary activity is the provision of financial services. These include banks, microfinance institutions, financing companies and credit associations. Studies found out from the fact that sustained agricultural growth is central to rapid poverty reduction and economic development. Nonetheless, global poverty is largely concentrated in agricultural societies that have the potential for increasing agricultural productivity. This applies in particular to the countries of southern Sahara, where the differences between potential and current yields remain large. Minimizing this gap by promoting modern inputs, such as fertilizer and modern seeds, was the core of almost all development strategies in Ethiopia. In addition to other initiatives, the country has promoted microfinance institutions and financial cooperatives that are members of the bank to ease the credit limits of small producers (Gizachew, et al., 2016). Pepper chain actors are hardly accessing to the finance. According to (Mussema, 2006) the chain actors use their own financial resources and their local knowledge to produce and bulk pepper from the area.

#### **2.3.1. Contribution of financial institutions**

Agricultural financing is more than just finance; financial services must be linked or integrated with other services, including import, post-harvest and storage, processing, marketing, research and technology, training and expansion, among others. Value chains in agriculture play a crucial role as a way to minimize the costs and risks of financing the agricultural sector. That is why value chain financing is a powerful tool for banks and other financial institutions to develop tailor-made financial services that the agricultural sector needs. The benefits of the financing approach to the value chain to extend access to finance for agriculture sector are lower transaction costs; improved product quality and delivery; safer, longer-lasting relationships between players; and providing a general framework to facilitate communication, problem-solving ability, efficiency and improved market competitiveness (Anup & Jian, 2012).

#### **2.3.2. Constraints in actors accessing finance**

Working capital, innovative financing products and services, and finding new ways to overcome the challenges that producers and off-farm providers face in accessing credit are important considerations when designing financial services and development interventions (AgriFin, 2017). There is an ever-increasing need for investment in agriculture due to a drastic increase in the world's population and changing nutritional preferences of the growing middle class in emerging markets for higher-value agricultural products. In addition, climate risks increase the need for investment to make agriculture more resilient to such risks. Estimates suggest that food demand will increase by 70% by 2050 and that at least \$ 80 billion will be needed annually to meet this demand, most of which must come from the private sector. Financial sector institutions in developing countries give a disproportionately lower share of their credit portfolios to agriculture compared to the agricultural sector's share of Gross Domestic Product. On the other hand, the growth and deepening of the agricultural finance markets is limited by a number of factors, including: inadequate or ineffective policies, high transaction costs to reach remote rural populations, covariance of production, market and price risks, and lack of adequate risk management tools, low demand levels due to fragmentation and incipient development of value chains, and lack of expertise of financial institutions in the management of agricultural loan portfolios (Varangis, 2018). The challenge in financing or providing service such as extension services there is a problem of interlinking the chain actors. According to (Willems & Hilde Duns, 2015) there is a weak business link between stakeholders in the

chain, including producers, traders, processors and meso-supporting institutions and regulatory and enforcement bodies at the macro level.

### **2.3.3. Strategies in financing**

According to (Miller, 2012) the development goals of the government and/or the development agency must be clear before decisions can be made about the target group, region or sector and about value chain specific considerations. The strategy for building pepper financing and bringing the organized sector closer to the farmer. Because the farmer cannot increase productivity by themselves they need advising in strategy to be able to increase their productivity.

## **2.4. Financing options**

### **2.4.1. Screening borrowers**

Value chain actors may have useful information about potential borrowers. This information can help financial institutions to look for reliability, evaluate profitability and/or assess the risk of default. In some case the chain actors they know each other that they can fund themselves. however, this depends on mutual trust between the chain actors. According to (Sarah, et al., 2012) building trust between partners' representatives is essential in partnerships, in addition to better understanding and improved relationships.

### **2.4.2. Repayment of loans**

The chain actors can be positioned to pay out loans (in kind or cash) on behalf of the financial institution and the repayments of loans can also be channelled through them. These roles can help reduce transaction costs and reduce the risk of arrears and defaults (USAID, 2019).

### **2.4.3. Collateral**

Value chain actors can also offer an alternative that is acceptable for a financial institution in the event that no legal collateral is available to secure the loan. Purchase orders and buyer contracts can offer a reasonable repayment guarantee to the extent that a financial institution waives traditional requirements. Even when buyers' contracts are not transferable (and therefore not really a substitute for collateral), they can still be important to the lender because they signal creditworthiness and thus reduce the standard risk (MarketLinks, 2019). Microcredit is an important interventionist strategy in this decade of global economic liberalization, as it is designed to tackle and improve financial markets by providing loans without collateral for those in rural areas. Microfinance has become an important tool used to provide credit to many low-income entrepreneurs in developing countries. The provision of micro-credit services improves the latent capacity of the poor for entrepreneurship, increasing their self-reliance, increasing their capacity to create more jobs and ultimately improving household incomes. However, studies show out different agricultural finance and microfinance institutions need to carefully examine the significant determinants of loan repayments for the viability and sustainability of the approach and for optimal repayment performance (Solomon, et al., 2017).

## **2.5. Value chain governance**

Value chain management refers to the relationships between buyers, sellers, service providers, and regulatory institutions that operate within or affect the range of activities needed to bring a product or service from start to end-use. Governance is about power and the ability to control in the chain - at every point in the chain, a company establishes and/or enforces parameters under which others operate in the chain. The most important parameters are: What must be produced. This includes product design and specifications. How it should be produced. This includes the definition of production processes, which may include elements such as the technology to be used, quality systems, labour standards and environmental standards. How much must be produced and when? This refers to production planning and logistics (MarketLinks, 2019). The actors can be

actors in the value chain or public or private institutions from the enabling environment. The same actor does not have to be responsible for establishing, monitoring and facilitating compliance with the rules - combinations of actors often fulfil these responsibilities.

#### **2.5.1. Horizontal coordination**

This form of upgrading is very important for poor people in rural areas because coordination with others allows producers to achieve economies of scale and reduce transaction costs. Horizontal coordination is often the first step in a series of interventions that ultimately result in market access and is a prerequisite for other forms of upgrading. Crucial to the success of horizontal coordination strategies are the rules for participation in the group and the quality of management of the group structure (Jonathan, et al., 2009).

#### **2.5.2. Vertical coordination**

Vertical coordination refers to all possible economic arrangements involved in the transfer of funds between economic phases (Veselska, 2005). The vertical coordination in pepper value chain includes all actors the cash flow from input supply up to the consumer which characterised by lower profit margins for the farmer (Shumeta, 2012).

#### **2.5.3. Function upgrading**

Function upgrading refers to changing the combination of functions performed by actors in the value chain that increase (upgrade) or reduce (downgrade) the number of activities of individuals and firms (Jonathan, et al., 2009). Small producers jointly have the capacity to upgrade the production and processing of their chilli (vertical integration). They can do that by reorganizing and improving cooperation between themselves. Intensification in production, increasing land positions and diversification to other varieties of chilli pepper are the other options that can be considered (Baan, 2014).

#### **2.5.4. Process upgrading**

In the pepper value chain increasing the efficiency of internal processes as they are considerably better than that of rivals, both within individual links in the chain and between the links in the chain. Studies state that process upgrading increases production efficiency, either through better organization of the production process or through the use of improved technology. The need to save costs and/or increase production in response to competition within or between chains stimulates process improvement, thereby reducing costs per production unit (USAID, 2019).

#### **2.5.5. Product upgrading**

Introducing new products or improving old products by adding value faster than competitors. This includes changing new product development processes both within individual links in the value chain and in the relationship between different chain links. Process and product improvement are closely linked because improving product quality are often accompanied by improvements to the production process (Jonathan, et al., 2009).

### **2.6. Producer organization**

According to (European Union, 2019) producer organizations are voluntary partnerships between producers of agricultural products. Producer organizations and their associations assume important functions on behalf of their members. They concentrate their offer, improve product marketing, optimize production costs, conduct research and a wide range of other activities. Producers in developing countries are increasingly integrated into international markets supply chains. Because individual producers are too small to connect to (international) consumer markets, collection and marketing of agricultural products, as well as negotiating with domestic and

international customers is done by a collective producer organization and also are considered instrumental in increasing the value generated by the entire chain, for instance by ensuring that the quality of products is in accordance with the required standard. They can also mobilize support from other stakeholders and help producers negotiate a fair share of the total profit generated (Giel & Jos, 2006).

Organized producers reduce transaction costs in markets, limit risks, build market power through economies of scale due to bulking agents and increase representation in the policy. A group can set rules that specify quality standards and members can appoint to enforce them. The group has access to expansion and marketing advice that is not practical to provide to individual producers. And it pays to pay for certification and inspection procedures so that the group can sell products to high-quality export markets. Moreover, the group finds it easier than an individual to guarantee consistent delivery of products in terms of volume and quality. The buyer can treat the group as a whole instead of individual producers (Ellen & Bert de, 2010). Various studies show the importance of producer or cooperative union especially to create stable profit for the producers. According to (Mekdes, et al., 2018) traders made a total of 87.75% of the total profit margin; in particular, among traders, the profit margin of processors represents the highest share (30.71%) followed by retailers (20.49%). As a result, producers are smaller than traders, strengthening producers negotiating position by cooperative was important.

## **2.7. Role of the ministry of agriculture**

Ministry of agriculture is primarily responsible for facilitating crop production by delivering the relevant policies, extension service and strategy inputs for related crops and marketing its offer a generic and specialized extension service for smallholder producers before and after harvest agronomic practices. From the fact that smallholder producers haven't know-how on how to organize themselves for the better profit margin as well as access to finance, so Government intervention in agricultural financing is often aimed at managing risks in the sector. Support for producers in the form of payment compensation, social security reductions contributions and exemption from taxes during periods of crisis in the sector. By creating or supporting credit guarantee funds credit guarantee schemes offered by private institutions through counter-guarantees. In the case where risk management has left the farmer, governments can still support through providing information to the sector on potential risks (Ruete, 2015). In addition to private sources of financing, governments are also important sources of financing for agriculture in developing countries. Public financing can focus on certain actors, such as small producers According to (Mekdes, et al., 2018) In addition to an important role in the daily dish of Ethiopians, it also plays an important role in the national economy. Nowadays it is an important cash crop, on average 79% of the pepper production is intended for the southwest region market. It is a crop of high value in both domestic and export markets. Because it is a commercial and industrial crop, it generates jobs for employees in the city and in the rural area.

### **2.7.1 Policies**

The Ethiopian government has an agenda for liberalizing the agricultural market. The aim is to increase agricultural production by expanding economic incentives for producers and by allowing the private sector to participate in economic activities In addition, the Ethiopian government follows a strategic policy aimed at diversifying the export base of coffee to other crops, and international donors are interested in investing in the spice sector due to the high export potential of many spices (Rutgers, 2010).

## **2.8. Role of extension service in capacity building**

Ministry of Agriculture in 1963 shortly after it started in 1954 under the Alemaya College of Agriculture, along with research and education. Under the Ministry it has gone through various programs such as extended package programs, the Minimum Package Project (MPP), the Peasant Agriculture Development Project (PADEP) and in 1993 the Participatory Demonstration and Training Extension System (PADETES) which was approved as the national agricultural expansion system in Ethiopia as response to the evaluation of previous expansion strategies

in the country. one of the major policy shifts in Ethiopia since 1992 has been the considerable emphasis placed on improving the productivity of small-scale agriculture by making more use of a package of improved agricultural technologies. Producers of small agricultural products can increasingly select economically viable technologies and practices for maximum and efficient production. The transformation of Ethiopian agriculture from its current orientation to a market-oriented production system forms the basis of the Ethiopian government's agricultural development strategy (MoFED, 2019).

To enable a real transformation in agricultural education, producers must be trained to improve their knowledge, skills and attitudes towards decisions about their own affairs, access to information, exposure to improved agriculture and ways of life. With the implementation of the accelerated and sustainable development plan to end poverty. The national strategy for the agricultural extension has recently made a new shift from previous farm visits and demonstration of technologies under producers training centre (FTC) approach. At least 50 years have been spent since the idea of an extension was brought to the country. However, more has been said than practically done about the Ethiopian agricultural system in bringing about the expected change in the country's rural communities (EEA, 2012).

The performance of the sector decreases from time to time. Although general production has increased in recent days, production per capita is by far lower than in the sixties and seventies. The livelihood of society is also the best indicator of the performance of the agricultural sector in national and domestic food security. In fact, drought and some other natural disasters are the primary drivers for poor performance, as rainfall becomes less predictable and drought becomes more frequent. The start of the agricultural extension service and the government's efforts to modernize the agricultural sector date from the establishment of the Ministry of Agriculture in 1908 (EEA, 2012). The Ministry of Agriculture then gave advice on crop and animal production, protection of wildlife and forests, provision of veterinary services and at the same time collection of relevant statistical information.

### **2.9. Public-private partnerships**

Ethiopia has recently drawn up a new proclamation to facilitate public-private partnerships (PPP), recognizing that the private sector is essential to support the country's economic growth and the quality of public services, in particular in infrastructure improvement (Brufal, 2019). According to (Facet, 2013) the limited access of private entrepreneurs to credit is the most urgent and binding limitation for doing business in Ethiopia. The Ethiopian financial sector is one of the least developed in Sub-Saharan Africa. The sector is characterized by relatively shallow reach and strong government control.

### **2.10. Sustainability**

Ethiopia aims for a carbon-neutral middle-income status by 2025. As set out in the National Growth and Transformation Plan (GTP), this leap will require increasing agricultural productivity, strengthening the industrial base and promoting export growth. Economically speaking, it means growing fast enough to raise the current gross domestic product (GDP) per capita from about USD 380 to USD 1,000 (the lower threshold of medium-income status), reducing the share of GDP agriculture contributes, falls from more than 40% to less than 30%, and migrates from agriculture and livestock farming to jobs in the service sector and the industrial sector (FDRE, 2011).

### **2.11. Sustainability indicators**

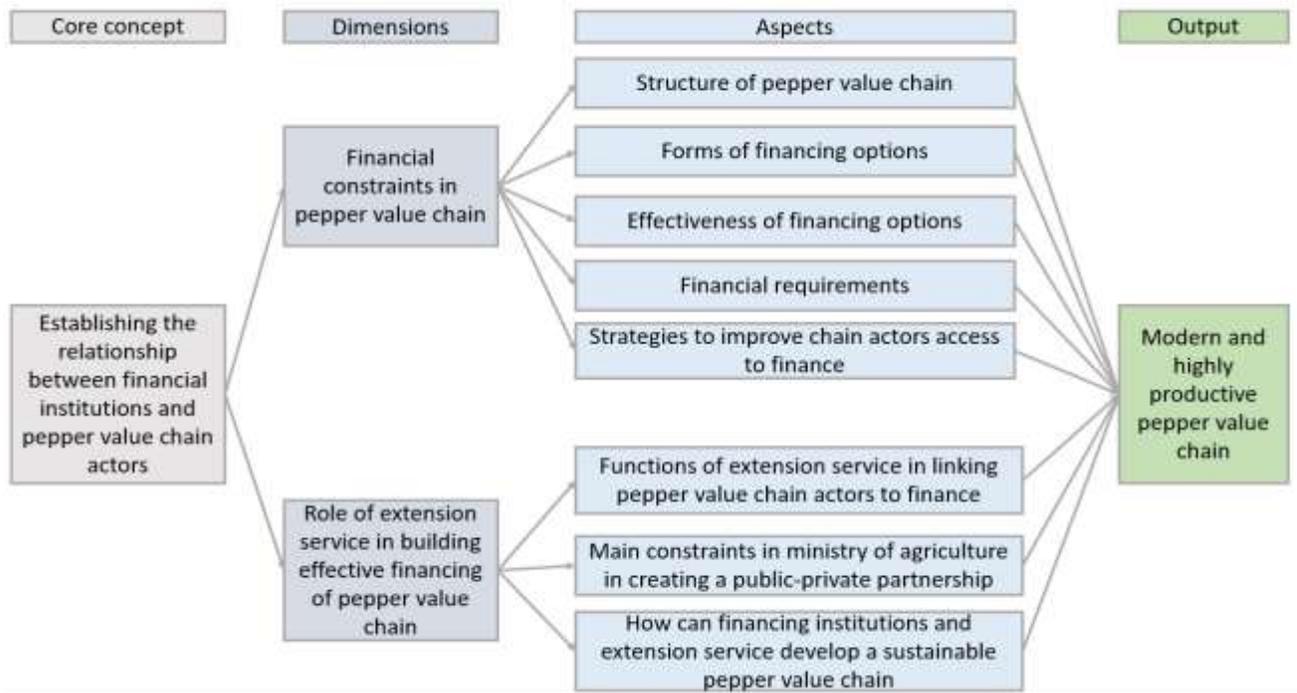
Sustainability indicators are particularly difficult to define and measure. The basic problem is that sustainability is something that only occurs in the future, while the indicators are something that it is can be measured in the present. Sustainability indicators have three dimensions (social, ecological and economic). Although these three

sustainability dimensions are treated separately here for clarity, they overlap in practice (USAID, 2019). For this study, the selection of indicators was thus specifically adopted to Ethiopian context concerned pepper production in Goro district.

### 2.12. Conceptual framework

According to (Regoniel, 2015) conceptual framework represents the synthesis of the researcher of the literature about explaining a phenomenon. It maps out the required actions in the course of the study, in view of his previous knowledge of the position of other researchers and his observations on the subject of research. In other words, the conceptual framework is the researcher's understanding of how the specific variables in his research are interrelated. It, therefore, identifies the variables required for the study. It is the "map" of the researcher to continue the research.

Figure 2 Conceptual framework



Source: Structure according to (Regoniel, 2015)

### The operational definition of terms

**Value chain** - the addition of value as the product progresses from input suppliers to producers and then to consumers. Determined as the competitive advantage of an organization, is based on the value chain of their product (KIT, 2008).

**Baltina:** "baltina" is a term for processed pepper or species known by Ethiopians.

**Large-scale producers** - Large-scale producers are producers who supply their output to processors or exporters and who have a strong relationship with companies (Ayelech, 2010).

**Small-scale producers** - Small-scale producers, including small-scale producers who manage land areas ranging

from less than one hectare to more than or equal to one hectare, characterized by the use of family labour for production and the use of a small part of the products for home consumption.

**Kebele:** is Amharic word meaning Peasant Association (PA) and it is the smallest administrative unit in Ethiopia.

**Production Season** - Pepper has an important production season in the Goro district. That is from June – December.

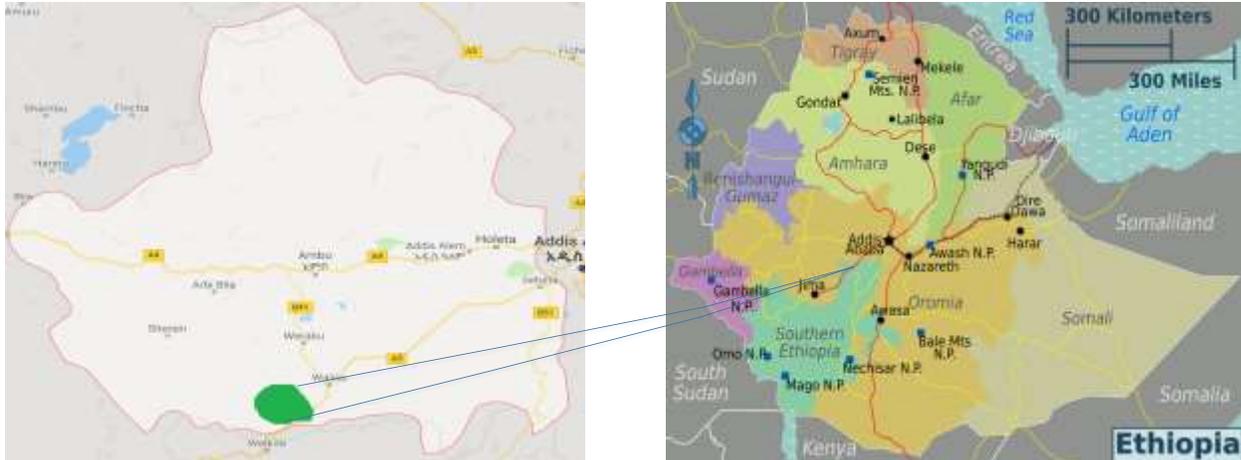
**Cooperative societies** – is a producers ' group engaged in the production and marketing of pepper at Kebele level in the district.

## CHAPTER THREE: METHODOLOGY

### 3.1. Study area

The study was conducted in Goro district, southwest the zone of Oromia regional state. The capital town of the district, Goro is found at about 131 km southwest of Addis Ababa on Jimma –Addis Ababa highway. The district is known by production of pepper, maize and teff (Census, 2007). The district is situated in the semi-humid agro-ecological zone of the country. It is one of the districts known by production of pepper. The two sub-district/kebeles Galiye and Sinano selected because of the production and infrastructure (road).

Figure 3 Map of the study area

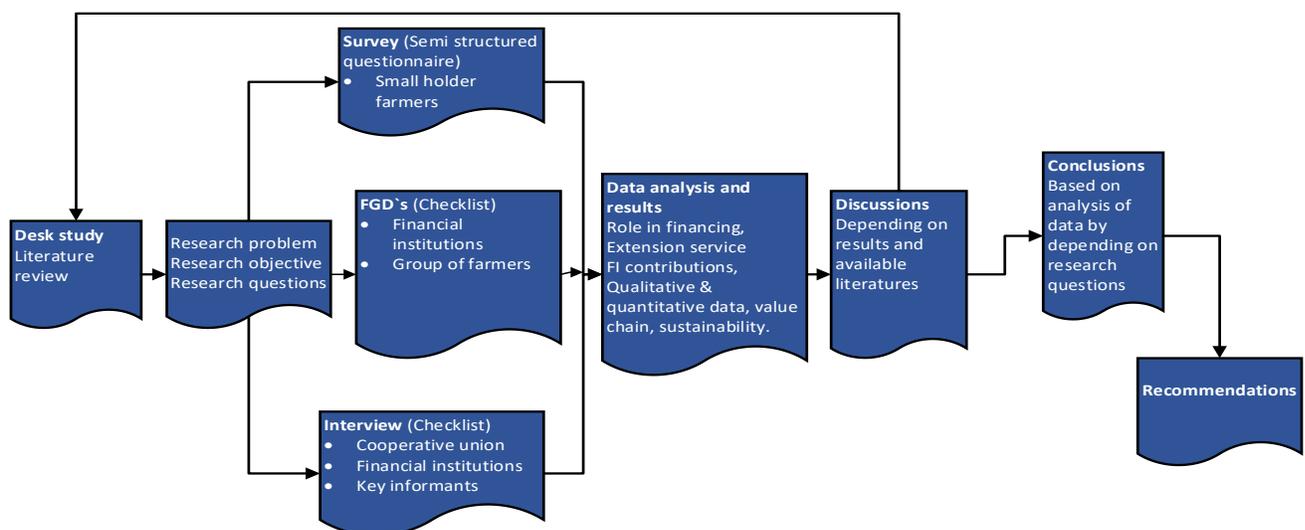


Source: Google maps

### 3.2. Research Framework

The research was done with qualitative and quantitative approaches based on empirical data, literature and documents.

Figure 4 Research framework



Source: Author, 2019

Table 2 Research framework

Survey method on the pepper producers was used supported by interviews of the other chain actors

Actor	Tool	Number of respondents	Data analysis tool
Producers	Survey & FGD	80 & 12 respectively	SPSS Version 25
Collectors	Interview	1	Grounded theory
Processor	Interview	1	Grounded theory
Wholesaler	Interview	1	Grounded theory
Extension service	Interview	1	Grounded theory
Financial institutions	Interview & FGD	2&10 respectively	Grounded theory
Cooperative union	Interview	1	Grounded theory
Retailer	Interview	1	Grounded theory

Source: Author, 2019

### 3.3. Methods of data collection

The data was collected through Close ended questionnaire for survey and checklist for interview respectively. The survey, Focus group discussion and an interview were conducted with smallholder producers, chain supporters and other actors (collector, wholesaler, processors, retailers) respectively. In order to gather information, both primary and secondary data was collected from different sources. Information such as farm size, price, the cost of production, drying, processing, and transportation was collected from primary sources. Financial institutions, other key informants were interviewed. Four data collection method was used in this research namely desk study, survey, observation and interview.

#### 3.3.1. Desk study

From the start of the fieldwork, desk research was done to obtain literature on value chain concept, chain development, chain governance, chain improvement strategies, challenge, opportunities and strategies in financing to create a modern and highly productive pepper value chain. Information on secondary data, such as production, the number of financial institutions in the Goro district and the price of the local pepper market price at the stage of each actor's level was collected. Literature from Books, Scientific journal by professionals, Google scholar, Greeni and Google search was supportive in findings the research problems.

#### 3.3.2. Survey

A survey was conducted among smallholder producers by using semi-structured questionnaires in order to get qualitative and quantitative data on pepper production, constraints of finance and marketing activities in the pepper value chain. This was conducted in two sub-districts /kebeles of the Goro district, namely Galiye and Sinano. The sub-districts selected due to their potential in pepper production. The selection of pepper producer was done with extension officer from agriculture bureau of Goro district. From each sub-districts forty, respondent/smallholder producers were selected by non-probability/purposive sampling. Sinano and Galiye kebeles were divided into eight quotas, four from each kebele. Each quota was included, ten respondents. The convenience sampling and systemic sampling was used to survey every fifth household along the road. See appendix.

#### 3.3.3. FGD's (Smallholder producers and Financial institutions)

The focus group discussion aims to understand social sense-making or opinion, process about the benefit of credit and on how to use. Focus Group discussion with financial institutions was held in the office of commercial bank of Ethiopia and with smallholder producers in Galiye Rogda catholic school. The focus group discussion was

conducted two times separately with financial institutions experts and smallholder producers on the issues of how will be the credit change the livelihoods of chain actors and on how to use the credit access respectively. Though twelve producers were included and eight financial institutions experts were included in FGD`s separately. To get detailed information such as marketing, challenges and strategies in financing pepper value chain were used to improve modern and highly productive pepper. In this case, participatory rural tools such as business model, SWOT, PESTEC, and chain map were used. See table 2

Table 3 FGD`s with smallholder producers and financial institutions

Chain actor /supporter	Number of participants	Frequency	Issue addressed
Smallholder producers	12	1	<ul style="list-style-type: none"> <li>• The importance of credit for producers producers</li> <li>• The role of credit in agriculture</li> <li>• The challenges in accessing finance</li> <li>• How to use credit efficiently</li> </ul>
Financial institutions	10	1	<ul style="list-style-type: none"> <li>• Challenges of Agricultural Financing</li> <li>• Who Needs Finance in the pepper value chain</li> <li>• Credit guarantee schemes for smallholder producers</li> <li>• Requirements on financing smallholder producers and business owner</li> </ul>

Source: Author, 2019

### 3.3.4. Interview

Interviews were conducted with chain supporters and chain actors namely, Extension service/ Bureau of Agriculture, Financial institutions CBE & OSC, Cooperative society bureau, District Market Development Office, District Small and Micro Enterprise Office, District Custom and Revenue Authority, District Rural Land, Environmental Protection Bureau, Goro Town Administration, Processor, Wholesaler, Retailer and Collector/ Local Trader respectively. The processor and wholesaler were in Wolkite town which is 27 km far away from Goro town. The interview with key informants in the chain was carried out using checklists, audio recording and note-taking were the tools to collect the data. The experience of the experts and detail information about the financing option, supportive services from other chain supporter and actors in the pepper value chain and strategies on building effective financing of the pepper value chain in Goro district was addressed. See appendix. Table 4 List of Key informants

Actor	Tool	Number of respondents	Data analysis tool
Extension service/ Bureau of Agriculture	Interview	1	Grounded theory
Financial institutions CBE & OSC	Interview	2	Grounded theory
Cooperative promotion bureau	Interview	1	Grounded theory

District Market Development Office	Interview	1	Grounded theory
District Small and Micro Enterprise Office	Interview	1	Grounded theory
District Custom and Revenue Authority	Interview	1	Grounded theory
District Rural Land Environmental Protection Bureau	Interview	1	Grounded theory
Goro Town Administration	Interview	1	Grounded theory
Processor	Interview	1	Grounded theory
Wholesaler	Interview	1	Grounded theory
Retailer	Interview	1	Grounded theory
Collector/ Local Trader	Interview	1	Grounded theory

Source: Author, 2019

### 3.4. Data analysis

Data was encrypted on the computer as early as possible after the collection of data and then analyzed. The analysis was performed by interpreting the data and triangulated with secondary sources such as published materials. Qualitative data was analyzed based on Grounded theory. With this tool, transcripts of stakeholder interviews appendix were made and each transcription organized into relevant topics and then selection of categories in relation to the research question.

The survey data were analyzed using IBM SPSS Software version 25. Descriptive statistics such as ratios, percentages, averages, variances and standard deviations and was used. In addition, other qualitative and quantitative information from the survey and interviews was analyzed using a chain map and stakeholder matrix. The findings are processed into results by answering the research questions. The stakeholder matrix was used to identify the actors and stakeholders and their role in the chain. A value chain map for the for pepper producers in the pepper value chain in Goro district was identified the information flow, product flow and the chain overlays. Finally, the data were analysed with as described in models such as PESTEC and SWOT analysis.

Table 5 Summary of methodology

Research question	Source of information	Data analysis	What will be achieved
1.		Value chain analysis	Understanding the current value chain in the study area
1.1	Literature review, interview, FGD`s	Grounded theory,	Types of financing chain actors, Credit, loan, subsidy

<b>1.2</b>	Literature review, interviews, survey, FGD`s	Grounded theory IBM SPSS Software version 25	The role of financial institutions to chain actors  Requirements, interest rate and source of finance
<b>1.3</b>	Literature, interviews, FGD`s	Grounded theory	Different requirements for different chain actors
<b>1.4</b>	Interview, literature review, FGD`s	Grounded theory	Enhanced financial support
<b>1. Extension service</b>	Interview and FGD`s	PESTEC and SWOT	<b>Linkage of smallholder producers to a financial institution</b>
<b>2.1</b>	Interview, FGD`s	Grounded theory	Linkage of smallholder producers to a financial institution
<b>2.2</b>	Interview, literature review,	PESTEC and SWOT	Strategies on how to improve the district public-private partnership

<b>2.3</b>	Interview, Literature, FGD`s	Grounded theory	Value chain sustainability
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Source: Author, 2019

## CHAPTER FOUR: RESULTS PRESENTATION

This chapter describes the results of surveys with smallholder pepper producers, interviews with key informants and focus group discussions with financial institutions and pepper producers separately. The results for the main and sub research question were presented as follows.

### 4.1 Financial constraints of actors in the pepper value chain

The financial constraint of different chain actors was identified and studied according to value chain functions and their supporting roles in the pepper value chain in the Goro district. In this study, Survey, interview, FGD`s were used. According to an interview with an expert from Oromia credit and saving association, the pepper value chain actors have financial constraints due to lack of collateral, fixed assets and lack of information on credit. Besides this expert from land and environmental protection also mentioned that especially the producers are facing problems such as diseases of pepper, scarcity of input and knowledge on the agronomic matter of pepper production.

The experts from Goro district bureau of agriculture, trade and market development mentioned there are constraints in the pepper value chain. From two FGD`s with producers and financial institution separately, the following PESTEC and SWOT analyses model was formulated to demonstrate external factors that influence the value chain of pepper and to draw intervention points and to describes the internal factors, including strengths and weaknesses, and as the external factors opportunities and threats in the chain. Accordingly, the political, economic, social, technological, environmental and cultural factors are described in the PESTEC and SWOT mixed matrix below.

Table 6 SWOT and PESTEC

PESTEC	SWOT			
	Strength	Weakness	Opportunities	Threats
<b>Political</b>	Presence of microfinance and banks	There is no exact price determination especially producers are not benefited from the price fixed by traders	The government have a plan to give a higher budget for the Agriculture sector. Which focus to increase the productivity of cash crop like pepper	Political interference Restrictions. Such as bureaucracy and corruption. Price setting
<b>Economical</b>	CBE grants short and long term loan to customers Pepper plays an important role in the national economy. Oromia credit and saving association allows chain actors access to credit	Limited access to a loan for producers. Producers are not getting the right profit share. Traders and processors the pricing of Pepper. Quality decreasing due to adulteration with water. Illegal processors and traders causing	The economic importance of pepper for the producers and other actors in the market chain. The ability to grow cooperative societies to producers' cooperative union to supply inputs and credit. A strong	The fluctuation of the rate of interest. Lack of business investment Lack of competing technologies Lack of roads Lack of communication Lack of education Lack of technical and management skills.

		problem such as price shocking	relationship between chain actors regarding finance or credit.	The high and different interest rate at financial institutions.
<b>Social</b>	Microfinance needs to improve the social well-being of the productive poor people Pepper production creates employment for urban and rural workers. The focus for women and youth in Goro district to participate in the pepper value chain.	Cheating is very common in pepper marketing Adulteration with other poor quality pepper and spices.	The consumption of pepper by the society in every dish, especially during holidays	Lack of institutional capacity Lack of social representation (civil society) Lack of creating a public-private partnership. Weak in linking producers to premium price.
<b>Technological</b>	Producers have the option to sell to different actors	Insufficient updated market information for producers	Infrastructural capacity Technical capacity and training Social exclusion Institutional competence	Inefficient and costly transport due to poor infrastructure
<b>Ecological</b>	In Goro district, pesticides are not widely used.	In pepper production, organic fertilizers are not widely used	Conducive environment for pepper production	Drought Weather Diseases
<b>Cultural and/or Gender</b>	Pepper has a major role in Ethiopians daily dish In Pepper processing, women are highly involved	Consumption of horticultural products is probably the lowest in Africa, then there is a low opportunity to extend the market. Value addition is a very weak in the study region.	Oromia credit and saving association working on improving the social well-being of the women Land ownership by women is very low	The price is high and there is no government intervention by setting the price of pepper.

Source: Author, 2019

#### 4.1.1 Pepper value chain structure

##### 4.1.1.1 Chain Actors

###### Input suppliers

There are two input suppliers in Goro district. These input suppliers provide the fertilizers, pesticides and seeds inputs for producers. The cooperative promotion agency with the collaboration of district agriculture bureau provides fertilizers, agro-chemical, improved seed, and agricultural tools, by the lower price which consider smallholder capacity to buy. The cooperative promotion agency is working together with Goro district agriculture bureau. It provides training on how the producers are coming together to form cooperative and it is also responsible for governing the cooperative societies at the district level. Its governed by zone cooperative development bureau. See Figure 5. The second alternative is private input supplier's which producers can buy the input from. These actors are based in towns such as Goro, Woliso, and Wolkite, which is far away between 10-20 km from the study area. The price at this supplier is higher than cooperative promotion agency and district agriculture bureau. Though the smallholder chooses the private input supplier when they get the scarcity of inputs from the government side.

###### Producers background

Producers/producers are the primary actors as well as the second stage actors in the pepper value chain. In pepper value chain there are three types of producers, they are medium, large scale and smallholder producers. The medium and large scale producers are holding land on average above one hectare of a pepper farm. Whereas the smallholder producers are holding on average below one hectare. As exposed in the table below the highest population land size of pepper producers is between 0.6-1 Hectare per household in the district. Which is 36.3% out of 80 respondents. The lowest land size population is only 5% which is above 2.51 Hectare per household. This shows the producers have access to land between 0.6 – 1 ha per household. Besides this, some producers don't have access to land but they were renting from someone else.

Table 7 Farm size per household

		Farm size			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	> 0.5 ha	21	26.3	26.3	26.3
	0.6 - 1 ha	29	36.3	36.3	62.5
	1.1-1.5 ha	9	11.3	11.3	73.8
	1.51-2 ha	10	12.5	12.5	86.3
	2.1-2.5 ha	7	8.8	8.8	95.0
	2.51 and above	4	5.0	5.0	100.0
	Total	80	100.0	100.0	

Source: Author, 2019

##### I. Age of pepper producers

The table below represents the highest number of respondents found to be 52.5% are between 46 – 60 years old. Whereas the lowest number of respondents found in between 18 – 29 which was only 8.8%.

Table 8 Age of producers

Age of producers
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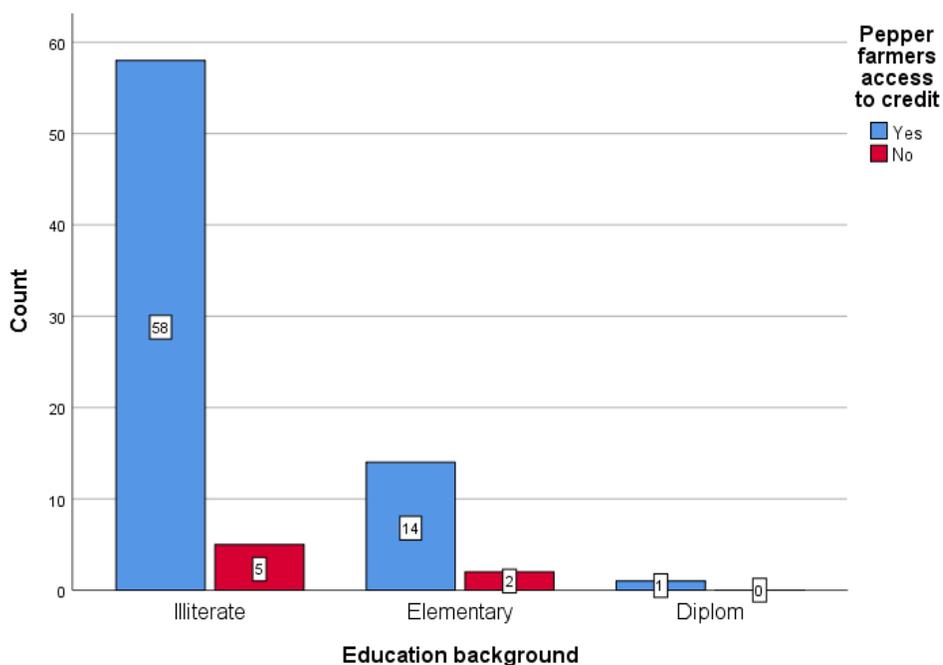
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 - 29	7	8.8	8.8	8.8
	30 - 45	23	28.7	28.7	37.5
	46 - 60	42	52.5	52.5	90.0
	< 60	8	10.0	10.0	100.0
	Total	80	100.0	100.0	

Source: Author, 2019

## II. Education level of pepper producers

To investigate the educational background of pepper producers in this research, the education level was categorized as illiterate, elementary and Diploma. Accordingly, from a total 80 respondents 58, 14 and 1 found to be illiterate, elementary and Diploma were found to have access to credit respectively. Whereas 5 and 2 found to be illiterate and elementary found don't have access to credit.

Figure 5 Education level of pepper producers



Source: Author, 2019

The producers can sell the pepper to collector or processors at the nearest market (Goro) town or selling at a market far away between 10-20 km at Woliso or Wolkite town.

Table 9 Distance from market

		Distance from market			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sale within the farm gate	65	81.3	81.3	81.3
	10- 15 km	9	11.3	11.3	92.5
	16- 20 km	5	6.3	6.3	98.8
	21 and above km	1	1.3	1.3	100.0
	Total	80	100.0	100.0	

Source: Author,2019

The producers can also sell their pepper at farm gate, this depending on the agreement between traders (wholesaler and collector) and producer. The producers consider all chain actors as traders, sometimes they also sell their products to processor or consumer directly at the farm gate or market place respectively. The producers used to transport their pepper to market, either carrying by themselves or using transportation means such as donkey, animal-driven carts and medium Isuzu car but it depends on the weight of pepper they own. Alternatively, they sell to the village collector known as "farmer traders" who assemble red pepper from a large number of producers at the farm gate. The pepper producers are also farming other crops such as maize, beans and teff on between 0.5-1 hectare. From field survey with producers and observation, some producers are also doing activities such as shopkeeping, Bucherman and trading in the study area.

Figure 6 Survey with producers and field observation



Source: Author, 2019

### III. Types of pepper varieties produced by producers in Goro district

According to the experts from Goro district bureau of agriculture the varieties of pepper were identified as *Marako*, *Dubbe* and *Absiniya* and producers are also asked whether they are producing and they have mentioned as shown in the below table. This shows that pepper producers are producing out of 80 respondents 66.3% of produced *Marako*, 25% of *Dubbe* and 8.8% of *Absiniya* varieties respectively.

Table 10 Types of pepper varieties produced by producers in Goro district

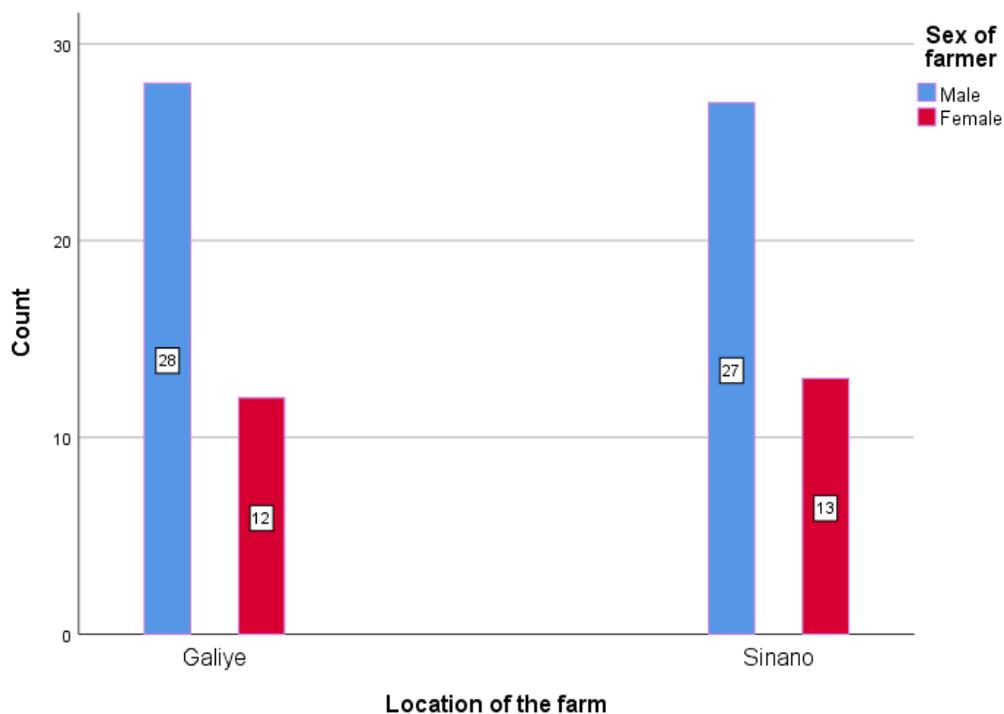
		Type of pepper grown			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Marako	53	66.3	66.3	66.3
	Dubbe	20	25.0	25.0	91.3
	Absiniya	7	8.8	8.8	100.0
	Total	80	100.0	100.0	

Source: Author, 2019

#### IV. Demographic representation

From two *kebeles* Sinano and Galiye 80 respondents or smallholder producers were selected. Accordingly, 40 from each *kebeles* whereas Galiye represents 35% male and 15% female gave their response they are from Galiye and from Sinano 33.75% male and 16.25% female gave their response that they are from Sinano. This shows the number of male producers was higher in Sinano and Galiye *kebeles*.

Figure 7 Demographic representation of smallholder producers

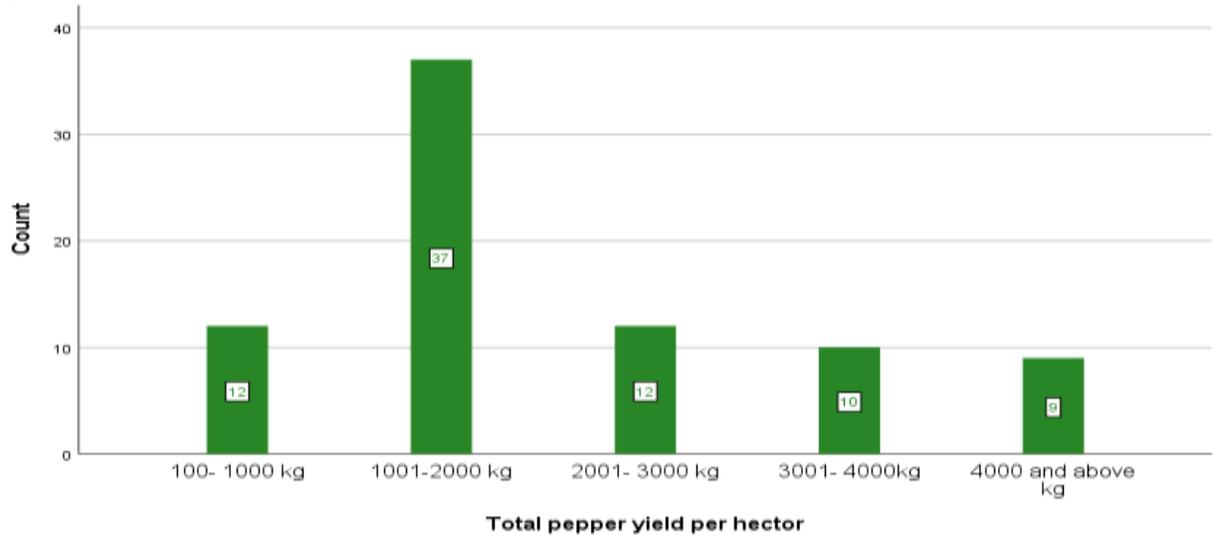


Source: Author, 2019

#### V. Pepper productivity

The highest yield reported by pepper producers out of 80 respondents 37 producers were producing between 1001-2000kg of pepper. whereas the lowest yield reported by pepper producers was above 4000kg of pepper which is only 9 producers reported.

Figure 8 Pepper productivity



Source; Author, 2019

#### Collectors/ Local traders

The collectors are either based in the village or Goro town, those who are based in the village are called farmer traders and others are called traders or just collectors who can buy pepper from farmer traders or from producers directly at the market or at the farm gate. The collectors sell pepper to a wholesaler at the market place or by transporting it to Wolkite, Woliso or Addis Ababa which is far away 20, 19, 131 km respectively. They transport pepper on a daily basis because they don't have a big storage room. Besides this, the wholesaler and processors are not in Goro district. According to an interview with a collector in Goro market place, collectors have a strong relationship with farmer traders and smallholder producers see Figure 9. There is convinced amount of trust between these collectors and smallholder producers especially producers can borrow money from these traders. Sometimes the collectors also buy the pepper on kind to pay the producers or farmer traders after selling.

Figure 10 Collector in Goro town



Source: Author, 2019

#### Wholesalers

The wholesalers are traders who buy a large amount of pepper from farmer traders and collectors. They own a big storage room to sell the pepper to an institutional consumer such as hotels and restaurants. The wholesaler

also can buy pepper during harvesting time from producers at the market place, this is due to the farmer transport their pepper to market to get a better price than which determined by farmer traders and collectors at the farm gate. According to my observation, these actors are located in the middle-upper part of the market chain and they have somewhat strong financial as well as management and know-how in all aspects of the business activity in comparison with other actors.

Figure 11 Wholesaler in wolkite town



Source: Author, 2019

### Processors

The processing function conducted in the region by a processor called Elfu Baltina. It is pepper and other spices processor which found in Wolkite town. In Goro, Woliso and Wolkite town there are also small scale processors. However, they are not known and legal in the pepper processing business. This home-made pepper processor buying low quality sorted raw pepper called *Foshe* from producers and after processing to powder they sell to low-income households or consumers at the market place with lower price. According to my observation during fieldwork small scale processors are selling at a lower price than “Elfu Baltina. This is due to the quality of the pepper, spices and amount of salt they are adding makes the price lower than “Elfu Baltina”. Elfu Baltina buys red pepper and adds values like grading, sorting, adding spices and salt. The processors its own mills and plays a major role in pepper powder processing, wholesaling, and creating jobs in the community. The processor buys red pepper from producers. After they process pepper to powder and packaging it, they distribute from their big shop or using their own car to reach shops and supermarket in the study area. Sometimes they also find the other town to sell their product. They have a major role in wholesaling of the pepper powder. Retailers like shops and supermarkets in Wolkite and Woliso are their first customer. Institutional consumer such as Wolkite University, Woliso University and Wolkite prison are also buying the processed pepper from the processor. An individual consumer also directly buys the pepper from their distribution big shop.

Figure 12 Observation at Elfu processing Unit



Source: Author, 2019

Figure 13 Eflu Baltina in Wolkite town



Source: Author, 2019

### Retailers

Retailers are directly servicing the last actors in the production to the consumption pepper value chain. The retailers have their own shop to sell other consumer product and processed pepper. Shops and supermarkets are playing a major role in selling to high and medium-income households or consumer. They buy the processed red pepper from processor Eflu baltina or other processors from Addis Ababa. They are characterized by owning shops or supermarket on which buying and reselling functions are undertaken particularly at Wolkite or Woliso market and lastly to consumers.

Figure 14 Pepper and spices distributor in the region



Source: Author, 2019

### Consumers

They are the final stage actors in the red pepper value chain from production to consumption of red pepper. The consumers are segmented into two, they are an institutional consumer (Wolkite University, Woliso University, Wolkite prison, Hotels and Restaurants) and individual household consumer (high-income consumer and low-income consumer). They are buying either processed or raw pepper from pepper value chain actors. See figure 15. Hotels and Restaurants are buying raw pepper from wholesaler to do processing by themselves. An institution such as Wolkite, Woliso universities and Wolkite prison is getting processed pepper directly from a processor. Households have also an alternative to buying either processed or raw red pepper See figure 16. Figure 17 Observation from consumer buying pepper powder and other spices



Source: Author, 2019

#### 4.1.1.2 Pepper value chain supporter

The main supporters are mentioned in below table accordingly main supporting actors who play a central role in the provision of services with a collaboration of other institutions has been providing different types of training to the market chain actors of pepper in the district.

Table 11 Pepper value chain supporter in Goro district

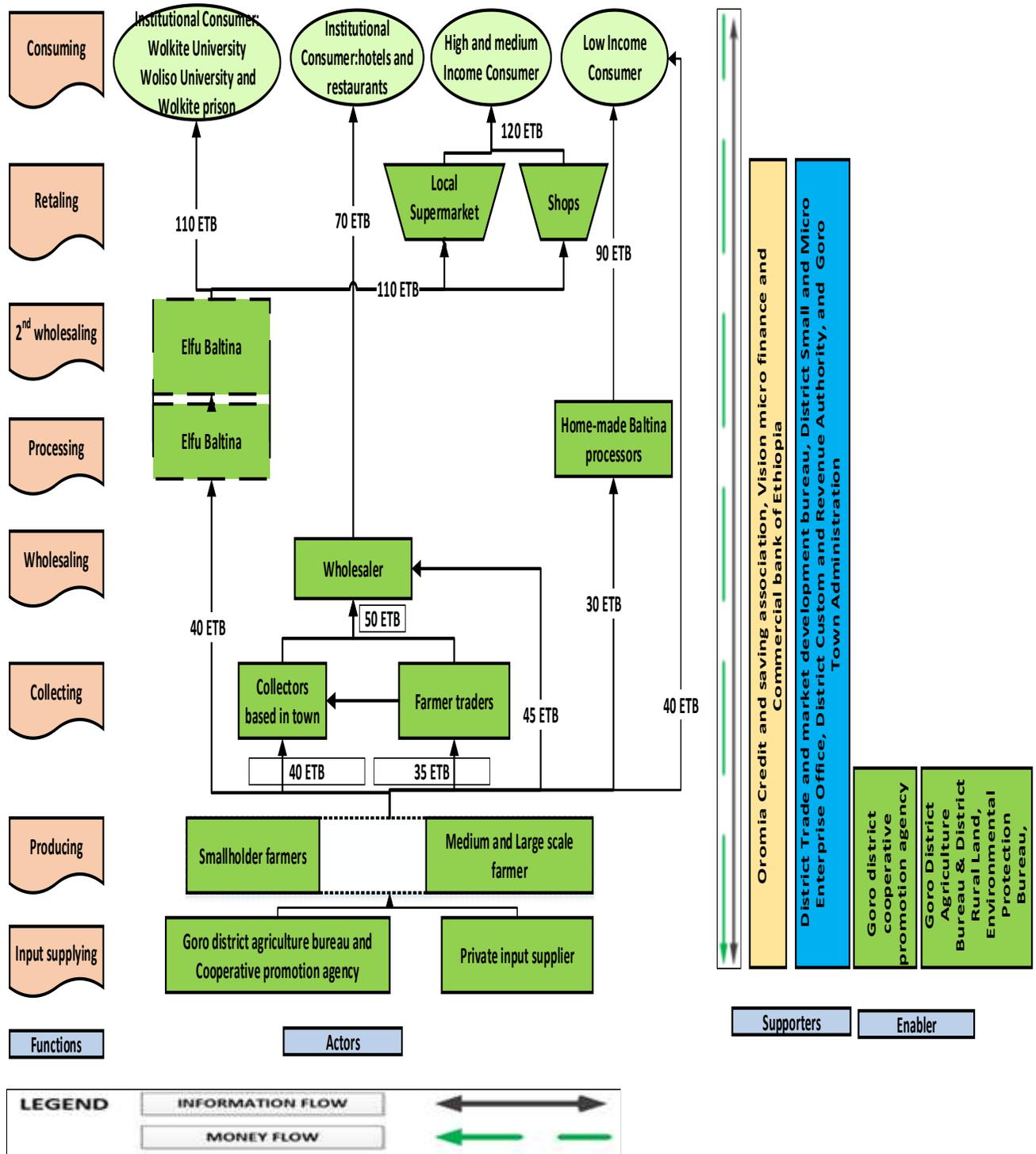
Name of pepper value chain supporter in Goro district	Type of organization	Type of service	Place
Bureau of agriculture	Government	Extension service and input supplying for producers	Goro town
Trade and market development bureau	Government	Linking producers to market Controlling the market to eliminate the middle man	Goro town
Goro town administration	Government	Facilitating infrastructure such as road by taxing traders at Goro town market	Goro town
Rural land and environmental protection bureau	Government	Protecting farmland by providing training to producers	Goro town

		Legalizing and providing a master plan of their land	
Small and micro-enterprise bureau	Government	Legalizing and grouping pepper chain actors below 35 years old	Goro town
Custom and revenue authority	Government	Collecting revenue for the government and taxing producers only once per year.	Goro town
Commercial bank of Ethiopia Gudina branch	Public	Providing financial service Such as Loan with high-value collateral	Goro town
Oromia credit and saving association Goro branch	Public	Providing financial service like loan starting from group collateral	Goro town
Vision Fund Micro Finance Institution S.C, wolkite branch	Private	Providing financial service like loan starting from group collateral	Wolkite town
Oromia cooperative promotion agency	Government	Extension service and input supplying	Goro town

Source: Author, 2019

### Current pepper value chain map in Goro district

Figure 18 Current pepper value chain map in Goro district



Source: Author, 2019

#### 4.1.1.3 Profit margin, value shares and added value

The main actors in the pepper value chain are producers, collectors, wholesaler, processor and retailer. According to the survey, and interview results the profit margin calculation included production and marketing costs in the pepper value chain.

Pepper producers in the Goro district on average, incur costs in the following activities as shown in the table below. The average production from one hectare of pepper farm was 2500 kg as producers reported. On average the producers were selling one kilogram of pepper by 40 ETB. So producers have on the average 100,000 (One hundred thousand) ETB as revenue per hectare of a pepper farm. On average the producers in Goro district incur a total average cost of 40,550 ETB per hectare of a pepper farm, refer the table below. usually, the total yield is 2500 kg pepper per hectare.

Table 12 Total Average Cost on one hectare of pepper Farm

Activity	Cost (ETB)	Price (ETB)
Land rent	Own or if rent	4,000
Land clearing	800/Hectare	800
Ploughing	3200/Hectare	3,200
Sowing labour	450/Hectare	450
First weeding	150*30 = 4500	
Second weeding	150*30 = 4500	
Third weeding	150*30 = 4500	
Fourth weeding	150*30 = 4500	= 18,000
Fertilizer DAP 50%	550*5	2,750
Fertilizer UREA 50%	550*5	2,750
Labour for fertilizer application	150*3	450
Labor for pesticide application	150*3	450
Farm laborer	1200	1,200
Labour for harvesting	150*30	4,500
Miscellaneous	2000	2,000
TOTAL		40,550 ETB

Source: Author, 2019

The quantitative data collected from each chain actors depicted as follows. For the purpose of this report, the average prices and average marketing cost for each chain actor in the pepper value chain. Since the price is fluctuating in some of the seasons. As it was shown in table 11, the production cost of pepper per hectare was 40,550 ETB in Goro district in 2018 production year.

Table 13 Cost Price, Selling Price, and Profit per hectare of pepper for Producers

Cost per/ hectare in ETB	Amount produced per/Hectare	Cost price= cost/output
40,550 ETB	2,500kg	16.22 ETB

Source: Author, 2019

As table 11 depicts the volume of pepper produced in 2018 production year on average was 2500kg and the cost per/kg was 16.22 ETB.

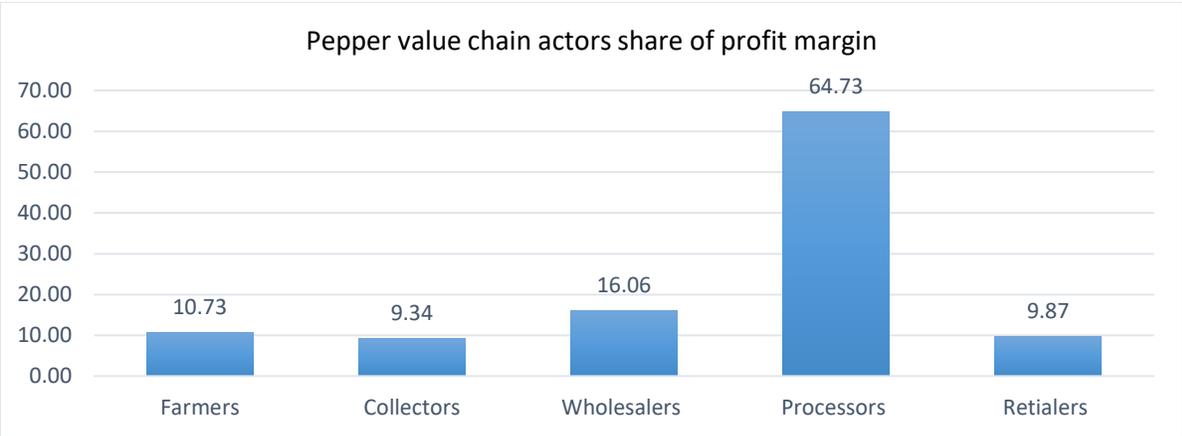
Table 14 Profit margin and value shares of the pepper value chain in Goro district

Item (Measured Birr/kg)	Producers	Collectors	Wholesalers	Processors	Retailers	Horizontal sum
Purchase price		40	50	40	110	240
Production costs	16.22					0
Labour	11.62	0.25	0.35	0.5		1.1
Transport cost	0.5	0.1	0.2	0.1	0.01	0.41
Storage/shop rent			3	3		6
Tax	0.8	0.2	0.2	0.9		1.3
Total marketing cost	29.14	40.55	53.75	44.5	110.01	248.81
Sale price(Revenue)	40	50	70	110	120	350
<b>Gross income</b>	10.86	9.45	16.25	65.5	9.99	101.19
<b>% share of profit margin</b>	10.73	9.34	16.06	64.73	9.87	100
<b>Gross margin (%)</b>	27.15	18.9	23.21	59.55	8.325	28.91
Added value	40	10	20	70	10	110
<b>Value share (%)</b>	36.36	9.09	18.18	63.64	9.09	100.00

Source: Survey and interview result, 2019

The highest profit share found by a processor which is 64.73% and the wholesaler shared 16.06% of profit in the pepper value chain. The lowest profit margin found to be a collector and retailer which is 9.34% and 9.87% respectively whereas the producers are 10.37% of the total profit margin.

Figure 19 Profit margin of pepper value chain actors



Source: Author, 2019

#### 4.1.1.4 Value chain governance

The pepper value chain governance is a spot or relational type of governance structure, as the table below shown only 37.5 is said to be spot which means these producers are taking pepper to market to sell and 62.5 gave their response said relational which means they have relationship between traders or processor that can but pepper at farm gate. This implies the producers have possibilities in selling in the market or to the traders at the farm gate. This is due to the fact that some producers have a strong relationship with traders for credit purpose.

Table 15 Marketing system

		Marketing system			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Spot	30	37.5	37.5	37.5
	Relational	50	62.5	62.5	100.0
	Total	80	100.0	100.0	

Source: Author, 2019

#### 4.1.1.5 Vertical integration

Traders such as collectors and wholesalers have a closer relationship when purchasing pepper from producers in the district. These traders have the power to determine the price of pepper, taking into account the credit they provide and considering the regional large market price at (Woliso, Wolkite or Addis Ababa). Producers play the least role in negotiating and fixing selling prices with traders in the district. So the producers are market participants who can't set the price. In addition, traders and producers have a strong relationship with regard to credit. During FGD, producers revealed that due to the high bureaucracy and the high-value collateral at financial institutions, they prefer to borrow from traders, and it is a crucial financing option at the moment. however, there is a weak vertical integration between processors and producers. Input suppliers are important players in the delivery of seed, chemicals such as pesticides. But producers also said that the role of extension services in linking producers to financial institutions is insignificant.

#### 4.1.1.6 Horizontal integration

Participation and management of stakeholders are necessary to develop the entire pepper value chain. There are no private agencies offering extension services to producers other than bureau of agriculture. In addition, results from FGD show that producers do not receive input on time. also, the role of extension services in linking producers to financial institutions is insignificant. In which 72.5% didn't give their answer related to the role of extension services in linking producers with financial institutions. That is why there is a problem where producers are carefully supported to address the shortage of input and access to finance.

Table 16 Role of extension service in linking producers with financial institutions

		The role of extension service in linking producers with financial institutions			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		58	72.5	72.5	72.5
	High	2	2.5	2.5	75.0
	Low	2	2.5	2.5	77.5
	Very low	18	22.5	22.5	100.0
	Total	80	100.0	100.0	

Source: Author,2019

#### 4.1.2 Forms of financing options and financial institution in the pepper value chain

##### Banks

According to my observation, there is only one branch of the commercial bank of Ethiopia called Gudina branch in Goro district. Experts from this branch mentioned as a general guide there is credit service for private sectors such as agriculture sector, domestic trade service and manufacturing. Large scale business owners and large scale producers have benefited more from this service, however, smallholder producers have not really benefited due to the requirements of high-value collateral. In another way, there is a credit package which commercial bank of Ethiopia finance micro-financial institutions for a customer who need credit less than three hundred thousand birrs.

##### Micro financial Institution

Also, one micro-financial institution identified in Goro town which established to provide financial service for people who want to work, but who do not have access to finance. According to an expert from this institution, the people are drawn from rural and urban areas of Oromia regional state by the minimum interest rate. The services which Oromia credit and saving provide are such as credit service, saving, insurance and money transfer. The service is provided for agriculture, trading and manufacturing sectors.

##### Cooperative Societies

According to an expert from Goro district cooperative promotion agency, there are 19 cooperative societies in Goro district. In Sinano and Galiye kebeles there are two cooperative societies in each kebele. These cooperative societies are formed and governed by Oromia region government. At the district level, they are governed by cooperative promotion agency. The cooperative societies are the member of Liban cooperative union found in Woliso town. However, producers mentioned their knowledge on cooperative societies at their respective *kebeles* as shown in the table below. Consequently, 93.8% of respondents said there was a cooperative society in their *kebele*. However, 6.3% mentioned there is no cooperative society.

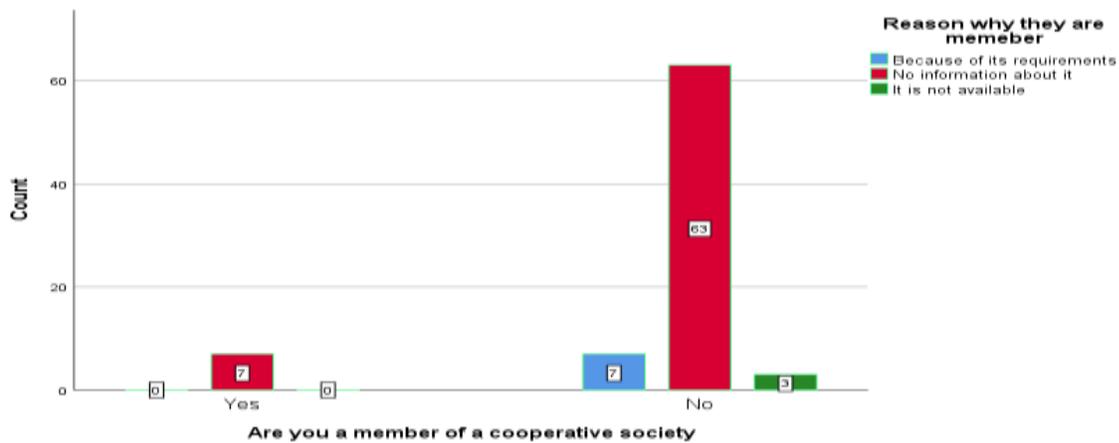
Table 17 Availability of cooperative societies

Are there any cooperative societies in your area					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	75	93.8	93.8	93.8
	No	5	6.3	6.3	100.0
	Total	80	100.0	100.0	

Source: Author, 2019

Consistently, the producers questioned whether they are a member of a cooperative society and the reason why they are a member or not at a cooperative society. Thus, 63 producers said they are not a member of a cooperative society due to lack of information about it. 7 producers responded because of the requirements at cooperative societies and 3 producers reported the cooperative societies are not available to a member. Whereas 7 producers reported they are a member of cooperative society but with no information or knowledge about it. As the below figure depicted.

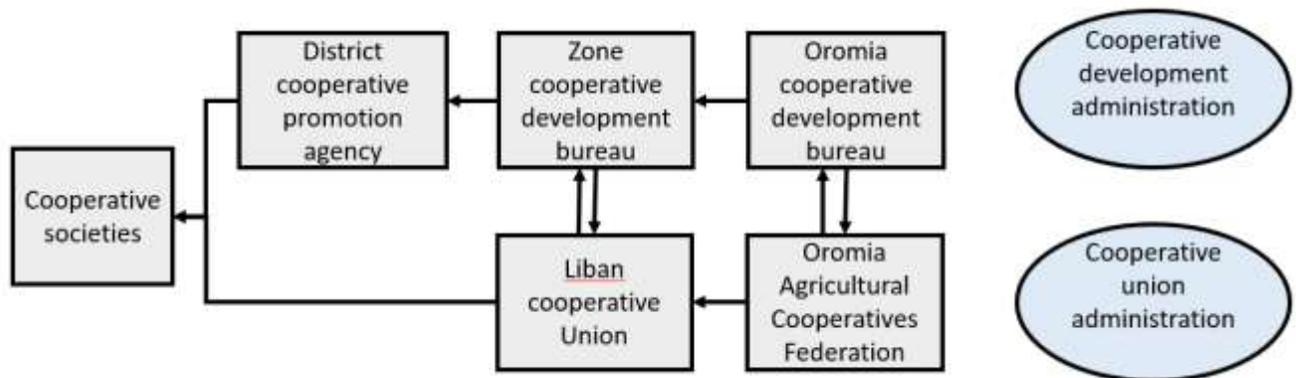
Figure 20 Membership at cooperative societies and reason to be a member



Source: Author, 2019

According to an expert from district cooperative promotion agency, the organizational structure of cooperative societies and cooperative union, as well as the respective governing body from the government side, are shown in figure 22 below.

Figure 21 Cooperative development and cooperative union administration structure



Source: Haki, 2019

Also, producers witnessed that there are forms of financing as modern financial institutions such as banks, micro-financial institutions, cooperative societies and traditional or informal financial institutions such as *Iddir* and *Iqqub*. The producers asked whether they have access to credit or not. From 80 respondents asked if they have access to credit or not and they gave their response 91.3% are said they have access to credit whereas 8.8% doesn't have access to credit access.

Table 18 Producers access to credit

		Producers access to credit			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	73	91.3	91.3	91.3
	No	7	8.8	8.8	100.0
	Total	80	100.0	100.0	

Source: Author, 2019

From 91.3% of respondents who gave their response that they have access to credit, 22.5% were said the source of finance for their business was a micro-financial institution. A total of 56.3% gave their response borrowing from traders were the source for their business. Although from informal or traditional financing option 11.3% said *Eqqub* and 1.3% said *Iddir* were the source of financing for their business. 8.8% of the respondents afraid to mention the institution. Financial institutions such as bank and cooperative societies were not selected by smallholder producers.

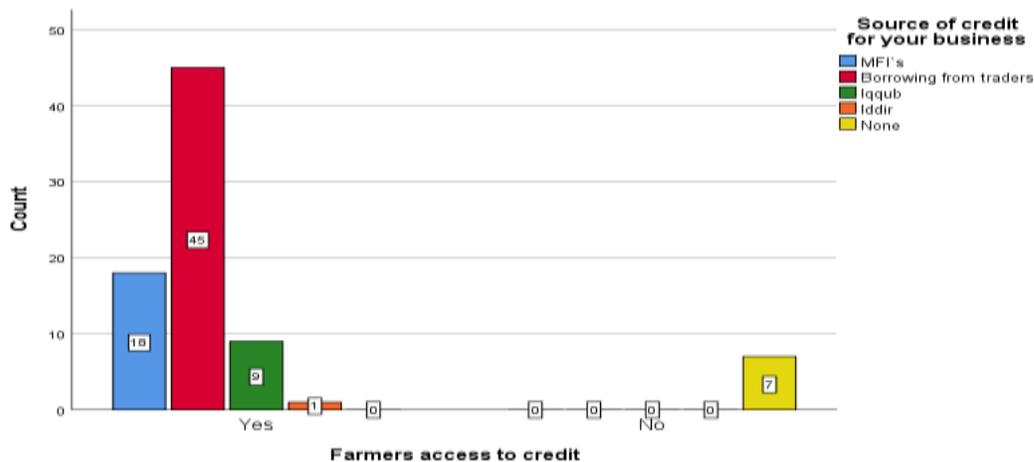
Table 19 Source of credit for business

		Source of credit for business			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MFI`s	18	22.5	22.5	22.5
	Borrowing from traders	45	56.3	56.3	78.8
	<i>Iqqub</i>	9	11.3	11.3	90.0
	<i>Iddir</i>	1	1.3	1.3	91.3
	Banks	0	0	0	0
	Cooperative societies	0	0	0	0
	None	7	8.8	8.8	100.0
Total		80	100.0	100.0	

Source, Author, 2019

Figure 20 implies the borrowings from the traders were the significant institution following by the microfinance institution. The smallholder producers were choosing the borrowing from traders due to the fact that the financial institution such as bank and MFI`s are neglecting the producers. Besides this high-value collateral and high-interest rate were usually asked. Though the producers are lacking high-value collateral and ability to pay the interest rate. Also, the traders have credit package for producers the producers are choosing borrowing from traders.

Figure 22: financial institutions



Source: Author, 2019

### 4.1.3 The effectiveness of financial institutions in financing the pepper value chain

Bureau of agriculture Goro district expert mentioned pepper is a cash crop which changes the life standard of the many producers in the district, however, there is a big problem related to diseases. The spread of disease is aggravated by high humidity making disease control a challenging. However, producers have benefited from very small acreage of pepper. Peppers connects many actors and stakeholders such as traders, producers, processors and financing institutions as well.

According to the commercial bank of Ethiopia Gudina branch, Financing the chain is more profitable than other financing option individual business. Because financing the pepper value chain was helping as an opportunity to finance all chain actor together. In another way, the link between producers, traders, processors and consumer benefit the financial institutions to get their loan back in time due to the chain actors have access to market and can repay.

The credit interest depends on the type of the credit packages, for instance, for those licenced through the small and micro-enterprise bureau the interest is 13% on a declining method. For individual and those who organize themselves as a group, it is 17% declining method. Besides, it is better for the chain actors to be licenced by the small and micro-enterprise bureau. This is due to many benefits in terms of loan size, minimum interest rate, other services such as land and market development. However, the producers prefer group collateral because of the bureaucracy and process during licensee.

Commercial bank of Ethiopia provides loan by 11% interest rate which is the lowest compared to other banks and micro-financial institutions. However, smallholder producers lack high-value collateral. Besides the low-interest rate commercial bank of Ethiopia is providing loan for the micro-financial institution but the interest rate at micro-financial institutions is too high which is 18%. So, in general, the smallholder producers are facing obstacles.

The main challenges in accessing credit were lack of collateral security as shown in the table below, where 46.3% of 80 respondent gave their response. Besides this repaying time and high-interest rate are challenges in accessing finance. Out of 80 respondents, 25% gave their response. Because the highest number of producers are getting credit from traders they are not paying the interest rate which is only 2.5% out of 80 respondent gave their answer to it.

Table 20: challenges in accessing credit.

Challenges to have access to credit					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Repaying time	14	17.5	17.5	17.5
	Collateral	37	46.3	46.3	63.7
	High interest rate	2	2.5	2.5	66.3
	Repaying time and High-interest rate	20	25.0	25.0	91.3
	Repaying time and collateral	7	8.8	8.8	100.0
	Total	80	100.0	100.0	

Source: Author, 2019

The majority of producers mentioned they have problems paying back the credit. 82.5% of respondents gave their answer they have difficulties in repaying the credit. Whereas 17.25% said they are not facing difficulties in repaying the credit. The table below shows quantitative data about the difficulties in repaying credit.

Table 21; Difficulties paying back loans

Difficulties in repaying the credit					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	66	82.5	82.5	82.5
	No	14	17.5	17.5	100.0
	Total	80	100.0	100.0	

Source: Author, 2019

The main reason producers are failing to repay loans are shown in the table below. 32.5% is due to the low price at harvesting time and 22.5% gave their response it is for the reason that of low production because of disease. 13.8% said it is due to Short repayment time and Low production because of disease together. This implies there is a problem of the low price which the producers don't have power in setting the price and at harvesting time it is notable that the price will be low. This is from the fact that at harvesting time the pepper will be surplus in the district and the traders are setting the price from the point of credit they provide in the production season. In another way, there is a low production due to the disease. According to FGD producers mentioned that there is no way out for the producers due to the interlinked problems. Such as low production because of the diseases and the traders cannot provide the credit looking at the pepper farm which is infected by diseases by expecting low production at harvesting time. In addition to this, setting the price is a very weak in the district for chain actors where the traders only have power in setting the price. The producers are a price taker.

Table 22 Reason for difficulties in repaying credit

Reason for difficulties in repaying credit					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		11	13.8	13.8	13.8
	High-interest rate	1	1.3	1.3	15.0
	Low price at harvest time	26	32.5	32.5	47.5
	Short repayment time	6	7.5	7.5	55.0
	Low production because of disease	18	22.5	22.5	77.5
	High-interest rate and Short repayment time	1	1.3	1.3	78.8
	High-interest rate and Low production because of disease	4	5.0	5.0	83.8
	Low price at harvesting time and Low production because of disease	2	2.5	2.5	86.3
	Short repayment time and Low production because of disease	11	13.8	13.8	100.0
	Total	80	100.0	100.0	

Source: Author, 2019

#### 4.1.4 Requirements for different chain actors when applying for loans

The credit service allows customers who can fulfil the minimum criteria or minimum requirement for credit such as collateral: (fixed assets, friend or family with fixed assets), business plan, cash flow, audited income statements, trade licence, TIN number, and banking history are the minimum requirements. See appendix

The other problem was the high (25%) interest rate charged by the commercial bank. Creditworthiness was therefore largely limited to those larger landowners or those who had a salary. Since the Commercial Bank already has an extensive network of more than 100 national branches, it has the potential to provide credit services to most rural Ethiopia without the costs and delays associated with building a new institution.

The credit requirements differ from the type of credit package. At Oromia credit and savings association, who wish to access to group credit, the producers or chain actors are collateral for each other in the group. The group liability or collateral is due to the fact that producers lack collateral for the sum of money they need. In this group liability, collateral must be paid if the group member is unable to pay the amounts owed by him/her. Alternatively, Oromia credit and savings associations offer credit to those who form a group and have a licence from the small and micro-enterprise bureau. In this case, the licence can be used as collateral. An individual credit is also possible, but fixed assets such as vehicles, a salary from family members or friends and a master plan of the land, which is certificates of ownership, are also used as collateral.

The chain actors mentioned there is collateral requirement requested more often by financial institutions. Besides this, 93.8% of smallholder producers were given their response on requirements for credit were collateral. see table below.

Table 23 Requirements requested for credit

Requirements requested for the credit					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Collateral	75	93.8	93.8	93.8
	Income statement	5	6.3	6.3	100.0
	Total	80	100.0	100.0	

Source: Author, 2019

#### 4.1.5 Strategies to improve chain actors access to finance

Quality is crucial to improve pepper chain actors access to finance. Nevertheless, there is a lack of attitude among traders and producers. Each chain actors wish to get a fair share of profit at each stage but getting the profit is not a problem by itself, the problem is when they adulterate pepper in order to get high profit. The government should tackle activities that affect pepper quality. There is also a problem of setting the price in the region setting the price can also improve chain actors access to finance.

The Rural Land Environmental Protection bureau aims at creating awareness for producers to use their land as collateral. They also provide service on training to sustain farmland through contract farming thus, improving producers access to finance.

Trade and market development bureau aims at creating and legalizing traders who can buy pepper at a fair price from the producers and eliminating middlemen from the chain. Also modernizing the market structure which is

free and clear for every participant in the chain. Controlling the quality of the product is also a crucial area that given due attention.

At *kebele* level, there are leaders who organize producers and send them to Small and micro-enterprise bureau for linkage chain actors to financial institutions. The district agriculture office provides agronomic related skills and knowledge. The interlinkage of stakeholders in the chain are the main strategies to improve chain actors access to finance.

#### 4.2 Role of government extension service in building effective financing of the pepper value chain

According to the farmer's survey, focus group discussion with financial institution and producers, interview with key informants the role of extension service in building effective financing the pepper value chain actors were discussed. Though the following issue was addressed.

##### 4.2.1 Functions of extension service in linking pepper value chain actors to finance

The district agriculture bureau is working in collaboration with financial institutions and other stakeholders. The district small and micro-enterprise bureau, market development bureau, rural land and environmental protection bureau, custom and revenue authority are the main stakeholders in the chain. The district agriculture bureau is in charge of providing the extension services and some inputs such as fertilizer to the producers in collaboration with the cooperative union development bureau.

Farmer to traders: Traders traditionally have one to one relationship with producers. They either buy from them at local markets or at the farm gate.

Farmer to agro-processor: The processor in the pepper chain usually works with individual producers. They lack to get strong cooperative union or big government farm in the region.

As below table shown, the producers mentioned there is no specific extension service for pepper producers. 71.3% of the respondent mentioned that there is no specific extension service for pepper producers. Whereas 27.5% said they have extension service. However, the extension service is more generic than on particular production and mixed up all kind of service. Form FGD with financial institutions they said that there is no clarity about the government extension service. Due to the fact that there was an overlapping of services from the government bureaus.

Table 24 Producers access to extension service

Producers access to extension service				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1.3	1.3	1.3
Yes	22	27.5	27.5	28.7
No	57	71.3	71.3	100.0
Total	80	100.0	100.0	

Source: Author, 2019

The below table represented the role of extension service in linking producers to financial institutions. 22.5% of 22 smallholder producers held the role of extension service is very low. In this case, 72.5% afraid to give their answer because they believe that they are not getting extension service on pepper production.

Table 25 Role of extension service

Role of extension service to link producers with financial institutions				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	58	72.5	72.5	72.5
High	2	2.5	2.5	75.0
Low	2	2.5	2.5	77.5
Very low	18	22.5	22.5	100.0
Total	80	100.0	100.0	

Source: Author, 2019

#### 4.2.2 The main constraints in the ministry of agriculture in creating a public-private partnership

The agriculture bureau Goro district was constrained to create public-private partnership due to factors influencing the pepper value chain. Experts, traders and producers were recommended possibility to create a public-private partnership to improve pepper value chain in Goro district.

Table 26 PESTEC Analysis

PESTEC	Constraints	Suggested solution
<b>Political</b>	Extension staff was overloaded	Increasing the number of extension officer
	Little or no training	Making producer for training which aims to improve the know-how of producers
	Frequent changes in extension policy at the national level	Constant and stable policy based on research and findings
	No exact set price for pepper in the district	The government should interfere and eliminate illegal traders
<b>Economical</b>	Limited accessibility of logistics and other support for an extension staff	The government should provide logistics Creating public-private partnership the extension sector
	Producers lack or shortage of working capital	Linking producers to financial institutions Legalizing the producers that they have access to finance
	The insufficient connection between research and extension	The extensionist should follow the producer and apply updated recommendations
	Shortage of extension staff	The government should hire extension officers
	No or limited private extension service	The government or public organization could realize to the private sector

<b>Socio-cultural</b>	Inflexible extension approach	Giving training for extension officer to adopt the socio-culture of societies
	Consideration of pepper as men product	Create awareness for producers and societies on the provision of women to pepper production and gender equality
	The inattention of the archaic and experience-based knowledge system of producers	Train and give advice to producers to change their attitude for a new idea
	Inadequate incentives and/or low payment for extension staff	Adequate payment reformation on salary and incentives for extension officers
<b>Technical</b>	Insufficiency of relevant technologies	Funding on the relevant technologies
	The low level of education of front-line extension staff	Providing education opportunities for the extension officers
	Poor harvesting management	Improve producers skill and knowledge on agronomic practices
<b>Environmental</b>	Pepper diseases	Introduce disease resistant pepper varieties
	Low production per hectare	Introduce new varieties of pepper which are more productive
	Soil fertility loss	Improve knowledge of producers on using natural fertilizers

Source: Author, 2019

From survey result represented in the above table 27, the ministry of agriculture or Goro district agriculture bureau was lacking in creating a public-private partnership (PPP). Subsequently, the expert from agriculture bureau Goro district exempt himself from giving an answer to this question. However, smallholder producers requested if they were given service from private or public. Thus, they stated 96.3 of the respondent they did not get service from other organization. Whereas, 3.8% said the given service.

Table 28 Service from another organization

Service from another organization					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	3.8	3.8	3.8
	No	77	96.3	96.3	100.0
	Total	80	100.0	100.0	

Source; Author, 2019

The below table depicted the kind of service and organization offering the service. The main function was from financial institution given to producers those who have access to finance at microcredit finance. This service offered by Oromia Credit and Saving Association on how to use credit and Vision microfinance on how to use credit as well.

Table 29 Kind of service from an organization

The kind of service from an organization					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		77	96.3	96.3	96.3
	OCSA microfinance on how to use credit	1	1.3	1.3	97.5
	Vision microfinance on how to use credit	2	2.5	2.5	100.0
	Total	80	100.0	100.0	

Source; Author, 2019

#### 4.2.3 The role of financing institution and extension service in developing a sustainable pepper value chain

Pepper is grown in many regions of Ethiopia and is an important ingredient for some of the most famous dishes from Ethiopian foods. In addition to its popularity in Ethiopia, capsicum and bell pepper can also be used as a raw material for extraction of oleoresin by the Ethiopian Spice Extraction factory. Currently, pepper production is seriously threatened by various diseases and is damaged by moisture stress.

Bureau of agriculture and financial institutions have crucial role in developing sustainable pepper value chain. Extension service provided for small scale farmers and finance provision from financial institutions as presented above by legalizing, providing quality services and financing the chain were assumed to develop sustainable pepper value chain. Therefore, the role of financing institutions and extension service were assessed through sustainability indicators of the pepper value chain in Goro district. Accordingly, an expert from the financial institution and extension officer participated in discussion informing this model.

Table 30 Sustainability of pepper value chain

Indicators		Chain performance
Planet	Pollution of air	Pepper was free of air emission. Chemical for pesticides and artificial fertilizers were used
	Soil degradation	Soil degradation due to poor farming style
	Poor farming	Crop rotation was not applied due to the profitability of pepper than other produce
People	Employment	Pepper created a job for the chain actors and small and micro enterprises aim at job creating for youth in this chain
	Labourer	No child labour observed
	Gender	There is no gender equality in pepper production were male producers dominated the production system and female processors were dominated the processing activities. The traders were male
	Transportation	Transportation was done at every chain actors: it is transported long-distance by Isuzu open truck
	Infrastructure: road, light and water	No infrastructure or inadequate service provision
	Market information	The producers were lacking information about price, it was in the hand of other chain actors
	Product information	No accessible about the safety and quality of the product

	Product quality	Low quality due to adulteration with other things
	Farming method	Backward and depending on the experience of the producers
<b>Profit</b>	Profitability	Revenue from pepper sale exceeded production and other total costs of the pepper value chain actors
	Value-added	Value-added found Processors 63.64%, producers 36.36%, wholesaler 18.18%, collectors 9.09%, and retailers share 9.09% from highest to lowest.
	Chain Governance	The traders set prices to depend on the harvesting time price either on credit repayment.
	Productivity	According to a survey with producers, the average production of pepper in Goro was 2500kg/hectare. However, producers are struggling with lower production due to diseases
	Value-adding activities	Sorting were made by producers and processor were known by adding value such as spices

Source: Author, 2019

## **CHAPTER FIVE: DISCUSSIONS**

This chapter presents the discussion of the research based on results from the fieldwork and desk study. There are several studies on pepper value chain in pepper producing region of Ethiopia. Such as (Mekdes, et al., 2018), (Rutgers, 2010) and (Shumeta, 2012). However, in Goro district even though the district is known by pepper production there were not yet studied. This shows the role of pepper value chain actors, supporters and influencer were not clearly identified in Goro district. This study contributes the knowledge gap in pepper value chain in Goro. From the fact, that pepper is the most important ingredient in Ethiopian foods and it is high value to the export market, even though, from point of its importance pepper was characterized by many factors such as Inadequate access to finance, insufficient inputs for pepper production, poor extension service provision and diseases were the major problems in the pepper value chain in Goro. Consequently, this study is presenting the structure of pepper value chain, constraints in pepper value chain financing and role of extension service to link chain actors to financing institution were studied in Goro district.

### **5.1 The structure of pepper value chain in Goro district**

Different chain actors, supporters and influencer were involved in the pepper value chain in Goro district. The chain actors were input suppliers, producers, collectors, wholesalers, retailers and consumers. See (Figure 23). Input suppliers are government (Goro district agriculture bureau and Goro district cooperative promotion agency) and private such as agro-input dealers. The major supporters in pepper value chain were government or public organization. Despite the fact that the private company such as processing factory were only acting as a chain actor than providing a piece of service for other chain actors.

Pepper producers in Goro district are characterised by the smallholding of land on average below one hectare. however, producers own or rented other lands on average up to one hectare and a half for production of beans, maize, teff and or for animal grassland. The age of these producers was on average found as a middle-age which was 46-60. This shows the young and adult age group are not in farming activities. Many of them were not educated and there was a difference between illiterate and basic educated producers regarding credit access. Illiterate producers had a strong relationship with traders this shows traders are provided loan more to illiterate producers. Marako were the most known type of pepper varieties by producers. The price of Marako variety was somehow higher than Dubbe and Absiniya varieties at a market place this shows producers produce marako variety for better profit.

A number of women in farming activities were found below a number of men producers in Goro district. this result has conformity with (FAO, 2019) that women in Ethiopia continue to face challenges of unequal access to and control over productive resources and services. For illustration, women have only 19.5% of the land titles, 51% of women producers have access to information services compared to 62% of men, 19% women against 28% men use an extension package and 15% women against 21% of the male landholder has access to credit. Women also provide most of the unpaid work with a heavy workload because of their responsibility in caring for the family and getting water and firewood, while taking on other productive tasks and responsibilities in the community. The participation of women in national institutions and markets is also lower than that of men.

### **5.2 Stakeholders relationship in the pepper value chain**

According to result see (Table 31), the most powerful actor in the pepper value chain was processors. The producers and collectors had the least power on pepper value chain. Due to weak market linkage, lack finance and lack of adequate information producers were forced to sell their product at the price set by traders. To increase the bargaining power of producers the role of the cooperative was vital. This result had conformity with (OACF, 2019) Oromia cooperative federation union aiming at to improve the negotiating power of producers in the Oromia region, by taking advantage of new technology by producing quality and high quantity products and winning the domestic and international market, turning their agricultural products into industrial products

(added value) and making them competent . Nevertheless, the producers in Goro were at cooperative society level with inadequate service provision to producers.

The traders were provided credit for producers consequently, the producers were forced to sell their produce during harvesting time to the same trader. The price at this time was very low due to surplus pepper production during harvesting period. The governance of pepper value chain was controlled by processor and wholesaler this illustrated, from the fact that processor and wholesale are found at the upper and middle part of the chain. See (Table 32), forcing the upper class (Consumers) and lower class (producers) by setting their own price. Looking at the information such as low productivity, scarcity or seasonality of pepper production.

### **5.3 Profit margin and value share among pepper value chain**

Except for the processor, the rest of pepper chain actors were not adding value on pepper as it passes from one actor to another. Also, the profit margin of the processor was higher than other chain actors which is six times of producers and collectors. The marketing costs for producers were more than double of other chain actors. Traders and processor were costs below ten ETB on average. According to (KIT, 2008) in principle, the size of the gross margin reflects the amount of labour, expenditure and risk/loss of perfect competition and transparent information. Nevertheless, the pepper market controlled by traders and processors. Though, producers have moderate gross margin relatively to collectors, wholesalers and retailers. The gross margin of the processor was higher than all pepper value chain actors this shows that gross margin of processor increased by other chain expenditures.

### **5.4 Pepper value chain governance**

About 62.5% of producers are selling pepper to traders or processors who had a relationship with them. see table 33. This was due to credit benefit producers got from traders or processors. In another way, the traders also can buy producers on kind without paying in terms of money immediately. This shows there were surplus and scarcity of pepper product depending on the season. Consequently, traders can transport pepper from surplus area to scarce area by buying the producers on kind. And other producers are selling their pepper product by taking to market directly to traders, processors or consumers.

### **5.5 Constraints in pepper value chain**

From the fact, smallholder producers and other chain actors are constrained by external and internal factors in the pepper value chain. Besides the external factors, there is no exact price determination especially producers are not benefited from the price fixed by traders. Agricultural marketing and value-adding mainly take place through the informal sector through traders. Poor marketing services and facilities and rural transport are major constraints on the commercialization of agriculture.

The smallholding of farmland by producers is causing the scarcity of pepper for the consumer. Based on the information from stakeholders and producers one of the peppers producing district (Abeshge) neighbouring to Goro district have stopped producing the pepper because of diseases. The producers in Goro districts mentioned that they are seeing the diseases in Goro district. So right now the producers are not worried about the finance, they are more worried about how to fight the diseases so they can continue producing pepper. In addition to this, low production is the reason for producers in lacking creditworthiness. The producers are not getting credit from formal financial institutions but they are getting the credit from the traders. On the other hand, if the traders know their pepper at the field is being infected by the diseases traders will not to fund or offer credits to the producers. So the diseases are becoming a major problem and indirect influence than credits.

The government extension service is generic. There are various government bureaus offering extension services such as cooperative promotion agency, rural land and environmental protection bureau. This was due to the fact

that the bureau of agriculture was giving a broad extension service. Accordingly, for instance, there was no specific extension officer to give deep advice on pepper production as producers mentioned. On the other hand, the cooperative promotion agency was providing training and advice to pepper producers. However, there is no information what they are specifically providing other than input supplying. In some cases, producers were confused even which service belongs to which bureau as the reason service from rural land and environmental protection bureau was also general. This shows the drawback of the government offering extension service and owning other service providing institutions together were observed as a weakness. This confirms replicating the roles which are confusion for the producers as well as costing the resources. It shows that weak link in service provision and inattention in obeying the objective observed in government service providing institutions. This probably is why the producers are not receiving the right service when the other organization is thinking the other is offering and vice-versa. On the ground, the producers are with nothing despite the fact that more than two organizations are offering the extension service.

### 5.6 Forms of financing pepper value chain

Pepper value chain actors were found with financing options of modern and traditional way ways of accessing to finance. However, the requirements frequently asked by financing institutions were challenging the chain actors. Modern financing institution such as the commercial bank of Ethiopia was lowering interest rate than other financial institutions compared to private banks and microcredit finances. Whereas the producers facing challenge due to the high-interest rate at a micro-financial institution. Besides this, commercial bank of Ethiopia is offering a loan for the micro-financial institutions. Instead of just coming up with a credit package for smallholder producers.

Figure 24 Forms of actual financing pepper value chain in Goro

Forms financing institutions	Pepper value chain actors				
	Producers	Collectors	Wholesalers	Processors	Retailers
Banks	--	- +	++	++	+ -
Micro-credit institutions	- +	++	++	++	++
Cooperative societies	--	--	--	--	--
Borrowing from traders	++	+ -	+ -	+ -	+ -
Iqqub	++	++	++	++	++
Iddir	- +	- +	- +	- +	- +

No financing (--) Source: Author, 2019

Financing or not (-+)

Financing (++)

The producers are choosing to borrow from traders due to banks and micro-credit institutions are requesting high-value collateral and high interest. likewise, the traders are setting a price to the lower. This result was not confirmed (NBE, 2019) as officially, the Commercial Bank of Ethiopia is committed to serving stakeholders through enhanced financial intermediation globally and supporting national development priorities. Banks branch which located in Goro district fulfils the mission of the organization by providing the two types of agricultural loans for the producers. The agricultural Input Loan: it is a short-term loan granted to customers for the purchase of fertilizers, improved seeds, and agro-chemicals. And the agricultural Investment Loan: It is short to the long-term loan granted to customers engaged in commercial farms or agro-processing.

The micro-financial institutions are allowing groups who are licenced by the small and micro-enterprise bureau by providing better access to loan size. Since the small and micro-enterprise allow age group between 18-34 it is implication there are opportunities in pushing the young generation to the agriculture sector as well as other chain actors to other business opportunities like trading processing and retailing. Therefore, in order to increase the efficiency of society and to serve rural people in a better perspective, the cooperative banking system must be strong and efficient to meet the challenges in a competitive environment and must take appropriate action

According to results from a key informant, the credit package for women and youth were mentioned as interventions. Micro and small enterprise state that the age group which can legalize accordingly were only male and female below 35 years old. The other requirement is being jobless in the district where considered. Besides this, the producers in Ethiopia are owning small land and they are above 35 years old age group. In addition to this, micro-financial institution revealed that there is a huge size loan if and only if producers are in the group and legal through micro and small enterprise bureau. In fact, it is opportunities for the young generation and women to access finance and land.

According to van Maanen, 2019 microfinance or microcredit is banking the unbankable brings credit, savings and other essential financial services within the reach of millions of people who are too poor to be served by regular banks, in most cases because they cannot provide sufficient collateral. This confirms Oromia credit and saving association was one of the financing options to the pepper value chain in Goro district. This conforms (Ayalew, 2014) Oromia credit and saving association is one of the largest and leading microfinance institutions in Ethiopia. the company was first established as Oromia credit & saving rural schemes development project / ocsrdp / under Oromo self-help organization /osho/ on January 1, 1996, and later developed into a microfinance institution on august 4, 1997, to obtain the current name - Oromia credit & save sc. It conforms also Oromia Credit and Saving Share Company (OCSSCO) is currently largely active in rural areas to supplement the agricultural-leading and rural-oriented development impact of the federal government of Ethiopia in general and the regional national state of Oromia in particular. Goro is also one of the districts where Oromia Credit and Saving Share Company gives credit to households. In fact, only 22.5% of producers had access to credit whereas borrowing from traders was 56.3% which was double of micro-credit institutions.

The cooperative society in Goro district was not functional and not well organized likewise it lacked the ability to offer producers a short and medium-term loan that helps them meet their short-term or long-term financial needs. Its only provides agricultural inputs. However, they were designated as primary agricultural credit organization at the basic level of a village or group of smallholder producers. Formally, it is the basic unit that provides agricultural credit as well as fertilizers to producers to meet their financial needs. The cooperative society was lacking all that mentioned above. Moreover, Adequate and timely financing is essential for the development of the improvement of the pepper production sector and related activities. But there are many financial difficulties in developing a cooperative system including lack of sufficient contribution from smallholder producers, lack of necessary resources, poor linkage of industrial relations, lack of professional management, political interference, changes in economic conditions and limited source of income from producers.

The traditional financing option such as *Iddir* and *Iqqub* were found financing producers and pepper value chain actors in Goro district. These results from fieldwork confirm that *Iddir* is a social institution that provides material and psychological assistance to the relatives of a deceased member. According to (Yimer, et al., 2016) organizes and facilitates a decent burial ceremony for its members and for the member's families that fall under the *Iddir* system. It has the function to support family members during grief. It also offers other multi-dimensional support for its members during mourning, including financial and psychological support for families. More importantly, the *Iddir* institution changes its administrative structures, objectives and rules from time to time without, however, losing its traditional roots and values. It was traditionally reserved only to support the families of a

deceased person and to ensure that the deceased family member receives a decent burial, but has now become a large social security institution. It offers financial assistance to sick members. They also use their money raised for social services such as building access roads, schools and clinics that serve the community. It began doing business by renting its properties to non-members.

Additionally, *lqqub*, the traditional financing option was similarly playing a key role in financing pepper value chain in Goro district. This result confirmed by (Yimer, et al., 2016) and as some producers mentioned that informal financing institution *Eqqub* is very important in solving producers lack financing besides this, it depends on the capacity of smallholder producers to pay it back. *Eqqub* is a financial institution that works by collecting money from its members on a weekly basis and by paying the collected money to the member who wins a lottery on a specific week. *Eqqub* members continue to contribute until each member is paid. It is a system that provides rotation-based financing by raising money from its members.

Spices sector in Ethiopia is the most important sector, measured by its contribution to total production, employment and export earnings compared to other agriculture product. Small-scale producers are the most common way of growing, and it is the farmer who has suffered the most from the lack of capital, the lack of technology and the deterioration of the soil. Particularly noteworthy is the lack of resources aimed at increasing productivity or making sufficient rural financing available. An important example of neglect is the miserably insufficient amount of agricultural credit available for the farming sector and the total carelessness of encouraging savings mobilization

### **5.7 Role of government extension service**

Government organizations including the district agriculture bureau were working in collaboration to improve producers and other actors in the chain. The function of the extension service in linking producers to other chain actors will be through a powerful firm in the chain will give producers better access to finance. For instance, in Goro district processor was the lead actor in the chain. In addition to this, linkage through cooperatives, which is crucial in improving the quality of pepper in the district. Linking chain actors to export market are also the other way of improving chain actors access to finance. These results were in accordance with the policy plans (MoA, 2013). However, Ethiopia has so far been unable to develop an extensive seed production and distribution system to guarantee the delivery of high-quality seed to all producers. Key policy issues include the mandate for production, pricing and distribution to public and private firms, seed import and the role of the government in the regulation of the seed industry. The participation of the private sector is stagnating and is mainly limited to hybrid varieties. Important policy evaluations are considered necessary at all stages of the seed supply chain, from growers seed to commercial certified seed production.

Besides this, the ministry of agriculture fails to create public-private partnerships. The Ministry's Extension Service deals with PPPs with the objective of improving infrastructure and improving public services. Whereas, low infrastructure and other related problems are discussed in Goro district. Leveraging private resources is an ideal way to finance public development plans if there is a budget constraint. This reveals the limitations that governments face in terms of fund scarcity, corruption, poor planning and project formulation, as well as inefficient capacities. Public-private partnerships (PPPs) have emerged as one of the ways to overcome these limitations. By leveraging private sector funding and resourcefulness, governments can finance critical infrastructure, improve project preparation, implementation and management, and deliver efficient services to citizens.

### **5.8 Sustainability of pepper value chain**

As it was discussed in the (Table 34) sustainability regarding its indicators. At the producers, level pepper was free of air emission. However, a chemical used by producers for pesticides and artificial fertilizers were

influencing the biodiversity. Soil degradation due to poor farming style caused by irresponsible and lack of education by producers can affect the planet. Furthermore, crop rotation was not applied due to the attitude producers adopt to thinking of high profit only from pepper than other products such as beans and maize

No child labour was observed during the fieldwork by the researcher. However, As one of the most traditional societies in almost every corner of Ethiopia, people usually separate economic, social and political activities based on gender. This kind of distribution of activities in societies not only on the basis of gender but also on age groups. However, women are the most disadvantaged in this division of labour because they are robbed most socially and economically as well as political privileges, as opposed to their male counterparts. Nevertheless, simple observation can reveal that women are usually forced to handle the heavy parts of activities in all sectors without being able to enjoy the full test of the fruits of their labour (ILO, 2009)

There is no gender equality in pepper production were male producers dominated the production system and female processors were dominated the processing activities. This confirms (Dutch Ministry of Foreign Affairs, 2018) stated female producers to own the land and running the business in pepper production are owning the land by heritage or they own the land after their husband has died. From a legal point of view, women can own land. However, it is culturally not accepted unacceptable for women to perform all agricultural tasks individually. As a result, women are often unable to own and manage farms independently.

The social aspects of the pepper value chain were also discussed regarding transportation which done at every chain actors this results show (Shumeta, 2012) specified chain actors transport red pepper to the nearest markets (village market) by themselves or using donkeys either using pack animals, or animal-driven carts or else medium-size Isuzu trucks some of the producers are also selling their red pepper to the consumers in Wolkite, Goro and Woliso town. Village markets are markets which are closest to producers' resident, having k less marketing facilities such as road, electricity, potable water. Although, producers sell smaller volumes of red pepper on such markets due to lack of infrastructure. The producers were depending on backward and own experience while lacking information about the price because it was in the hand of other chain actors at regional markets were big markets that are found in Addis Ababa where most of surplus pepper products are transacted. On the other hand, no accessible about the safety and quality of the product for the consumer. Due to this, the consumer was facing low quality caused by adulteration with other things.

The economic aspect was revenue from pepper sale exceeded production and other total costs of the pepper value chain actors. Sorting were made by producers and processor was known by adding value such as spices. value-added found processors 63.64%, producers 36.36%, wholesaler 18.18%, collectors 9.09%, and retailers share 9.09% from highest to lowest. traders set prices to depend on the harvesting time price either on credit repayment. Even though the average production of pepper in Goro was 2500kg/hectare producers are struggling with lower production due to diseases.

The methods of data collection for this research were desk study, survey with smallholder producers, interviews with key informants and focus group discussion. Similarly, for this research, the sample size for survey was sufficient if it remained only 40 respondents. However, to come up with reliable data and results I preferred to take 80 respondents from Sinano and Galiye kebeles. However, from the fact that these 80 respondents are not really represented the whole producers in the pepper value chain, the data might be biased. The method I have used to select Sinano and Galiye kebeles were by non-probability sampling. as Goro district contains 19 kebeles, in reality, two kebeles were not symbolised the whole district which it might be biased. Also stakeholder meetings were proposed first as one of the methods for data collection. However, it was challenging to get all chain actors and supporters together because of coup d'état were announced by the government at a time of data collection. For this fact focus group discussion were preferred than stakeholder meetings this might affect the reliability of

data. However, the focus group discussion offered the possibility to triangulate data from interviews. As time was given, it was not possible to address to many works in a short period of time, whereas limited finance or money, as well as infrastructure such as road, were a practical limitation in this study.

### **Reflection as researcher**

As a researcher, this is my reflection from what I observed from my fieldwork. From starting to become friendly with respondents. I am lucky that I can speak major language of my study area (Afaan Oromo) and they were happy when they are speaking with me by their own language and there was the confident amount of trust with the respondents.

Because the time was given I was using a motorbike to collect my research data. Though there was a time I went two times to the field to survey smallholder producers, this was because I didn't check my questioners. That it has lacked in collecting data I need. I decided to check my questioners on the field for another two more times. In fact, it was costly in terms of time and budget. I must collect the reliable, enough and problem-solving data and I have managed it.

Other than the collection of data by the formal way I was also observing what was the real situation happening in the chain. Since I was friendly speaking with some of producers and traders. It was the time one farmer told me about the credit access they have from traders. That choice was not in my questioners I have only formal and informal options of financing on my questioners before. And I asked him how many producers have this access and in percentage, he said maybe 10 %. And when I have talked to collectors I asked about the credit they are offering, and I triangulate the data. When I have started surveying the producers next time I include those options. I learnt being a keen observer helps the reliability and to get enough data from field.

Some of the producers and key informants were talking information which is not useful, that was really a challenge I must listen to them. I realize later before I started my question I always told them I have this amount of question-related to this and this much time. I think that helps me a lot during fieldwork to manage my time.

Some of the key informants are not allowing to take any digital information such as photo, video or audio. It was really helping if they allow me. However, I tried to convince and I took many of them and fail to take from few informants. It was the way I learnt to collect data in other means such as transect walk.

I have used some literature before my fieldwork since I am not a researcher before and fearing what will be in the field. I have managed to apply some character of good researchers, such as dressing behaviour the same to area and be equal and justice for respondents.

Generally, as a researcher, the results and analysis, discussion and recommendation of this study can fix financial constraints and strategies to link pepper value chain actors. In collaboration of private, government and chain actors together.

## **CHAPTER SIX: CONCLUSION**

This chapter is presenting the conclusion based on the main findings and discussion of the research.

Based on the findings and discussion of the research, the pepper value chain consists of different chain actors and supporters. The main chain actors in pepper value chain in Goro district were input suppliers, producers, collectors, wholesalers, processors, retailers and consumers. The input suppliers were from government and private side. They are providing input such as pepper seed, fertilizers and pesticides. Producers were smallholder producers who engaged in the activity of pepper production and selling. These producers have more than two option to sell pepper were they can sell to nearby collectors, or to wholesalers, or directly to low-income consumers, or to processors. Collectors were collecting pepper from producers at their farm gate or at a market place and sell to wholesalers. These wholesalers are selling pepper to institutional consumers such as hotel and restaurant. The processors are divided into two were they are smallholder homemade processors and big processors. The big processor was selling processed pepper powder to retailers and institutional consumers. Whereas smallholder homemade processors are selling to the low-income consumer at the market place. Consumers were divided as institutional, high and medium-income households and low-income households.

From the analysis, the major supporters of the pepper value chain in Goro district were Extension service/ Bureau of Agriculture, were providing extension service for producers. Financial institutions Commercial bank of Ethiopia & Oromia credit and saving association were in providing finances to chain actors. Cooperative promotion bureau was in charge of grouping and creating know-how on the cooperative benefit to producers. The market development bureau was responsible for linking producers to market. The small and micro-enterprise office was creating a job by legalizing chain actors, in addition, linking them to a financial institution. Custom and revenue authority was collecting tax and allowing legal marketing system. Rural land environmental protection bureau was providing training and capacity building to producers on the issue of land and environment aspects and Goro Town Administration were also collecting tax on the market place form chain actors other than producers and consumers.

The lead actor in the pepper value chain in Goro district was a processor with a gross margin of 59.55% share. Whereas producers were 27.15%. the profit share of producers was 10.86%, collectors 9.34%, wholesalers 16.06%, processor 64.73% and retailers was 9.87%. the profit share of producers was lower than wholesaler and processes. This shows wholesalers are getting higher profit from pepper with minimum value-adding. Alternatively, the value share of chain actors from higher to lower was collectors and retailers were 9.09%, wholesalers 18.18%, producers 36.36% and processor were 63.64%.

Pepper productivity in Goro district was constrained mostly by man-made and natural influences. Poor agronomic ways, lack of sufficient inputs, the backward experience of producers, insufficient knowledge of extension officers and deficiency in giving attention, to pepper producers. Similarly, natural factors such as diseases, pests and seasonality of rain were the major constraints in pepper value chain in Goro district.

The marketing system of pepper value chain also constrained by the absence of information, adulteration, cheating, setting price depending on credit offers, illegal traders and brokers, lack of cooperative union in providing loan and inputs to smallholder producers, limited bargaining power of pepper producers, bureaucratic challenges to chain actors when applying for loans at formal financial institutions, high-interest rate at financial institutions, short period for repayment and high value collateral requested at banks. There is a need to strengthen agribusiness links along the most important value chains of agricultural raw materials. Support for producers ' cooperatives and organizations is crucial for improving marketing and adding value.

The financing options for actors in the pepper value chain were found as modern and traditional financing options. However, this financing option was characterised by factors such as lack of collateral, lack of information and high-interest rate. Bank was reflected by its character neglecting of smallholder producers, due to its high-value collateral requirement whereas small microcredit institutions categorised by high-interest rate. Borrowing from traders were other option which 56.3% of producers accessing finance from, nevertheless, they were studied by determining low price. Traditional forms of financing such as iqqub were also presented as they have positive support in pepper value chain. See table 20, page 39

The effectiveness of financial institutes in pepper value chain deliberated as the profitability of financing institutes as key informants explained. Financing all chain actors were effective than individual financing scheme. This kind of strategies links the chain actors which strengthen the financial capacity of chain actors and financial institutions. The bureaucracy at financial institution mentioned as drawbacks which can make the financial institutions ineffective in the pepper value chain. Also, the requirements such as collateral, high-interest rate, repaying time, besides, difficulties such as the low price at harvesting period and low production because of diseases, were determined the effectiveness of financial institutions in the pepper value chain. See table 21 & 23 page 41 & 42

The requirements of credit for different chain actors in the pepper value chain were identified as drawbacks this was due to the inconsideration of a financial institution such as a bank which can provide a large amount of money but, insignificance importance providing loan to smallholder producers.

The strategies to improve access to finance for pepper value chain actors were studied by assuring the quality of pepper along the chain, setting a fair price, legalizing the pepper market and providing training for chain actors were deliberated as a strategy to improve chain actors better access to finance.

Functions of extension service in linking pepper value chain actors to finance were refereed by working in collaboration with other stakeholders in the chain. Linking chain actors and supporters vertically or horizontally along the chain were expected to improve the service provision. However, producers did not get access to specific extension service on pepper production. On the other hand, producers were not linked vertically or horizontally to chain actors or supporter by extension service.

The main constraints of the ministry of agriculture in creating a public-private partnership were affected by political, economic, social, technical and cultural in the pepper value chain in Goro district. The district bureau of agriculture was also constrained in creating a public-private partnership. See table 29, page 45

The sustainability of pepper value chain was characterized by negative and positive impacts as a result, pepper producers were using chemicals such as fertilizers and pesticides, inadequate crop rotation and soil degradation were observed as drawbacks. Likewise, pepper production has created a job for its chain actors, and from the fact that pepper is the most ingredient used in every Ethiopian dishes, it was considered an enthusiastic side. According to researcher observation, pepper value chain sustainability was showing the need to improve with moderate performance.

## CHAPTER SEVEN: RECOMMENDATIONS

This chapter is presenting recommendations depending on the conclusion drawn from this study. It focuses on building financial linkages and chain coordination to come up with a modern and highly productive pepper value chain. Pepper value chain actors, financial institutions and other stakeholders should be the major participant of these changes. Goro district agriculture bureau is the problem owner of this study. The problem owner should facilitate the recommendation on workshops, forums, meetings, exhibition and annual review. Accordingly, the recommendations are positioned as follows.

- ✓ Agriculture bureau could facilitate establishing financial linkages among the pepper value chain actors and financial institutions. This shall be through continuous awareness creation, training, workshop and meetings.
- ✓ Agriculture bureau and cooperative promotion agency could provide training on how to improve smallholder bargaining power.
- ✓ Agriculture bureau should provide specific extension service to assure good agriculture gap practice to pepper producers.
- ✓ Commercial bank of Ethiopia could provide credit for smallholder producers than providing loan through small and micro-financial institutions to reduce bureaucracy and high-interest rate for pepper value chain actors. So, the commercial bank of Ethiopia could research how to finance smallholder producers directly, rather than financing micro-financial institutions.
- ✓ Agriculture bureau and cooperative promotion agency should provide sufficient inputs for pepper production. This could be through a well organized and planned budget.
- ✓ Agriculture bureau should provide capacity building to smallholder producers on how to supply quality assured and marketable pepper. Linking producers to a premium price which shall through continue awareness creation for producers by assuring quality pepper production
- ✓ Cooperative promotion agency could help in developing cooperative societies to pepper producer's cooperative union.
- ✓ Agriculture bureau, in collaboration with the research Centre and cooperative promotion agency, should provide an improved and disease-resistant variety of pepper seed.
- ✓ Trade and market development and agriculture bureau could provide training and awareness creation on market information to pepper producers.
- ✓ Trade and market development bureau could increase their outreach to reduce illegal traders in the pepper value chain.
- ✓ The small and micro-enterprise bureau could organize and legalize pepper value chain actors in collaboration with the bureau of agriculture to link actors to financial institutions in order to reduce lack of collateral and small loan size.
- ✓ Agriculture bureau could link producers to stakeholders and chain actors through awareness creation along the value chain vertically or horizontally, to strengthen the capacity to have access to finance. Moreover, through creating a public-private partnership.

- ✓ Agriculture bureau should consider sustainability, in its extension service provision. consequently, by creating awareness to producers on how to reduce the problem related to biodiversity, land degradation, by reducing the number of chemicals they are using. By advising and providing best agronomic practice and about natural fertilizer or compost.

## References

- Aderaw, G. & Manjit, S., 2015. *Agriculture finance constraints and innovation models experience for Ethiopia: Empirical Evidence from Developing countries*, s.l.: s.n.
- AgriFin, 2017. *Financing Agribusiness in Sub-Saharan Africa: Opportunities, Challenges, and Investment Models*.
- Amare, T. & Dawit, A., 2013. *Marketing channel and margin analysis: A case study of red pepper marketing at Jabitehinan District in Northwestern Ethiopia*, s.l.: s.n.
- Anup, S. & Jian, Z., 2012. *Workshop on Enhancing Exports' Competitiveness Through Value Chain Finance*, s.l.: s.n.
- Arnarson, A., 2015. *Chili Peppers Nutrition Facts and Health Effects*, s.l.: s.n.
- Ayalew, S., 2014. *The Role of Microfinance Institutions in Improving Livelihood; In Case of Oromia Credit and Saving Share Company In Agaro Town, Jimma Zone*, s.l.: European Journal of Business and Management.
- Ayelech, T. M., 2010. *Contract farming in Ethiopia*, s.l.: s.n.
- Baan, D. G., 2014. *Analysis of Chili Pepper Value Chain: A case study of Kpando Torkor Irrigation Scheme in the Volta Region of Ghana*, s.l.: s.n.
- Brhan, K. S., Edward, G. M., Remmy, W. . K. & Nasser, K. Y., 2016. Genetic Diversity and Population Structure of Eritrean Pepper (*Capsicum* species) as Revealed by SSR Markers.
- Brufal, J., 2019. *ETHIOPIA INTRODUCES A PUBLIC PRIVATE PARTNERSHIP LAW*, s.l.: s.n.
- Catherine, K. et al., 2017. Value Chain Upgrading and the Inclusion of Smallholders in Markets: Reflections on Contributions of Multi-Stakeholder Processes in Dairy Development in Tanzania.
- Census, P. a. H., 2007. *Results for Oromia Region,,* s.l.: Population and Housing Census of Ethiopia.
- Daniel, R., 2007. *Donor Interventions in Value Chain Development*. July, 2007 (1500 copies) ed. Switzerland: SDC, Berne.
- Dawit, S. H., 2017. *Market linkages and strategies for onion smallholder producers*, s.l.: s.n.
- Demese, C., Berhanu, A. & John, M., 2010. *FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT*, s.l.: FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT.
- Dessie, G. & Birhanu, H., 2017. *Growth and Yielding Potential of Hot Pepper Varieties under Rain-Fed Production at Woreta, Northwestern Ethiopia*, s.l.: s.n.
- Diriba, S. G., 2013. *Socio-economic Contributions of Micro and Small Enterprises: The Case of Jimma City*, s.l.: s.n.
- Dutch Ministry of Foreign Affairs, 2018. *The Future of Work for smallholder producers in Ethiopia*, De Haag: Dutch Ministry of Foreign Affairs.
- EEA, 2012. *Ethiopian Economic Association*. [Online]  
Available at: <http://www.thinktankinitiative.org/think-tanks/EEA-EEPRI>  
[Accessed 06 06 2019].
- EEPA, 2016. *Pepper production in Ethiopia*, s.l.: Ethiopian Export Promotion Agency .
- Ellen, M. & Bert de, S. p., 2010. Dealing with small scale producers: linking buyers and producers.
- European Union, 2019. *Agriculture and rural development*.
- Facet, T., 2013. *Country Report Ethiopia IOB POLICY REVIEW, PRIVATE SECTOR DEVELOPMENT*, s.l.: s.n.
- FAO, 2019. *Country Gender Assessment Series: National Gender Profile of Agriculture and Rural Livelihoods: ETHIOPIA*, Addis Ababa: BluePencil Infodesign, Hyderabad, India.
- FDRE, 2011. *Ethiopia's Climate- Resilient Green Economy Strategy The path to sustainable development*, s.l.: s.n.
- FDRE, M. o. F. A. o., 2019. *History of Ethiopia*, s.l.: s.n.
- Francesconi, G. N., n.d. Cooperation for competition.
- GDBoA, 2019. *Mission, Vision*, s.l.: s.n.

Gert van Maanen, 2004. *MICROCREDIT: SOUND BUSINESS OR DEVELOPMENT INSTRUMENT*, s.l.: s.n.

Getachew , M. D., 2017. *ASSESSMENT OF THE FINANCIAL AND OPERATING PERFORMANCE OF MFIs: VISION FUND MICROFINANCE INSTITUTION S.C*, s.l.: s.n.

Getahun, H., 2011. *Financing Small Famer Development in Ethiopia*, s.l.: International Conference on African Development.

Giel, T. & Jos, B., 2006. The role of producer organisations in the process of developing an integrated supply chain; experiences from Quinoa chain development in Bolivia.

Gizachew, T. A., Shahidur, R., Carlo, B. & Kindie, G., 2016. *Rural Finance and Agricultural Technology Adoption in Ethiopia: Does the Institutional Design of Lending Organizations Matter*, s.l.: s.n.

Guillou, P. & Marjon van, O., 2010. *Could you pass me the Sustainable pepper, please? Towards a sustainable spices supply chain Keys findings and sector recommendations*, s.l.: s.n.

Hermes, 2015. *Hot pepper production and post-harvest handling*. s.l.:s.n.

Ilo, 2009. *A study on the situation of child labour in Ethiopia: review of existing studies and brief assessment*, s.l.: s.n.

Infomineo, 2018. *Agriculture in Ethiopia*, s.l.: s.n.

Itc, 2010. *Spice sub-sector strategy for Ethiopia*, s.l.: s.n.

Janice , s. & bob. F., 2007. *Finance in the value chain framework*. S.l.:s.n.

Janice, s. & bob, f., 2009. *Finance in the value chain framework*, s.l.: United States Agency for International Development.

Jonathan, M., Christopher , C. & Jodie , K., 2009. *Upgrading Along Value Chains: Strategies for Poverty Reduction in Latin America*.

Jonathan, M., Jodie, K. & Christopher, C., 2009. *Trading Up: How a value chain approach can benefit the rural poor*, s.l.: s.n.

Jurevicius, O., 2013. *Value Chain Analysis*, s.l.: s.n.

KIT, F. M. a. I., 2008. *Chain empowerment: Supporting AfricAn producers to Develop Markets*. Amsterdam: English Press Ltd.

Lagiso, D., 2016. *Assessment on profitability of red pepper production in shashago*, s.l.: s.n.

Lalbahadur, B., 2017. *The health benefits of chilli pepper*, s.l.: s.n.

lundy & mcevoy , 2012. *The external infulence of agriculture* , s.l.: s.n.

Madhvi , R., Rajesh , K., Apurva , S. & Andreas , E., 2015. *Exploitation of AVRDC's Chili Pepper (Capsicum spp.) Germplasm in India*.

MarketLinks, 2019. *Value chain finance*. [Online]  
Available at: <https://www.marketlinks.org/good-practice-center/value-chain-wiki/value-chain-finance>  
[Accessed 02 06 2019].

Mekdes, D., Mufti, J. & Habtamu , M., 2018. Value Chain Analysis of Red Pepper: The Case of Mareko District, Guragie Zone, Southern Ethiopia. *Global Journal of Science Frontier Research: D Agriculture and Veterinary*, 18(6).

Mekdes, D., Mufti, J. & Habtamu, M., 2018. Value Chain Analysis of Red Pepper: The Case of Mareko District, Guragie Zone, Southern Ethiopia. *Global Journal of Science Frontier Research: D Agriculture and Veterinary*, 18(6).

Mekdes, . D., Teshale, . W. & Getachew , M., 2017. *Value Chain Analysis of Red Pepper: The Case of Abeshge District, Guragie Zone, South Ethiopia*, s.l.: s.n.

Merkato, 2019. *Oromia Credit & Saving S.C. (OCSSCO)*, s.l.: s.n.

Miller, C., 2012. *Agricultural value chain*.

MoA, 2013. *Ministry of Agriculture*, s.l.: s.n.

MoFED, 2019. *Ministry of Finance and Economic Development (Ethiopia)*. [Online]  
Available at: <http://www.mofed.gov.et/>  
[Accessed 06 06 2019].

Muhammad, T. I. K., Muhammad, . A., Qamar, A. & Muhammad , W., 2017. Economic analysis of open field chilli (*Capsicum annum L.*) production in Punjab, Pakistan. *ResearchGate*.

Mussema, R., 2006. *ANALYSIS OF RED PEPPER MARKETING: THE CASE OF ALABA*, s.l.: s.n.

NBE, 2019. <https://www.nbe.gov.et/>. [Online]  
Available at: <http://www.tito.org>  
[Accessed 2 june 2019].

OACF, 2019. *Oromia Agriculture Cooperative Federation*, s.l.: s.n.

Oromia agriculture cooperative federation, 2019. *OROMIA AGRICULTURE COOPERATIVE FEDERATION*. [Online]  
Available at: <http://www.oromiaagcoopfederation.org/index.php/en/>  
[Accessed 28 08 2019].

Raphael, K. & Mike, M., 2000. *A HANDBOOK FOR VALUE CHAIN*, s.l.: IDRC.

Regoniel, P. A., 2015. *A Step by Step Guide on How to Make One*, s.l.: s.n.

Ruete, M., 2015. *Financing for Agriculture: How to boost opportunities in developing countries*, s.l.: s.n.

Rutgers, T., 2010. *An analysis of supply side constraints on Ethiopian red pepper and paprika capsicum production and export: a global value chain approach*, s.l.: s.n.

Sarah, D., Jeroen, . v. W. & Fenta , M., 2012. Key conditions for successful value chain partnerships.

Shoib, A. W. et al., 2016. *Significance of Agricultural Finance in Agricultural and Rural Development of Pakistan "A Case Study of Qambar Shahdadkot District*, s.l.: European Journal of Business and Management.

Shumeta, Z., 2012. Trends in Agricultural Hot Pepper Production and Marketing in Southwest Ethiopia: An Alternative Enterprise for Small Scale Producers . *Science Alert* : .

Solomon, E., Emmanuel, O., A, E. & Ajah, 2017. *Determinants of loan repayment among agricultural microcredit finance group members in Delta state, Nigeria*, s.l.: s.n.

Sophie Laws, C. H. N. J. A. R. M., 2013. *Research for Development*. s.l.:SAGE.

Teklegiorgis, M., 2009. *VALUE CHAIN ANALYSIS FOR DEVELOPING RURAL AGRI-BUSINESS: Case Studies in Ethiopia*, s.l.: s.n.

USAID, 2019. Types of Upgrading.

Varangis, P., 2018. Agriculture Finance & Agriculture Insurance.

Veselska, E., 2005. *The process of vertical coordination and its consequences within the beer commodity chain*, s.l.: s.n.

Wageningen, U., 2014. *Cash crops enhance food security*, s.l.: Wageningen University.

Willems, D. & Hilde Duns, 2015. Factsheet - Spices Ethiopia.

World Bank, 2004. *Challenges of Agricultural Production and Productivity in Ethiopia*, s.l.: s.n.

Wosene, G., 2018. *Analysis of Red Pepper Value Chain: Analysis of Red Pepper Value Chain:Gojam Zone of Amhara National Regional State, Ethiopia*, s.l.: s.n.

Yimer, G. et al., 2016. *Customary Laws Regulating Traditional Financial Institutions in Tigray Regional State (Ethiopia): A Brief Introduction to Eqqub and Iddir*, s.l.: s.n.

Yimer, G. et al., 2016. *Customary Laws Regulating Traditional Financial Institutions in Tigray Regional State (Ethiopia): A Brief Introduction to Eqqub and Iddir*, s.l.: s.n.

## Appendix

### Appendix 1 Checklist with Goro district agriculture bureau

#### **Checklist for Goro district extension service officer**

- What services do you offer to the farmer?
- What are the challenges in their service?
- What is the role of the agricultural district office in pepper marketing?
- What is the role of the agricultural district office in linking farmers to finance?
- What is the role of the agricultural district office in improving the productivity of pepper in the region?
- What strategies do you think can be used to improve access to finance?
- What strategies do you think can be used to improve access to market and to get the premium price?

### Appendix 2 Checklist for a cooperative promotion agency

#### **Checklist for district cooperative promotion bureau**

- What services do you offer to the farmer?
- What are the criteria for membership in the cooperative?
- What is the role of the cooperative in linking farmers to markets, inputs and finance?
- What are the challenges you face in the provision of service?
- What are opportunities for pepper in the district?
- What are the measures that can be used to increase pepper productivity per farmer?
- What are the arrangements required to bridge the gap between financial institutions and farmers?

### Appendix 3 Checklist for district development bureau

#### **Checklist for district market development office**

- What services do you offer to the farmer?
- What are the challenges in their service?
- What is the role of the agricultural district office in pepper marketing?
- What is the role of the agricultural district office in linking farmers to finance?
- What is the role of the agricultural district office in improving the productivity of pepper in the region?
- What strategies do you think can be used to improve access to finance?
- What strategies do you think can be used to improve access to market and to get the premium price?

#### Appendix 4 Checklist for Oromia credit and saving association

##### **Checklist for Oromia Credit and Saving Association,**

- What is the role of financial Institutions in pepper marketing?
- What are the financing packages you have for farmers?
- What are the requirements for smallholder farmers?
- What is the current interest rate?
- Are there opportunities for financial institutions in pepper value chain financing?
- What are the challenges you face in provision service?
- What are the measures that can solve this problem?

#### Appendix 5 Checklist for district custom and revenue authority

##### **Checklist for district custom and revenue authority**

- What is the role of the district custom and revenue authority in pepper production?
- What services do you offer to the chain actors?
- What are the challenges in your service provision?
- What is your role in financing or linking chain actors to access to finance?

#### Appendix 6 Checklist for district small and micro-enterprise

##### **Checklist for district small and micro-enterprise office**

- What services do you offer to the pepper value chain actors?
- What are the challenges in your service provision?
- What is the role of the district small and micro-enterprise office in pepper marketing?
- What is the role of district small and micro-enterprise office in linking pepper chain actors to finance?
- What is the role of the small and micro-enterprise office in improving the productivity of pepper in the region?
- What strategies do you think can be used to improve access to finance?
- What strategies do you think can be used to improve access to market and to get the premium price?

#### Appendix 7 Checklist for district rural land environmental protection bureau

#### **Checklist for District Rural Land Environmental Protection Bureau**

- What is the role of the district land management office in pepper production?
- What services do you offer to the farmer?
- What are the challenges in your service provision?
- What is the role of the District Rural Land Environmental Protection Bureau in linking pepper chain actors access to finance?

#### Appendix 8 Checklist for Goro town administration

##### **Checklist for Goro Town Administration**

- What is the role of Goro town administration in the pepper value chain?
- What service do you offer to the chain actors?
- What is the role of town administration in linking pepper chain actors access to finance?
- What are the challenges in service provision?
- What strategies are you following to link chain actors' accesses to finance?

#### Appendix 9 Checklist for processor

##### **Checklist for Pepper Processor**

- What is the role of pepper processor in the chain?
- Who is your supplier?
- What are the challenges in the pepper value chain?
- Do you have access to finance from any financial institutions?
- Do you have any support from any government or non-governmental organization?
- Do you have a credit package for farmers or other chain actors?
- What strategies would improve accesses to finance for the pepper chain actors?

#### Appendix 10 Checklist for Wholesaler

##### **Checklist for Pepper Wholesaler**

- What is your role in the pepper value chain?
- Do you have access to finance?
- What are the challenges in the chain?
- What is your role in financing the farmers?

#### Appendix 11 Checklist for a retailer

##### **Checklist for Pepper Retailer**

- What is your role in the pepper value chain?
- Do you have access to finance?
- What are the challenges in the chain?
- What is your role in financing the farmers?

## Appendix 12 Checklist for a collector

### **Checklist for Pepper Collector/ Local Trader**

- What is the role of the collectors in the pepper value chain?
- Do you have access to finance?
- What are the challenges in the chain?
- What is your role in financing farmers?

## Appendix 13 FGD`s with smallholder producers and financial institution

### **FGD with smallholder farmers**

- The importance of credit for farmers
- The role of credit in agriculture
- The challenges in accessing finance
- How to use credit efficiently?

### **FGD with financial institution**

- Challenges of Agricultural Financing
- Who Needs Finance in the pepper value chain
- Credit guarantee schemes for smallholder farmers
- Requirements on financing smallholder farmers and business owner

Appendix 14 Questionnaire for smallholder producers

Questionnaire for smallholder farmers

This questionnaire is aimed to collect data on “Establishing a relationship between financial institutions (FI) and pepper value chain actors”. I would like to thank you for your time and willingness in filling this questionnaire and I would also like to confirm that the information will be used only for research purpose.

You have the right not to mention your name.

Thank you!

Survey question

Date of data collection.....

Size of farm..... Sex of farmer.....

Age >18 ..... 18-29 ..... 30-45..... 46-60 ..... <60.....

Education status: Illiterate..... Elementary..... Diplom..... Degree ..... Masters.....

Location of farm..... Distance from the market.....

Type of pepper grown..... Variable costs.....Fixed costs.....

Total pepper yield per hectare..... Price of pepper per kg .....

Marketing system ..... contractual..... spot..... relational..... captive.....

1. Are there any cooperative societies in your area?

- A. Yes                      B. No

2. Are you a member of a cooperative society?

- A. Yes                      B. No

3. If the answer for question number 2 is No, why\_\_\_\_\_?

- A. Because of its requirements                      B. it is not important for your business  
C. No information about it.                      D. it is risky      E. It is not available

4. What is the degree of importance of credit for your business?
  - A. Crucial            B. likely important            C. Not important
  
5. Do you have access to credit?
  - A. Yes            B. No
  
6. Which financial institutions are a source of credit for your business?
  - A. Banks   B. MFI's   C. Cooperative societies   D. Browning for from traders   E. None
  
7. If you get access to credit for what purpose do you use the credit?
  - A. To buy Inputs            B. To build storage room            C. Home consumption
  - D. Other, Specify \_\_\_\_\_
  
8. Do you pay interest on the credit?
  - A. Yes            B. No
  
9. Which requirements are more requested for the credit?
  - A. Collateral   B. Income statement            C. Tax clearance certificates            D. Personal TIN no
  - E. Other specify \_\_\_\_\_
  
10. What is the challenges to have access to credit?
  - A. Repaying time            B. Collateral            C. High-interest rate            D. Other \_\_\_\_\_
  
11. Are there any difficulties in repaying the credit?
  - A. Yes            B. No
  
12. If the answer for question no 11 is Yes, what are difficulties in repaying the credit?
  - A. High-interest rate   B. Low price at harvest time            C. Short repayment time
  - D. Low production because of disease            E. Other, Specify \_\_\_\_\_
  
13. For what time interval did the financial institutions request the repayment?
  - A. 1 month            B. 3 Months            C. 6 Months            D. 1 year
  
14. Do you have access to extension service?

A. Yes                      B. No

15. If the answer for question no 14 is Yes, what is the role of extension service to link farmers with financial institutions?

A. High                      B. Medium                      C. Low                      D. Very low

16. Do you get another service from another organization?

A. Yes                      B. No

17. If the answer for question no,16 is Yes, what kind of service and which organization?

Organization \_\_\_\_\_ Service \_\_\_\_\_

Afaan Oromo Version

Gaaffiilee Qonnaan Bultoota Harka Qalleeyidhaf Qophaa`ee

Gaaffiilee armaan gadii kun kan qophaa`an oddeeffannoo waa`ee “haala walitti dhufeenyaa dhabbaata fiyinaansii fi qaamolee oomisha barbaarree, daldaaluu, qopheessuu fi raabsuu” keessatti qooda fudhatan walitti hidhuu irrattii kan qophaa`edha. Kanaafis yeroo keessanif isin galaateeffachaa gaaffilee armaan gadiitti dhiyaatan guutuu fi maqaa keessan barreessuu dhiisuun mirga keessanii fi odeeffannoon gutaamu kun qoraannoo kaanaf qofa kan fayyadu ta`a.

Galaatooma!

Gaaffilee odeeffaanno

Guyyaa odeeffaano.....

Umuri >18 ..... 18-29 ..... 30-45..... 46-60 ..... <60.....

Barumsaa: Kan hin baratin..... Sad 1faa ..... Diploma..... Degree ..... Masters.....

Ballina lafaa.....

Saala .....

Iddoo lafaa qonna.....

Fageenya gabaa.....

Gosaa barbaarre.....

Baasi jijjirama..... Baasi dhabbata.....

Omishaa waligalaa H.....

Hamma gurguura kg .....

Mala gabaa ..... Kontraata ..... Ciccita ..... Walitti dhufeenyaan .....Boji`a .....

1. Waldaan hojii gamtaa naannoo kana jiraa?

A. Eyyee B. Lakki

2. Ati waldaa hojii gamtaatti miseensaa?

A. Eyyee B. Lakki

3. Yoo deebin gaffii 2 ffaa Eyye ta`ee maalif \_\_\_\_\_?

A. Sababa haal- duree isaatif C. Hojii kiyyaf barbaachisa miti

B. Odeeffaanno hin qabu D. Bala qaba E. Hin jiru

4. Barbaachisumman liqiin hojii keetif qabu hagam?

A. Bayye barbaachisa B. Barbaachisa C. Hin barbaachisu

5. Tajajilaa liqii ni qabdaa?

A. Eyyee B. Lakki

6. Kannen armaan gaadi keessa isaa kamtu tajajila liqii sif kenna?

A. Bankii B. Walda liqii fi qusanna C. Walda hoji gamtaa D. Liqii daldaltoota irraa E. Hin jiru

7. Tajajilaa liqii kan argattu yoo ta`ee maalif fayyadamta?

A. Galtee omiisha bituf B. Mana kusaa hojjachuf C. Fayyida mana keessaf

D. kan bira \_\_\_\_\_

8. Dhalaa liqii ni kanfaalta?

A. Eyyee B. Lakki

9. Kan armaan gadi keessaa isaa kamtu liqiif gafataama?

A. Waabi B. Ragaa gaali C. Ragaa gibiira D. Lakk TIN E. Kan bira \_\_\_\_\_

10. Bu`aa ba`iin liqii wajjin waal qabatee jiru maali?

- A. Yeroo kanfaalti      B. Waabii      C. Dhalaa guddaa      D. Kan bira \_\_\_\_\_

11. Liqii kanfaalu irraatti rakkiinni jiraa?

- A. Eyyee      B. Lakki

12. Yoo deebin gaffii 11ffaa Eyye ta`ee Liqii kanfaalu irraatti rakkiinni jiruu mali?

- A. Dhalaa guddaa      B. Gaati gadaana yeero sassabu      C. Yeroo kanfalti gababa

- D. Omisha xiqqaa sababa dhukkubatin      E. Kan bira \_\_\_\_\_

13. Yeroon itti dhabbatnii finance kanfaalti deebiisi gafaatan?

- A. Ji`aa 1      B. Ji`a 3      C. Ji`a 6      D. Wagga 1

14. Tajajiila gorsaa qonna ni qabda?

- A. Eyyee      B. Lakki

15. Yoo deebin gaffii 15ffaa - Eyye yoo ta`e tajajiilli gorsaa qonna dhabbata finance wajjin walitti

hidhuf qodni inni qabu maali?

- A. Bayye gudda      B. Giddu galeessa      C. Xiqqa      D. Bayye xiqqaa

16. Tajajilaa bira dhabbata bira irra ni argatta?

- A. Eyyee      B. Lakki

17. Yoo deebin gaffii 16ffaa Eyye yoo ta`ee Tajaajila fi Dhabbata kam?

Dhabbata \_\_\_\_\_ Tajajiilaa \_\_\_\_\_

Photos

Photos 1 Photo from interviews



Goro town administration



Cooperative promotion agency



Rural land and environmental protection bureau



Custom and revenue authority



Small and micro-enterprise bureau



Goro district agriculture bureau

Photos 2 Photo with smallholder farmers



Photos 3 FGD with farmer



Photos 4 Field observation

