

## Agricultural Value Chains in Imereti and Racha regions

### Poultry and egg production

#### 1 Introduction

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The present research was carried out by the Association of Young Economists of Georgia in collaboration with Czech University of Life Sciences Prague (Faculty of Tropical AgriSciences) and People in Need from July 2014 to April 2015. This study is a part of regional value chain analysis for the main products of agricultural sector in Imereti and Racha regions.

The goal of this analysis is to provide background information and baseline data for subsequent implementation stages of the project Enhancing Small Farmers' Cooperation and Productivity in Imereti Region financed in the framework of European Neighbourhood Programme for Agriculture and Rural Development in Georgia (ENPARD Georgia) - Small Farmers Co-operation component.

This research would not have been possible without funding from the ENPARD Georgia and Czech Development Agency project "Support for Cooperatives in Imereti, Georgia".

#### 2 Methodology

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The research team followed an approach that allowed handling several issues concurrently. Data collection was organized and methods selected in order to assess specific issues from different angles supported by a triangulation of qualitative and quantitative methods. After the identification of the 8 local products with the highest development potential (based on local expert and government officials interviews), we carried out a more detailed survey thematically focused around each selected product. For poultry value chain analysis, following districts were covered:

- Terjola
- Oni

The field data focused on agricultural product in the Imereti and Racha Regions was collected in following stages:

March to June 2014 - gathering field data for main products

July 2014 – June 2015- finalization of report

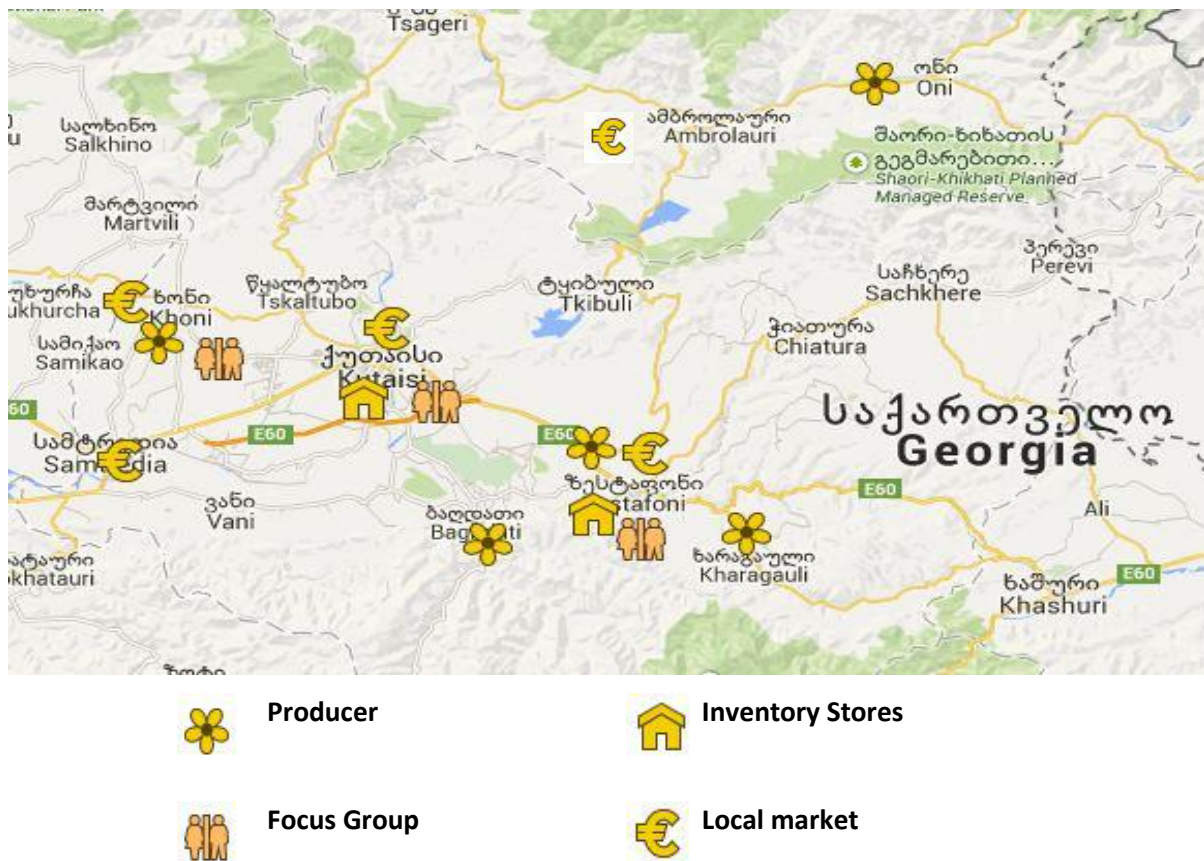
For the analysis mainly qualitative research based on key-informants and group of farmers is used, which is designed to reveal a target group's range of behaviour and the perceptions that drive it with reference to specific topics or issues. As a main qualitative research method is used method of semi-structured in-depth interview. Interviews were conducted with small number of key informants who must have first-hand knowledge about examined issue. Each interview took from 1.5 to 2 hours. Diversity of key informants was important to cover whole value chain from suppliers to the local market. It means to identify and interview different-sized farmers (from small subsistence to commercials), collectors, middlemen, processors, sellers on a local market, exporters, together with agro-shops selling

seeds or seedlings and different kinds of tools, technology, pesticides, fertilizers or other inputs.

Main field data collection instruments for poultry production included (spatial distribution is visualized in Figure 1):

- Focus group discussions with poultry farmers
- Interviews with representatives of poultry farmers
- Interviews and observations of input supplier shops
- Poultry market screening

Figure 1 - Map of locations for data collection in Imereti



However, it should be taken into consideration that qualitative research is only part of the project that generally reflects the most widespread information. The secondary quantitative and qualitative data is based on the unity of consolidated researches including official statistical data.

But still, it is necessary to bear in mind, that the qualitative research is only partially representative and captures mainly general and the most frequent information. The secondary quantitative and qualitative data relies heavily on an examination of existing, accumulated research, by official government data provided by national statistics bureau of Georgia.

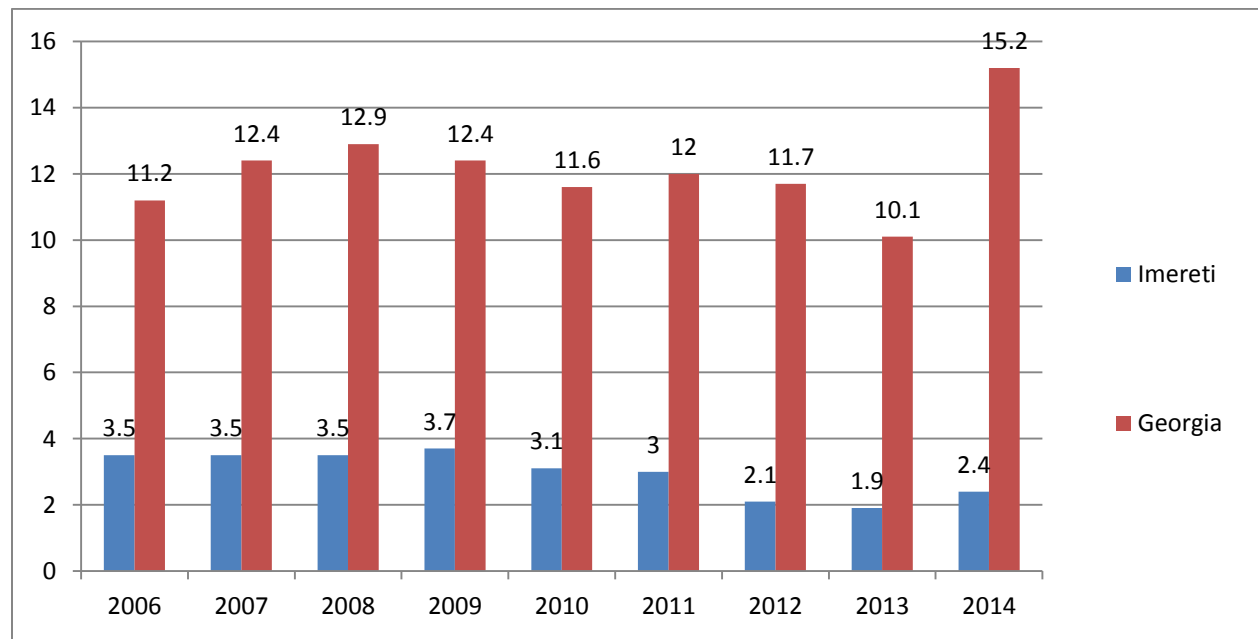
Due to the lack of agricultural activity in Racha regions, National Statistical Bureau of Georgia does not publish any specific data regarding the agricultural sector.

### 3 Poultry farming as a sector of Georgian agriculture

Poultry farming is one of the oldest and most traditional agricultural sectors in Georgia, including Imereti and Racha regions. In accordance with the National Statistics Office of Georgia, in 2012 the share of produced poultry and eggs within the country in relation to Gross Domestic Product (GDP) was approximately 1%.

Since 2000, poultry farming has been a growing industry in the country, but since 2004, an increase in bird flu cases, and the risk of an outbreak in the country significantly affected poultry and egg consumption volume and consequently, production. During the mentioned period (2004-2006 years), poultry production decreased by approximately 30%. Between 2000 and 2009, poultry meat consumption rose faster in Europe than in any other region but most of the increases took place in countries outside the European Union. However, growth rate in other regions are relatively high. Diagram 1 shows poultry production in Georgia, from 2006 to 2014 years, which is stable over the years.

Diagram 1 - Poultry production in Georgia<sup>1</sup> (thousand tons)

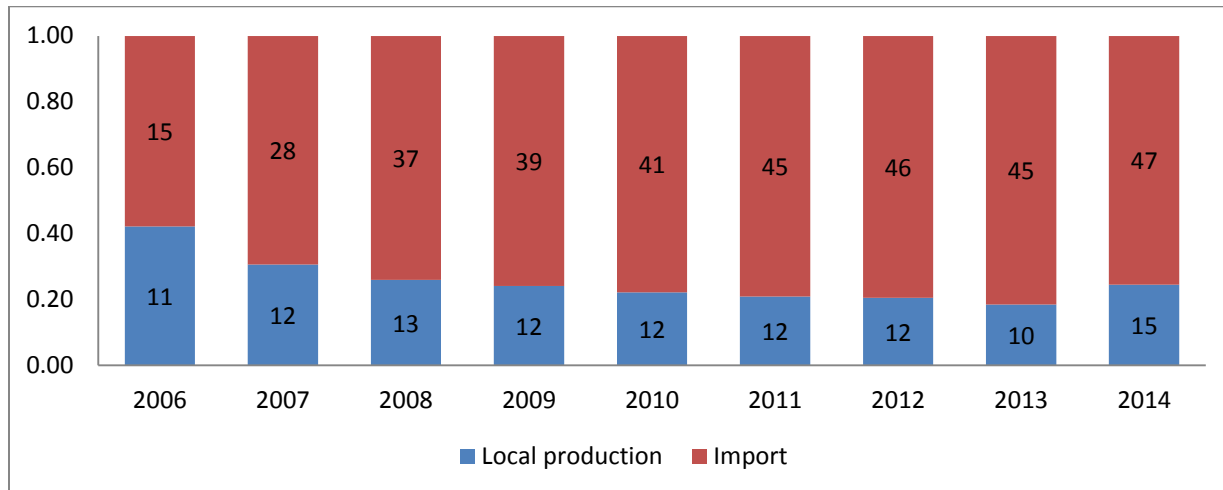


After the bird flu outbreak risk was lowered, the sector continued to develop, however, as of 2012, only 20% of Georgia’s poultry is locally produced, the rest is imported, from Brazil, EU, etc. The export

<sup>1</sup> [http://pc-axis.geostat.ge/Menu.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px\\_db=Database&px\\_type=PX&px\\_language=ka](http://pc-axis.geostat.ge/Menu.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px_db=Database&px_type=PX&px_language=ka)

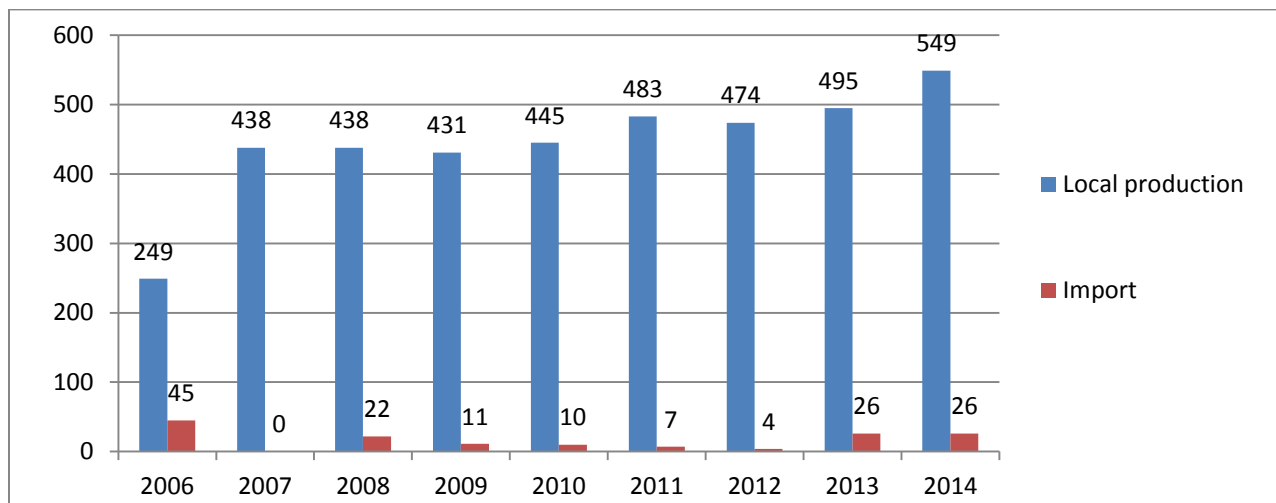
volume of Georgian poultry production is very insignificant and varies around 0.5 tons for the last 9 years.

Diagram 2 - Poultry production and import to Georgia<sup>2</sup> (thousand tons)



Eggs import to the country was restricted due to the aforementioned outbreak risk. The restriction was in place until the end of 2012. As a result, 100% of eggs used for food during the period was locally produced (imported eggs were only used for industrial purposes – for chicken hatching). After the regulation was dropped, 5% of local consumption was again replaced by imports.

Diagram 3 - Egg production and import in Georgia<sup>3</sup> (million egg)



<sup>2</sup> [http://pc-axis.geostat.ge/Menu.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px\\_db=Database&px\\_type=PX&px\\_language=ka](http://pc-axis.geostat.ge/Menu.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px_db=Database&px_type=PX&px_language=ka)

<sup>3</sup> [http://pc-axis.geostat.ge/Selection.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px\\_db=Database&px\\_type=PX&px\\_language=ka&px\\_tableid=Database%5cAgriculture%5cAnimal+Husbandry%5cTABLE\\_3.02-13.px](http://pc-axis.geostat.ge/Selection.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px_db=Database&px_type=PX&px_language=ka&px_tableid=Database%5cAgriculture%5cAnimal+Husbandry%5cTABLE_3.02-13.px)

According to the study results, apart from chicken farms, almost all rural households own 5 to 15 chickens in their back yards. However, due to the size of population, most of them are concentrated in Imereti, Guria and Kvemo Kartli.

Table 1 - Number of birds by region (1000 chicken)

	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>Whole Georgia</b>	5401	6150	6682	6674	6521	6360	6159	6413	6404
<b>Imereti</b>	1212	1159	1318	1186	1237	1057	1039	1186	1159
<b>Samegrelo and Zemo Svaneti</b>	1014	1471	1359	1207	1073	1016	1058	1062	1065
<b>Shida Kartli</b>	265	266	314	446	465	443	434	440	443
<b>Kakheti</b>	879	805	1004	1088	1088	1025	945	1000	1020
<b>Kvemo Kartli</b>	1212	1573	1641	1644	1537	1739	1733	1740	1738
<b>Remaining Regions</b>	820	876	1044	1100	1121	1079	949	985	988

## 4 Poultry value chain description

### 4.1 Production systems

The majority of small farmers<sup>4</sup> in Imereti are engaged in poultry farming mostly for household needs, but they take surplus production to the market, which makes up 20-30% of produced poultry and 35-40% of eggs.

**Poultry** - According to conducted research, almost all families in Imereti raise between 5 and 15 birds. In addition, in several municipalities of the region (e.g. Khoni, Therjola etc.) a number of medium sized farms<sup>5</sup> have developed recently. They are based in households and mostly use maize grown on their own farms. Each farm produces up to 3,000 birds per year. Such farmers (approximately 95%) usually produce only poultry, not eggs. Based on combining and analysing field research and official statistics, it was found that 60% of poultry in Imereti is produced by medium sized family farms and 40% by agricultural enterprises, yet only 30% of poultry supplied to the market is produced by family farms, which also indicates subsistence character of most farms. For meat production, there are an increasing number of producers purchasing so-called one-day vaccinated chickens of Broiler breed, rather than eggs for hatching chickens, even if they own hatcheries. This means that division of labour and specialization is increasing, indicating development of the industry.

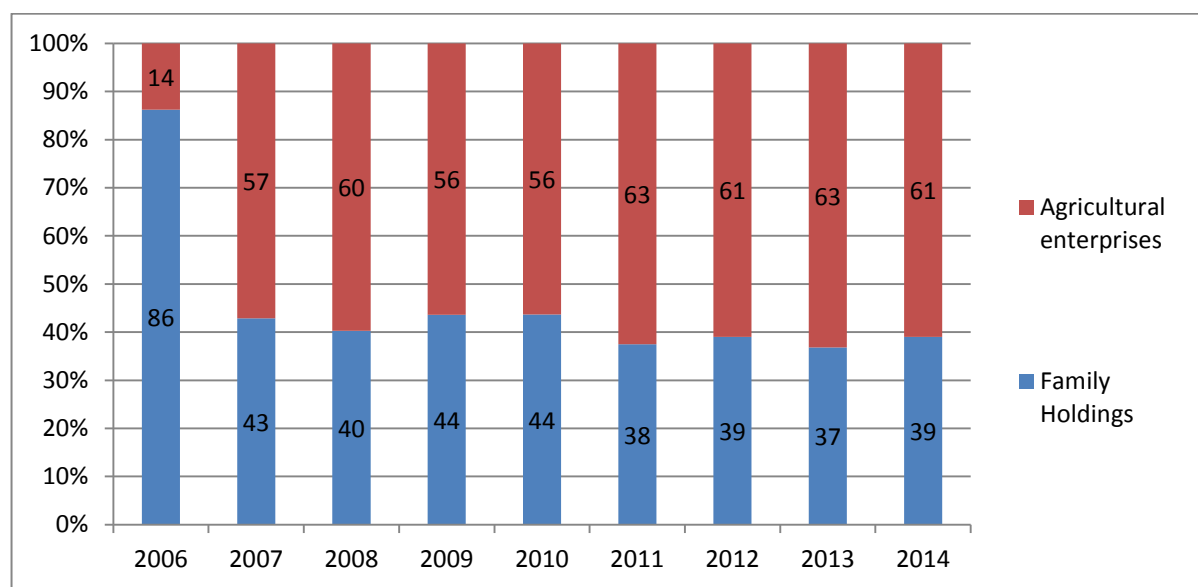
<sup>4</sup> Small farmers – producing up to 100 birds per year mostly for own consumption, taking to the market only surplus products.

<sup>5</sup> Family farm – farm based in household and producing between 100 and 3000 birds. Most of produced goods are intended for sale, rather than own consumption.

Chickens are mostly purchased from hatcheries in the region. The cost of one chicken is on average 1.1 GEL and it reaches commodity weight in approximately 35-40 days. Birds grow in closed space, in special cages, at a stable temperature, with ventilation and lighting and in compliance with hygienic standards. A total of 1.5-2.2kg of fodder is spent per kg of goods (meat, eggs). In addition, birds are given a small amount of maize, grain, green vegetables and other feed in the evening.

**Eggs** - are mostly produced for sale in big agricultural enterprises. Based on combining and analyzing field research and official statistics, it was found that around 40% of all eggs are produced by family farms and 60% by agricultural enterprises.

Diagram 4 – the share of egg production in Georgia<sup>6</sup> (percentage)<sup>7</sup>



The number of large sized egg producers in the region is very small, not exceeding five. They usually import egg chicken breeds from Turkey. Cross chicken is the most common egg breed in the region. One female lays 250 eggs per year, with a total weight of 12-15kg, 6-7 times exceeding its own weight. Eggs are collected manually, from 9.00am to 2.00pm, then packed (put on special plates) according to sizes, placed in special boxes with ventilation holes and sent for distribution.

**Labour Force** - One of the most important components of production price is remuneration, especially in medium and large farming enterprises and agricultural enterprises because small family farms do not usually use employed labour, i.e. they do not incur remuneration costs, increasing their profit margin

<sup>6</sup> [http://pc-axis.geostat.ge/Selection.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px\\_db=Database&px\\_type=PX&px\\_language=ka&px\\_tableid=Database%5cAgriculture%5cAnimal+Husbandry%5cTABLE\\_3.02-13.px](http://pc-axis.geostat.ge/Selection.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px_db=Database&px_type=PX&px_language=ka&px_tableid=Database%5cAgriculture%5cAnimal+Husbandry%5cTABLE_3.02-13.px)

<sup>7</sup> [http://pc-axis.geostat.ge/Table.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px\\_db=Database&px\\_type=PX&px\\_language=en&px\\_tableid=Database%5cAgriculture%5cAnimal+Husbandry%5cTABLE\\_3.16.px&layout=tableViewLayout1](http://pc-axis.geostat.ge/Table.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px_db=Database&px_type=PX&px_language=en&px_tableid=Database%5cAgriculture%5cAnimal+Husbandry%5cTABLE_3.16.px&layout=tableViewLayout1)

(up to 35%, usually not exceeding 20-25%). In large farming and agricultural enterprises, remuneration of basic personnel accounts for approximately 10% of production costs.

## 4.2 Productivity

In order to fully evaluate the productivity of the industry, it is important to separately analyse indicators for poultry and eggs, as well as for small producers, family farms and agricultural enterprises, because, according to the research, there are significant differences.

Productivity of small producers is the lowest. Poultry raising and egg production takes place in semi-field conditions, which means that birds are in the open space during the daytime and placed in special cages at night. It takes a minimum of 60 days for such birds to yield meat. Yet, their weight does not exceed 1kg by that time and they only reach mature weight of approximately 1.5kg in 90 days at best. They only start laying eggs in approximately 150 days and yield on



Picture 1 - Hatchery in Imereti

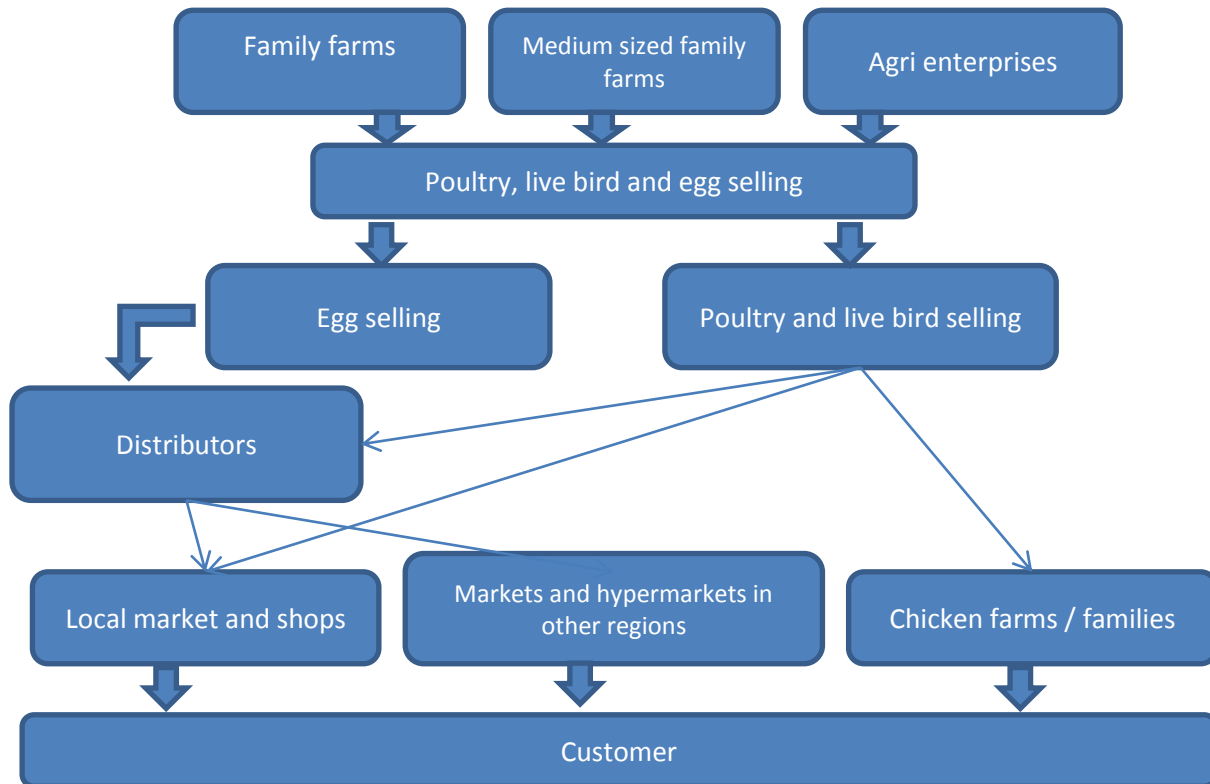
average 100 eggs per year. Even superficial observation is enough to identify the low productivity and non-profitability of such producers; yet, families do not value their labour and do not value the feed products they make either. Factors leading to low productivity are inefficient breeds and lack of appropriate production conditions.

Compared to small producers, family farms and agricultural enterprises achieve much higher productivity. The majority produce meat chickens with one production cycle lasting for two months with birds reaching weight 1.5–2kg . They manage 4-6 production cycles per year (farmers do not usually start a new cycle immediately after finishing the previous one due to public holidays or seasons, consequently, they make five production cycles per year). They manage to do so by using the appropriate breed (mostly Broiler) and the existence of appropriate conditions for their growth (heating, lighting, ventilation, qualified staff, timely treatment, sanitary-hygienic conditions, appropriate food etc.). It should be noted that the meat yield of Broiler is 80% of life weight, with 68% edible parts, significantly exceeding similar indicators for other breeds spread in Georgia. The situation is similar in terms of egg production. Small producers have much lower productivity compared to medium sized farms and agricultural enterprises. The latter groups use egg breeds for egg production. Such birds start laying eggs at approximately 120 days and usually lay an egg a day for 75% of days until they are 80 weeks of age. 100-day birds of such breeds are mostly imported from Turkey; sometimes one-day

chickens of the same breed are also imported.

### 4.3 The product chain typical for Imereti and Racha regions

Scheme 1 - Poultry value chain in Imereti and Racha regions



**Poultry producing farms and enterprises** – After reaching commodity weight, birds are sold live or in the form of meat, for which birds are killed, cleaned and brought to the chain. Large producers own special slaughterhouses, while relatively smaller producers kill and clean birds using rather primitive methods. Small producers sell most of their products to end users in the same village.

**Distributors/resellers** – large scale producers (agri enterprises and medium sized family farmers) supply various large legal entities (e.g. the army, penitentiary etc.), with poultry and eggs usually via resellers and distributors. According to the research, 60% of produced poultry is sold in the form of meat and 40% is sold live. A total of 90% of killed birds are purchased by distributors/resellers; the rest are sold on the spot. Overall, 25% of live chickens are purchased by end users and 25% by distributors/reseller.

**Local and regional open markets** – Usually farmers sell poultry and eggs to final consumers in local agrarian open markets, while resellers are main providers of markets and shops in other regions. These resellers mainly buy eggs from enterprises and medium sized farmers, which produces sufficient amount of eggs.



## 4.4 Production prices

**Poultry/meat.** Slaughtering birds usually starts when they reach weight of 1.8kg for at least a 1.5kg yield. The poultry meat price is between 4.5-6 GEL per kg depending on the season. For example, the price is lower during the fasting period and increases during festivals. Seasonal fluctuations are more relevant for killed, rather than live birds. The frozen product costs approximately 0.5-1 GEL less. Accordingly one kg of frozen poultry price varies from 3.5 to 5 GEL, also the same price is for frozen poultry imported from other countries.

**Eggs.** The sale price varies depending on the season. Prices are relatively high from September to May. Eggs are sorted into classes according to size. The price of the first class varies between 0.16-0.26 GEL, the second class is by 0.02 GEL cheaper compared to the first, the third is by 0.03-0.04 cheaper. Grocery shops sell eggs of all classes.



Picture 2 - Egg sorting process in a farm in Imereti region

**Table 2** - Average retail prices of egg according to categories in Imereti and Racha regions<sup>8</sup>

Category	Price
0	0.32
I	0.30
II	0.28
III	0.26

## 5 Competitiveness diamond – Input conditions, demand conditions, related industries, context

### 5.1 Supply of input

Several components are required for production, in particular:

**Feed.** Feed occupies a significant proportion (approximately 60%) of the cost structure required for production. Farmers produce most feed by themselves in the following manner: local or imported maize

<sup>8</sup> [http://pc-axis.geostat.ge/Selection.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px\\_db=Database&px\\_type=PX&px\\_language=ka&px\\_tableid=Database%5cAgriculture%5cFood+Balance+Sheets%2c+Supply+and+Utilization%5cTABLE\\_4.12.px](http://pc-axis.geostat.ge/Selection.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px_db=Database&px_type=PX&px_language=ka&px_tableid=Database%5cAgriculture%5cFood+Balance+Sheets%2c+Supply+and+Utilization%5cTABLE_4.12.px)

is coarsely ground and mixed with so-called “premix”. The latter is a special fodder for birds including vitamins required for growth. In total, 20-25% of premix is added to maize and used for feed. Premix is not produced locally and its market price is 1.8-2 GEL per kg. Maize prices fluctuate more depending on the season and usually vary between 0.45-0.8 GEL per kg. The price is low in autumn during harvesting and increases in spring and summer. In addition to the above-mentioned locally mixed food, special ready-made food, so-called “granules”, is also used, which is more efficient but costs more. As a result, it is sometimes given to young birds to accelerate growth; afterwards, birds are switched to locally mixed food. The market price for 1kg of “granules” is 3 GEL. Approximately 4kg of food is required to feed chicken from a birth until 2kg (35-40 days).

**Medications.** Required medications are purchased at veterinary pharmacies in Kutaisi and Tbilisi. Price and quality is generally similar at all pharmacies, i.e. prices for the same goods do not vary significantly. Large poultry producers usually have their own veterinarian, while small producers receive required services from veterinary pharmacies or veterinarians of large producers. Medications are foreign manufactured and are imported from various countries. The share of medications and various disinfectants (for farm disinfection) is approximately 2-2.5% within the total cost structure. The most commonly used medications include: Enroflox – antibiotic, for newly hatched chickens, costing 2 GEL and sufficient for 20 birds; H vaccine used against pasteurellosis at two months, costing 3 GEL, sufficient for 100 birds.

**Packing Materials.** Eggs are placed in cardboard crates mostly imported from Ukraine. The price of one crate is 0.1 GEL and the box (for crates) costs 0.7 GEL. A total of 30 eggs are placed on a crate, in total 12 plates per box, i.e. 360 eggs. Consequently, the packing price for one egg is 0.05 GEL. Eggs are also packed in plastic boxes for ten eggs. The cost of the box is 0.1 GEL.

**Cages.** Cages have size approximately 1m/2m and have several (3-4) levels. Special paper is placed on the bottom of the cage, which is periodically changed. At first, up to 15 chickens are placed in a cage and as the birds grow, the number reduces to 5. Prior to placing the chickens inside, the cages and the environment are disinfected; cages are treated with formalin and chemicals against rodents are also applied.

## 5.2 Demand

According to the National Statistics Office of Georgia, 57,400 tons of poultry was consumed in Georgia in 2012, which is on average 13kg per person per year. Overall, 21% of the products are locally produced and 79% imported, mostly from the US, Brazil and Turkey. According to data from the same period, annual egg consumption is 445 million pieces, 100% of which is locally produced due to government-imposed regulations restricting egg import to the country. However, the research suggested that 5% of consumed eggs were imported in 2013.

A high share of meat is imported frozen because it is two times cheaper compared to locally produced chicken meat. As a result, although the quality and taste of the latter are normally inferior, consumers

still buy it due to poor economic conditions.

Live birds and meat produced locally are all sold within the country, mostly at regional agricultural markets and food shops. Small producers usually sell their products at agricultural markets only, while medium and large producers are also focused on selling at larger retail chains (in Kutaisi) and to various legal entities (kindergartens, army etc.).

Diagram 5 - Egg consumption in Georgia (million egg)<sup>9</sup>

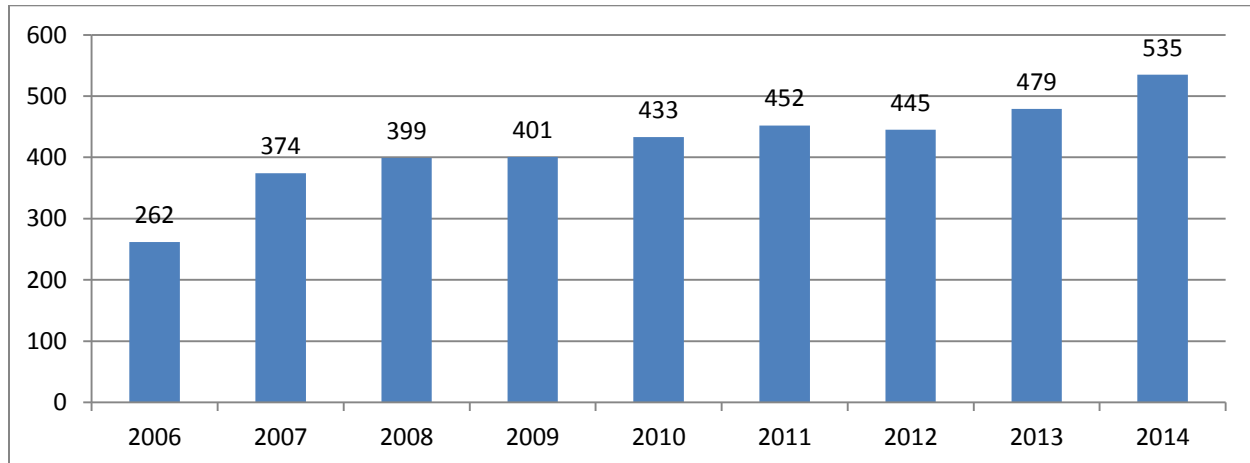
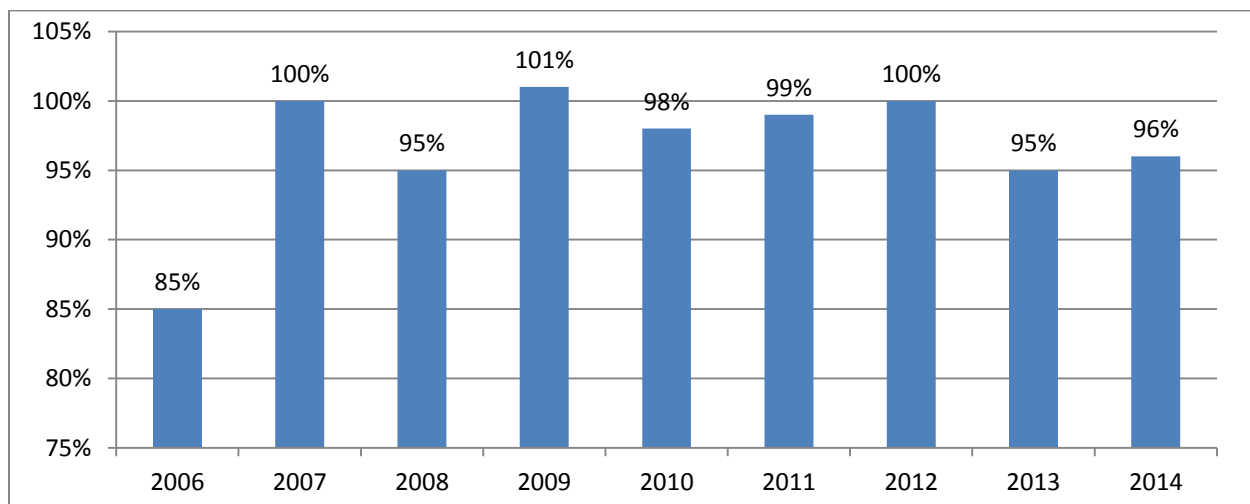


Diagram 6 - Egg self-sufficiency of in Georgia (percentage)<sup>10</sup>

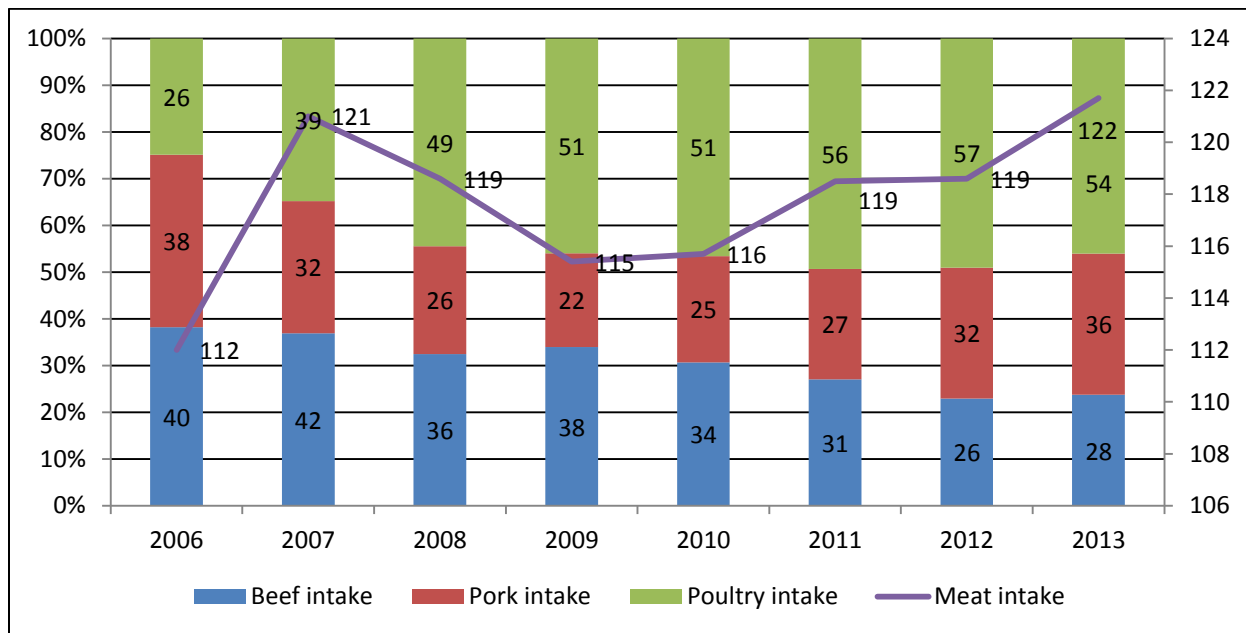


<sup>9</sup> [http://pc-axis.geostat.ge/Table.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px\\_db=Database&px\\_type=PX&px\\_language=ka&px\\_tableid=Database%5cAgriculture%5cAnimal+Husbandry%5cTABLE\\_3.02-13.px&layout=tableViewLayout1](http://pc-axis.geostat.ge/Table.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px_db=Database&px_type=PX&px_language=ka&px_tableid=Database%5cAgriculture%5cAnimal+Husbandry%5cTABLE_3.02-13.px&layout=tableViewLayout1)

<sup>10</sup> [http://pc-axis.geostat.ge/Selection.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px\\_db=Database&px\\_type=PX&px\\_language=ka&px\\_tableid=Database%5cAgriculture%5cFood+Balance+Sheets%2c+Supply+and+Utilization%5cTABLE\\_4.12.px](http://pc-axis.geostat.ge/Selection.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px_db=Database&px_type=PX&px_language=ka&px_tableid=Database%5cAgriculture%5cFood+Balance+Sheets%2c+Supply+and+Utilization%5cTABLE_4.12.px)

Georgia does not export poultry meat, this means that 100% of the poultry which is produced in Georgia is consumed in Georgia. Accordingly we can assume that imported cheap poultry fills the gap of the market not expulse the local product. However it's hard to say that around 78% of market share is gap, because Georgia produces only 20-22% of its poultry consumption. In cases of increased investments in poultry production there is a good market potential for Georgian producers to sell poultry on internal markets. Poultry, beef and pork are substitutes of each other, so sometimes demand on poultry is conditioned by lack or surpluses supply of beef or pork, on the market. Diagram 6 shows market shares of beef, poultry and pork.

Diagram 7 – Poultry, Pork and Beef consumption in Georgia (ths tons)<sup>11</sup>



A study of the current situation revealed two factors leading to change in the poultry market structure:

- In 2006, there was a high risk of bird flu outbreak across the world, including Georgia. As a result, consumers avoided poultry consumption, while production was reduced accordingly. When the risk of bird flu decreased, this resulted in increased consumption;
- Cost of poultry is approximately 40% lower compared to beef, significantly affecting consumer choice. Poultry intake constitutes around 40-45% of meat consumption in Georgia.

<sup>11</sup> [http://pc-axis.geostat.ge/Table.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px\\_db=Database&px\\_type=PX&px\\_language=ka&px\\_tableid=Database%5cAgriculture%5cFood+Balance+Sheets%2c+Supply+and+Utilization%5cTABLE\\_4.12.px&layout=tableViewLayout1](http://pc-axis.geostat.ge/Table.aspx?rxid=c8ca81e9-2824-4c5b-a46a-c80202913531&px_db=Database&px_type=PX&px_language=ka&px_tableid=Database%5cAgriculture%5cFood+Balance+Sheets%2c+Supply+and+Utilization%5cTABLE_4.12.px&layout=tableViewLayout1)

### 5.3 Related industries and their income

Medium sized farms and agri enterprises own mills, used for producing feed for their needs and providing services to small farmers. Yet, these activities are responsible for only a small share of total income.

Individual producers make bird cages themselves for their needs and for sale as well. Cages are primitively-made, without automated systems for water and food supply. Sale prices vary according to size but tend to be approximately 1 GEL per bird. The profit margin from the mentioned activity is around 15-20% per bird, depending on breed and size of chicken bird, which is rather insignificant source of income.

Medium and large producers use hatcheries for additional income. In particular, they provide the service of hatching chickens for the local population. Income from this service is 0.2 GEL per egg, and most costs incurred relate to electricity and salaries. The profit margin is approximately 20-25% and the mentioned business is usually seasonal with 3-6 persons employed.

### 5.4 Competition

Competition is very strong in the market of poultry products in the country and in the region as well. There are two types of actors in the market – importers and local producers. The main advantage for importers is low prices, yet the quality of the products (as perceived by the customers) is inferior to local goods, because imported meat is generally secondary, i.e. made from birds used for egg production and used for meat after a decrease in productivity. Still, due to a lack of appropriate labelling, the majority of customers use such products as a result of poor social conditions.

There is some competition between locally produced poultry sellers too, significantly affecting the market price. Small producers are at an advantage in this respect, as they do not usually employ labour and practically do not pay any taxes (land, property etc.). Yet, large producers try to combat this through economy of scale and, consequently, at present, producers of all scales are quite successful in the market.

The situation is different with respect to eggs. Since the government restricted egg imports to the country, the market was almost completely supplied by local goods. Yet, so-called quotas were introduced for producers which limited the introduction of new actors to the market and violated the principle of free competition. At present, all restrictions are cancelled and there are no artificial barriers against entering the market.

## 6 Strategic productivity and quality

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### 6.1 Poultry production in relation to food safety and quality

Poultry is rich in high-quality proteins, and is tender and juicy. Egg contains proteins, fats, over 10 vitamins and up to 20 minerals.

According to the research, there are no efficient and effective mechanisms for controlling the quality of poultry, to ensure that only high-quality products go to the market. As a result, suppliers providing quality and, consequently, costly products to the market are at a disadvantage, because there is no information labelled. Producers unanimously note that the existence of a quality control system in the market is necessary in order to protect the legitimate interests and safety of suppliers as well as consumers.

## 7 Operational productivity – processing, diseases and biological hazards

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### 7.1 Processing

The main equipment and inventory used by poultry and egg producers is a properly furnished farm building equipped with ventilation and heating systems, permanent water supply and lighting. In addition, one of the most important pieces of equipment is cages for birds. Most farmers produce such cases in a primitive manner. They have no ventilation systems and only conduct airing of the building and provide heating by means of wood-burning heaters. Large-scale farmers use relatively better and more modern systems, including automated lines for food and water supply, usually imported from Turkey. Due to its high quality, prices for such equipment are also high. For 500m<sup>2</sup> farms with 13000 chickens have cages equipped with automated water and food supply system which costs 35,000 GEL, gas-operating central heating system costs 3,500 GEL while a ventilation system costs 4,500 GEL.

In addition, large producers own a slaughterhouse and refrigerating equipment, sometimes hatcheries as well – although, recently, farmers have opted to purchase chickens from various local producers, rather than hatching on the spot.

### 7.2 Transportation

Large farms usually own various specialized vehicles (trucks) used for food transportation. Small producers usually supply their products to the market by means of public transport or their own private non-specialized light vehicles, but the number of products transported is usually rather small. Large producers usually have their own distribution system with specialized vehicles for meat and eggs. Distributors usually use their own vehicles.

### **7.3 Diseases and chemical hazards**

One major hazard is the potential outbreak of an epidemic, causing mass deaths of birds. Furthermore, in the event of an outbreak in a farm, the source of the epidemic is unknown for several years; consequently, it becomes impossible to place birds within the same farm. In order to prevent outbreaks, it is important to meet hygienic and sanitary standards, conduct disinfection, purchase quality food, regularly use required medications etc. Major diseases presenting a substantial risk for the country include: bird flu, pasteurellosis, Newcastle disease etc.

## **8 Supply chain management – flow of goods and information in the chain**

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Live birds, as well as meat produced in the region, are exclusively sold within the country, mostly at agricultural markets and food shops of the region.

Fresh products are not usually packed and some producers pack frozen goods. Yet, freezing is quite rare too, because refrigerating equipment is owned only by 2-3 large producers. The price of frozen goods is 0.5-1 GEL less per kg while selling goods in the market is not difficult and freezing is rarely necessary.

Supplying goods to the market takes place through middlemen, who purchase poultry and eggs from the producer at bulk price or by means of their own distribution network (in the case of large producers).

## **9 Social capital, human resources, extension opportunities and education**

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### **9.1 Know-how and access to extension services**

In the poultry farming industry, the transfer of knowledge takes place through person-to-person relationships among farmers, as there are no organized training courses providing basic education to persons interested in the field. Although occasionally trainings are organized by donor institutions on specific issues related to poultry farming (mostly in Tbilisi), most producers are not aware of them. Consequently, they usually receive consultations from more experienced farmers, veterinarians or information consulting centres established by the Ministry of Agriculture at all municipalities.

### **9.2 Formal Education**

The most closely related field to poultry farming is veterinary medicine. Various universities offer Bachelor's and Master's programs in veterinary medicine (Agrarian University - Tbilisi, Akhaltsikhe University – Akhaltsikhe).

### 9.3 Social capital and cooperation

The level of cooperation is rather low throughout the field and is limited to individual entrepreneurs providing each other with information regarding feed, medications, buyers and other issues based on personal relations. The main problem of low cooperation level is mentality and lack of experience. The farmers do not see the opportunities which cooperation brings, and also they do not want their capital and property to be depended on others working performance.

## 10 Institutions and business environment

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### 10.1 Business environment

In spite of favourable natural conditions for poultry and egg producing development in the region, the development of the field as a business has been rather poor. Production is most commonly extensive and about 40% of eggs are produced by small family farms. There are a few barriers in the market (especially for egg production), which makes it possible for acceptable quality/price goods to be easily established in the market.

There are several reasons for the lack of investment in the field. On the one hand poultry production has low-income margin. On the second hand the period for return on investment is long-term which increases the risks. Also the farmers and enterprises have limited access to financial resources because there are not well developed agribusiness loans in the country available. Current agribusiness loans are not proper for market conjuncture due to its high interest rate and a grace period.

### 10.2 Government regulations

The study has shown that local poultry and egg producers require governmental support in the following areas:

Egg production is taxed with VAT (unlike other primary agricultural products), and the increasing production price of local goods makes them uncompetitive against imported goods. Furthermore, eggs are produced by the countries benefiting from significant tax privileges on import to Georgia;

In order to import eggs to Georgia a special permit is required from the Ministry of Agriculture. Persons interested in import, gain the mentioned permit quite easily compared to previous years, when egg imports were actually restricted into the country. For receiving import license, imported product has to meet Georgian quality standards and sanitary norms.



## 11 Conclusions and recommendations

### 11.1 SWOT

<p><b>S</b></p> <ul style="list-style-type: none"> <li>• High quality of produced goods (as perceived by customers)</li> <li>• Long-standing experience in poultry farming</li> </ul>	<p><b>W</b></p> <ul style="list-style-type: none"> <li>• Low productivity and high production cost</li> <li>• Lack of modern equipment and technologies</li> <li>• Shortage of own cheap feeding</li> <li>• Low access to credit resources</li> <li>• Lack of management experience and qualification</li> <li>• Low access to education</li> <li>• VAT on egg production</li> </ul>
<p><b>O</b></p> <ul style="list-style-type: none"> <li>• Growing local market</li> <li>• Introduction of high-productivity breeds common around the world</li> <li>• Opportunity for development of cooperatives in the field</li> </ul>	<p><b>T</b></p> <ul style="list-style-type: none"> <li>• Risk of poultry epidemics</li> </ul>

### 11.2 What potential exists for improving the poultry production chain for small farmers?

- **Promoting the consolidation of farming enterprises.** Small farmers have no access to refrigeration and other required inputs for increasing productivity. One way to solve the issue is to develop cooperation.
- **Development of feed base.** Expansion of grain production in the country and reduction of prices would lead to reduced production price for poultry (meat, eggs), increasing its competitiveness.
- **Providing information on new technologies to the farmers.** The majority of farmers use outdated equipment leading to low productivity levels. In order to equip existing poultry farms with modern equipment and technologies, a leasing system may be used.
- **Promoting distribution of high-productivity breeds.** The use of modern productive breeds both in meat and egg production will significantly increase productivity of the industry



## 12 Bibliography

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