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Faculty of Tropical AgriSciences



**Constraints of cheese small-scale producers in Imereti
region of Georgia: middlemen the cause root or not?**

Master' thesis

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Declaration

I declare that I worked on my Master Thesis entitled: " Constraints of cheese small-scale producers in Imereti region of Georgia: middlemen the cause root or not?" by myself and that I used primary data collected in January- February 2016 and secondary data based on literature resources listed in the references.

22nd April 2016, Prague

.....
B.Sc. Pacifique Ingabire

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“If you do not know where you come from, you will not know where you go”

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Abstract

Small scale farmers rely on the local middlemen, due to their monopsony position to deliver products to the market. They are frequently portrayed in the literature as agents of exploitation of small farmers and source of failure of the free market assumptions. The aim of this study was to identify key constraints that limit farmers' productivity and market access in cheese value chain, to assess the role of middlemen, if they contribute negatively or positively to farmer's development and access to market and to assess how the horizontal integration of farmers in agricultural cooperative might contributed to the change of cheese supply chain and increased productivity. The study used quantitative and qualitative methods employing convergent parallel mixed method of research for different objectives, primary qualitative data were collected from small-scale cheese producers (n=100), middlemen (n=5) and retailers (n=12) using semi-structured questionnaires, secondary resources were obtained from Association of Young Economists of Georgia in collaboration with Czech University of Life Sciences in Prague and People in Need, the analysis was done using descriptive statistics in Ms excel, bivariate correlation, Friedman rank test and ANOVA in SPSS 22.0. The study found that middlemen in Georgian cheese market have a minor role in limiting access to farmers and are not the cause root of market constraints; farmers have access to market and price information. However, we found out that the main constraints in cheese marketing is low quantity produced and low retail price that farmers receive. The study found that there is a promising increase in level of processing and quantity of products supplied, increased total added value of the supplied commodities, reduction of transaction costs, better access to markets, higher bargaining power on the domestic market, and even improved access to international markets for some products if farmers would join an agricultural cooperative.

Keywords: Agriculture cooperative, monopsony position, internal and international market, value chain, horizontal integration

Table of Content

1. Introduction.....	1
2. Literature Review	3
2.1. Conceptual framework of the value chain.....	3
2.1.1. Actors in the value chain.....	3
2.2. Worldwide Livestock production.....	6
2.2.1. Dairy production	8
2.2.2. Dairy Value Chain	9
2.2.3. Constraints in the Dairy sector.....	11
2.3. Georgia.....	11
2.3.1. History of the agriculture sector	12
2.3.2. Livestock sub-sector in Georgia	15
2.4. Dairy situation in Georgia.....	17
2.4.1. Dairy Value Chain in Georgia.....	17
3. Objectives.....	22
4. Methods and Materials.....	23
4.1. Research design.....	23
4.2. Study area.....	24
4.3. Data Collection.....	25
4.3.1. First objective.....	25
4.3.2. Second and third objectives	26
4.3.3. Sample size calculation for small-scale producers.....	27
4.4. Methods of data analysis	27
4.4.1. Description of variables	27

4.4.2. Data processing.....	28
4.5. Limitations of the study.....	30
5. Results	31
5.1. First Objective.....	31
5.2. Second objective	35
5.2. 1. The role of middlemen in cheese value chain	36
5.2.2. Constraints in the cheese market	40
5.3. Third Objective	42
6. Discussion.....	47
7. Conclusion	53
8. References	54

List of tables

Table 1: Indicator and variables for third objective.....	28
Table 2: Average cheese prices (GEL per Kilo) and price margin.....	39
Table 3: Constraints perceived by small scale-farmers in the cheese market	40
Table 4: Friedman test statistic	40
Table 5: Descriptive statistics of public transport price and farmers who agree that price is high.....	41
Table 6: Chi-square test of association between public transport price and extent of what farmer believe price of transport is high	42
Table 7: Correlations between farmers who are satisfied and who want to join the cooperative.....	46

List of figures

Figure 1: Per capita net production Index (base 2004-2006)	7
Figure 2: Milk production share by region	8
Figure 3: Production of top 5 milk producers.....	8
Figure 4: World milk production by Animal	9
Figure 5: worldwide production of cheese (all kinds).....	10
Figure 6: Map of Georgia	11
Figure 7: Georgia share of land	13
Figure 8: Rural Population.....	13
Figure 9: Structure of GDP in % (2006-2015)	14
Figure 10: Output of Agriculture	15
Figure 11: Top five livestock animals in Georgian agriculture sector	15
Figure 12: Livestock and beehive numbers	16
Figure 13: Milk production in Georgia.....	17
Figure 14: Cheese value chain map for Imereti region.....	18
Figure 15: Map of study areas	24
Figure 16: Typical agricultural value chain in Imereti region.....	32
Figure 17: Type of traders that farmers trade with	36
Figure 18: Number of small-scale cheese producers who sale to middlemen and retailers.....	37
Figure 19: Distance traveled by farmers to reach retailers or middlemen.....	38
Figure 20: Source of cheese market information of small-scale farmers	38
Figure 21: constraints in cheese marketing	41
Figure 22: If farmers join a cheese cooperative, the output production will change	43
Figure 23: Farmers are able to work together horizontally and vertically in the cheese making and marketing.	43
Figure 24: If farmers join a cooperative, they can negotiate better price	44
Figure 25: The distribution channel will change once farmers integrate in the cooperative.....	45
Figure 26: Middlemen and retailers' point of view on distribution channel, after farmers join cooperative	45

List of abbreviations

ACDI/VOCA	Agricultural Cooperative Development International and Volunteers in Overseas Cooperative Assistance
AYEG	Association of Young Economist Georgia
EC	European Commission
EEAS	European External Action Service
FAO	Food and Agriculture Organization of the United Nations
Geostat	National Statistic Office of Georgia
GOG	Government of Georgia
HVA	Hogeschool Van Amsterdam
IFAD	International Fund for Agricultural Development
IIRR	International Institute of Rural Reconstruction
KIT Institute)	Koninklijk Instituut voor de Tropen (Royal Tropical
MOA	Ministry of Agriculture
TPG	Travel Promotions Georgia
USAID	United States Agency for International Development

1. Introduction

Georgian agriculture and livestock sector contribute 9.2 % of the total GDP of the country and employs 53 % of the population (EEAS and EC, 2014; Geostat, 2014). Small scale farmers-, who practice subsistence farming, are characterized by limited access to information, poor infrastructure, non-institutionalized food value chain and limited size of land (USAID, 2011).

Despite the Georgian favorable climate to grow a diversity of crops (USAID, 2010), farmers produce what they can only consume. Even if, the production does reach the market, problems evolve on market accessibility, lack of information, traders and price distortions (USAID, 2011). High and stable demand of milk and dairy products in Georgian agriculture shows a steady increase in the livestock production (FAO, 2009) which led farmers to add value in producing certain types of cheese production in Georgia (AYEG, 2015). Cheese is considered as a traditional product, found on internal markets of Georgia (Euromonitor, 2015) and contributes in poverty alleviation and increase the social welfare of farmers.

Among the researches of value chain in Georgia, the Economic Prosperity Initiative (USAID, 2011) assessed some of the agricultural products including fruits, hazelnuts and vegetables but no dairy production. Later on, AYEG (2015) described the dairy value chain as a whole from production. However, there is a gap to fill when it comes to the role of actors in the value chain, especially for middlemen in the cheese value chain; because first, cheese is an internal consumed product with little international market access and shows potential to develop the sector through horizontal integration of farmers.

With a value chain approach as a main conceptual framework, our research identifies key constraints that limit farmer's productivity in the local distribution of cheese. Based on the key findings it continues also with theoretical assessment of how agricultural cooperatives could ameliorate studied market failures in the value chains.

The second chapter of this thesis elaborates the concept of value chain approach focusing on actors that are involved in value chain activities and especially middlemen; the second part introduces the situation of agriculture sector and livestock production in Georgia and how Georgian agricultural has evolved of the years after the fall of the Soviet Union. The chapters of methodology, results, discussion and conclusion follow.

2. Literature Review

2.1. Conceptual framework of the value chain

The value chain describes physical activities that when combined, bring products from production to consumption. It involves individuals who interact alongside the chain, their skills such as design, production, marketing, distribution of services and goods to the final consumer (Kaplinsky and Morris, 2000). Since the founder of the value chain theory Michael Porter- who introduced the concept of value chains in 1985 (Ankli, 1992), several other studies have used the value chain approach to identify constraints that exist in organizational competitiveness and bottlenecks that hinder the service deliveries and opportunities for farmers to be able to optimize, alleviate poverty, increase household income and reduce transaction costs (Oguoma et al., 2010; Mabuza, 2013; Vadivelu and Kiran, 2013; Barron et al., 2014). The concept of value chain analysis present theoretical and practical tools to helps researchers to understand the links between agents, dynamics and structural composition, as well as how prices increase with value addition (Herr and Muzira, 2009; Bolwig et al., 2010; Nang'ole et al., 2010).

According to Leonardo et al. (2015) and Barron et al. (2014), it is a tool that helps smallholder's decision making of sales arrangements to attain several and simultaneous objectives in the supply chain. Value chain approaches contribute to food security studies Reif et al. (2015). In the context of analytical framework and assessment of different components, challenges and limitations in the value chain, as well as global marketing scheme of large manufactures (Hattersley, 2013).

2.1.1. Actors in the value chain

The value chain links growers, processors, distributors and retailers together in order to facilitate the product's availability, price, and composition from the beginning up to the final consumer (Webber and Labaste, 2010) and implicitly analyze how every activity along the chain increases value of the product (Hattersley, 2013; Franz et al., 2014). Hough (2011) argues that value chain analysis should focus on input suppliers, small scale farmers (who portrait minimum wage, low value addition and scarce resources) as important actors in the

value chain. On one hand, [Alemayehu \(2011\)](#) emphasizes on competitors and bigger actors (exporters and traders- either legal or illegal marketers) in the value chain, that make it difficult for small scale farmers to acquire necessary information to compete on either internal or international markets; and on the other hand [Mabuza \(2013\)](#) argues that local producers in the mainstream market show poor value chain governance and lack of vertical integration- subject consumers and producers to higher transaction costs.

Besides local producers who mostly are small scale farmers in the least developed economies, other actors whom, we will concentrate on during this study are middlemen- who sometimes also assume the role of wholesale traders.

2.1.1.1. Middlemen

Middlemen in agricultural economics and productions are described as- (i) people who do not own what they sell (not primary producers) ([Lee, 2013](#)); (ii) trading entrepreneurs who bridge the gap between the increase of consumer demand and supply ([Chau et al., 2016](#)); (iii) wholesale traders, distributors, service providers- who connect to different markets and other actors (other wholesalers, retailers, industrial processors) by taking up large scale and connect to various consumers to transfer cost and reduce transaction cost, (iv) providers- who fetch resources and find sources ([Gadde and Snehota, 2001](#)), (v) travelling traders- because they spend most of their time on the road where they have to pay transport costs and meet resident wholesalers- who stay in the large markets or supply to schools, supermarkets, prisons and restaurants ([KIT and IIRR, 2008](#)), (vi) farm gate collectors -as they buy at farm gate from the farmers (go door to door to collect and assemble large production and sell at higher prices ([Nainabasti and Bai, 2009](#)).

The Research on middlemen is not a new concept. [Chandler \(1977\)](#) showed that during the pre-industrial era, the middleman was a trader-who dominated the market where he had to buy and sell different type of products, and occupied different positions: “exporter, wholesaler, importer, retailer, ship- owner, banker and insurer”. According to the theory of [Bucklin \(1965\)](#) and [McVey \(1960\)](#) in the

distribution channel, the middleman was associated as an independent market- who buys and later sells to consumers.

However, (Oguoma et al., 2010; Vadivelu and Kiran, 2013) and (Nowakunda et al., 2010; Lee, 2013; Laititi, 2014) argue that middlemen can be: (i) agents- paid in commission of what they have traded or take few products as wages; (ii) speculative- who in the marketing channel sell few goods in the sole purpose to gain and profit from market uncertainties; (iii) information asymmetry and price distorters (they deviate prices and give farmers lower prices compared to wholesale traders, (iv) hold a monopsony position (an exploitative position where there is one buyer and many sellers) towards the farmers; (v) assemble large quantities of raw products or final products and trade them to the retailers.

According to the theories of perfect market competition; - market information asymmetry (when some people know more and know different things than others) is always attached to imperfect market (Stiglitz, 2001). Moreover, the author criticized the fact that some markets do function despite the information asymmetry, his argument is based on the fact that information is included in the transaction costs. According to Lee (2013) and Laititi (2014), information asymmetry and market irregularities challenge farmers to turn into middlemen's ad hoc arrangements, because middlemen possess more information on the future trends of commodities. Sometimes when middlemen collect at farm gate, farmers rather sell directly the harvested quantity to middlemen in order to earn money than wait for later. Farmers choose that option to sustain their families and their basic needs.

Abdelali-Martini et.al (2014) and Oguomo (2010) elaborated the factors that push farmers to trade with middlemen and the role of middlemen in the supply chain. During their researches, they emphasized on the general view of farmers towards the middlemen with other various actors in the value chain, the authors found that the middlemen have a strong monopsony position due to the information asymmetry. (Mitra et. al, 2013) associates the factors that push farmers to supply with middlemen, with various connections and ability of middlemen to network and to transport enough and bigger quantities.

Despite portraying middlemen as antagonistic, middlemen can adjust the market disparities and establish rules, standards and policies (Abdelali-Martini et al., 2014); those middlemen facilitate other actors by disseminating price information among other actors, ensure ethics and trust on the market- in the only objective to create order on the market, and not gain profits. Middlemen play an important role as -they sell or distribute in larger volumes and bigger markets (Zhang, 2010; Vadivelu and Kiran, 2013), middlemen provide financial arrangements to small scale farmers, loans, access to information and markets, motivate farmers to trade with them (Abdelali-Martini et al., 2014); middlemen permits consumers to have a larger basket of choices (Laititi, 2014). Lastly, theories consider a middleman- as a two way link between supplies and consumers- as he acquires different product and assures exchange; however (Gadde and Snehota, 2001) argue that these types of businesses and activities between farmers and middlemen require maintaining a close relationship with consumers and suppliers to adjust the market.

2.2. Worldwide Livestock production

Farmers around the world- especially in the third world are involved in the animal production- which contributes to 30 % of agricultural GDP in the developing countries (Swanepoel et al., 2010). Due to the increase of migration, urbanization and globalization- Consumers have changed their diet eating patterns, which lead to the increase of per capita net production (Figure 1) and rise of intensive dependency on food crops (animal feed). Higher productivity in the livestock production increase living standards of small scale farmers, alleviate poverty and contribute to the food security of the households (Kristjanson et al., 2005; Herrero et al., 2009). For small scale farmers- poor households, Mixing cropping and livestock production together (crop-livestock) contribute majorly to global food supply and livelihoods more than relying either on livestock or agriculture only (Duncan et al., 2013) .

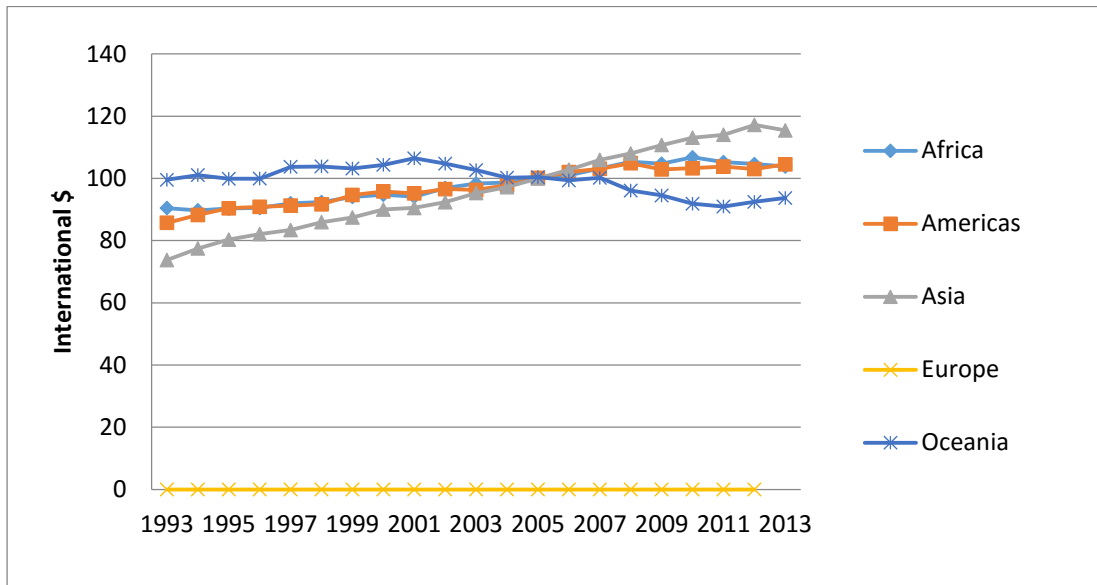


Figure 1: Per capita net production Index (base 2004-2006)

Source: Author’s calculation based on data from Faostat (2016)

In the developing countries, livestock production is a source of income and employment; contribute to the household’s nutrition dietary needs, alleviate poverty and contribute to food security (Randolph et al., 2007; Swanepoel et al., 2010). The livestock is composed of many products that can be consumed as a source of calories: such as eggs, meat, honey and milk. According to FAO (2011), livestock production holds a very important role in the financial inclusion of small scale farmers; in a system with lack of access to loans; livestock can serve as assets in the household (as accumulated capital) (Hoddinott, 2006). Livestock also serves as a cultural bond in the societies, especially in Africa- where cows serve as dowry in matrimonial ceremonies.

In the developing countries; farmers still face constraints due to the archaic system of production, lack of enough natural resources (water, enough animal feed), diseases, limited access of markets, agricultural market information asymmetry, lack of value addition, high transaction costs, services, inadequate infrastructures, natural disaster (due to climate change), political instabilities (sometimes), price fluctuations and above all poverty (Randolph et al., 2007; FAO, Undated; FAO, 2011; Oosting et al., 2014).

2.2.1. Dairy production

The worldwide production of milk in the recent years saw a tremendous increase - because of the increase of animals (FAO, Undated), by region the dairy production is led by Europe with 35 % of total production (Figure 2). Countries wise, India leads the milk production (Figure 3). Milk production is obtained from different animals (cattle, goat), as shown on Figure 4, the cattle milk leads in the overall milk production (Faostat, 2016).

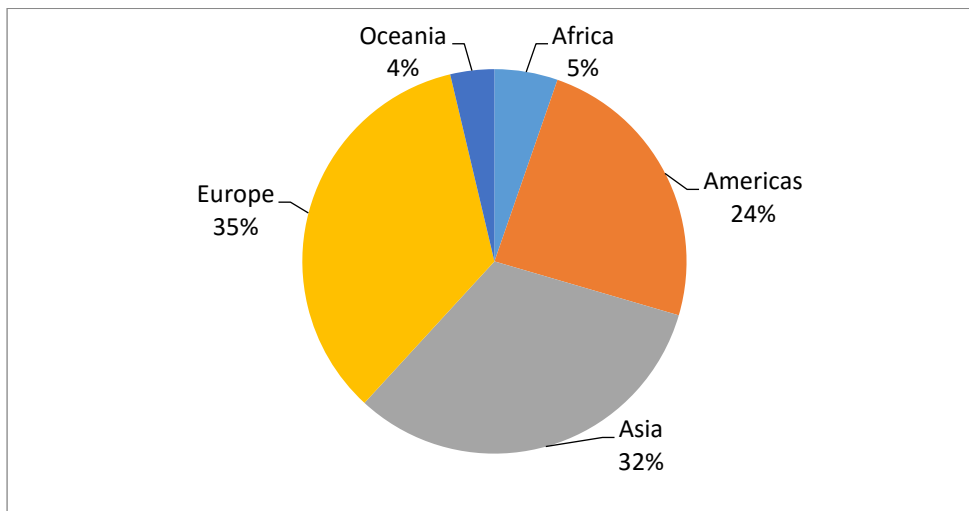


Figure 2: Milk production share by region

Source: Author's calculation based on data from Faostat (2016)

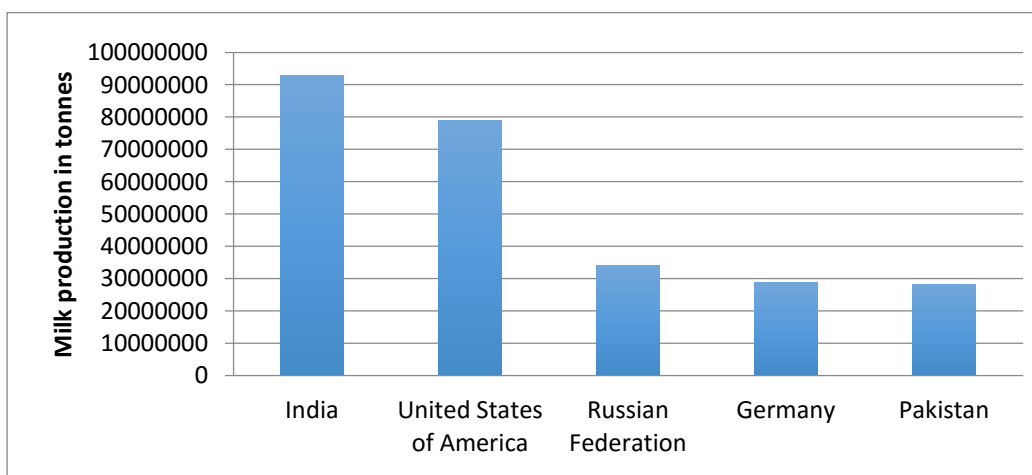


Figure 3: Production of top 5 milk producers

Source: Author's calculation based on data from Faostat (2016)

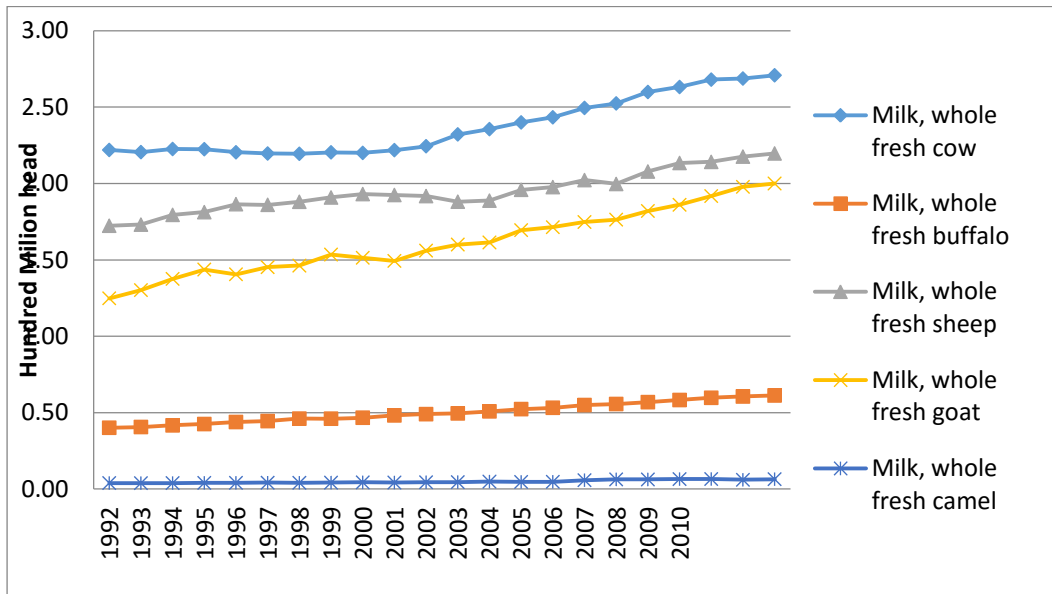


Figure 4: World milk production by Animal

Source Author's calculation based on data from Faostat (2016)

2.2.2. Dairy Value Chain

The dairy sector employs more than 150 million farmers around the world (FAO, Undated) and practice extensive subsistence farming, in the rural areas. The value chain in one way informs socio-economic stakeholders what strategies to use in marketing and value adding activities; on the other way, value chain elaborates how to conduct epidemiological risk analysis assessments, in case there is a breakout disease in livestock, it would inform concerned actors and mitigate potential risks of contamination (FAO, 2012). Gerber et al., (2013) emphasized that the dairy sector is demand driven, because of the population growth and higher demand of the milk products. Even though small scale farmers encounter various problems to market and to produce (Swanepoel et al., 2010), Alemayehu (2011) associated it with low productivity, lack of enough resources to value addition, lack of capital to invest, lack of information- in the production system, prices, consumer preferences, and competitors in the value chain.

Value chain in livestock is extremely dynamic because of how people feed (meet their dietary needs) and their livelihood necessities as cattle owners depend on the income from selling milk, cheese or other processed milk products (FAO, 2011).

Kristjanson et al. (2005) argue that despite the dynamic aspect in dairy value chain, small scale farmers can improve their livelihood. The authors emphasize to tackle poverty at very small groups: such as farmers Unions, agricultural cooperatives, rural producer organizations- that prove to increase production at economies of scale (reduced transaction cost), gain collective bargaining power and ensure market participation.

2.2.2.1. Cheese

Cheese is chemical and biochemical reaction from a concentrated milk product delivered especially from cow, sheep, and goat or buffalo milk. Cheese value chain: (i) identify actors from milk producers, labor, and milking production; (ii) categorize small scale farmers according to the type of animals used; cattle, sheep or goat (Tellez et al., 2011); (iii) is analyzed according to each horizontal integration- links between agents what organizations and arrangements they have made and by vertical integration, meaning alliances between various actors along the chain (Tellez et al., 2011; Bertazzoli et al., 2011).

Among cheese producing countries, the United States of America lead the top 5 worldwide cheese producers (Figure 5), in all kinds of cheese.

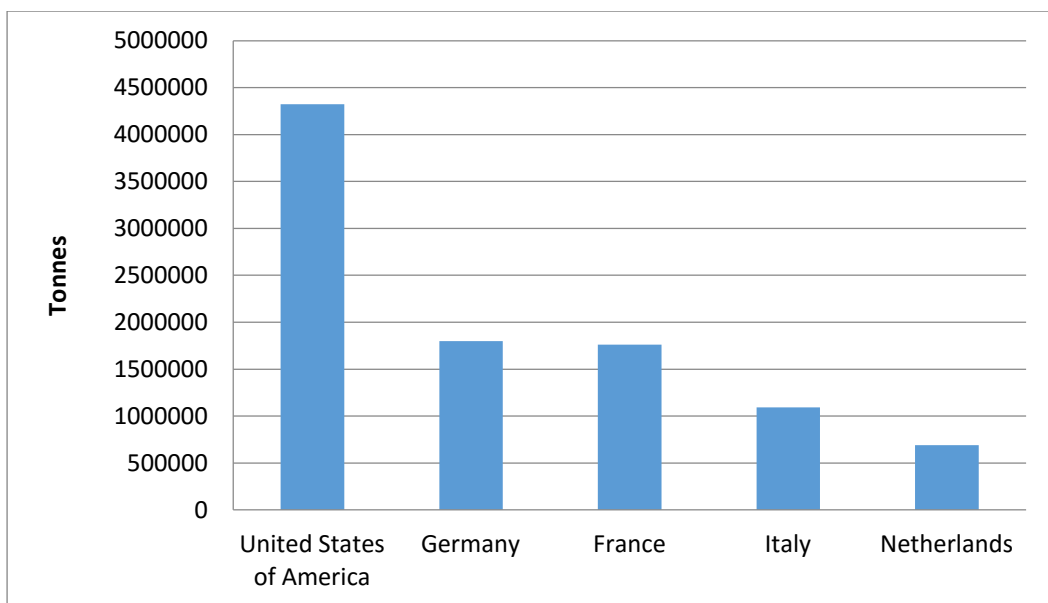


Figure 5: worldwide production of cheese (all kinds)

Source: Author's calculation based on data from Faostat (2016)

2.2.3. Constraints in the Dairy sector

Despite the overall increase of the livestock production- which has led to the increase in the production, especially in Asia (Swanepoel et al., 2010), livestock production is facing major challenges such as climate change and the production system. Dairy products such as cheese and yoghurts lack appropriate health sanitary equipment which reduce the value addition, and increase transaction costs. In Vietnam for example, farmers as well as consumers have limited access to dairy products due to lack of dairy processing companies (Khoi, 2013). Apart from constraints on the production level, the dairy sector also faces major challenges in policies, institutions and markets (Swanepoel et al., 2010). According to Abdelali-Martini et al., (2014), Syrian farmers, face marginalized markets, dependency on middlemen for loans and credit and cheese processors.

2.3. Georgia

The country lies in the Caucasus region (Figure 6), with a territory of 69,700 km².



Figure 6: Map of Georgia

Source: UN, 2015

2.3.1. History of the agriculture sector

The Agriculture of Georgia is in the increase despite the problems it faced after the collapse of the Soviet Union (USAID, 2010; Millns, 2013). During that period, Agricultural sector was efficiently using the land resource (producing more on a small land area). Due to several conflicts and political instabilities that marked the history of Georgia in the last two decades, agriculture sector perished and consistently declined because of it lacked adequate infrastructures, know how transfers, knowledge, access to market and information (Saari, 2011; FAO, 2012; EEAS and EC, 2014); which affected the agricultural exports, caused a stagnant agriculture production of land and deepen the country into being a net food importer because of the rising of domestic demand and food insecurity. The arable land suffered prior to privatization, lack of crop rotation practices, and low use of fertilizers, improved seeds and adequate soil management practices, thus, 33 % of arable land suffered from erosion (USAID, 2010).

In 1991, after the independence, the GOG implemented several reforms to transition into market oriented economy (Millns, 2013); to boost agriculture production and improve economic condition after the ravishing civil war (ACDI/VOCA, 2013; Millns, 2013). One of the reforms was land reform- where the GOG had to privatize and lease up to 1.25 hectares back to the farmers (Now, 94 % of the farmers own 1ha of land) (USAID, 2010). According to Faostat (2006), in 2011, the total cultivable land was approximately 35.5 % of the total area (Figure 7).

Upon implementing policies and democratic reforms, Gross Domestic increased by 8.5 % in 2012. The GOG, civil society and different organizations provided technical support to subsistence farmers with low income (Lerman and Sedik, 2014).

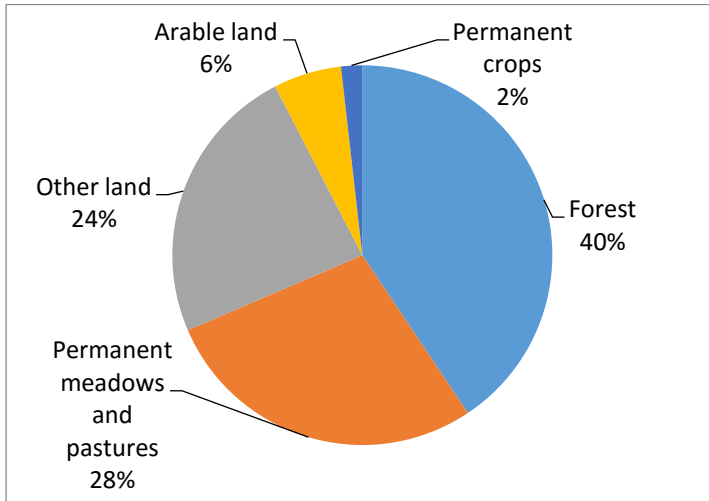


Figure 7: Georgia share of land

Source: Author’s calculation based on data from Faostat (2016)

2.3.1.1. Georgian Agriculture

Agriculture is the main source of income of rural population (Figure 8) - who relies on the main products such as berries, potatoes, maize and other agriculture crops (EC, 2014).

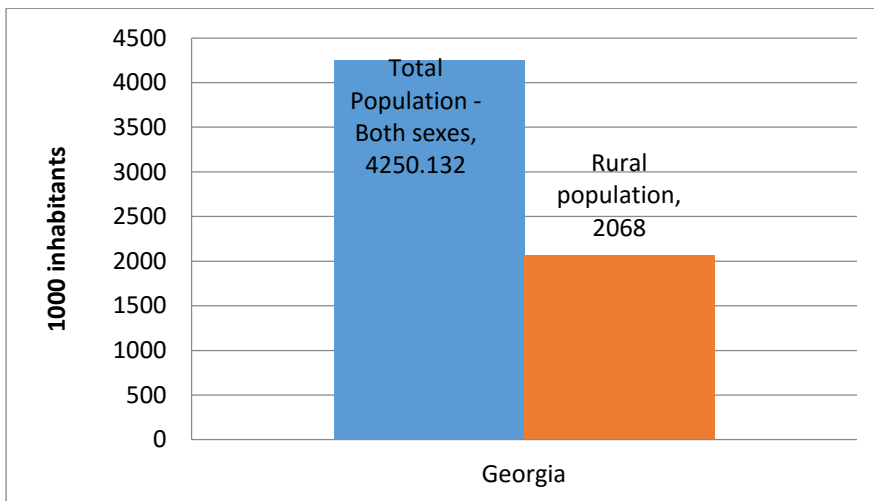


Figure 8: Rural Population

Source: Author’s calculation based on data from Geostat (2016)

The total production of the agricultural sector is composed of growing grain crops, fruits, walnuts, vegetables, spices, animal husbandry and food processed products

(such as wheat, flour, dairy products, alcohol beverages and other food processed) (MOA,2014) with 9.2 % share in the total GDP (Figure 9) (Geostat, 2014).

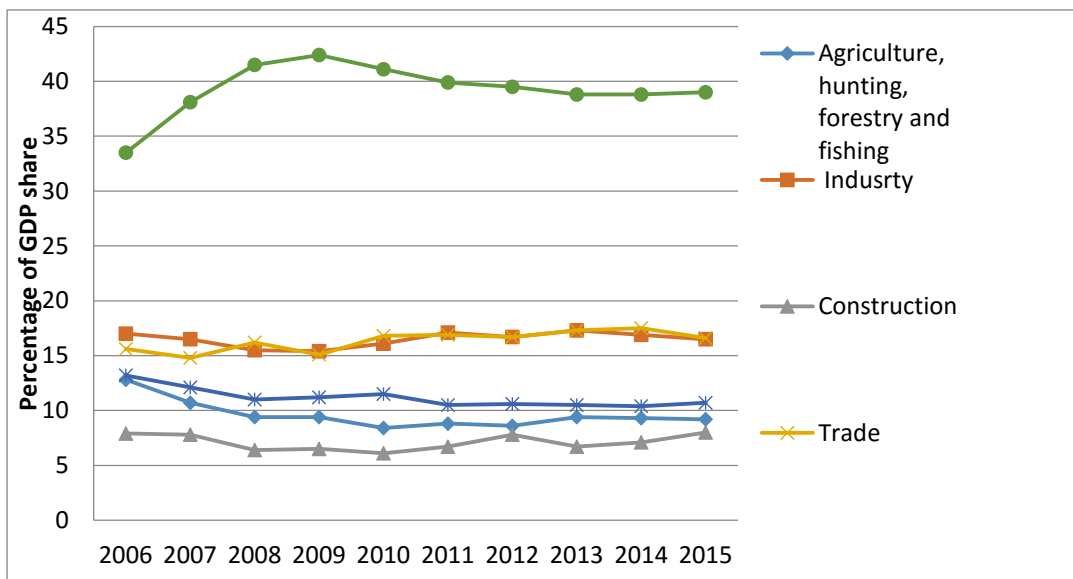


Figure 9: Structure of GDP in % (2006-2015)

Source: Author's calculation based on data from Geostat (2016)

Georgian Agriculture has a favorable and diverse climate in different region (Mirotadze et al., 2009) to grow berries, wine seedlings, maize and hazelnuts. Despite the fact that farmers have access to land, farmers attribute different products on the arable land, according to the type of soil, fertility, irrigation, sunlight, wind and the previous crops experience (Elizbarashvili et al., 2006).

According to the national statistics office of Georgia (Geostat, 2014), the output of agriculture has been increasing from 2010 (2241.8 million GEL¹) till 2014 (3378.1 million GEL) (Figure 10) and plant growing shows an increase share in the overall total agriculture from 2010 (42 %) and a drop in 2012 (39 %) to later on increase again to 44 % in 2014.

¹ 1 GEL = €0.38, from the National Bank of Georgia, April 2016

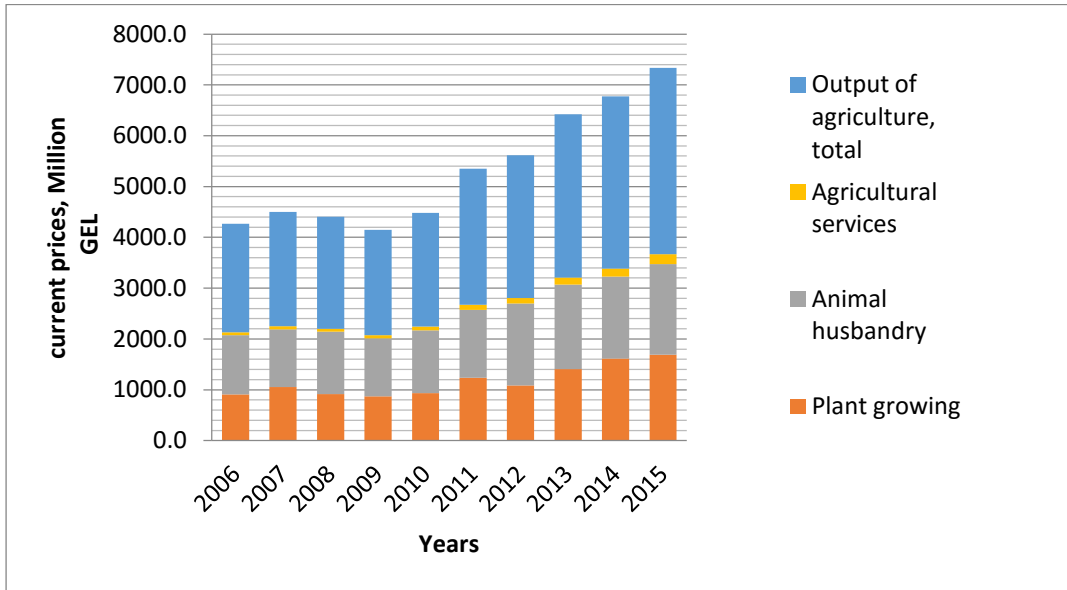


Figure 10: Output of Agriculture

Source: Author's calculation based on data from Geostat (2016)

2.3.2. Livestock sub-sector in Georgia

The following species are utilized in primary livestock production: cattle, pigs, sheep (Figure 11) and goats, poultry, fish and bees.

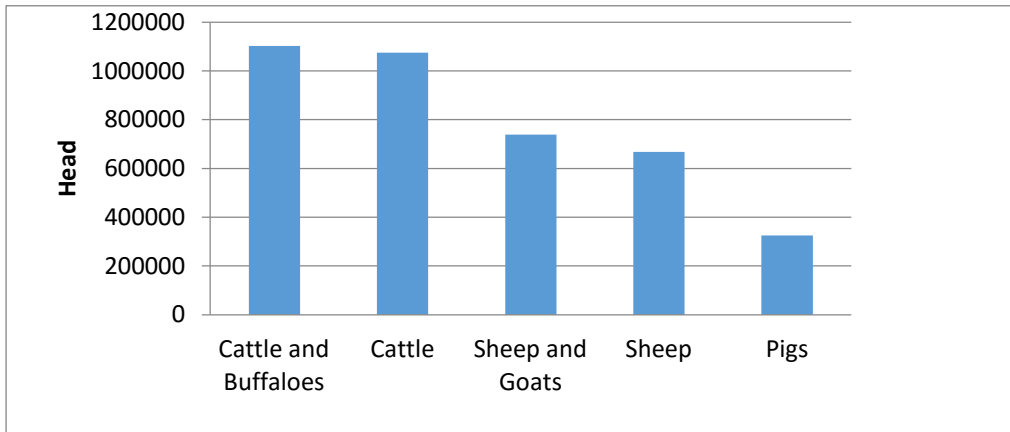


Figure 11: Top five livestock animals in Georgian agriculture sector

Source: Author's calculation based on data from Faostat (2016)

According to [Geostat \(2016\)](#), since the 1950s the livestock number were constantly increasing until 1991 and increased again from 1998, however, the quantities fluctuated again amidst 2003 to increase again in 2010 (Figure 12) . Livestock were less by 36 % compared to the 1990s.

Cow milk is predominant in milk production, while pork, meat and poultry are equally represented in meat production. Locally adapted breeds (see Appendix 4) have far greater significance in all livestock production than modern imported breeds. The most important primary livestock products are meat, milk, eggs, fish and poultry. Georgian regions differ in respect of significance of these products. The importance of secondary products in Georgia is related to particular regions, depending on geographic, social and economic status, management of natural resources. In the last years there has been a significant increase in livestock product export, owing to their import ([AYEG, 2015](#)). Imereti region is the second highest cattle rearing with 211.6 thousands heads of livestock, following Samegrelo and Zemo svaneti and the highest milk producer ([Geostat, 2014](#)).

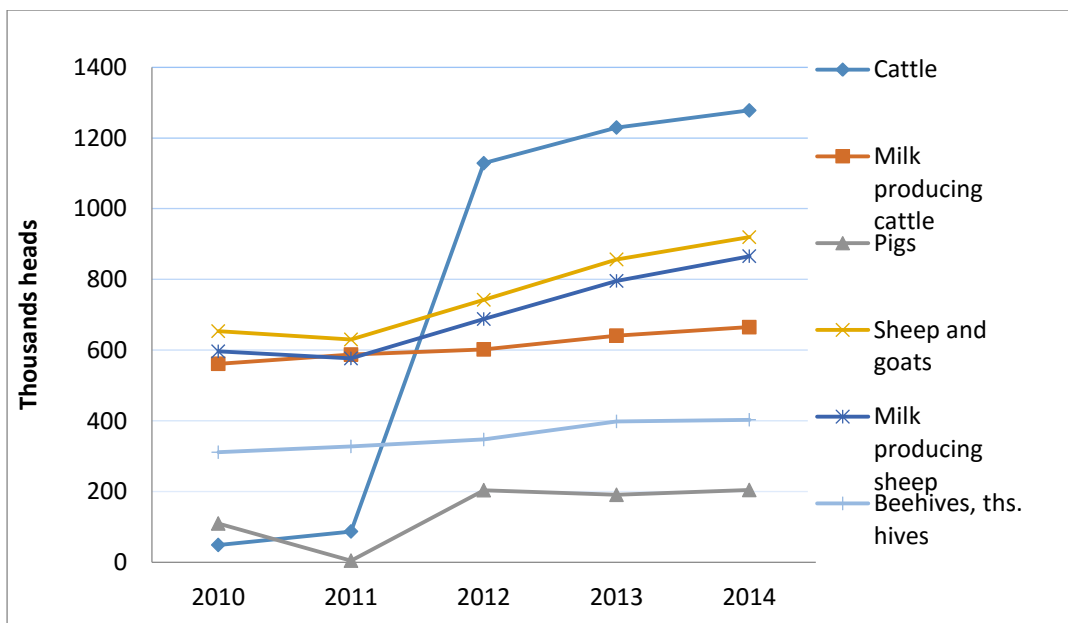


Figure 12: Livestock and beehive numbers

Source: Author's calculation based on data from Geostat (2016)

2.4. Dairy situation in Georgia

Diary production is one of the oldest and the most traditional agricultural sector in Imereti and Racha regions as well as in the whole Georgia. According to Geostat data, 604.7 million liters of milk were produced in Georgia in 2013. Milk production share in GDP was up to 2 %. During recent years the number of cattle livestock has been increasing (Figure 12) making the milk production also rise up, but with relatively low trend (Figure 13) (AYEG, 2015).

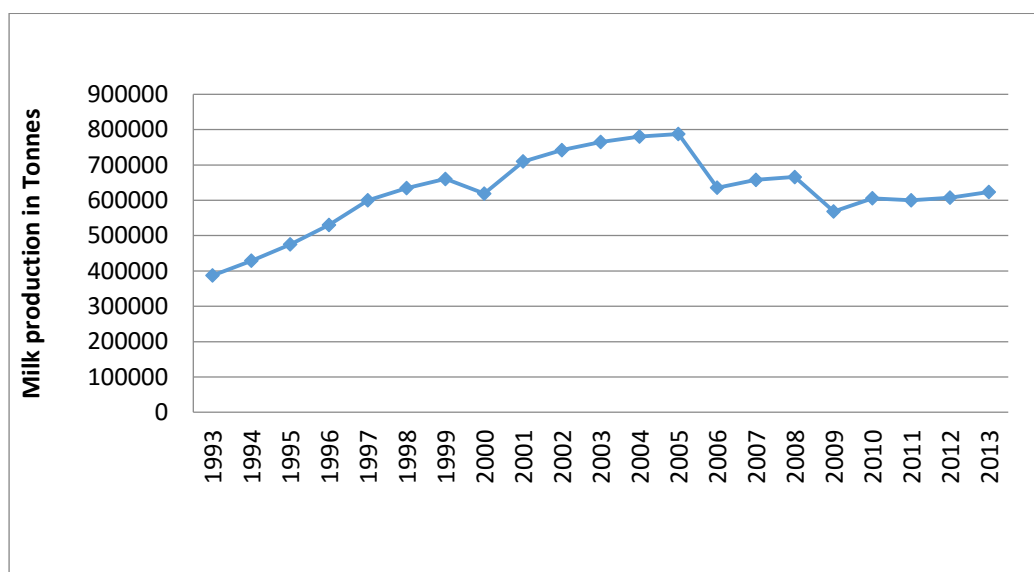


Figure 13: Milk production in Georgia

Source: Author's calculation based on data from Geostat (2016)

There is a high and stable demand of milk and dairy products in Georgian Agriculture and a steady increase in the livestock production (FAO, 2009).

According to AYEG (2015), 99 % of country wide produced milk was received from cattle and only 1 % from goat and sheep.

2.4.1. Dairy Value Chain in Georgia

The cheese value chain (Figure 14) in Georgia begins with input suppliers: - veterinary services provide artificial inseminations, breeds and – other livestock farmers who sell cows to other farmers in terms of procreation and productivity. Milk and cheese producing farmers produce cheese on their own, except few small scale farmers who supply milk to a cooperative in (Khoni) to later make cheese.

After producing, the cheese is refrigerated in small containers, and continues to either middlemen (who go door to door and buy at farm gate and sell through retailers in the local open markets) or to wholesale traders (who supply retailers, restaurants within that region). Wholesale traders assemble bulk production from the local market- where he waits for farmers to deliver their production. However, large and medium scale farmers work with several wholesalers and deliver to local market, supermarkets and restaurants on daily basis (HVA, 1999; AYEG, 2015).

Local open markets are characterized by retailers who sell directly to final consumers. Retailers assemble the cheese from a wholesale trade or middlemen and sometimes directly from small scale farmers. According to AYEG (2015), family members do not sell cheese by themselves on local open market. Restaurants- play also a role in the cheese marketing; they receive the cheese from different actors (either directly from small, medium and large-scale farmers or wholesaler traders who supply large quantities).

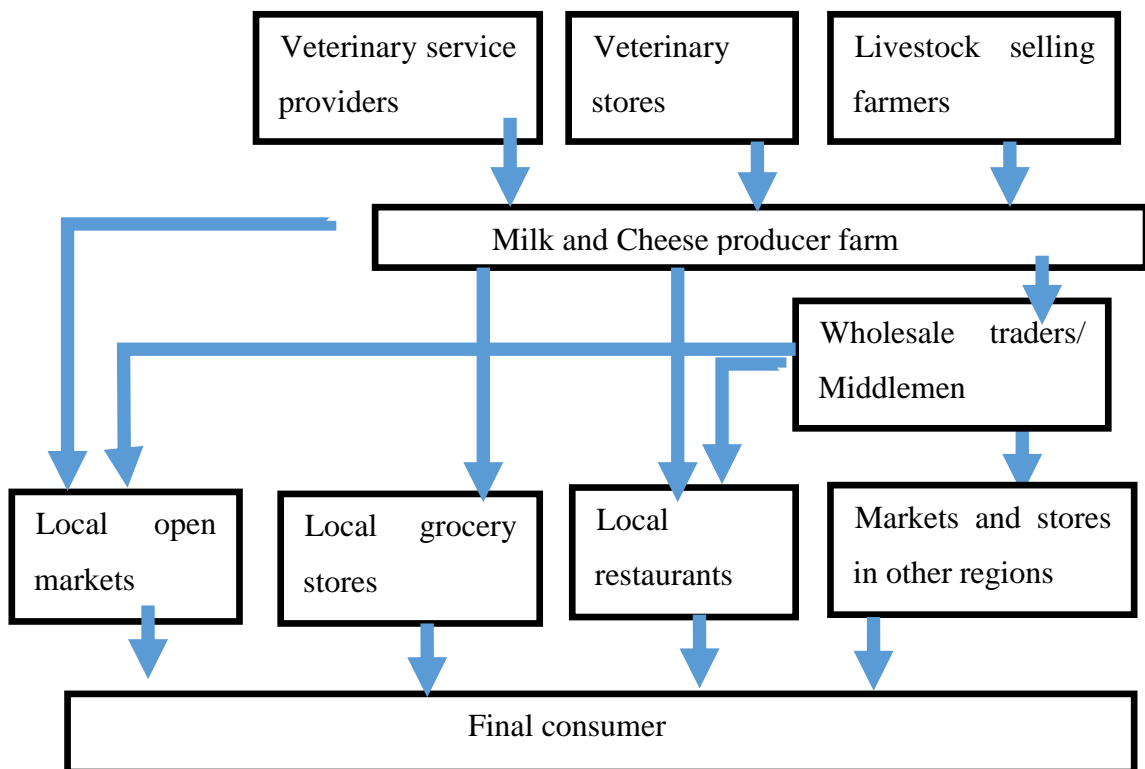


Figure 14: Cheese value chain map for Imereti region

Source: AYEG, 2015

2.4.1.1. Productions system

The production of milk and dairy products (such as cheese) increased from state owned farms to private owners after independence. There are only few products processed from milk and there are only processed with natural and traditional practices, with little attention to packaging and lack of marketing concepts (HVA, 1999). The main dairy products on Georgian market are produced by either farmers with 1-10 cows (see Appendix 4) per household who consume half of the production at home and another half at the market (AYEG, 2015). However large small scale farmers (10-100 cattle) are involved in the marketing and selling, one farm in Racha (which has 400 livestock) and 5-7 farms (50-100 livestock) sell on bigger portion and quantities. The production system merely depend on climatic conditions and natural environment- In winter there are low quality of milk due to the poor feeding of cattle, while in winter there is intensive mountainous and alpine pastures (quality and green grass) (AYEG, 2015). Among the milk products that exist on the Georgian market, there is matsoni (type of yoghurt), naduri (whey curd), smetana (sour cream), imported sweet condensed milk and several types of cheese (HVA, 1999).

Cheeses (all kinds) are produced from 85 % of milk produced by farmers. Cheese production plays an important role on the income and living standards of the small scale producers (AYEG, 2015). The main products and types of cheese produced are sulguni, mozzarella cheese, imeruli, curd cheese, cottage cheese- which are served with all meals. Imeruli cheese is the most famous and cheap ones than sulguni (HVA, 1999; AYEG. 2015).

Milk is sold fast on the local market to avoid spoilage especially for farmers-who do not have cooling storage and transportations means and appropriate facilities; however the price of milk is low compared to the processing of cheese and future value addition (AYEG, 2015).

2.4.1.2. Cheese domestic market

Cheese in Georgia is considered as a traditional product, where households produce certain types (as seen on Picture 1 and Appendix 4) either for home consumption, festivities, or market oriented business. Georgian cheese is found among the products on internal markets and not on external markets (AYEG, 2015).



Picture 1: Cheese on the local market

Source: Author

Imeruli - which is the cheapest and affordable cheese can be found on the local market. In Imereti region, 60 % of the production is sold by wholesalers (to other regions and open market in the areas) while 40 % of the production is sold by farmers in open markets, supermarkets and restaurants. The reputation of farmers and traders on the market provides assurance of the good quality of cheese and the degustation which is carried while buying or selling. The decision of farmers to sell through middlemen or wholesale traders is carried away informally. Farmers might choose to sell directly to retailers and the next day, they can choose to sell door to door. Sulguni and Imeruli type of cheese do not go beyond internal consumption (AYEG. 2015).

2.4.1.3. Constraints in the cheese value chain

Although Georgian favorable climate- provide green pastures for animal to graze on, mild winters, good fodder crop production (which does not require irrigation), unutilized land ([Elizbarashvili et.al, 2006](#); [Mirotadze et al.,2009](#)), high milk and dairy products demand, the long lasting tradition in the cheese making (milk production) and cattle breeding experience, farmers still lack of: appropriate institutions on the macro and micro level (such as non-functioning milk processing plants and modern equipment), investments, enough capital, know-how, skills qualification, regulated framework of the market, quality control for standards in health and lack of experienced and skillful human capital ([HVA, 1999](#); [AYEG, 2015](#)).

2.4.1.4. Price of cheese

The price of cheese on Georgian market is determined by demand and supply (the number of suppliers and buyers) on the market. A large number of either sellers or consumers are likely to influence the price. According to [HVA \(1999\)](#), the price of milk was GEL 0.3-0.4 per liter and cheese was GEL 3-7 per kilogram; however the price has been increasing over the years, according to [Geostat \(2014\)](#), the average price of Imeretian cheese was GEL 8.02 per kilo.

3. Objectives

With a value chain approach as a main conceptual framework, the aim of the thesis was to identify key constraints that limit small-farmers cheese producers in the local distribution of cheese. Based on the key findings it continues also with theoretical assessment of how agricultural cooperatives could ameliorate studied market failures in the value chains.

The research is structured into three specific objectives which were:

1. To critically analyze and compare cheese value chain with 10 other value chains of typical local products
2. To assess the role of middlemen in the cheese value chain of Georgia
3. To assess how composition of value chain might change through horizontal and vertical integration, if local small farmers join cooperatives.

The research questions are:

1. Do middlemen hold rather exploitative monopsony position or actually contribute to the market access of small farmers and increase of their output?
2. To what extent are small-scale cheese producers satisfied to willingly join a cooperative, integrate horizontally and vertically towards productivity and change of distribution channel?

4. Methods and Materials

4.1. Research design

Our research design combines different methods for different objectives. For the first objective we used mainly analysis of secondary data based on studies that Association of Young Economists of Georgia conducted in collaboration with the Czech University of Life sciences Prague and People in Need. Their research was a part of regional value chain analysis for main agricultural products in Imereti and Racha regions - which was funded by European Neighborhood Program for Agriculture and Rural Development in Georgia (ENPARD Georgia).

The second objective was achieved by using a descriptive research based on the value chain theory. This part builds on survey type of mixed research and first-hand experience through personal interviews of authors with cheese farmers. The research design borrows from both - quantitative and qualitative methods employing convergent parallel mixed method of research (Creswell, 2014). This allowed for triangulation of quantitative and qualitative data and better interpretation of results. For quantitative part of the research we use the cross-sectional non-experimental type of design based on non-random sample of cheese farmers from three villages with high concentration of cheese production in Imereti region of Western Georgia.

The second objective follows Abdelali-Martini et al., (2014) and Abebe et al., (2016)'s descriptive part of their research on institutional arrangements and contractual relationships between middlemen and small scale producers. The second objective also follows Chau et al., (2016) 's study on the distance and transport factor of binding middlemen and farmers in a spatially dispersed economy-where production takes a place at a certain distance away from transport facilities.

Finally for the last objective which was to assess how composition of value chain might change through horizontal and vertical integration, if local small farmers join cooperatives we used hypothetical and deductive analysis. We used quantitative and qualitative methods of research.

4.2. Study area

Imereti region has a total population of 536,052 inhabitants. It is characterized by a total 19 % of family holdings (121,657 holdings) according to farmer's place of residence (Geostat, 2014). Obcha I&II both are small villages in Zestafoni-Baghdati (30 km from Kutaisi city center of Imereti region) sub district of Imereti region as shown on Figure 15



Figure 15: Map of study areas

Source: Author's design based on [D-maps \(2016\)](#) and [TPG \(2016\)](#)

The area is characterized by an annual rainfall between 63-111 mm and average annual temperature of 10-25°C. The total population in Obcha I is about 1380 and 1800 in Obcha II. The agriculture (mainly subsistence farming) is the main economic activity. Farmers grow cucumbers, grapes for wine consumption, tomatoes, potatoes and they are involved in the cattle milk production ([Geostat, 2014](#)).

The livestock production is also small - with 1-10 cattle per household. The production process of cheese purely depends on milk production and climatic

conditions. In winter, there is a low milk production, because of low quality feeding for the cattle. Large-sized farmers intensively use mountain pastures during the summer and food concentrates during the winter time, in spring and autumn. The main market - where farmers sell their products is Zestaphoni market.

The third village, where we collected data is Meskheti (Figure 16); a small village near Kutaisi (5 km from Kutaisi), characterized by a railway infrastructure and center business in Nikea market in Kutaisi. Meskheti is characterized by small scale farmers and small and medium business owners and nearly 1500 residents. The area has also a high diversity of natural resources like fresh mountain water and fertile lands- that are favorable to agriculture and livestock production (HVA, 1999).

Obcha I & II were selected because farmers are known to produce a lot of cheese and supply to one of the biggest local open market in Imereti region, identified during the pilot study and Meskheti village is approximately in the Kutaisi city center which gives access to the hub of commercial centers and different local markets available.

Time frame

The research from the Association of Young Economists of Georgia who collaborated with Czech University of Life Sciences Prague (CULS) (Faculty of Tropical AgriSciences) and People in Need was carried out from March 2014 to April 2015. The respondent and key actors in the value chain were identified during a pilot study we conducted in July 2015, and the data collection was conducted in January-February 2016.

4.3. Data Collection

4.3.1. First objective

For our first objective, we used secondary data, from the Association of Young Economists of Georgia who collaborated with Czech University of Life Sciences Prague (CULS) (Faculty of Tropical AgriSciences) and People in Need. The data were obtained through a qualitative research based on key-informants and a selected group of farmers. During the data collection, local trained enumerators

and experts from CULS used a semi structured interview with different key-informants on every stage of the value chain.

The study focused on production in Georgian agriculture sector, value chain (production systems, productivity, actors in the value chain, product prices, competitiveness diamond (input conditions, demand conditions, related industries and context), strategic productivity, quality (food safety), operational productivity (processing, movement, diseases or biological threats), supply chain management (flow of information), human resources (social capital and know-how), institutions (business environment) and finally the SWOT analysis.

4.3.2. Second and third objectives

The research collected primary data from 100 farmers in three different villages (Obcha I, Obcha II and Meskheti), 12 retailers (5 in Zestafoni and & 7 in Kutaisi market called Nikea and 5 middlemen (from Nikea market).

For small scale farmers, we selected farmers in Obcha I&II, using two methods of non-probability sampling (judgment sampling and partially snowball sampling method) and one convenient sampling method in Meskheti. We collected primary data with semi structured interviews using a designed questionnaire (open ended, closed questions and open questions allowing free discussion with respondents) (see Appendix 5) and personal observations.

Middlemen data survey was conducted from middlemen's work place in Nikea market as wholesale traders, selected with a non-random selection based on willingness of middlemen to answer our questionnaire. We used open-ended questionnaire (see Appendix 6), but mostly engaging conversation, on the quality and quantity purchased from farmers, working place and legal business entities. We assessed if middlemen have contracts between both famers and retailers, how they share information, how they carry out negotiations between both retailers and farmers, followed by the open questions, on whether they think if farmers join cooperatives, it will somehow jeopardize their business.

Primary data from retailers, were collected using semi structured interviews using a designed questionnaire (open ended, closed questions and open questions allowing free discussion with respondents) (see Appendix 7) and personal

observations. Data were collected from the markets, where the retailers work. It was a non-random selection of shops among 40 cheese stands in the markets; data were collected according to the willingness of retailers to engage and respond

4.3.3. Sample size calculation for small-scale producers

Considering the Georgian National Survey ([Geostat, 2014](#)) the research hypothesized that among the three villages, 2000 small-scale farmers can produce and sell their production on commercial basis. We used Raosoft for Sample size Calculator with the following scenarios:

- 10 % Margin Error
- 90 % Confidence Interval
- 50 % of response distribution

Our target group sample size was 92 farmers, but to avoid uncertainties and missing values we add ten more respondents, to get 102, unfortunately 2 had missing answers and we ended up with 100 respondents representing the population of three villages. Our sample was balanced in terms of gender; since 45 % of respondents were female and 55 % respondents were male.

4.4. Methods of data analysis

4.4.1. Description of variables

4.4.1.1. For the first objective

We have compared the differences and similarities in different assessed value chains with cheese value chain. We schematize a value chain map and the links typical for all the products. Main indicators were: (i) production systems, (ii) type and length of value chain (iii) market power of actors, (iv) information access, (v) institutional framework of the value chain (laws, regulations, general business environment) and (vi) bottlenecks. The research follows [Stewart and Kamins \(1993\)](#), on how to analyze secondary research data.

4.4.1.2. For the second objective

Table of indicators and variables (Table 1, Appendix 1), shows main indicators used in the study; transport, quality of cheese, quantity, price of cheese, distance to

nearest market, types of contract, access to loans, monopsony position of middlemen.

4.4.1.3. Third objective

The descriptive statistics are based on following indicators:

Table 1: Indicator and variables for third objective

Indicator	Unit of measurement:
Output productivity might change, if farmers join cooperatives If farmers join the cooperative, cheese distribution channel might change	Likert scale 1-5
Farmers are willing to integrate together in the cheese making and marketing. Farmers are satisfied to trade with their current trader (retailer or other buyers)	
Willingness of farmers to join a cooperative	

1= strongly disagree, 5= strongly agree

4.4.2. Data processing

4.4.2.1. Second Objective

The second objective's result analysis is composed of two parts: (i) descriptive statistics and (ii) statistical tests. After collecting data, we analyzed data using SPSS 22.0. The role of middlemen (type of contract, price agreement, loans and inputs) was analyzed in frequencies distribution. The monopsony position of middlemen was assessed from frequencies description of how many small-scale farmers sell to retailers and middlemen, in Ms Excel. The variable distance used bar charts in comparison of the distance that small scale producers travel to reach middlemen or retailers. We analyzed the indicator source of information with descriptive statistics in Ms excel. We calculated the average price of different

types of cheese, and the prices that middlemen are buying from and retail prices. We calculated if middlemen have higher margin than retailers. For the indicator price of sulguni, we used one way ANOVA to test if there are any significant differences of means between the prices of sulguni (type of cheese) that three different group (small-scale cheese producers, middlemen and retailers) receive when trading.

We summaries, all the indicators of constraints (with indicator likert scale (1= strongly disagree 5= strongly agree) by computing the mean rank and standard deviation using Friedman ranking test. We borrowed this method from [Jamali and Hojjati \(2015\)](#) to rank what is highest constraint farmers' meet, and to analyze if the variables are independent from each other.

The quantity indicator (as seen in Appendix 1), was analyzed by putting the unit of measurement (kilogram) which was continuous, into categorical form (1-5 kg, 6-10 kg, 11-15 kg, 16-20 kg) and then we computed descriptive statistics using cross tabulations and Chi-square test in SPSS 22.0, to see if among our respondents, there is an association of farmers who supply less quantity and farmers who responded that for them the main constraint in cheese marketing is low quantity.

The same concept was applied to indicator transport. We assessed if among our respondents, who responded that the transport is low have any association with the variable price. We used cross tabulations to compute the descriptive statistics and chi-square test to see if there is any association between the price of public transport to nearest open market and the farmers who agreed that the price is high. For the indicator labor, we used Ms excel to compute the descriptive statistics of farmers who responded that the constraints for cheese market is lack of labor.

4.4.2.2. Third objective

We analyzed the third objective using Ms excel for descriptive statistics and visualization of data in bar chart for the first three indicators (as seen in Table 1) We analyzed if there is a correlation between the satisfaction of small-scale farmers trading with middlemen (or other buyers) and the farmers who are willing to join a cooperative. We assessed if people who were not satisfied are likely to join a cooperative. We used the bivariate correlation: -where the variables are (i) the satisfaction and (ii) willingness to join a cooperative.

4.5. Limitations of the study

The study was limited to the selection process of small scale cheese- respondents. The methods of non- probabilistic sampling methods, limited sample and geographical spread, therefore the sample could not represent the results for the whole western population of Georgia.

The biggest limitation of this research on middlemen is that it is a sensitive topic to the farmers, retailers and middlemen. To obtain information was limited by translation and willingness of respondents to respond to our questionnaires, and since we obtained data from middlemen and retailers work place, the interviews were interrupted each time our respondents get client.

Last but not least, the researches that were conducted by the Association of Young Economists in collaboration with Czech University of Life Sciences in Prague had very many similarities of value chain and repeating information, that it was hard to get differences within the studies.

5. Results

5.1. First Objective

In Racha and Imereti region, Georgian farmers are involved in agricultural production of herbs, hazelnuts, corn, fruits (berries, plum, apples), livestock, poultry, cattle, beekeeping (honey production) and fish.

In Imereti region, low level of agricultural development can be characterized with short value chains reaching from producers to local markets (Figure 16). Farmers usually work alone and supply the market by themselves. Either formal or informal horizontal integration of farmers is very rare, only for few working cooperatives that already exists (milk, herbs cooperatives). Some products (corn, fish) are traded through middlemen, who come to the farm gate and assemble larger quantities from several farmers. These middlemen then supply local shops and restaurants.

Although products in Georgia present the same actors that are involved in the local internal market; regarding international markets few differences appear among them. For hazelnuts, corn honey, herbs, plumb and wine value chains, large portion goes as far as outside Georgia (Figure 16). On one hand, hazelnuts production is sold illegally (Turkey does not allow Georgian products on the Turkish markets, so the export happens on trucks loaded with other products to later sell the products as Turkish honey or hazelnuts) through Turkish middlemen before going to European markets (Germany, Belgium, Greece, and Slovakia); on the other hand, hazelnuts are exported to the EU under the Generalized System of Preferences (Gsp+) which allows Georgia to export and benefit from a tariff preference for hazelnuts to enter the EU market with a reduced import tariff to 0 %.

Honey is traded on farm gate to the Turkish middlemen, to Azeri buyers and Georgian middlemen. Large bulk of herbs production is sold in Ukraine, Russia and Turkey while only 5 % of corn is exported to Armenia and Azerbaijan by middlemen. Middlemen and wholesale traders assemble sour plumps and deliver them to processing factories, and the final products, plum sauce is exported to Russia, Ukraine, and Belarus. Dried fruits go to Germany, but Cheese stays on

internal market as it is sold on the local open market, with no middlemen or wholesalers who export it outside Georgia.

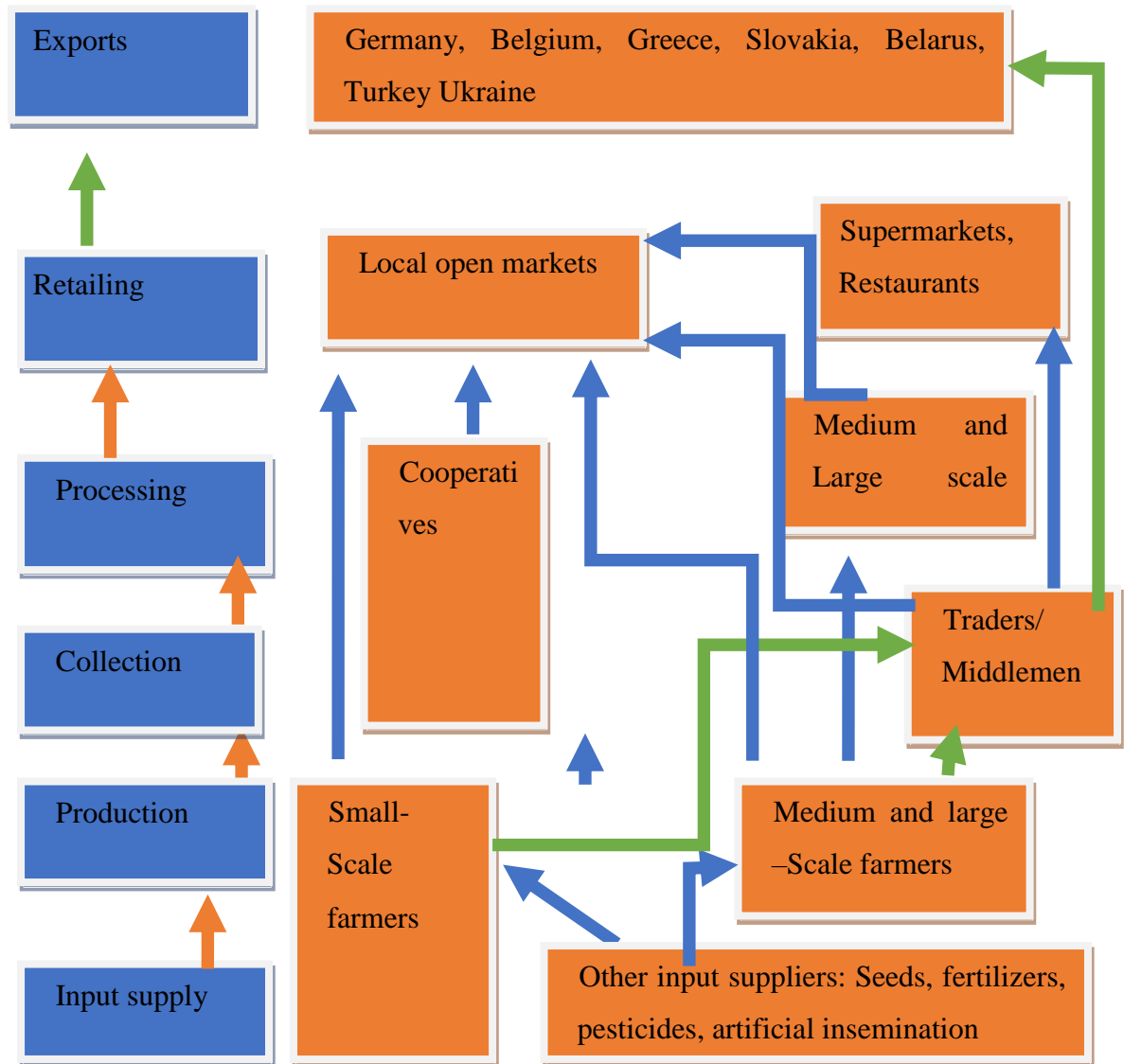




Figure 16: Typical agricultural value chain in Imereti region

Source: author, inspired by Farm radio International, 2012

- 
 Value chain flow of hazelnuts: honey, plum sauce, dried fruits, herbs and wine, corn (only 5 % of total production)
- 
 Value chain flow of products: Corn, beef meat, poultry (eggs, chicken), cheese, grapes and fish

Small scale farmers grow hazelnuts and are involved in the post-harvest processes (harvesting, drying and cleaning), similarly to cheese; hazelnuts are popular ingredients to the Georgian traditional cuisine (churchkhela). Corn production depends heavily on natural and mineral fertilizers which boost the harvest. More than 70 % owned land is used to cultivate corn, processing depends on the final production destination (human consumption or livestock) and is very low (2.3 tons per hectare).

Fish farming consist of lowland farming (carp, grass carp, the silver carp) and cold water farm (rainbow trout). Herbs (parsley, coriander, dill) are grown in green houses, from November till end of April. Small scale lease small tractors from mechanization center or bigger farms.

Beef meat processing (cutting beef meat according to small kilo pieces) in Imereti is done by butchers- who slaughter the cattle in appropriate slaughter houses, the butchers can sell at local open market. For small scale cattle producer, since they do not slaughter the cattle in slaughter house, they sell to butchers. However medium and large cattle producers use slaughter houses.

Regarding fruits production, berries are common to most of the households, but only on subsistence scale. Strawberries farming has been a tradition unlike raspberries and blueberries- which were cultivated 3-5 years ago. Strawberries farmers do not have processing industries because of the low production, and famers encounter market competition from imported berries during the winter period.

There is a high competition in local produced products and imported products (beef, poultry); however, Georgian consumers and farmers believe that the internal produced products are highly nutritious and fresh. In addition, the distribution and prices change according to the high and low seasons. If farmers possess financial means, there is a possibility to buy for example hazelnuts from other small scale farmers, store it and sell whenever the price is high. Unlike cheese- which does not have a collection center, hazelnut (value chain is a medium length) do have small collection centers that provide facilities to farmers to bring their harvest which will be sold in large collection centers.

In terms of market power, the Turkish middlemen play an influencing role to the final price for hazelnuts production in Georgia. Georgian hazelnuts prices compared, to neighboring countries (Azerbaijan and Turkey) are very low.

For the herbs market, foreign middlemen have market power as they export to Ukraine, Belarus, Turkey, Azerbaijan and Russia; they assemble bulk production to export which fluctuate prices.

For corn production, there exist 15 large corns producing farms that produce more and also influence the price in case of shortages and low seasons. During the festivals, there are hidden force of demand and supply for poultry, fish and cheese- where price increases than the fasting period, but for honey production depends heavily on Azerbaijan and Turkey demand, reason why, the demand of honey is unstable and unreliable.

Animal husbandry farms influence the price of corn on the market, as they store corn especially in autumn as animal feed. Local produced fish has low competition with imported fish, since local fresh produced fish are sold in restaurants. As cheese production competes on local market, it is not influenced by international buyers.

Smallholder farmers encounter several problems such as lack of proper cultivation skills, improved seeds (poor quality and inadaptability of hybrid seeds to local conditions) and weed control; lack of modern knowledge, low access to financial services, low productivity, lack of modern technologies, equipments and higher prices are common to all the products in Imereti, especially to fish farming, poultry, beef production- where farmers lack of awareness on modern technology and techniques.

On the Georgian hazelnuts market, there is lack of cooperation and communication flow between actors (producers, consolidators, processors and exporters) and lack of machinery. The type of corn that small farmers cultivate does not yield high productivity per hectare, and the modern facilities that farmers possess are not being used efficiently.

For fruit processing, there is also insufficient supply of orchards. Beef meat production lacks of meat producing breed and management experiences.

Value chain in Imereti lack a system of monitoring and food quality and safety management systems; regarding the berry farming, even though Georgian legislation regulates food safety, no efficient measures have been taken for berry production to only ensure that high quality goes to the market.

As for corn and other crops, the GOG continues to support the agricultural and livestock sector by providing seeds, drying centers and storage facilities. For berry production and farming, there no governmental or non-governmental extension services yet.

The main information source is the market, which is typical in all value chains in Georgia. Farmers and traders use mobile phone communications. The informal relationships that exist between farmers allow them to share information on inputs, consumers and market price. The contracts and agreements are based on verbal communication.

5.2. Second objective

Before presenting the results of the role of middlemen in Georgian farmers, it is good to highlights few of the findings regarding the farmers and how they access the market. In our research we found out that 65 % travel between 6-10 km to the nearest market; 73 % of respondent commonly use public transport, 62 % of the respondents sell cheese at least once a week; among our respondents- we assessed how many farmers know their distribution channel 36 % said that it goes to Kutaisi city and 64 % do not have any idea, where their cheese production goes. We found also that 87 % of small scale farmers have between 1-5 traders (buyer) they supply to (See Appendix 3).

In our research from the market open questions with middlemen- who play a role of wholesale traders, 100 % responded that they prefer meeting farmers in local open markets rather than going to the farmers, so that they can be able to compare prices and the quality on the market- hence assemble bulk production from local market of Nikea in Kutaisi to deliver them in Batumi and Tbilisi (other bigger cities).

However, farmers responded that they prefer trading with whoever is paying more at the time, because they have access to all markets available to the area (open local markets, supermarkets, consumers).

In our research we wanted to assess the role of middlemen in cheese value chain compared to other products (herbs, honey, and hazelnuts) who export outside the country. We found that 10 % (Figure 17) of the cheese producers supply the cheese to the market through middlemen and that they meet middlemen in local open market- where they play a role of wholesalers.

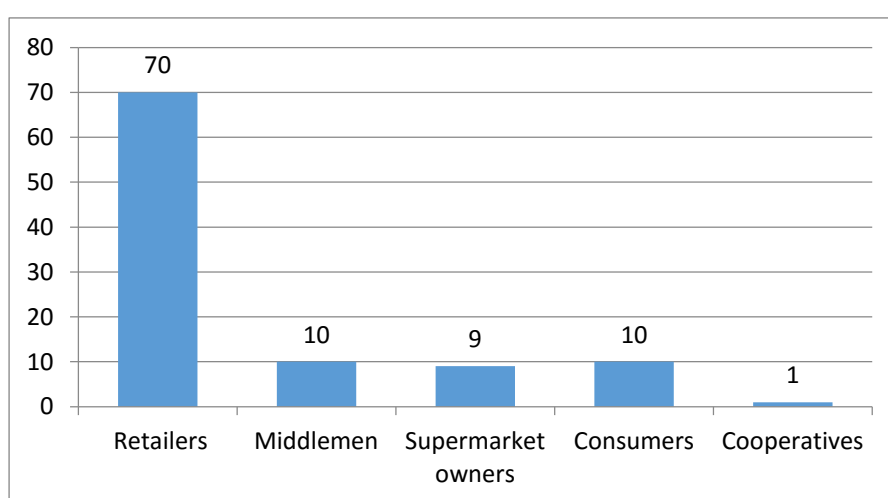


Figure 17: Type of traders that farmers trade with

5.2. 1. The role of middlemen in cheese value chain

Middlemen in Institutional arrangements with small scale-cheese producers

Our research found out that when it comes to institutional arrangements, middlemen do not hold any influential leverage (either with credits provisions or inputs) over small scale farmers. 100 % of small-scale cheese producers responded that: (i) the contract that exist between them and the traders, is the oral contract (word of mouth), (ii) price is agreed before selling, farmers responded that negotiations of the price are taken before hand, (iii) middlemen or other traders do not provide them with inputs (such as milk, rennet, animal feed or artificial insemination) (see table 2 in Appendix 2).

Middlemen in monopsony position

As we saw from the literature, Monopsony position- is an exploitative position where there is one buyer and many sellers. The research assessed how many small scale producers trade to retailers (n= 12) and middlemen (n=5). The study found that in average, every middleman buys cheese from 20 farmers and that every retailer buys cheese from 37 small-scale cheese producers. As Figure 18 shows, middlemen in cheese value chain are medium assemblers and retailers are cheese bulk retailers; as Figure 18 shows that one retailer has 60 farmers who supply cheese to him.

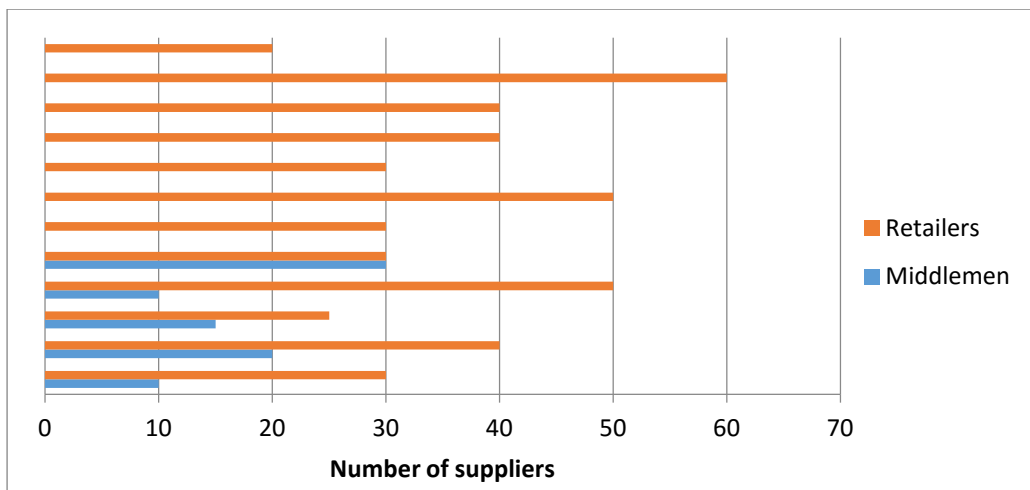


Figure 18: Number of small-scale cheese producers who sale to middlemen and retailers

Middlemen as a distributor

The distance from farmers' producing points and selling points play a key important role for the farmers to choose between: traders, markets, quantity transported and the mode of transport. According to [Chau et al., \(2016\)](#), middlemen bridge the gap between distance proximity of farmers to reach the retailers. The study observed (Figure 19) that small-scale cheese producers- who travel long distances (16-20 km) are likely to use middlemen or retailers, regardless of the distance.

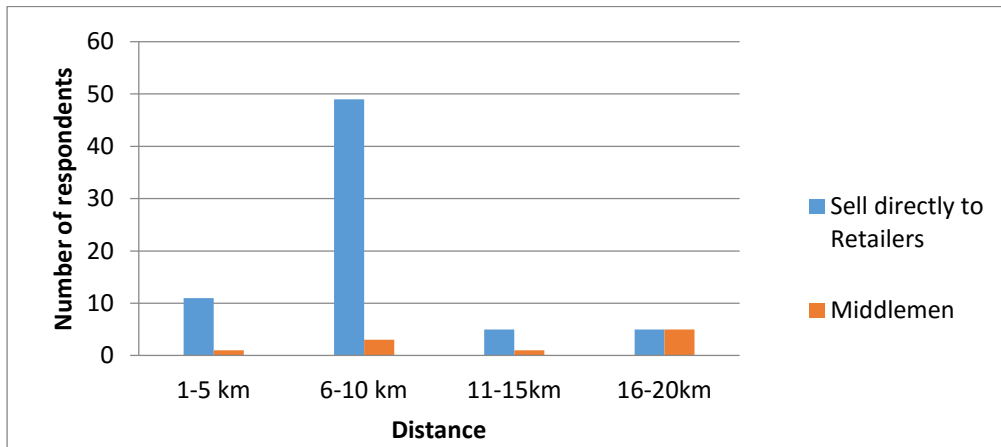


Figure 19: Distance traveled by farmers to reach retailers or middlemen

Middlemen as a market price informant

On the market, with assumption of imperfect competition, information asymmetry is considered to hinder farmer's income and productivity.

The study assessed how farmers get access to cheese market information either in the production system, prices and consumer preferences. According to some studies, middlemen are portrayed to have better access to information which puts them as market price informant of small scale producers. However, the study found out (Figure 20) that 38 % call the retailers to access the information. Since 70 % of our respondents sell to retailers, they have constant contact with the market. Our research found out that farmers do not get information from middlemen, agricultural market information services, or internet.

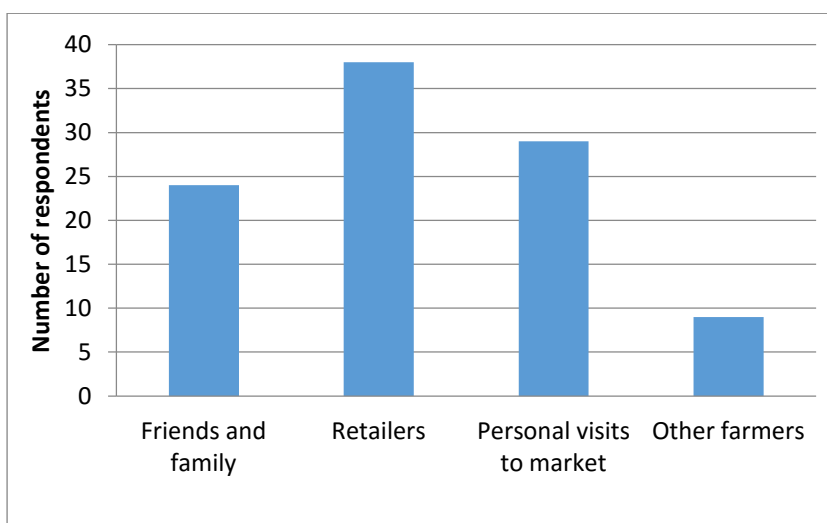


Figure 20: Source of cheese market information of small-scale farmers

From the middlemen interview (n= 5), the research found out that middlemen get the selling and buying price from the market, and retailers (n=12) get the information from the forces of demand and supply which regulate the price in cheese marketing.

Middlemen as bulk assemblers

The study found that 100 % of middlemen respondents agreed that they possess cooling facilities, small refrigerators and trucks which allow them to assemble large quantities to transport in other cities (Batumi and Tbilisi). However, some small-scale cheese producers store cheese in salted water before selling. As dairy products spoil fast, the arrangements to sell are negotiated before farmer can bring cheese to market.

Middlemen also all responded that the price depends mostly on the quality and less of quantity. If the farmer is selling low quality, middlemen are not buying, but if farmers sell good quality, but less quantity and size, the price is adjusted accordingly. Middlemen assemble cheese production, in regards to the taste and texture of cheese.

Middlemen as higher margin earners

Our research found out that, when it comes to the margin price of middlemen (percentage difference between how much middlemen are buying and selling from) compared to the price margin of retailers. Our study found out (Table 2) that for certain types of cheese (sulguni), retailers get as twice as what middlemen get.

Table 2: Average cheese prices (GEL per Kilo) and price margin

Types of cheese	Price, small scale farmers receive (n= 100)	Margin between middlemen and farmer (%)	Price middlemen receive (n=5)	Margin between middlemen and retailer	Retail prices (n= 12)
Normal cheese	6	7.69	6.5	7.14	7
Mozzarella	4	27.27	5.5	31.25	8
Sulguni	8	11.11	9	25.00	12
Imeruli cheese	7	6.67	7.5	16.67	9

Using ANOVA, There is statistical significance mean of sulguni price between, farmers, middlemen and retailers (table 4, Appendix 2).

5.2.2. Constraints in the cheese market

On a scale of 1-5 (1=, 5= highest), farmers ranked what they believe is a constraint that hinder the market access. Our study found out as shown in Table 3 that low retail price ranked as the highest constraint for farmers. Quality of cheese produced by small scale cheese producers ranked lowest (mean rating 1.50) as one of the major constraints that farmers face.

Table 4, shows that, the constraints variables are independent from each other (p-value= 000< 0, 05).

Table 3: Constraints perceived by small scale-farmers in the cheese market

Indicator	N	Mean rating(1-5)	Std. Deviati on	Rank
Farmers believe transport cost is high	100	3.20	1.007	3
Farmers supply low quantity	100	3.38	1.332	2
Farmers supply low cheese quality	100	1.50	.539	5
The retail price is low	100	4.08	1.105	1
Farmers do not have a enough labor	100	2.35	.756	4

1= strongly disagree, 5= strongly agree

Table 4: Friedman test statistic

N	100
Chi-Square	212.961
df	4
Asymp. Sig.	.000**

Note: ** significance at 95 % confidence level

Figure 21 summarizes the constraints that exist in the cheese marketing in Imereti region. Farmers responded that they have a constraint in producing low quantity, but disagree that the problem is not lack of labor.

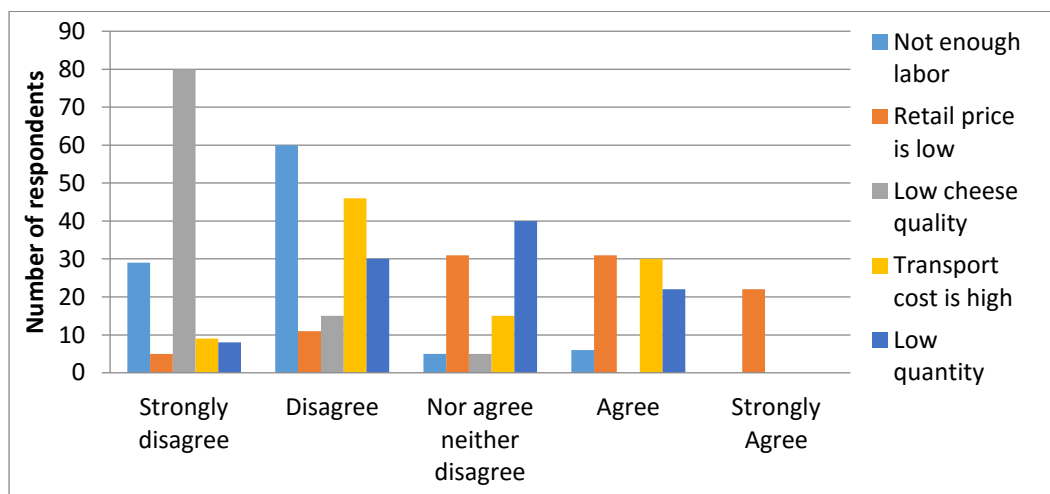


Figure 21: constraints in cheese marketing

Transport as a constraint that hinder farmers to access the market

Transport plays a crucial role in the dairy sector. The study found that 73 % use public transport to reach the local open market (see Figure 5, Appendix 3). Our research found out that among farmers who agree that the transport is high, 25 % spend 2 GEL to reach the local open market. Even with availability to access public transport, transport cost to reach the local open market is high.

Table 5: Descriptive statistics of public transport price and farmers who agree that price is high

			Price of transport is high				Total
			Strongly disagree	Disagree	Nor agree neither disagree	Agree	
Public transport price to nearest local open market	1 GEL	5	28	2	5	40	
	2 GEL	4	18	13	25	60	
Total		9	46	15	30	100	

Our study found out that there is a statistical association between the two indicators (public transport to the nearest open local market and extent of which farmer agree that price is high). The study shows (Table 6) that the two indicators are not independent from each other (p-value; .000 <0.05)

Table 6: Chi-square test of association between public transport price and extent of what farmer believe price of transport is high

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	20.505 ^a	3	.000 **
Likelihood Ratio	21.845	3	.000
Linear-by-Linear Association	15.457	1	.000

Note: ** significance at 95 % confidence level

5.3. Third Objective

This part is based on subjective opinion of respondents. 99 % of respondents were not members of any cooperative (either grassroots informal or formal associations).

Change of output distribution after joining the cooperative

As the study shows (on figure 22), 30 % disagree with change of productivity output distribution after joining the cooperative one side, maybe due to the low productivity in cheese value chain; on the other side farmers, agree that there is potential in joining the cooperative, as it will change output distribution.

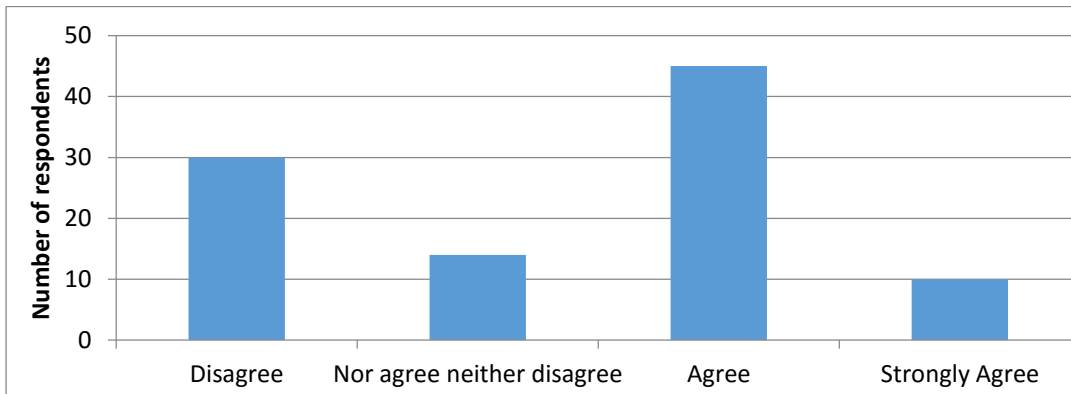


Figure 22: If farmers join a cheese cooperative, the output production will change

Horizontal and vertical integration of farmers in cooperative

Both male and female present different skills, women are involved in the cheese making and men in marketing. The study found out that men possess bargaining skills for better prices and dealing with the cheese traders. Our study found out (Figure 23), that 46 % of farmers (agree), that they are willing to integrate either on the production level and marketing level, i.e.: they are willing to be involved in the cheese making and marketing, however 12 % disagree that if they joined a cooperative, they would not want to be involved in the cheese making and other activities.

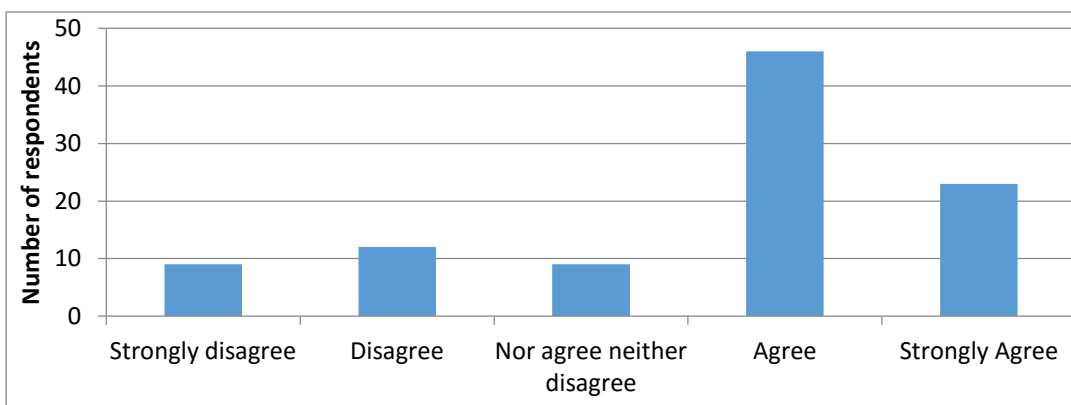


Figure 23: Farmers are able to work together horizontally and vertically in the cheese making and marketing.

Farmers are able to negotiate better prices on the market

In our research, we assessed if the integration of farmers in cheese cooperative would allow farmers to negotiate better prices for different types of cheese, especially for farmers who responded that they are not satisfied with the situation of trading either with retailers or middlemen (below on Table 7). The Figure 24 shows that 41 % of the respondents disagree that even if they would join the cheese cooperative, they are unable to negotiate better prices; however 45 % of the respondents agree that they can integrate and get the bargaining power through the cheese cooperative.

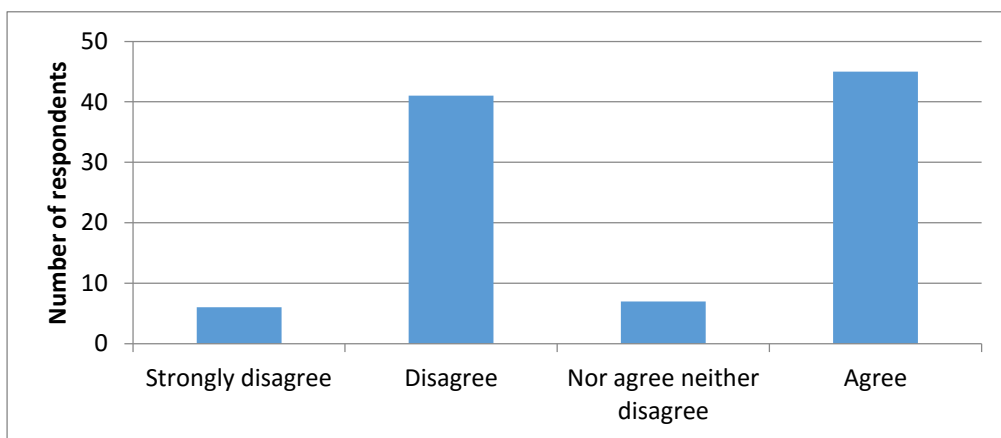


Figure 24: If farmers join a cooperative, they can negotiate better price

Distribution channel change

Since cheese is produced and consumed on internal market, we assessed if farmers join a cooperative, the cheese distribution channel would change or if the traders (buyers) that are involved in the value chain would change. As shown on the Figure 25, 30 % of the respondents disagreed that the distribution channel of cheese is likely not to change, however as many as 46 % agreed that the distribution will change and allow farmers to produce more and supply to other markets.

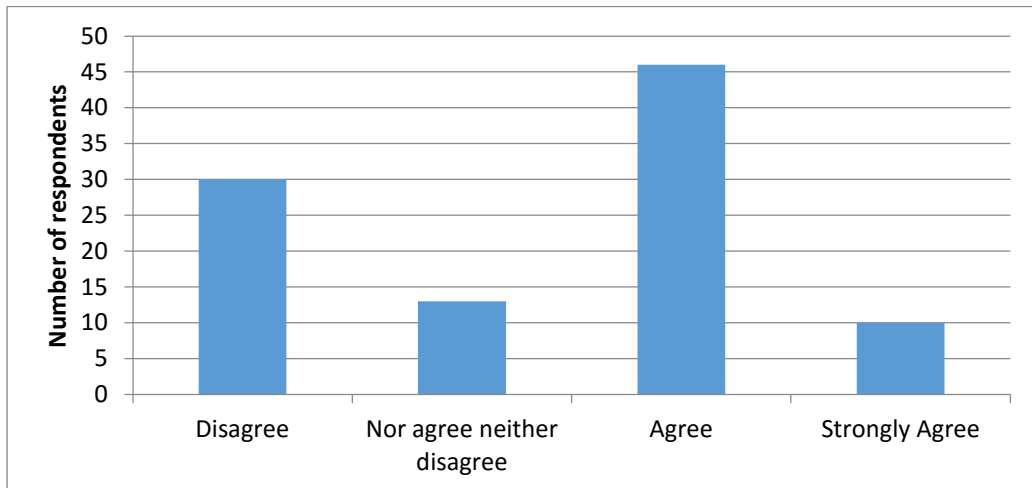


Figure 25: The distribution channel will change once farmers integrate in the cooperative

Middlemen and Retailers point of view on distribution channel change

Middlemen and retailers responded that, in generally they think cooperative in cheese marketing will not jeopardize their business. Our study found out that (Figure 26) few of the retailers and middlemen think the distribution channel will change, others think that cheese is traded on internal market; the distribution is likely not to change with the introduction of cooperatives.

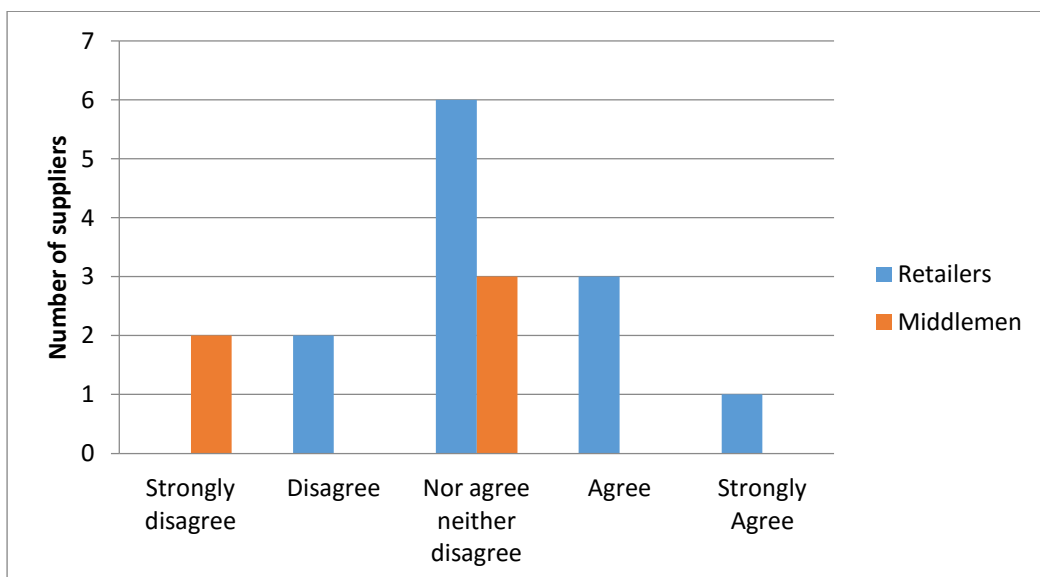


Figure 26: Middlemen and retailers' point of view on distribution channel, after farmers join cooperative.

Statistical analysis

Our study assessed to which extent farmers agree that they are satisfied with the cheese marketing (type of trader they are supplying to, accessing the market and information); 40 % of farmers disagree that they are satisfied (see Appendix 3, figure 6). However we found out that 40 % (figure 7, Appendix 3) of farmers were willing to join the cooperative. From the correlation of two indicators, we computed if the values of the two variables were independent from each other. We found out (Table 7) that there is a moderate correlation ($0.3 < |r| < 0.5$) and a negative correlation- which corresponds to a decreasing relationship between the two variables, thus we accept the alternative hypothesis ($r = 0.38$, $N = 99$, $p = .000 > \alpha$) that there is a strong evidence that the satisfaction and willingness to join a cooperative are negatively and moderately correlated, i.e, farmers who are not satisfied with current distribution of their cheeses are more willing to join a cooperative.

Table 7: Correlations between farmers who are satisfied and who want to join the cooperative

		satisfaction of cheese marketing	Willingness of farmers to join a cooperative
Satisfaction of cheese marketing	Pearson Correlation	1	-,381
	Sig. (2- tailed)		,000**
	N	99	99
Willingness of farmers to join a cooperative	Pearson Correlation	-,381	1
	Sig. (2- tailed)	,000**	
	N	100	100
Note(s): ** are significance at 95 % confidence interval			

6. Discussion

Concerning the position of middlemen as monopsonic in Georgian cheese value chain, we found out that middlemen assemble from many farmers (Figure 18) and farmers also have access to many buyers (Appendix 3, Figure 4). Contrary to what [Oguoma et al. \(2010\)](#) found in their research - that 81 % sell to middlemen in 500 farmers, [Abebe et al., \(2016\)](#) found 68% of 345 farmers trading with middlemen and [Abdelali-Martini et al \(2014\)](#)- found 56 % in 120 dairy farmers in Syria.

Our research also found out that farmers prefer to access the market by themselves because they can access public transport and shorter distances (average 6-10km) (Figure 19) (as described in study area, there is a train railway in Meskheta village, which gives direct access to farmers in Kutaisi). [Chau et al., \(2016\)](#) 's study on the distance and transport factor of binding middlemen and farmers in a spatially dispersed economy argued that where production takes a place at a certain distance away from transport facilities, middlemen bridge the gap between farmers and retailers.

The research found out that, the role of middlemen in Imereti is not to bridge the gap ([Gadde and Snehota, 2001](#)) caused by lack to access to markets or proximity to reach the market; because middlemen in cheese value chain serve as wholesale traders who assemble products on local open market to sell on farther markets. Middlemen in Georgia would assume the role of gap-bridgers if they would be collecting cheese, at farm gate due to long distances.

Middlemen in Georgian cheese value chain serves as a distributor, wholesale assembler of cheese production and not as farm gate buyers. [Oguoma et al. \(2010\)](#) showcased that middlemen collect at farm gate to profit information asymmetry and market irregularities that challenge farmers. In return farmers turn into middlemen's ad hoc arrangements. In Georgia, farmers who choose to sell at farm gate have knowledge of the prices before selling.

The research also found out that when it comes to institutional arrangements; farmers and middlemen have oral contracts (word of mouth). [Abebe et al., \(2016\)](#)

found out that 97% of framers who trade with middlemen and 70 %, who trade with wholesalers do not have any contract or get loans from traders. We found that farmers get prior agreements on price before selling, meaning that farmers have the information about retail price and final price before selling. We also found that there are no loans or credits and absolutely no inputs or any other support to the farmers (see Appendix 2, Table 1), contrary to what [Abdelali-Martini et al., \(2014\)](#) found in dairy production in Syria, authors found that small scale dairy farmers get two types of loans, in winter and milking season. Processing traders provide farmers with an advance loan- that farmers have to pay by supplying milk every 11 days. According to our study, small scale cheese producers do not have such commitments to always depend on middlemen for cheese supply, it also shows why farmers are not dependent on middlemen in terms of additional services, which again disapproves what [Abebe et al., \(2016\)](#) found in their studies; that market access, securing funds to buy fertilizers and other inputs, are the services that middlemen render to motivate farmers. The role of middlemen in Georgian cheese market is not to provide, loans or support, but to contribute to the access of market. Small-scale farmers produce as individuals and sell directly to consumers through various actors on the internal market, middlemen included (Figure 17).

According to [HVA International \(1999\)](#), there is a regional difference in the type of cheese consumed in Georgia- where the majority of the cheese produced in the Eastern region is Smetana, but in the west are Imeruli and Sulguni. The study found that till today the most consumed cheese type in Baghdati region is normal cheese (also known as salted cheese) by 75 % of respondents, Imeruli (11%) and Sulguni (14%) (See Appendix 3, Figure 9). The research found out that middlemen do not get higher margin contrary to what [Oguoma et al., \(2010\)](#) observed; the author on the other hand conducted his research on 500 respondents prior to his conclusions; contrary to what our study found with, middlemen do not earn a bigger margin (Table 3) because farmers negotiate the prices before selling, farmers are aware of the margin, middlemen are operating from, this fact was also been proven by [Abebe et al., \(2016\)](#) in their research conducted on 345 farmers, that the justification of low margin price that middlemen get is subjected to knowledge of farmers and access to markets.

The study found that according to the types of cheese, retailers have as twice as margin than middlemen (Table 3), which goes up to 20 % from farm gate price, contrary to (Mitra et. al, 2013) who found that in West Bengal, the margin of every trader goes as high between 50- 60 % margin. The reason why, retailers have higher margin than middlemen is because, they have direct consumer preference information- which favors them to sort out type of cheese to sell out first and buy from farmers (see Appendix 3, Figure 19).

Middlemen and retailers in Georgia dispose storage facilities, which facilitate farmers with lack of storage capacities to always supply the low quantity they have produced. Georgian farmers visit the market frequently, as more than 60 % supply cheese to market every week (Figure 2, appendix 3). Middlemen contribute to the output productivity of farmers, but in case of low season, they control the market as they influence the prices. The research from USAID (2010) also observed that in Georgia (for vegetable value chain) , whoever dispose the cold storage facilities can be able to store the supply for a period of time, in order to increase the price in case there is a shortage- this permit them to charge higher prices. Middlemen can force farmers to sell at low prices, in case there is a surplus on the market and farmers lack of such advanced equipments to store cheese for very long days.

Lee (2013) in his study in Vietnam argues that middlemen give access to farmers, our study agrees with the author; the role of middlemen in Georgian cheese value chain is also to partake in giving farmers access to market.

In terms, of middlemen being price market informants, we found that farmers rely on retailers and not middlemen to get the market price information (Figure 20), opposite to what Oguoma et al. (2010) found. Concerning farmers-middlemen-retailers' relationships in the value chain, the research observed that in the Georgian agricultural production and marketing, there is constant communication and information flow between actors (see Appendix 3, figure 3), it has an impact on how much farmers can produce and sell within the internal market, because they are always depending on retailers to accept their production and vice-versa. It was also highlighted by Abebe et al., (2016) that the social ties in social network

structure facilitate the flow of information and exchange between middlemen and farmers.

Our research found out that when it comes to power; farmers dispose: - skills to produce cheese, ownership of cattle and livestock management (see Appendix 4) and have access to cheese market information (See Appendix 3, Figure 3), transport means to reach local traders (Appendix 3, figure 5), Middlemen have only the position as wholesale traders and transport means to reach further markets.

Despite the position that middlemen occupy in the value chain, they depend on: (I) farmers who prefer to trade with them rather than going to retailers, (ii) informal contract (word of mouth, agreement of the price before selling) that they have established with farmers over the years. To add that farmers choose to sell to middlemen knowing the market price and that the meeting place is the market- where farmers choose middlemen over retailers) Wholesale traders in Zestaponi market- assemble bulk production and prefer to sell their cheese in Kutaisi, Tbilisi or Batumi.

Middlemen in Georgian cheese production have a minor utility towards farmers- fact was not surprising as well for [Barron et al., \(2015\)](#) – when they found that middlemen in the value chain have little influence on vegetable growers in the state of Puebla in Mexico. Middlemen are not the cause root of constraints that hinder the cheese marketing. Cheese farmers believe that lower productivity (quantity) and low retail price they receive are the main problems. The study goes in the same footsteps as [\(AYEG, 2015\)](#) found that low productivity is imminent in the Georgian cheese market, the authors found that it is linked to limited access to modern equipment, technology, skills and experience. About experience in cheese production, we somehow disagree with [AYEG \(2015\)](#) because we found that farmers are medium experienced, since we found that 70 % of farmers have been selling cheese for at least more than 5 years (Appendix 3, Figure 10).

In our research, we assessed how the composition of value chain might change through horizontal and vertical integration, if local small farmers join cooperatives.

We found out that farmers might integrate in cooperative and lead the production output to change (Figure 22), however some farmers, think that even with integration in cooperative, the production would be still low, because it is one of the major constraint and threat to farmers, however we assume that in the long run, farmers' cooperative might be a solution which can lead to the change of distributional channel of cheese (Figure 25). However, the ability of farmers to negotiate better prices is double sided. On one hand, it is possible because of the social capital and cooperation of farmers in dairy sector in Georgia, as [AYEG \(2015\)](#) described, on the other hand, it might be difficult because the price driving forces in cheese lies in the supply and demand (many consumers and suppliers). The cheese value chain looks promising for future increase of production. According to [Geostat \(2016\)](#) milk production has shown tremendous increase in the past years, the research found that with the vertical and horizontal integration of farmers in agriculture cooperative might be one of the ways to eliminate market constraints such as low productivity, appropriate machinery and storage facilities and gain market bargain power to negotiate better price.

Farmers can integrate horizontally and vertically in the cheese cooperative. With horizontal integration, they would focus on the same level of making cheese in amount of bigger quantities, better quality and production; and in vertical integration, in the marketing. This might be possible, because integrating women and men both might yield results, because women have skills in making cheese and men to negotiate and get good deals in marketing sector (Figure 24), as [Francesconi and Wouterse \(2015\)](#), farmer-based organizations (FBOs) benefits farmers.

Most farmers- who are not satisfied with the current trader, price and cheese marketing (Appendix 3, Figure 7), are likely to join cooperative as we found (Table 7) that there is a negative correlation between farmers being satisfied with their marketing situation and the willingness to join a cooperative for better improvements.

In fact, In Georgia there are exceptions on different products (honey, herbs, hazelnuts, etc.) - where middlemen hold a monopsony positions because the products are traded sometimes illegally and smuggled to Turkey or other neighboring countries (AYEG, 2015). However, for cheese the role of middlemen might change in the future due to the increase of cooperatives in Georgia, they might change the distribution channel to expand the market (Figure 26).

7. Conclusion

Middlemen in Georgian cheese value chain; do not hold a monopsony position, are not the main source of market information, are not the cause root of constraints, serve as wholesale traders to local markets, but sometimes middlemen influence the market forces of demand and supply because of cheese storage facilities . We found out that for certain products (herbs, hazelnuts, honey, etc.), middlemen assemble quantities at farm gate to export outside Georgia, but there are no middlemen who trade cheese on international market.

Among the constraints that farmers face the most are low retail prices and the supply of low quantity which is the subject of production system and not middleman. There is a long term future potential for agricultural cooperatives, to integrate farmers in working together horizontally and vertically.

The study found that there is a promising increase in level of processing and quantity of products supplied, increased total added value of the supplied commodities, reduction of transaction costs, better access to markets, higher bargaining power on the domestic market, and even improved access to international markets for some products if farmers would join an agricultural cooperative.

For other institutions such as public sector, government and non-governmental institutions might need to collectively create a risk free market for farmers, by providing financial support, necessary subsidies- for farmers to gain adequate utilities and equipment, get necessary knowledge and practices on how to produce cheese that can compete on the international market.

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