



Georgian Farmers' Association
საქართველოს ფერმერთა ასოციაცია

Business Case Study

Dairy Sector in Georgia

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ABBREVIATIONS

BSO	Business Support Organization
CARD	Center for Agribusiness and Rural Development
CBA	Cost Benefit Analysis
CEA	Cost Effectiveness Analysis
CSO	Civil Society Organization
DCFTA	Deep and Comprehensive Free Trade Area
DFA	Dairy Farmers' Association
EU	European Union
EBRD	European Bank for Reconstruction and Development
FAO	Food and Agriculture Organization of the United Nations
FLW	Food Loss and Waste
GEL	Georgian Lari (currency code)
GFDC	Georgian Farmers' Distribution Company
GFA	Georgian Farmers' Association
HACCP	Hazard Analysis and Critical Control Points
IRR	Internal Rate of Return
LoA	Letter of Agreement
LoL	Land O'Lakes
LSD	Lumpy Skin Disease
MAMA	Macedonia Agribusiness Marketing Activity
MoEPA	Ministry of Environment Protection and Agriculture of Georgia
NFA	National Food Agency
NPV	Net Present Value
SDG	Sustainable Development Goal
SOQ	Seal of Quality
SME	Small and Medium Enterprise
USAID	United States Agency for International Development
VC	Value chain

1. INTRODUCTION

1.1 BACKGROUND

Georgian Farmers' Association (GFA) has conducted an assessment of value chain (VC) of dairy production in Georgia under LoA between Food and Agriculture Organization of the United Nations (FAO) and Center for Agribusiness and Rural Development (CARD) of Armenia for provision of "Support to local private sector in Armenia and Georgia on their engagement in SDG implementation with a focus on Food security and nutrition".

The global objective of the study was conducting a baseline assessment of dairy sector in Georgia, with a specific attention to the regions where cattle breeding is the main agricultural activity of households/farms (particularly Kvemo Kartli, Imereti, Samtskhe-Javakheti, Samegrelo and Zemo Svaneti). The assessment also meant identification, prioritization and feasibility assessment of specific needs for sector development. The report also included a thorough analysis of supporting services and regulations affecting the value chain operations.

1.2 OBJECTIVES OF THE BUSINESS CASE STUDY

In response to main findings of the baseline assessment, Georgian Farmers' Association designed a business case study. The study aims to address various gaps existing in Georgia's dairy industry. Specifically, the study proposes a business model that can be applied in practice to solve the gaps in the dairy value chain and foster the sector development.

For this purpose, GFA team studied best practices in other countries and has selected an approach used by Land O'Lakes International Development. In addition to studying of international experience, the team conducted needs assessment of dairy farmers in Georgia. Needs assessment had two main goals: 1. To identify the main impediments of the dairy farmers; and 2. To capture the opinion of the target group about the establishment of new association.

The structure of the case study is similar to the one used in feasibility studies. Section 2 provides a brief review of the dairy sector in Georgia and presents main gaps in the dairy value chain. Section 3 proposes a business model – establishment of Dairy Farmers' Association and discusses association development including the service development. Section 4 provides financial calculations for the proposed solution. Section 5 concludes. Section 6 provides an indication for further research.

1.3 LINKAGES WITH SDGs

UN Sustainable Development Goals (SDGs), comprised of 17 goals and 169 targets, were approved on September 25, 2015. Georgia, along with all other UN member states, has expressed willingness to implement sustainable development goals and targets set for 2030. SDGs and targets are integrated in the Government of Georgia (GoG) Annual Action Plan.

All relevant SDGs, particularly those underlined in the LoA (SDG 1, SDG 2, SDG 5, SDG 12, SDG 17), have been taken into consideration while developing the business case study.

Proposed business case is linked with several SDG targets. Main goal of each Dairy Farmers' Association is to increase productivity and enhance competitiveness of dairy farmers in Georgia. This will contribute to SDG 2 - end hunger, achieve food security and improved nutrition and promote sustainable agriculture. Dairy farmers will benefit from various services offered by the association. Increased access to improved breeds and access to modern technology in milk and dairy production, will allow farmers to produce more in a cost-effective way. Since milk and dairy products are necessity commodities for rural population, increased production will contribute to food security and hunger elimination. At the same time, increased production means additional income for dairy farmers whose main source of income is agricultural production. Establishment of Dairy Farmers' Association will create additional cash flows in the region and contribute to SDG 1 – end poverty in all its forms everywhere - in the long run.

SDG 5 - Achieve gender equality and empower all women and girls. The sector is perceived to be led by men. However, in the baseline assessment, it was identified that men and women are relatively equally involved in animal husbandry. Women are mainly responsible for production of milk and dairy products. Men take care of the farm, animal health and assist women in selling the product. At the same time, among veterinarians as well as other professions men are relatively well presented than women. Therefore, the business case envisages that women and men will be equally presented in management of each association. Woman can also successfully handle tasks of veterinary services, etc.

SDG 12 - Ensure sustainable consumption and production patterns. Challenges associated with SDG 12.3 are important for dairy sector in Georgia. Like in many countries, there is a lack of national statistics data on Food Loss and Waste (FLW) in Georgia. In the business case it is envisaged that through representation of dairy farmers, DFA's will support relevant agencies in data collection on FLW. At the same time, associations will foster access to new practices which will enable dairy farmers to achieve low level of food loss. This will be achieved through DFA's services such as information dissemination, awareness raising of dairy farmers, and certification.

SDG 17 - Revitalize the global partnership for sustainable development. Partnership of different parties will be supported through advocacy, capacity building, and networking services provided by associations. DFA's will advocate farmers' rights on a regional as well as national level and play a mediatory role between farmers and government. Establishment of associations will foster public-private dialogue on industry related issues.

2. JUSTIFICATION

2.1 OVERVIEW OF THE DAIRY PRODUCTION IN GEORGIA

Georgia produces up to 500 million tons of milk annually. While Georgia's dairy market is valued at an estimated US\$ 0.5 to 0.6 billion, the country boasts just a handful of modern dairy farms and milk processing companies. Most of the milk produced comes from smallholders and is sold through informal channels. Even among the country's few commercial farmers, most lack the technical skills and knowledge needed to produce high-quality milk.

In 2016 the total supply of milk in Georgia was 681.0 thousand tones, of which 79.3% was produced in Georgia, 18.2% was imported and 2.5% remained from the previous years' closing stock. Of this total supply, 94.4% went to population consumption. Roughly 2.0% of total supply was used for feed, 1.0% was exported and another 2.0% remained in closing stock.

According to the official statistics, milk production is declining in Georgia. The decline is mainly caused by the following behavior: households which own small number of cattle they do not find milk production as a profitable business and gradually quit milk production. At the same time, establishment of professional farms encouraged milk production. Though, not all the farms are registered as a legal entity. According to the National Statistics Office of Georgia, in 2016, 1.2% of total milk was produced by registered farms (in 2015, it was 0.3%) and rest 98.8% was produced by non-registered farms which are called "households".

When it comes to the milk and milk products market in Georgia, it is characterized by a large quantity of suppliers and consumers, out of which no side is able to influence the price of the product and therefore the latter is determined exclusively through the interaction of supply and demand. Informal barriers at market are either non-existent or extremely weak.

Cheese is most consumed commodity among dairy products in Georgia and it is steadily rising. In 2016, average consumption of cheese amounted to 12.7 kg per capita. Next comes milk and matsoni with an average consumption of 11.7 ltr and 8.3 ltr per capita, respectively.

As for trade, Georgia's export of milk and milk products (but not in case of butter and other fats and oils derived from milk) has increased in 2017 compared to previous three years. However, import of same products also increases year by year and exceeds export, resulting in a negative trade balance of milk and milk products. In terms of quantity, Georgia's export of milk and dairy products is very limited. Main part of milk and dairy products is exported to neighbor countries such as Azerbaijan and Armenia. However, it has to be noted that during last two years, 2016-2017, export of milk and cream export depicted in Azerbaijan was much lower compared to previous years, 0.1 and 3.4 tons, respectively. At the same time, recent trend shows that milk and dairy products are being exported to new markets such as Kazakhstan and Tajikistan.

Overall, Georgia is a net importer of milk and dairy products, however, there are a few countries Georgia has a positive trade balance with such as Armenia, Kazakhstan and Tajikistan. In 2017, Georgia's export of milk, cream, cheese and curd to Armenia exceeded import of the same commodities from Armenia.

2.2 MAIN CHARACTERISTICS OF THE DAIRY INDUSTRY AND ISSUES TO BE ADDRESSED

Pre-production level

Input Suppliers such as veterinary stores, veterinarians, and farmers which sell cow or calf have their impact on the value chain. They directly influence on such issues, like artificial

insemination, prevention from diseases, breeds, etc. Generally, in the country veterinary stores are relatively well developed, as they can provide majority of needed drugs. However, veterinary services often lack modern knowledge and in addition, despite many of veterinarians know how to perform artificial insemination, demand from small scale farmers is not high.

Feeding. Households that possess several animals usually use grass in summer and corn, hay and straw in winter (produced on their own farm). Relatively large-sized farms and agricultural enterprises usually purchase the necessary food (wheat, corn, hay) in eastern Georgia. Family farms, as a rule, are not able to ensure necessary food ratios. Therefore, the productivity of their animals is low. Pastures do not provide sufficient feed and farmers have to buy animal feed that is produced locally or imported.

Breeding. As a rule, the family farms for reproduction use traditional, natural methods, which lead to absence of any controlled breeds. Some of medium and large-sized farms apply artificial insemination.

Machinery services. Currently, the major part of agricultural machinery in the country is technically unreliable, and outdated, which hinders timely implementation of agricultural activities, increases costs of production, worsens harvest quality, and reduces yields.

Production and harvest

Farm size. Agricultural holdings are mainly small (1-9 cattle heads) sized ones (94.9%). Medium (10 – 49 cattle heads) and large (more than 50 cattle heads) agricultural holdings constitute 4.9% and 0.2% of total agricultural holdings, respectively.

Milk powder. In winter, milk processing companies mainly use milk powder rather than raw milk, because the price of raw milk is relatively higher than the price of milk powder. In addition, there is a raw milk deficit in general during this time of the year. Quantity of imported milk powder is increasing year by year.

Milk production. In Georgia, the milk producing period is significantly shorter and lasts from seven to nine months due to ineffective breeds and insufficient care of the livestock. The milk producing ability of a cow depends on its breed and the conditions in which it is taken care of. Insufficient feeding reduces the milk producing ability two to three times. Georgia boasts just a handful of modern dairy farms and milk processing companies, with only an estimated 5% of milk sold through commercial dairy processors. Official statistics indicate that demand outstrips supply by a wide margin, which processors fill with imported milk powder. Recent trends show that milk production in intensive farms increases due to the increasing number of cattle, while in extensive farms, the milk production decreases caused by reduced number of cattle and average yield of milk. More than 90% of milk is produced in extensive farms and in family farms.

Productivity. The last 8 years, the productivity of local breed cows increased by 12.5% from 1,263 litres/year to 1,421 litres/year, which is substantially low indicator compared to

international breeds. Low productivity is mainly caused by extensive farm management and lack of knowledge on proper treatment of animal diseases among farmers. Lack of knowledge is caused by limited number of qualified veterinarians, farm managers, etc. Productivity in intensive farms is much higher (3,500-6,000 litres per cow) than in extensive farms.

Georgia has a solid consumer base for dairy products but lacks the necessary technical knowledge for efficient production and farm management. A study conducted by FAO and EBRD in 2014¹ concluded that Georgia lacked the commercial producers capable of supplying high quality milk to meet growing domestic demand. At the same time, the study found, milk productivity could be increased by up to 35% by helping existing dairy farmers learn and implement simple production methods, such as better feed and fodder production, improved animal health, welfare and farm management, and hygienic milk handling.

Knowledge and capacity of farmers. Many of the country's dairy farmers lack specific technical know-how to produce safe and high-quality milk. 2017 FAO survey of livestock producers in Georgia found that the majority of livestock farmers do not perceive a connection between animal health care on the one hand, and food safety and human health on the other. Further, about one-third of respondents admitted to knowing nothing about animal diseases. This is in the face of increased risks to animal health – Georgia saw its first two outbreaks of lumpy skin disease (LSD) in late 2016.²

In the regions farmers still milk cows by hand and do not use any milking equipment. Only a few farmers use the milking equipment but the hygiene standards still are not met. On-farm production is primitive. Farmers use inappropriate equipment for storing the milk and milk products. In the sector, there is a problem of low productivity, lack of modern equipment and technologies, low access to credit resources, and lack of management experience.

Post-harvest handling and processing

Sales of fresh milk. Farmers store dairy products in refrigerators and/or in special containers. According to the clarifications provided by the producers, if they get the possibility to sell milk instead of producing and selling cheese, it will increase their income. There are also farms that deliver milk to wholesalers, local cooperatives and milk collection centers. Anyway, currently the sales of fresh milk are extremely low.

Milk price. In the winter when the amount of milk is low, there is huge competition among registered and unregistered cheese producers in milk collection and they regulate the price of milk. Unregistered entities can offer unsustainable and high prices for milk due to low operational costs.

Wholesale and retail distribution

¹ FAO & EBRD joint project. www.georgiandairy.org/ru/post/o-proekte

² FAO. <http://www.fao.org/georgia/news/detail-events/en/c/1073576/>
<http://www.fao.org/georgia/news/detail-events/en/c/853929/>

In terms of sales, there is no any regular system on place. The ad hoc decisions about sales are received chaotically. Farmers may sell open door in one month and next time may take cheese to agrarian market. Large farms are more organized and they work with several wholesalers, also deliver cheese to certain groceries and restaurants on regular basis.

According to the study “Ensuring Sustainability in the Dairy Market Sector,”³ in terms of whole and retail sale of dairy products, the following aspects were highlighted:

- Unfair competition due to cheese being made from milk powder being sold as cheese made from raw milk and the subsequent need for improved controls on the use of milk powder mainly in Imeretian cheese production.
- NFA controls on cheese in supermarkets are currently insufficient.
- Lack of enforcement and controls by supermarkets over their supply. E.g. checking premises of suppliers to see if they are compliant. However, most Imeretian cheese is not made in factories but in households and uncompliant premises. The supermarkets must supply this commodity to customers but are faced with a conundrum of obtaining compliant supply which the market is only beginning to supply.
- Lack of transparency by supermarkets towards information provision to consumers.
- Low awareness amongst consumers of their rights and knowledge towards issues such as labelling. Most consumers assume that buying vacuum packed cheese in a supermarket guarantees quality and hygiene.

Consumers in Georgia are attracted by well-designed brands, however they do not know and are not aware of how to read and understand the labels on cheese. Indeed, the topic is a fairly complex one and thus confusing. E.g. if vegetable oil is written on the label it means that the product is not made from raw milk despite having every appearance and marketing of cheese. Due to this, consumers are unable to make an informed choice and are frequently misled by misrepresentative and disingenuous marketing.

Regulatory constraints

- *Incompliant product.* According to food safety and hygiene law it is not obligatory to be compliant with the requirements set by the law when milk processing at home, making cheese or other dairy products for home consumption. This obligation will be enforced from January 2020. Because of this law the NFA is not able to control the production of homemade cheese.
- *Lack of control of non-registered and incompliant enterprises.* NFA inspections concentrate on registered enterprises and unregistered cheese production continues to undercut compliant production and creates unfair competition, thus destabilizing the entire sector.

³ The study was conducted by Alliances Caucasus Programme in 2017.
<http://alcp.ge/pdfs/d755c5fad9646bcd36d5610ca27a261.pdf>

- *Unlabeled production of cheese made from milk powder.* Increasing amounts of imported milk powder are being used in cheese making but without commensurate transparency in labelling, thus undermining the potential added value of raw milk dairy production. HACCP is not required for SMEs, which are producing milk powder, but for SMEs who are producing raw milk it is obligatory.⁴

Dairy sector does not require any license or certification. According to Georgian legislation, producing and selling of milk and dairy products is regulated by 18 legislative acts. This legislation determines basic veterinarian norms, packaging, transportation, labeling and other related issues. But, all the above mentioned norms and regulations do not cover family holdings, and they stay beyond rules. Practice shows that small-scaled farmers can sell their product even before producing it. The milk is usually sold to the locals in the neighborhood.

3. SOLUTION

As seen from the previous section, Georgia's dairy sector still remains on a very low level in terms of breeding and feeding technics, milking practices, farm management, marketing and sales, etc. All these are important gaps in the dairy value chain that impede the sector development.

The team has studied international experience of other countries that managed to solve similar constraints existing in the dairy sector. The most relevant approach that can be replicated in Georgia is a case of Macedonia. The situation in Macedonia in the late 1990s was quite similar to the situation in Georgia after the collapse of the Soviet Union in the 1990s. Similar to our case, after the break-up of Yugoslavia, Macedonian agricultural sector was marked by major decline.

In the wake of Macedonian independence, a number of entrepreneurs turned to the difficult task of building a domestic food processing industry. New businesses created from privatized state enterprises typically suffered from inefficient and outdated equipment, and were too large to be run profitably at the limited processing levels permitted by available inputs and financing. As a result, many of them failed, while those surviving had difficulty maintaining stable production levels. At the same time, new facilities built from the ground up were often small, fledgling operations, producing a limited number of products and marketing them in substandard packaging. Inconsistent quality, together with a lack of standardization and branding, made it difficult for consumers to differentiate between high- and low-quality domestic food products in the marketplace. As a result, consumers were increasingly attracted to the growing variety of imported, branded products.

⁴Alliances Caucasus Programme. 2017. [Ensuring Sustainability in the Dairy Market Sector](#)

In 1998-2003, Land O’Lakes⁵ implemented the Macedonia Agribusiness Marketing Activity (MAMA), a USAID-funded initiative designed to support the development of Macedonia’s private sector agribusinesses and thereby contribute to the country’s economic growth. MAMA project activities focused on assisting the Macedonian meat and dairy industries to achieve dramatic growth via a comprehensive market-driven strategy and the fostering of the creation of a well-functioning and competitive market that rewarded quality through increased sales and profitability.

GFA team had a privilege to meet representatives of Land O’Lakes in Tbilisi during their visit (9-14 April, 2018) in Georgia. Land O’Lakes team has shared their experience in different countries, especially experience of Macedonia, and encouraged an idea of establishment of new sectoral association in the dairy sector in Georgia.

In addition to studying international experience and best practices, the team conducted a needs assessment of dairy farmers in Georgia. To identify main impediments of the dairy farmers, telephone interviews were carried out with 100 dairy farmers.

In addition, meetings were held with service providers, experts and government representatives to take their expertise and vision into consideration.

3.1 AGRICULTURAL HOLDINGS AND DAIRY FARMING; FARM SIZE

According to agricultural Census 2014, there are 277,125 agricultural holdings with cattle and buffaloes in Georgia. Around 240 thousand holdings own dairy cows and buffaloes across the country meaning that these holdings are engaged in dairy production.

As it is visible from Table 1 below, dairy farming is concentrated on Imereti, Kvemo Kartli, Samegrelo and Zemo Svaneti, and Samtskhe-Javakheti regions. In total, agricultural holdings in these four regions own more than 60% and 83% of dairy cows and dairy buffaloes, respectively.

Table 1. Number of agricultural holdings with dairy cattle and dairy buffaloes (units)

Region	Holdings with dairy cows	Holdings with dairy buffaloes	Total
KvemoKartli	26,759	231	26,990
Imereti	52,046	277	52,323
Samtskhe-Javakheti	19,348	203	19,551
Samegrelo and ZemoSvaneti	45,216	2,881	48,097
Subtotal (4 regions)	143,369	3,592	146,961
Share (%)	60.96%	83.34%	61.36%

⁵Land O’Lakes International Development has extensive experience in developing sustainable associations to facilitate market access and dairy and beef industry development – the [Association of Meat and Dairy Processors in Macedonia](#), [Eastern and Southern Africa Dairy Association](#), [Malawi Milk Producers’ Association](#), [Dairy Association of Zambia](#), and [Kenya Dairy Board](#) – all remain active today.

Total Georgia	235,197	4,310	239,507
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Source: National Statistics office of Georgia. Agricultural Census 2014.

By number of cattle heads, agricultural holdings can be grouped into three categories:

- Small – 1-9 cattle heads
- Medium – 10 – 49 cattle heads
- Large – more than 50 cattle heads

According to official statistics, 78% of cattle is owned by 95% of agricultural holdings, which own 1-9 cattle heads.

In case of dairy cows, in Georgia, 94,86% of agricultural holdings own less than 10 dairy cows. The remaining agricultural holdings are medium-sized (4.95%) and large-sized (0.19%) ones with 10-49 dairy cows and more than 50 dairy cows, respectively.

Table 2 shows the distribution of dairy cows in four regions where dairy farming is more common. This can be once again confirmed that these four regions represent more than half of dairy farmers in all categories (farm size); Thus, these regions can play a role of driving force for dairy sector. For example, 60.75% of small-sized farmers are presented in these four regions.

Table 2. Distribution of agricultural holdings by number of dairy cows (units)

Region	1-9 dairy cows	10-49 dairy cows	>50 dairy cows	Total
Kvemo Kartli	24,244	2,435	80	26,759
Imereti	51,213	780.69	52	52,046
Samtskhe-Javakheti	16,484	2,786	77	19,348
Samegrelo and Zemo Svaneti	43,588	1,583	45	45,216
Subtotal	135,530	7,584	255	143,369
Share (%)	60.75%	65.15%	56.99%	60.96%
Total Georgia	223,108	11,642	446.8743	235,197

Source: National Statistics office of Georgia. Agricultural Census 2014.

3.2 ANALYSIS OF DAIRY FARMERS' NEEDS ASSESSMENT

In total, 100 dairy farmers participated in the telephone survey. The survey covered four regions and all farm categories (small, medium and large sized farms).

Table 3. Regional distribution of surveyed farmers by farm size

Region	Small 1-9 dairy	Medium 10-49 dairy	Large >50 dairy	Total number of surveyed farmers
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	cows	cows	cows	
Kvemo Kartli	13	5	5	23
Imereti	15	10	6	31
Samtskhe-Javakheti	10	7	4	21
Samegrelo and Zemo Svaneti	12	8	4	25
Total	50	30	20	100

50 out of 100 surveyed dairy farmers are small-sized farmers, other 30 are medium ones and the remaining 20 dairy farmers are large producers.

Questionnaire consisted of two parts: 1. Constraints and knowledge gaps; 2. Willingness to join new association and benefit from different services.

Part I. Constraints and knowledge gaps

To the question “in which areas do you need knowledge improvement and training”, majority of surveyed farmers consider lack of finance as main obstacle for their business. 81.6% of the surveyed farmers have heard of various standards, however, the majority (52%) says that they need detailed knowledge and information on new standards and regulations related to animal husbandry, especially milk and dairy production.

Lack of high quality breeds, low productivity cows, insufficient feed, lack of machinery, lack of knowledge on food safety and animal diseases are common for surveyed farmers in four regions: Kvemo Kartli, Samtskhe-Javakheti, Imereti and Samegrelo and Zemo Svaneti. In addition, most of them named lack of infrastructure and equipment, lack of information on training, project and programmes as constraints for their business.

About 86 surveyed farmers do need additional information and would like to get more knowledge regarding dairy sector. Farmers who indicated willingness of getting additional information and knowledge, they were asked to give concrete topics or themes of their interest.

Topics named by farmers are the following:

- Innovations and modern technologies in dairy sector
- Animal diseases and treatment
- Export related issues regarding milk and dairy products
- Fund-raising
- Business plan writing
- Artificial insemination

Part II. Willingness to join new association and benefit from different services

Most of surveyed dairy farmers are ready to work with new association (established in their region) addressing above-mentioned constraints existing in dairy sector. Moreover, majority of them has willingness to be a member of an association and would like to benefit from the following services:

- Sector related information, including information on technologies
- Support in access to finance (including grants)
- Support in networking and coordinating with other market players
- Training and consultations on sector-related issues

56 out of 100 dairy farmers surveyed thinks that association should regularly provide them with updated information on markets and finances, also, analytical information according to their needs.

Surveyed farmers think that one of the major role of dairy farmers' association is to assist them in contacting to similar or larger dairy farmers and processing companies.

According to survey results, dairy farmers are ready to pay membership fee, in case the association offers custom-tailored services. 55 of surveyed farmers consider payment of 50 GEL a month is acceptable. Majority of these 55 farmers are small-sized ones. 22 farmers are ready to pay 50-150GEL, 11 is ready to pay 150-250 GEL, and 5 is ready to pay more than 250 Gel a month. The remaining 7 farmers are not yet ready to pay a membership fee even the association offers various services to them. 5 out of 7 farmers are small one with 2-3 cows each and they cannot afford to become a member of the membership fee based association. 2 out of 7 farmers are large sized farmers who do not see any benefit from joining an association and therefore, are not willing to pay a membership fee.

Moreover, more than half of the surveyed farmers expect that association will play active role in policy creation and advocacy.

3.3 PROPOSED BUSINESS MODEL

Based on the main findings of dairy farmers' needs assessment and meetings with experts as well as government representatives, the team proposes an idea of establishment of **Dairy Farmers' Associations** in the following four regions: Kvemo Kartli, Imereti, Samtskhe-Javakheti, and Samegrelo and Zemo Svaneti.

Figure 1. Dairy Farmers' Associations in Georgia



Goal and Specific Objectives of the association

Georgian dairy industry is in transition from a traditional centrally planned to a more market-oriented sector. Due to this process the goal of each Dairy Farmers' Association (DFA) is to unite the voices of dairy farmers in their respective region, increase productivity and enhance competitiveness of dairy farmers in Georgia.

DFAs will aim to address each and every part of the dairy value chain in order to assure that the process goes towards the development. One of the main objectives of the associations will be creation of well-structured advocacy system. For this purpose, DFAs will be presented in Georgian Farmers' Association's (GFA) Farmers' Council through their Chairpersons. The main goal of the Farmer's Council is to make sure that farmers are actively involved in policy-making process. The Council supports the formation of close ties between them and the government. In the Council each municipality of Georgia is represented by two farmers, which means that the congress will have around 120 members.

Through representation in Farmers' Council, associations will be mediators between dairy farmers and the government and also will deliver useful services and information to their members.

The association will achieve its goal through an aggressive, industry-led transition to the production of local, higher-quality, branded food products that will become widely recognized and preferred by customers for their superior quality. As the quality is one of the main concerns for the producers, the organization will be oriented on its improvement by taking into action a certification system which will have a significant influence on the quality of the product. Within this certification system, training programs and distribution of market information will enable members to gain additional skills and business insights.

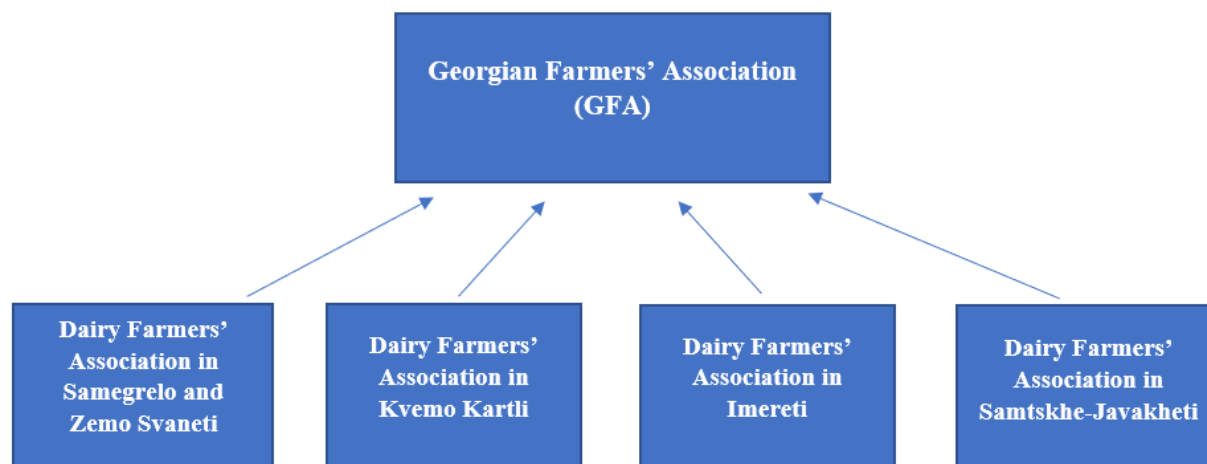
Specific Objective #1: Promote high quality breeds and usage of artificial insemination among the farmers and raise awareness among them, which will increase productivity of the cattle. Assist farmers to make a connection with different service providers which will provide appropriate consultations and training on various sector related issues.

Specific Objective #2: Establish advocacy system which will lead to the simplified communication between the farmers and the government. The association will play a role of mediator between farmers and the government of Georgia in order to deliver the problems of the farmers to the governmental authorities.

Specific Objective #3: Enable dairy farmers to improve the quality of their product in order to meet all the standards and regulations by introducing Seal of Quality (SOQ) which will oblige the producers to maintain a certain quality level of their product, which will help the farmers to maintain the quality of their production.

Georgian Farmers' Association (GFA)

As a result, there will be four regional associations established in Georgia. The associations will cover their specific regions and will unite under Georgian Farmers' Association which is an umbrella organization of sectoral associations in Georgia.



GFA was founded in 2012. Currently, the organization unites 3,600 farmers in Georgia. GFA establishes its value to members by giving guidance on governmental programs; links to service providers and sources of funding, markets and technical support; consultation on policy issues and representation of members' interests; defending smallholder farmers' rights; participation in policy making; and advocacy of fair access to markets and resources. GFA's call center provides farmers and stakeholders with useful information and helps to analyses current issues in agriculture.

GFA actively cooperates with governmental, donor and educational institutions and is a strong coordinator between farmers and all actors involved in agriculture. GFA has a clear ambition to bring Georgia forward and is aware of the fact that farmers need to make a shift from being a peasant to entrepreneur.

GFA's main services include advocacy and lobby services, the provision of information about existing funding or training opportunities in agriculture, and matchmaking (farmer – market; farmer – media) activities. At central level – at the office in Tbilisi - a call center is established to respond on questions of the members. GFA's Call Center has experience in conducting telephone interviews regarding different issues such as irrigation, land registration, and the Deep and Comprehensive Free Trade Area (DCFTA) – trade agreement between EU and Georgia.

GFA ensures the connection between its members and distribution company (Georgian Farmers' Distribution Company - GFDC) which itself collaborates with Adjara group and other hotels/restaurants and supplies farmers' products to them.

In addition to lobbying farmers' interests and other advocacy activities, it has to be mentioned that in December, 2016 the Board of Directors of GFA made a decision to form a Farmers' Council composed of farmers, with enough power to take part in the process of making policies, dealing with the issues of development of agriculture and improvement of the state of Georgian farmers.

In 2017, GFA created an application called "Agronavti", where a farmer can place the product produced for sale/marketing. "Agronavti" can be downloaded via iOS and Android. In addition to providing matchmaking services, the mobile application offers the following information: weekly prices established for agro products and their statistical changes, researches and innovations in agriculture, more than 60 cycles of agricultural products, weather forecast, agro-calendar, etc.

Association management

Management of Dairy Farmers' Associations will be similar to the one used by GFA. Each association will have a Chairperson and a Board of Directors.

Chairperson will be a key decision maker of each associations and he/she will be selected by members. It is also advised that each of the associations has a Board of Directors.

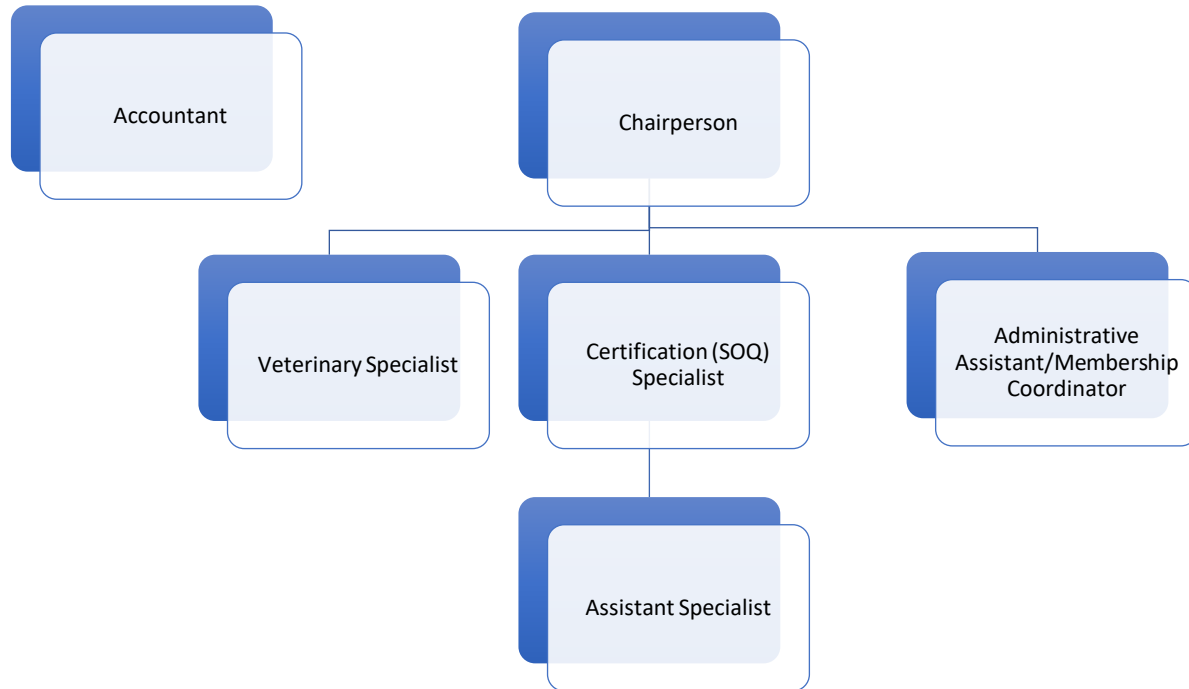
Organizational structure

Proposed organizational structure is to have

- Chairperson
- Administrative Assistant who will also be responsible for communication with members and other stakeholders

- Certification (SOQ) Specialist and Veterinary Specialist. They will be responsible for developing and delivering services and therefore, will work closely with dairy farmers
- Assistant Specialist who will assist in certification procedures.

Figure 2. Proposed organizational chart



Strategic Plan

A strategic plan is an important tool to guide the work of any organization. It helps to maintain a focused, long term vision of the organization's mission and purpose, and aid decisions about the allocation of human and financial resources.

DFAs are advised to elaborate a five-year strategic plan. The plan will envisage main goals that have to be achieved in five years' time.

Proposed main goals for a strategic plan are the following:

1. To be a principal regional organization for dairy farmers
2. To be the main advocacy body for its members
3. To provide services to dairy farmers that will strengthen their economic and social position in the Georgian society
4. To become financially self-sustainable by 2023

Capacity building plan, which is a detailed action plan, with activities and timeline should also have developed in accordance with the goals set in the strategic plan.

Regional coverage; members profile (size); membership fee

Dairy Farmers' Associations will cover Kvemo Kartli, Imereti, Samtskhe-Javakheti, Samegrelo and Zemo Svaneti regions. By the end of the first year from establishment of associations, number of each Dairy Farmers' Association members will be 45 farmers differentiated by farm size. Based on the experience of GFA, it is recommended that certain number of the member farmers are large dairy farmers, this will foster further development of association. The remaining farmers will be medium-sized producers and small-scale farmers.

Dairy Farmers' Association will be member-based organization. Based on the needs assessment, it has been found out that membership fee will be defined according to farm size. For small-scale farmers, membership fee will be 50 GEL per month, for medium-scale farmers it will be 150 GEL, and large-scale dairy producers will pay 300 GEL per month for services they are willing to receive from newly established association.

Service development

Proposed services for each of the DFA's are: Advocacy, Capacity Building, and Networking.

Advocacy: The purpose of the advocacy is to serve as the voice for the dairy farmers when and where needed, shape public policy through individual and collective action, and build the capacity of farmers to be strong advocates for their missions and broader agricultural issues.

Development and Capacity Building: The purpose of the Development and Capacity Building is to provide education and technical assistance to dairy farmers to increase their profitability, become more efficient and access new markets (i.e. EU market).

Networking: The purpose of the networking is to connect dairy farmers to one another and to other suppliers/producers in order to facilitate partnership opportunities and grow farmer's profitability. Networking opportunities are facilitated through various means including social media.

Advocacy

- ✓ Identifying problems and delivering them to agro-players
- ✓ Information dissemination
- ✓ Developing recommendations and communication

- ✓ Defending farmers' interests

Capacity Building

- ✓ Strengthening and developing farmers through engaging them in different activities
- ✓ Workshops and training
- ✓ Researches

Networking

- ✓ Collecting and disseminating information
- ✓ Connecting/linking interested parties

In addition to the above services, business case proposes to introduce new services for its dairy members. Associations' services include: consultations and certification (SOQ).

Through consultations, members well as other dairy farmers will benefit from advices about different issues in dairy sector provided by association's specialists.

In addition to custom-tailored consultations for farmer, association will also conduct training in different field such as artificial insemination, using modern technologies in dairy farming to improve farmers' knowledge and skills.

Association's will also assist its members to connect with different service providers which will provide specific trainings and consultations on sector-related issues including –treatment of different diseases, vaccination, requirements for standards and certifications, and other topics relevant to dairy sector.

Seal of Quality (SOQ)

This initiative is based on the premise that food quality is the foundation for success in world food markets. Dairy Farmers' Association will design a service that: (1) enables producers of processed milk and dairy products to meet improved quality standards; (2) establishes a system to verify that these standards continue to be met on an ongoing basis; (3) awards these products with a Seal of Quality for display on their packaging; and (4) promotes these products and their quality and value to consumers nationwide through an intensive marketing campaign. The association will be able to implement the first three components in the beginning of its operation, as for the fourth, it will start once association gains strength and experience in this process.

Producers who will be engaged in SOQ system, agree to maintain high quality standards verified by periodic visits of association's specialists. The producers are permitted to use the Seal of Quality logo on product packaging. Association will develop standards for dairy producers' materials including farm signs and stickers displaying the Seal of Quality logo.

Working with donors and other stakeholders

Through the help of DFAs, farmers will have an opportunity to make new connections with the different associations, service providers, donors and other bodies which operate in the dairy sector. DFAs will actively work with different service providers which will provide information, training and custom-tailored consultations to dairy farmers. They will also cooperate with the international donor organizations from which they will benefit significantly as donors play a critical role in promoting and supporting partnering not just as a tool or method but also as a value. Prior to making financial commitments, donors usually would like to feel that they have strong relationship with farmers.

Monitoring and Evaluation

During the implementation of proposed business case, it is recommended to design a proper monitoring plan to measure indicators of main results as well as baseline ones. Each DFA can devote one employee for monitoring and evaluation or this service can be outsourced. It is also suggested to include indicators on FLW and collect data on regular basis. This will contribute to implementation of SDG 12.

4. FINANCIAL CALCULATIONS

4.1 COMPOSITION OF REVENUES

Revenues include the following components:

Membership fee (40%)– part of income generated from membership dues. As discussed above, each regional association will have members of all size categories: small, medium and large. Assumption has made that by the end of the first year, an association will have 45 members (10 small sized, 15 medium sized, 20 large sized). The idea behind this composition is that at the beginning of establishment, when the number of large sized farmers are relatively higher than the number of medium and small sized farmers, they can play a role of driving force of the association.

Amount of a membership fee is defined based on the findings of needs assessment. For small-scale farmers, membership fee will be 50 GEL per month, for medium-scale farmers 150, and large-scale dairy producers will pay 300 GEL per month for services they are willing to receive from newly established association.

GFA's experience shows that members are increasing year by year. Based on this information, in the proposed model number of small-sized farmers will increase by 40% each year. Number of medium-sized dairy farmers will increase by 20% and number of large-sized farmers will increase on average by 2.5% each year.

Though the proposed model envisages establishment of four associations, one in each region, calculations were made for only one association during the period of five years. It is assumed that the same will be the case for other three associations.

In five years' time, a typical Dairy Farmers' Association (DFA) will have 320 members of all size.

Year	1	2	3	4	5
Small	10	14	25	61	201
Medium	15	18	26	45	93
Large	20	21	22	23	26
Total	45	52	72	129	320

Therefore, association will be able to generate a certain amount of money from membership fee.

In the model, the following rule is applied: 40% dues + 40% service + 10% projects +10% other = Total Revenue.

Consultations and Seal of Quality (SOQ) (40%)– association will develop and deliver consultations to its members as well as non-member dairy farmers. Consultations include veterinary service, animal treatment and other demanded services from dairy farmers. Revenue from SOQ includes fee for the certification and promotion of farmers' certified products. Assumption was made that during the first year 3 farmers will be granted by the SOQ certificate.

Project implementation and other (20%) – DFAs can target traditional sources of funding such as donor assistance, grants and fundraising as well as use the database available to sell individual reports and publications to private and public-sector stakeholders.

4.2 COMPOSITION OF EXPENSES

Labor cost–based on the organizational chart provided above, in the beginning, association will employ two Specialists, one Assistant Specialist, one Administrative Assistant/Membership Coordinator, and one Accountant. Along with increased number of members, starting from the second year, association will employ more people. Labor cost is calculated based on GFA's previous experience.

Laboratory and testing cost for SOQ – it will include cost of laboratory tests needed prior to issuing a SOQ certificate. Cost also includes monitoring missions held by association's specialists and cost of visibility materials related to SOQ. The payment for the certification will take place annually, which will enable farmers to be able to use SOQ certification during the whole year.

General administrative costs – it includes cost of office supplies and other administrative costs.

4.3 PERFORMANCE INDICATORS

Financial Calculations (e.g. Cost-Benefit Analysis (CBA) relies on but is not limited to two main financial metrics used in decision-making regarding selection of projects for financing. These are:

1. Net Present Value (NPV)
2. Internal Rate of Return (IRR)

If benefits generated by the project are exceeding costs, then project is worth financing. Determining the value of a project is challenging because there are different ways to measure the value of future cash flows. According to definition of NPV, it is the difference between the present value of cash inflows and the present value of cash outflows. NPV is used in capital budgeting to analyze the profitability of an investment or project.

Decision-Making rule in case of using NPV is as follows:

- If $NPV > 0$, investment is worth financing
- If $NPV = 0$, investment generates neither profits nor losses
- If $NPV < 0$, investment is more likely to generate losses

However, NPV is not the only tool which can be used for decision-making. Another financial metric which is also important is Internal Rate of Return (IRR). According to definition IRR is the discount rate often used in capital budgeting that makes the net present value of all cash flows from a particular project equal to zero. Generally speaking, the higher a project's internal rate of return, the more desirable it is to undertake the project. As such, IRR can be used to rank several prospective projects. Assuming all other factors are equal among the various projects, the project with the highest IRR would probably be considered the best and undertaken first.

Decision-Making rule in case of using IRR is as follows:

- If the $IRR >$ the project's cost of capital (discount rate), accept the project
- If the $IRR =$ the project's cost of capital (discount rate), accept the project
- If the IRR is less than the project's cost of capital (discount rate), reject the project

The rationale is that investor would not want to finance a project that returns less money than he/she pays to borrow money (cost of capital). If money is taken from bank as a loan then cost of capital would be an interest rate which is paid on that loan. As it was noted above while considering several projects, projects with higher IRR are more preferable.

Discount rate

Selection of discount rate is an important step in financial calculations. While there is a lot of literature suggesting different values, one should make a decision based on the specifics of the project, country and currency used in the analysis. It is vital to differentiate between financial and social discount rates.

Financial discount rate is the rate at which future financial values are discounted to the present. It is usually roughly equal to the opportunity cost of capital. In this view it could be consistent to have different financial discount rate in different countries, reflecting different opportunity cost of capital in different financial markets.

The business case uses 11% as a major discount rate because it is an average interest rate on loans in Georgia.

Results

This section presents the results of the business case study. Table 4 shows revenues and expenses of the project.

Table 4. Revenues and Expenses (GEL) of a typical Dairy Farmers' Association

Year	1	2	3	4	5
Revenues					
Membership fee	8,750	9,525	11,580	16,703	31,665
Consultations	3,281	3,572	4,342	6,264	11,874
SOQ	5,469	5,953	7,237	10,440	19,791
Project implementation	2,188	2,381	2,895	4,176	7,916
Other	2,188	2,381	2,895	4,176	7,916
Total Revenue	21,875	23,813	28,949	41,758	79,163
Expenses					
Labor cost	21,000	21,420	23,562	25,918	28,510
General administrative costs	1,200	1,224	1,273	1,351	1,477
Laboratory and testing cost for SOQ	2,461	2,679	3,257	4,698	8,906
Total Expenses	24,661	25,323	28,092	31,967	38,893
Operational profit	(2,786)	(1,510)	857	9,791	40,270
Profit tax	-	-	128	1,469	6,040
Net Profit/loss	(2,786)	(1,510)	728	8,322	34,229

NPV	22,592				
IRR	96.94%				

As it can be concluded from Table 4, expenses exceed revenues in Year 1 and Year 2. This can be explained that at the beginning number of members is not high enough to cover all the incurred costs. Starting from the third year, number of members is increasing, therefore revenues from membership fee, consultations and SOQ increase simultaneously.

The results of the study are positive and it can be concluded that if we consider association as a project, we can say that it represents good value for money. All the financial metrics support this conclusion. At the discount rate of 11% NPV is positive and equal to 22,592 GEL, IRR is 96.94% which is much higher than discount rate of 11%.

Table 5. Comparison of results with decision making rules

Results	Decision-making rule
NPV = 22,592 GEL	NPV>0
IRR = 96.94%	IRR> 11%

Sensitivity analysis with discount rates of 9%, 15% and 18% was conducted in order to check the robustness of results.

Table 6. Sensitivity Analysis

Performance Indicator	9% Discount Rate	15% Discount Rate	18% Discount Rate
Net Present Value (NPV)	24,878 GEL	18,691 GEL	16,252 GEL
Internal Rate of Return (IRR)	96.94%	96.94%	96.94%

Sensitivity analysis shows that results are robust when discount rate changes and NPV is positive for 9%, 15%, and 18% discount rates.

5. CONCLUSION

Business case study presented and analyzed current situation in dairy sector in Georgia. It highlighted the main characteristics of the dairy value chain and identified main challenges that hinder the sector development. For this purpose, GFA team has used different approaches such as baseline assessment of dairy sector, farmers' needs assessment, international experience and attitude of experts and government authorities.

Based on this analysis, the study proposed a business model that can be a solution and address to various gaps and constraints identified through analysis. These constraints impede the sector development and affect negatively the achievement of the SDGs: poverty remains on a high level among rural population, food security is still one of the main problems in the country, statistical data is not available on FLW, and partnerships between public and private sector needs to be strengthened. In response to all these gaps, business model proposes to establish Dairy Farmers' Associations in four regions: Kvemo Kartli, Imereti, Samegrelo and Zemo Svaneti, and Samtskhe-Javakheti. The case study provided description of the main goal and specific objectives, members profile, management structure, and service development of a typical Dairy Farmers' Association. In addition, financial calculations were made to show a profitability of the association.

Recommendations

Weak communication with potential members is one of the important challenges for associations in Georgia. Regular and mutual communication with members should be a basis for service improvement. It is also closely linked with financial stability of the organization, as members are ready to pay for custom-tailored services.

Public outreach and stakeholder communication, including attracting new members, are among priority areas where associations need to improve. Dairy Farmers' Associations should gain more experience and improve skills in all these issues. In addition, there is also a need to improve market research skills and offer market driven services to members.

DFAs which will be representing their member dairy farmers on national platforms, will become part of Business Support Organizations' (BSOs) community in Georgia. BSOs as well as Civil Society Organizations (CSOs) play a significant role in strengthening partnership between public-private sector and can contribute to SDG implementation. Therefore, it is recommended that DFAs are working with other BSOs, CSOs, businesses, government agencies, and also with research organizations, and are involved in relevant discussions and attend working groups actively.

6. LIMITATIONS AND FURTHER RESEARCH

- Cost benefit analysis (CBA) and cost effectiveness analysis (CEA) need to be conducted in order to account for all quantitative and qualitative benefits generated by establishment of dairy farmers' association
- Propose alternative business models and compare it to the one proposed by this business case study

Overall, it can be concluded that establishment of Dairy Farmers' Association will generate positive revenues and has a potential to become a sustainable organization.

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