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MILK SECTOR STUDY

This study report provides information and recommendations which can be useful to orient entry strategies for financial institutions or for the preparation of financial services

MILK SECTOR STUDY

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EXECUTIVE SUMMARY

Livestock is a very important agrifood sector in Albania - about ½ of the farmers are engaged in the livestock including the dairy sector. Dairy products represent an important part of the Albanian household consumption basket. Milk production is by far dominated by cows' milk (more than 4/5). Overall, dairy production is destined to the domestic markets, thus the production increase is mainly triggered by increase in the domestic demand, while the dairy trade balance shows a structural deficit. The dairy value chain is considered a priority sector considering import substitution potential.

There was a strong increase in milk (and dairy products) production trend during the first decade of transition - growth has continued also through the 2000ies. While the number of cattle and small ruminants has been decreasing during this period, production of milk has increased, confirming an improvement in yields (efficiency), triggered by investments in breeds and management related to a consolidation trend (in terms of dairy farm size). Despite these improvements, the milk production yield (eg. for cow, which is the main source of milk production) is far below EU trends. In addition to low yield, another major concern is lack of compliance with standards, which bans Albania from exporting dairy products to EU markets.

The objective of this study report is to provide an overview of the livestock sector in Albania, with focus on dairy, by analysing recent developments and the current state, including opportunities, constraints and challenges, with special focus on investments needs/potentials. This study report provides information and recommendations which can be useful to orient entry strategies for financial institutions or for the preparation of financial services. But potential users of the current study findings and recommendations can be also government institutions, business associations, development agencies, academia and other interested stakeholders.

This study is developed from the technical expertise of the Albania Agribusiness Support Facility (AASF). AASF is a financing framework developed by EBRD in cooperation with and with support from the Government of Albania which started its activities in 2016.

The objective of the facility is to motivate Albanian financial institutions to support a vital sector of the Albanian economy with widely untapped potential - agriculture and agribusinesses. AASF provides access to finance for the agribusiness sector in two ways: senior loans and / or portfolio risk sharing to both MFIs and banks. The institutions benefit from a first loss risk cover that was made available by the Government of Albania. AASF therefore represents an innovative financial instrument to encourage lending by financial institutions to the whole agribusiness value chain.

The final beneficiaries of AASF are farmers, entrepreneurs and companies that are engaged in primary agriculture, agricultural equipment production and trade, logistics, agribusiness service providers, agricultural processing, wholesale as well as retail traders. Agribusinesses may also benefit from the EBRD Advice for Small Businesses program, which provides consultancy on strategy development, marketing, technical restructuring and other key institutional development areas by international and local experts.

Both secondary and primary information/data sources have been used to meet the study objectives; semi-structured interviews with value chain actors and sector experts were used as a primary source of data collection. Data were analysed using various techniques including descriptive analysis, trend analysis, text analysis, SWOT analysis strategy. Combination of

qualitative and quantitative analysis has been crucial to identify/understand trends, gaps and needs for investments.

The current study informs the financial institutions and other interested parties in supporting the milk sector about the main opportunities to finance the sector. Improved efficiency and the concern to meet safety standards of processors has motivated some farmers/entrepreneurs to invest in establishing larger milk farms (both cow and small ruminants), buying better breeds, and investing in improved stables; machineries for feed production/processing also represents a financing opportunity. Other investments to be considered for large cow farms are waste (manure processing) separators, biogas production and solar energy production (solar panels installed on the stable roofs). Important financing opportunities to consider at consolidation, processing and marketing are support to cold milk storage system, investments in medium-sized dairy plants and milk processing company start-ups investments in areas where milk supply exceeds demand. Supporting business that can utilize the milk processing waste (such as hog production which can rely on the use of dairy industry byproducts/waste) may also represent an opportunity.

Many processing factories have a liquidity problem associated with cheese technology processes. Hence, there is a need for short-term loans in this value chain. Additionally, milk processors - as leaders in the milk value chain - may be approached for exploring value chain financing opportunities.

When designing interventions in the sector, the financial institutions should consider (i) support to investment is critically dependent on developments in safety standards enforcements (which is a prerequisite for new investments in the livestock sector) and (ii) use investment co-financing: bank financing combined with public financial support using government support schemes or IPARD schemes. The current grant policy has important implications for financial institutions - they have the opportunity to co-finance the investment (stables, cooling chain, milk processing, etc.) for 100% of investment amount out of which 50% could be short-term loan (the part to be reimbursed by the grant after the finalization of the investment) and 50% loan term loan for the part to be paid by the beneficiary.

1. INTRODUCTION

Background

Agriculture is one of the main sectors of the Albanian economy in terms of employment and contribution to GDP, and it is considered a priority sector by the government of Albania. Despite recent growth, Albanian agriculture still faces various challenges including difficult access to credit; agricultural sector receives only 2% of total credit for the economy.

Dairy sector is one of the main agrifood sectors – about ½ of the farmers are engaged in this sector. Production of milk has increased over the last years. Overall, dairy production is destined to the domestic markets, thus the production increase is mainly triggered by increase in the domestic demand, while the dairy trade balance shows a structural deficit, which implies a potential to increase production to substitute (part of the) imports.

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The final beneficiaries of AASF are farmers, entrepreneurs and companies that are engaged in primary agriculture, agricultural equipment production and trade, logistics, agribusiness service providers, agricultural processing, wholesale as well as retail traders. Agribusinesses may also benefit from the EBRD Advice for Small Businesses program, which provides consultancy on strategy development, marketing, technical restructuring and other key institutional development areas by international and local experts.

The study objectives

The general objective of this study is to provide an overview of the selected value chain in Albania by analysing recent developments and the current state, including opportunities, constraints and challenges, with special focus on investments needs/potentials.

More specifically, the study

- provides an overview of the main production trends, international trade trends and market trends;
- provides a 'snapshot' of value chain structure, flows and value chain governances with special focus on 'leaders in the value chain'
- synthesizes the main points in a value chain through a SWOT analysis strategy, and
- recommends the main opportunity (investment financing, working capital financing, and value chain financing) for the banking system.

This study report provides information and recommendations which can be useful to orient entry strategies for financial institutions or for the preparation of financial products and services.

Methodology and approach

Both secondary and primary information/data sources have been used to meet the study objectives; semi-structured interviews with value chain actors and sector experts were used as a primary source of data collection. Data were analysed using various techniques including descriptive analysis, trend analysis, text analysis, SWOT analysis strategy. Value chain analysis was adopted as general framework for the analysis. Methodology is described in more details in the following section.

The targeted users

The value chain study is primarily designed for the Financial Institutions, but this study report can serve as a useful background in the decision-making process of other relevant stakeholders such as Ministry of Agriculture (MARD), development agencies, and private sector actors (eg. companies, associations).

What the study is and is not

The report is a rapid appraisal and, considering the limited available resources and time, it deals particularly with the value chain financing need and hence financing opportunities for the bankers. The study is designed in such a way that it is easy to read in terms of structure/flow and level of information details, suiting to the needs of the reading decision-making (eg. bankers). The study is designed to serve as an 'tool' for executive staff rather than a research study per se.

The report is not a full sector study or value chain study which typically provide a detailed analysis of actors in the value chain, supporting services (business services, banking services and other services or embedded services) and global, national and local economic environment.

The report structure

The report is structured as follows: the second section consists of the description of the methodology. The third section provides an extensive analysis of production and international trade trends. Section four describes the value chain structure, flows and actors profile. Section five consists of production technology processes overview to make the reader familiar with main technological processes and relevant costs highlighting timing when such processes/costs occur, as well as production (proxy for the timing of sales). Section six provides SWOT analysis with focus on investments needs/potentials, whereas the last section consists of conclusions.

2. METHODOLOGY

Sector selection

The milk/dairy value chain study is part of a 'set of sector mini-studies' on all most important agricultural sectors in Albanian agriculture. Therefore, the first stage consisted of the prioritization of the sectors or subsectors or (group of) products for which there is the biggest demand/potential for growth and investments – considering export market potential or import substitution potential. Two groups of factors were considered when designing the list of products to be analysed, namely market potential and other factors leading to product competitive advantages. Market potential is examined in two angles, export potential and import substitution potentials. Export potential considers revealed export performance combined with international demand for the given product - when exports grow over time and this coincides with increasing international demand this product is said to have export potentials. Import substitution potentials considers potentials to meet domestic demand. Other consideration leading to competitive advantage include supply side factors, such as labour to land ration, tradition and skills also established linkages among actors on the value chain, including also well-established linkages between Albanian actors and international buyers.

The dairy value chain is considered a priority sector considering import substitution potential.

Data collection

The study is partly qualitative and partly quantitative. This allows better understanding of the status and dynamics of the relevant product chain. The study combines analysis of secondary and primary data. For various issues/indicators, analysis was based on the secondary data (including sectoral/ structural data).

The secondary data were retrieved from MARD (Ministry of Agriculture and Rural Development), INSTAT (Albanian Institute of Statistics), UNSTAT COMTRADE (for international trade), FAOSTAT (for production and consumption) and EUROSTAT (for production and international trade), etc. In addition, a review of other relevant studies and reports was carried out. The constraint faced is that for some indicators (related to domestic production and trade) there are no available statistics, while for some others there are no recent statistics. However, regarding international trade, latest data are available and were analyzed. When applicable data from other countries or regions were collected for comparative analysis purpose.

The primary data were collected through semi structured in-depth interviews carried out with key informants, representing value chain actors and sector experts. A snowball survey was used to identify the main actors and experts for each value chain for the semi-structured interviews (part of the primary qualitative research). In depth interviews with key informed stakeholders (alongside desk research), enabled the obtaining of up-to-date understanding about the main patterns for the key sectors. In the context of limited resource and time availability, only a limited number of interviews was carried out.

Data analysis

Regarding data/information **analysis**, secondary statistical data has been subject of standard descriptive analysis including tables and graphs depicting statistic and historical trends. Comparison of production and consumption trends with world, European and some cases with neighbouring countries was done, when applicable/necessary. Regarding VC expert/actors interviews, notes are analyzed by using simple content summarizing approach and qualitative content analysis techniques, with the aim to sum up the most relevant and interesting topics emerged from the interviews. Value chain analysis was adopted as general framework for analysis of value chain structure and (products, financial, and information) flows.

3. TRENDS AND PROSPECTS OF THE IDENTIFIED VC

3.1. PRODUCTION TRENDS

3.1.1. Primary production

Production of milk and dairy products suffered a strong decline during early transition following the post-communist agriculture sector restructuring. However, milk production started to increase rapidly already during the first decade of transition – relying mostly on small semi-subsistence farms and fuelled by a growing local consumption demand.

The increase in milk (and dairy products) production has continued through the 2000ies. While the number of cattle and small ruminants has been decreasing during this period, production of milk has been increasing (see Table 1), confirming an improvement in yields (efficiency), triggered by investments in breeds and better management related to a consolidation trend (in terms of dairy farm size).

Milk production is by far dominated by cows' milk as shown in Table 1 (below).

Table 1: Evolution in livestock number and milk production during 2000 to 2016

Category	2000	2005	2010	2014	2015	2016
(000 heads)						
Cattle	728	655	493	500	504	492
Sheep & goat	3,045	2,701	2,581	2,804	2,850	2,911
(000 ton milk)						
Cattle	807	930	930	965	964	975
Sheep & goat	141	146	140	168	167	170
Total	948	1,076	1,070	1,133	1,131	1,145

Source: INSTAT (2017)

Regionalization

The region with the highest level of production of cow milk is Fier, contributing to 1/5 of total production – the region/qark of Fier is characterized by relatively larger farm size, productive agriculture land which create better condition for producing animal feed. Also some of the largest dairy processors are located in that region (as shown in the following subsections). Fier is followed by the regions of Elbasan and Tirane which together make up about 45% of the total cow milk production.

Table 2: Regional distribution of cow milk in 2016 (ton)

Qark	Cattle	Share	Cumulative
Fier	194,837	20.0%	20.0%
Elbasan	121,676	12.5%	32.5%
Tirane	119,408	12.3%	44.7%
Korce	89,083	9.1%	53.9%
Shkoder	79,853	8.2%	62.1%
Durres	68,513	7.0%	69.1%
Diber	63,222	6.5%	75.6%
Vlore	59,221	6.1%	81.7%
Lezhe	54,339	5.6%	87.2%
Berat	50,970	5.2%	92.5%
Kukes	50,014	5.1%	97.6%
Gjirokaster	23,527	2.4%	100.0%
Total	974,663	100.0%	

Source: INSTAT (2017)

The regions with higher concentration of small ruminant milk production are those of Vlore, Gjirokaster, Korce and Elbasan, which together make up for more than ½ of total production. Generally, regions that have higher concentration of sheep tend to have also more goats, considering that both these types of animals are more common in mountainous areas.

Table 3: Regional distribution of small ruminant milk in 2016 (ton)

Prefecture	Sheep	Goat	Total S.R	Share	Cumulative
Vlore	17,000	10,000	27,000	15.8%	15.8%
Gjirokaster	11,651	9,670	21,322	12.5%	28.4%
Korce	11,776	9,349	21,125	12.4%	40.7%
Elbasan	7,195	12,818	20,013	11.7%	52.5%
Fier	9,219	5,836	15,055	8.8%	61.3%
Berat	6,751	8,171	14,922	8.8%	70.1%
Shkoder	4,904	6,865	11,769	6.9%	77.0%
Diber	5,439	5,629	11,068	6.5%	83.5%
Tirane	3,313	5,319	8,632	5.1%	88.5%
Durres	3,300	3,350	6,650	3.9%	92.4%
Kukes	3,473	3,070	6,543	3.8%	96.3%
Lezhe	1,425	4,911	6,335	3.7%	100.0%
Total	85,446	84,988	170,434	100.0%	

Source: INSTAT (2017)

3.1.2. Processing

Available data (Table 4) show a sizeable increase in dairy production between 2000 and 2005, followed by decline or a modest growth in the following years (varying from year to year). In general, local demand for cheese, yoghurt and butter is predominantly covered by domestic production. Overall dairy production is destined for the domestic market, thus the production increase is mainly triggered by increase in the domestic demand. As mentioned above, there are oscillations from year to year and product to products but at the same time, there are concerns for the reliability of data for domestic production, given the high level of informality in the dairy processing (similar to the whole agrifood sector).

Table 4: Evolution of production of cheese and butter (Ton)

Category	2000	2005	2010	2016
Cheese	8,404	13,947	13,527	14,301
Butter	440	647	680	824

Source: INSTAT (2017)

The main dairy product is cheese. About 3/4 of total cheese production is based on cow milk, while the rest is based on small ruminant meat, mainly sheep milk. The main type of cheese is soft cheese (feta-like cheese) - this type of cheese is widely consumed, and it is also preferred by processors because of quicker cash return (soft cheese is usually stored/ripened for several weeks when compared to harder so called kashkvall and vize cheese, which is ripened for several months, representing liquidity limitation) - hard cheese, is more likely to be produced during higher milk production months.

There are no records or statistics about the share of dairy products produced using (partially or fully) powder milk, although there have been reported cases of substantial use of powder milk. In the labels of dairy products, is not stated if powder milk is used - that is a concern also for consumer (see the following section regarding market and consumer preferences).

Table 5: Production of dairy products by type (2016)

Dairy products	Tons
Drinking milk	10,983
Raw milk	533
Whole milk	6,425
Pasteurized	6,242
UHT	182
Semi-skimmed milk	3,950
Pasteurized	2,967
UHT	983
Skimmed milk	74
Pasteurized	74
Cream	184
Of fat content by weight up to 29 %	100
Of fat content by weight over 29 %	84
Yoghurts, drinking yoghurts and other	15,687
Butter and other yellow-fat dairy products	824
Cheese	14,301
By type of milk	
Cheese from cow's milk	10,516
Cheese from sheep milk	2,647
Cheese from goat's milk	1,139
By texture	
Soft cheese	8,101
Medium-hard cheese	4,334
Hard cheese	533
Fresh cheese (curd etc.)	1,334

Source: INSTAT (2017)

3.2. INTERNATIONAL TRADE TRENDS

The dairy trade balance shows a structural deficit, but much lower when compared to the other livestock subsector – that of meat. Due to market conditions and production constraints (animal feed costs in Albania are structurally higher than in other countries of the region, first and foremost caused by small farm size), the dairy trade deficit is to be considered as a structural one and is expected to remain persistent also in the future. Exports are negligible due to constraints in standards and due to structural limitation (which were explained above).

Dairy imports consist mainly of cheese and UHT milk. Another dairy product that is imported is also powder milk, up to ca 500 ton/year or ca 1 Million USD. As briefly mentioned above, it is used in the agro-industry (often mixed with fresh milk) to produce dairy products, partially to cope with the fresh milk costs, and partially to cope with gaps emerging between seasonality of demand and the supply of fresh raw milk.

Table 6: Albanian international trade of dairy products (HS 04)

Year	Exports Mill USD	Imports Mill USD	Export/ Import
2000	0.20	5.00	4.0%
2005	0.57	12.57	4.5%
2010	2.98	20.40	14.6%
2015	1.93	22.02	8.8%
2016	1.37	20.71	6.6%

Source: INSTAT (2017)

Cheese exports are inexistent or very low at best. On the other hand, in the last two years, we observe an increased quantity of cheese imports.

Table 7: Import and exports of cheese, Albania by year

Year	Exports		Imports		Export/ Import
	000\$	Ton	000\$	Ton	Value
2000	:	:	1,417	669	:
2005	:	:	4,273	1,550	:
2010	15	3	5,585	1,294	0%
2014	2	0	5,153	978	0%
2015	54	10	6,105	1,445	1%
2016	171	34	8,236	2,091	2%

Source: UNSTAT (2018)

The main exporting partner is Kosovo although exports are negligible (below 200,000 USD). The main supplier of the imported cheese is Germany with 44% of the total import, followed by Italy and Austria which together account for about 2/3 of total imports.

Table 8: Import of cheese and curd, Albania by key partner country, in 2016

Country	000 \$	Ton	Share (ton)
Total	8,236	2,091	100%
Germany	2,978	910	44%
Italy	2,741	436	21%
Austria	1,029	256	12%

Source: UNSTAT (2018)

3.3. MARKET

3.3.1. International market

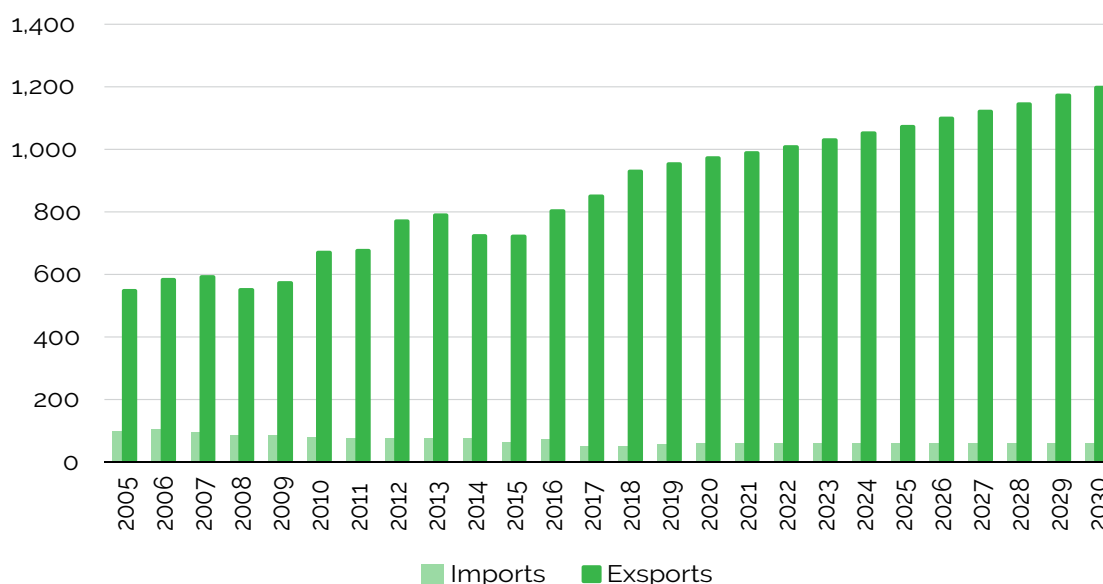
International production and trade trends with focus on EU¹

Production and consumption of dairy products has increased significantly in the last decades globally – Asian countries are key drivers behind this growth. Growing global and EU demand is expected to support world dairy markets demand in the long term. However, world market price variability is expected to continue, which might imply pressure to lower prices which has implications for less efficient or high cost producers, typically Albanian dairy livestock producers (both in terms of competing with cheap imports of dairy products, and also in terms of potential exports, although the later is not very feasible in the near future). One strategy to cope with the market prices pressure is producing more high value-added products such as cheese PDO/PGI.

World production and trade of dairy products is expected to increase. China, which is the largest world importer of dairy products, is expected to increase imports significantly – a similar pattern is expected among other Asian countries.

The EU is a net exporter – it is expected to supply close to 30 % of the global increase in import demand. While EU imports of dairy products are very low, due to strong competitiveness of the EU local producers and due to standard requirements imposed by EU market – for both these reasons Albania cannot export large quantities of dairy products in the future (while so far, it could not export at all, due to ban related to standards).

Figure 1: EU-27 cheese trade in 2016 (000 Mt)



Source: EC (2017)

1 Based partially on EC (2017). EU Agricultural Outlook for The Agricultural Markets and Income 2017-2030.

As mentioned earlier, Albania has no competitive advantages in exporting dairy products to EU countries or to countries in the region, at least in the medium term. Recent attempts to export UHT technology milk to neighbouring countries have been subject to challenges also related to the food safety system. Albania faces strong competition also from other non-EU countries in the region, e.g. Serbia, which is more competitive in animal feed production (which is a key determinant of dairy and meat production costs).

Export potential to Kosova has been explored by several milk processing companies. Export potential to other countries can be explored too (as also demonstrated by one of the leading Albanian dairy producers (Gjirofam), which has exported to Kosova, USA and Asia). That having said, major limitation for the Albanian producers is the fact that these markets typically require large volumes. Considering the lack of competitiveness for producing or exporting large volumes, one potential effective strategy for Albanian producers might be to produce PDO/PGI high quality cheese, which can be competitive in the Albanian market but which can target also export market, especially the diaspora.

3.3.2. Domestic market

Market supply

The main driver behind the (modest) growth of milk and dairy products production has been the increasing domestic market demand. The share of imported milk to consumption (or supply which is used as a proxy for consumption) is lower than 1%, while exports are inexistent or very low.

Table 9: Supply of milk– HS 0401 (000 ton)

Category	2000	2005	2010	2014	2015	2016
Production	948	1,076	1,070	1,133	1,131	1,145
Import	1.4	2.9	7.4	6.1	7.1	7.1
Export	0.5	:	:	:	:	0.05
Supply	948.9	1,079	1,077	:	1,138	1,152
Import/supply	0.1%	0.3%	0.7%	:	0.6%	0.6%
Export/production	0.05%	:	:	:	:	0.004%

Source: FAOSTAT (2018) and INSTAT (2017 for production) and UNSTAT (2018) for trade

Also the domestic supply of dairy by products is dominated by domestic production. In the case of cheese, import share to supply (consumption) has been lower than 10% in the past, however, during the last years, there has been observed increased volumes of imports – in 2016 the share of imported cheese to domestic market supply was ca 13%. Imported cheese consist of two types: low price (usually soft) cheese and high quality high price cheeses (eg. types which are not produced by local producers in Albania).

Table 10: Supply of cheese– HS 0406 (cheese and curd) (000 ton)

Category	2000	2005	2010	2016
Production	10.6	14.5	15.9	14.3
Import	0.7	1.5	1.3	2.1
Export	:	:	0.003	0.034
Supply	11.3	16.0	17.2	16.4
Import/supply	6.2%	9.4%	7.6%	13%
Export/production	:	:	0.02%	0.24%

Source: FAOSTAT (2018) and INSTAT (2017 for production) and UNSTAT (2018) for trade

Consumer demand and preferences

Cheese is the main dairy product and one of the most fundamental food items of the Albanian consumer's shopping basket. One of the most important factors driving consumer preferences is the type of milk used for cheese-making. Naturally, most consumers prefer cheese made without powder milk but rather produced only with fresh raw milk. The use of milk powder is presumably perceived as a non-natural or non-traditional method of producing cheese ².

Also the origin of production is considered as an important factor for most Albanian consumers. According to various studies, most consumers choose their products based on origin (domestic versus imports). Generally there is a strong consumer preference for domestic food products. Also, within the domestic product group, there are significant differences in perceptions based on the region of production within Albania. Most consumers view the region/area of origin is either important or very important when deciding to buy Albanian including dairy products, most notably cheese. Albanian urban consumers show a strong inclination towards the cheese of Gjirokaster. Furthermore, most consumers are willing to pay a premium for cheese produced in the preferred region. The preference of consumers for cheese from Gjirokaster (or other regions), which has strong tradition and long history of cheese production, represents a potential to develop regional brands, including GI or PDO³⁴.

Apparent consumption of cheese in Albania is lower than the European average consumption per capita which in 2013 was 13.8 kg/capita, while in Albania was 6.3 kg/capita. Montenegro has the highest consumption per capita of cheese from Balkan countries, while Serbia has the lowest consumption per capita.

2 Imami, D., Zhllima, E., Merkaj, E., Chan-Halbrendt, C., & Canavari, M. (2016). Albanian Consumer Preferences for the use of Powder Milk in Cheese-Making: A Conjoint Choice Experiment. *Agricultural Economics Review*, 17(1), 20.

3 Imami, D., Engjell, S., Maurizio, C., Catherine, C., & Alban, C. (2016). Analysis of consumers' preferences for typical local cheese in Albania applying conjoint analysis. *New Medit*, 15(3), 49-55.

4 Imami, D., Skreli, E., Zhllima, E., Cela, A., & Sokoli, O. (2015). Consumer preferences for typical local products in Albania. *Economia agro-alimentare*.

Table 11: Apparent consumption of cheese in Albania and other countries and world regions (Kg/capita)

Country	2000	2005	2010	2011	2012	2013
Albania	3.4	5.0	5.5	5.9	5.9	6.3
Montenegro	:	:	16.3	16.7	17.1	17.2
Serbia	:	:	2.2	2.2	2.7	2.8
Macedonia	1.9	3.7	4.6	4.6	4.5	4.6
EU	15.0	16.0	17.0	17.0	17.2	17.2
Europe	11.2	12.7	13.7	13.7	13.8	13.8
Eastern Europe	4.6	6.8	7.8	7.7	7.7	7.9
Southern Europe	13.7	14.2	15.6	15.6	15.6	15.2
Western Europe	20.1	20.8	21.7	21.9	21.8	21.8

Source: FAOSTAT (2018)

Note: the data available at FAOSTAT regarding consumption cover the period until 2013 – although such data are not updated, serves as useful indicative information about consumer trends, which tend to change slowly over the years.

Safety standards

There are gaps in food safety standards throughout the downstream food value chain. Albania faces serious problems with the national food safety control system in terms of legislation, infrastructure, institutional capacity, control and enforcement, which affect real and perceived safety risks for consumers. The problems in the Agricultural Food Safety System have been identified by several studies⁵. Food safety standard is a major concern perceived by Albanian consumers. Several studies^{6,7} document/highlight the concerns of average consumers about food safety.

The Albanian Government considers food safety and consumer's health protection a policy priority in its EU approximation agenda. The main law in Albania on food safety is Food Law No 9863⁸, (dated 28.01.2008). It sets requirements for production and circulation of safe food and feed to some extent in line with EU provisions.

MARD has introduced National Minimum Standards (NMS) in accordance with EU practices. Good Agricultural Practice (GAP) should correspond to the type of farming that a farmer would follow in the concerned region, entailing at minimum, compliance with general statutory environmental requirements. During recent years, food safety, animal welfare, and the NMS have been reformed through amendments and new laws; as well as through the Minister of Agriculture's Orders

5 Verçuni, A., Zhllima, E., Imami, D., Bijo, B., Hamiti, X., & Bicoku, Y. (2016). Analysis of consumer awareness and perceptions about food safety in Tirana, Albania. *Albanian Journal of Agricultural Sciences*, 15(1), 19.

6 Imami, D., Chan-Halbrendt, C., Zhang, Q., & Zhllima, E. (2011). Conjoint analysis of consumer preferences for lamb meat in central and southwest urban Albania. *International Food and Agribusiness Management Review*, 14(3).

7 Zhllima, E., Imami, D., & Canavari, M. (2015). Consumer perceptions of food safety risk: Evidence from a segmentation study in Albania. *Journal of Integrative Agriculture*, 14(6), 1142-1152.

8 All Albanian legislation can be found (in Albanian) in <http://ligjet.org>.

applying to such issues such as animal and farm registration, business licensure, collection of milk collection and transport, animal health etc. Compliance with NMS is a requirement also to access specific support grants support, most notably IPARD.

Despite legal and institutional changes, many farmers still lack information or awareness related to standards. According to a previous study⁹ about 87 percent of the surveyed dairy cattle farmers state that they have no cooling tank for storing the milk, which is a prerequisite for attaining milk safety and quality standards. Most farmers do not know which institutions are in charge of food safety, animal health, or stable standards control. Although most farmers state that they have a farm livestock book/register, they are not aware of the institution responsible for controlling them. Lack of awareness about standards results in standards non-compliance, which implies lower market access (especially in the case of exports) and constraints in access of funds whose access is conditioned by meeting certain standards in a documented way (e.g. IPARD II).

The growing pressure from the EU approximation to improve standards, will imply growing demand significant investments along the value chain to meet the standards. Awareness campaigns, combined with stronger law enforcement effort and availability of financial incentives would highly influence likelihood to increase such investments at farm, trader and processor level.

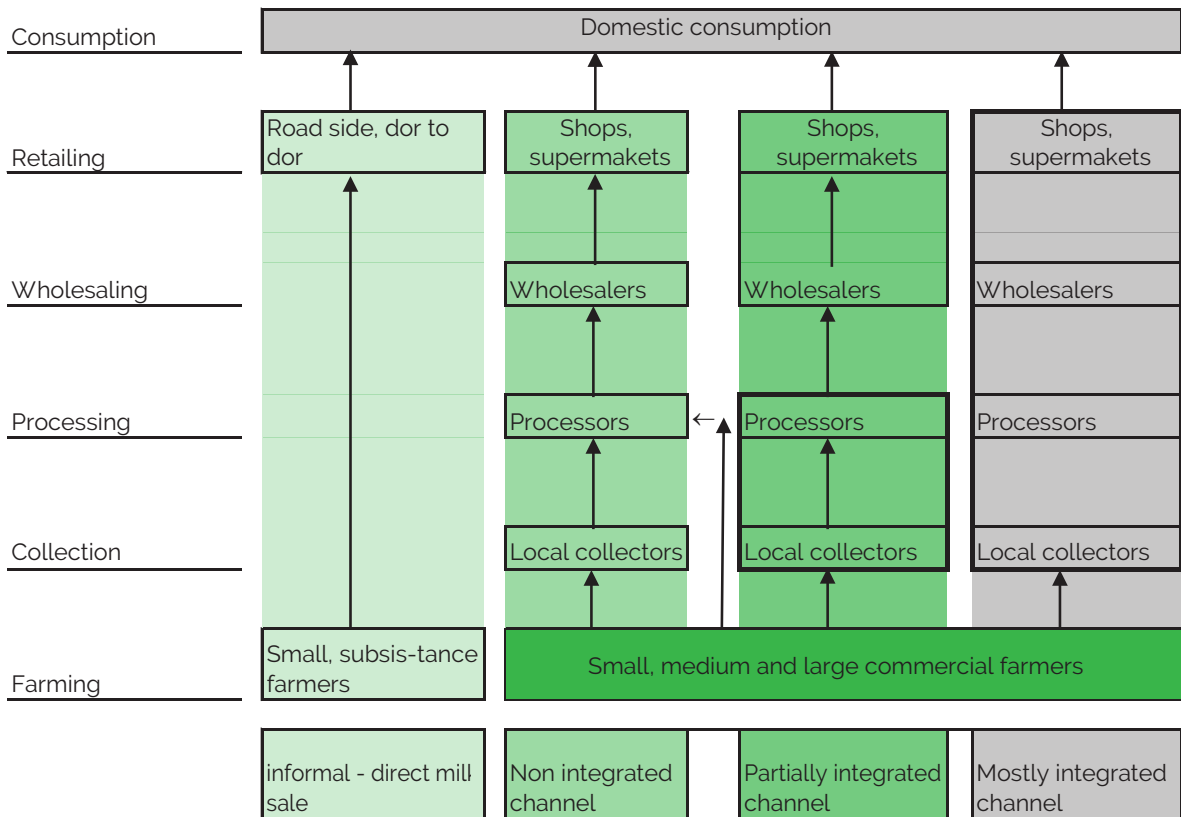
9 Gjenci, G., Bicoku, Y., & Imami, D., (2016). Awareness about food safety and animal health standards – the case of dairy cattle in Albania. *Bulgarian Journal of Agricultural Science*, 22(2), 339–345.

4. VALUE CHAIN STRUCTURE AND KEY ACTORS

4.1. VALUE CHAIN STRUCTURE AND ACTORS' PROFILE

The Figure 2 below maps the dairy value chain actors and the main channels through which milk flows from farmers to end use consumer.

Figure 2. Dairy value chain map



Source: Authors' own design

As one may observe from the map, the main actors in the milk value chain are dairy farmers, milk collectors, milk processors and dairy products wholesalers and retailers. We first give a short profile for the main actors in the value chain and then proceed with the description of the value chain flows and value chain governance.

Farmers

Most cow milk production units are very small with 1 cow per farm, typically oriented towards meeting self-consumption needs. Namely, 59% of the dairy cattle farms have only 1 cow –thus most dairy cattle farms are subsistence farms. About 1/3 of the dairy cattle farms have 2-3 cows, which can be considered semi-subsistence because farms that have 2-3 cows usually tend to sell part of the milk. About 8%, or almost 13,000 farms have 5 or more cows - these farms are market oriented, of which those with 11 or more make up 1,748 or 1% of the dairy cattle farms, which have a stronger market orientation and potential and might invest in the future (table 12).

Table 12: Distribution of dairy cattle farm by size

	Cattle	% to total
Number of farms		
Size category		
1 head	94,481	59.2
Between 2 and 3 heads	52,155	32.7
Between 4 and 5 heads	7,756	4.9
Between 6 and 10 heads	3,328	2.1
Above 11 heads	1,748	1.1
Total	159,468	100.0
Number of heads		
Size category		
1 head	94,481	28.8
Between 2 and 3 heads	115,869	35.3
Between 4 and 5 heads	33,273	10.1
Between 6 and 10 heads	24,287	7.4
Above 11 heads	60,187	18.3
Total	328,097	100

Source: INSTAT (2017 – published agriculture census data)

Table 13 below shows the largest dairy cattle farms – namely those with 21-50 dairy cows and those with above 50 heads – which can be considered large farms in the Albanian context.

Table 13: Distribution of larger dairy cattle farm by size

Cows	Number
Between 21 and 50 heads	213
over 50 heads (51 and above)	58
Total cow farms over 21 cows	281

Source: MARD processed by the authors

In terms of regional distribution, commercial farms are mainly found in west and low areas of Albania, namely Fier, Shkoder, Vlore and Durres, where there is also an overall bigger concentration of all types of dairy cattle farms.

Dairy cows are typically kept in simple stables, fed mainly on forage and grazed on grasslands and meadows, supplemented by concentrate feed and minerals. In only few cases, professional (large) farmers have invested in modern stables and started to implement mainly stable production regime.

Dairy farms with a small number of cows usually milk their cows by hand, while larger ones have milking equipment.

Most sheep and goat milk production units are also very small; the average sheep flock size averages less close to 30 milking sheep and 25 milk goats.

There are about 40,000 farmers that have sheep, and 22,000 with goat. Many small ruminant flocks have mixed flocks (combining both types). Most small ruminants farms have up to 10 heads. Namely, 43% of farmers with sheep and 33% of farmers with goats have more than 10 heads. In most cases, small ruminants are grown in pastures – although recently there have been reported cases of intensive breeding for some larger goat farms.

Table 14: Distribution of small ruminant farms by size

Size	Sheep	% total	Goat	% total
	Number of farms			
Total	39,532	100	21,738	100
1	2,065	5	3,717	17
2-3	6,866	17	5,532	25
4-5	5,845	15	2,375	11
6-10	7,912	20	2,845	13
11 and above	16,844	43	7,269	33
Number of heads				
Total	1,179,540	100	496,102	100
1	2,065	0	3,717	1
2-3	16,580	1	12,873	3
4-5	27,163	2	10,837	2
6-10	65,677	6	23,279	5
11 and above	1,068,055	91	445,396	90

Source: INSTAT (2017 – published agriculture census data)

About 5000 farms (5% percent of all SR milk production farms) have more than 50 sheep or goats (Table 15).

So all in all, most flocks are small. There are some common reasons for the prevalence of small flocks and the decrease in the number of small ruminants, including:

Scarcity of feed, especially during winter;

- Lack of milk collection/processing capacities. This is most evident in the region of Kukes where, despite the large area of pastures/grasslands, flocks are small and production is low;
- Ownership problems related to pastures;
- Lack of manpower: young people have migrated or do not want to work with livestock;
- Small ruminant breeders are mostly individuals who are typically middle-aged or elderly;
- Lack of financial resources to buy animals, feed, etc. in all districts.

In terms of regional distribution, sheep and goat commercial farms are mainly found in mountainous areas of Albania, namely Gjirokaster, Vlore, Berat and Korce.

There are only 5 thousand larger commercial small ruminant's farms which could be of interest for the banking system (Table 15). Modal value for larger farms seems to be the size between 101 and 200 heads.

Table 15: Small ruminants (sheep and goats) commercial farms for 2017

Size categorizes	Number	%
Between 51 and 100 heads	546	10.9
Between 101 and 200 heads	2704	54.0
Between 201 and 300 heads	1506	30.1
over 300 heads	251	5.0
Total sheep and goat farms	5007	100.0

Source: Data from MARD processed by the authors.

The production system is usually pasture based. Sheep and goats depend nearly entirely on grazing to feed, especially in pastures, both in winter and summer. In summer they also use arable land after harvest.

The small ruminant farms in Albania almost exclusively operate hand milking technology, which is very labour intensive. Sheep and goats are milked twice a day and the milk is stored using several ways: cooling in cold flowing water; cooling with plastic bottles with freezing water which is put inside the milk cans; and cooling tanks. The cooling in cold water system is applied only in mountainous areas that have a steady supply of water. Farmers are interested in cooling tanks because they offer the possibility of cooling milk overnight to be taken by the processors the next morning (but access to electricity in pastor areas is a problem).

The largest small ruminant farms have invested in improving stables, and many produce their own feed by cultivating forages and cereals.

However, the low capital intensity of production for both cow and small ruminant farms has resulted in low productivity, relatively high production costs and low profitability, which in turn prevent the accumulation of capital for new investments, thus perpetuating the low production and productivity levels on many dairy farms.

Milk Collectors

Milk collection and transport is one of the weakest points in the value chain. The collection of raw milk is organized mostly by milk processors and private milk collectors. Important quantity of milk for processing is delivered by farmers to the processing units as well¹⁰.

Whereas milk processors usually collect (most) milk from the area in which the processing unit is located, specialized (independent) private collectors also collect raw milk also from further afield. Small farmers tend not to have any milk cooling equipment (e.g. cooling tank) so collections are made at least once a day and from May to September and sometimes even twice a day. A private milk collector typically collects milk from 50 to 150 farms (approximately 500-1 500 liters per day). They earn about ALL 2-7 per liter milk for the collection service depending on the collection distance (this is in the case when they operate as independent entrepreneurs – however often, especially in the case of some larger dairy processors, collectors are rather employees of the company).

Evening and morning milk are frequently mixed in plastic barrels or cans, often at a high temperature and for a long time. Also, different milk qualities are mixed and transported in the same load. Inadequate cleaning and disinfection of milk containers is common. In mountainous areas the time it takes to collect milk and transport it is even longer (up to four hours without any cooling). Milk containers often are not made from food grade plastic or stainless material and most milk is not stored and transported at the required temperature.

Milk processors

Sheep and goat's milk is almost exclusively processed into cheese. Milk delivered to milk processors is processed in a different way based on tradition, experience and knowledge. Regions like Korça, Gjirokaster, Saranda and Vlore are traditional sheep and goat's milk processing regions and have more experience and knowledge in making hard cheese (yellow cheese known also as kashkavall and Vize) and white cheese in brine (Feta type cheese). Cheese makers have passed on cheese making knowledge to the new generation in their families, making it easy to find people that have profound knowledge of traditional cheese making. The situation is quite different in other areas like Dibra, Kukës or even in Shkodër. In these regions differences can be seen not only in the quantity of cheese produced but also in the quality, especially of the hard cheese and the feta style cheese made from sheep's milk or mixture of sheep and goat's milk. The cheese that is sold on the market is different in taste, consistency, texture and other physical (chemical) parameters.

Input from farms (milk supply) represents the main problem for milk processing industry. The supply from farm suffers from poor safety, and quite often from high collection costs, though it differs from region to region. In some areas, high milk price combined with low milk quantity results in low business profitability. Increasing the quantity and quality of milk production is the basis for the development of a modern dairy industry. A sufficient milk supply to processing plant is important for the utilization of equipment and distribution of fixed costs over a higher production.

Processing technology in the area is characterized by two types of processing units, namely seasonal processing units and those which operate year around which tend to be bigger and mechanized. Seasonally processing units are quite usual especially in the case small ruminant milk processing.

The dairy industry suffers from fragmentation, poor quality of inputs and poor processing practices, especially in the case of small and medium size companies. Many cheese plants have not adequate storage capacities and the milk is usually processed using quite basic technology.

The short period over which sheep and goat milk is available (100-150 days a year) requires relatively big flocks for milk supply; otherwise the cost of milk collection could be high and the control of milk quality is difficult. In such conditions, small processing unit (up to 5 ton/day) located in the production area seems more adapted; in an average situation it covers about 150 flocks with 50 sheep/goats (~ 5 villages).

Smaller processors suffer from insufficient knowledge on technological process resulting in low and inconsistent product (cheese) standard and quality. There is even a revealed demand or need for technology process expertise and education.

4.2. VALUE CHAIN FLOWS AND CHAIN GOVERNANCE

Product flows, information and financial flows

Product flow. As schematically shown in Figure 2, there are four channels through which the milk (and processed milk) flows from farmers to consumers, namely informal direct milk sale channel, non-integrated channel, partially integrated channel and mostly integrated channel. While large quantities milk remain on the farm to be consumed and processed, significant quantities of milk are sold direct from milk farmers to consumers (on the road size or door to door) - *the first* informal direct sale channel. *The second* important channel is uncoordinated one - milk flows from farmers to milk collectors or directly to processors to be processed. The processed products (cheese, curd) are sold to wholesalers who transfer the products to retailers. *The third* channel is partially integrated channel where at least two stages in the vale chain are performed by the same actor: processor deal with both milk collection and processing or both with milk processing and dairy wholesaling or with processing wholesaling and retailing; wholesalers deal with both wholesaling and retailing. *The fourth* channel is the most integrated channel where processors deal main stages in the vale chain - milk collection, milk processing, wholesaling and retailing; they either have their own outlets in the cities, or they sell the products to consumers at factory gate.

Financial flows. Many milk processors make delayed/late payment to farmers. A limited number of large processors make payment every month or even more frequently. When processors use consolidators/collector service to collect the milk, the latest are usually paid without much delay.

Information flows. Larger processors tend to engage with farmers to assist or instruct them about milk treatment after vaccination, use of antibiotics and milking and post-milking hygiene. Some of large processors have also written contracts (example, Gjirofarm) when milk quality and financial issue are stipulated in. One of the largest dairy cattle farms stated that his professionalization including improvement of standards, was largely due to close cooperation with one of the largest dairy processors (that he supplied).

Value chain governance

The milk value chain organization is relatively at an early stage. Embedded services regarding advice from processors to farmers are rather limited. Though farmers sell more to the same buyer rather than to different one, this is mainly due to a kind of exclusivity area each milk processor (baxho) operates; written contracts are not common.

Despite of the stage of development of the chain organization, chain organization models are emerging (Box 1).

Box 1. Gjirofarm chain organization model

General information. Gjirofarm is a leading milk processing company, located in Dropull municipality. The business is focusing on high quality-high price feta-like cheese. The rest of dairy products (yogurt, curd, etc.) are less important compared to other large companies (Erzeni, Lufra, etc.). Gjirofarm is present with its products in all large and medium outlets, and in many small shops. The company has also successfully explored other large export market, such as USA and Hong-Kong in addition to Kosova market. The processing capacity is 30 MT per day, and capacity exploitation slightly less than 50%. The company has plans to invest in upgrading cool chain system using the most up to date technology. The company also plans to invest to establish a cow farm, a pig farm to use the milk processing by products, as well as a salami small factory.

Actors. Gjirofarm has invested in complete up to date milk processing technology. Gjirofarm business partners include also supplying farmers and collectors. The factory collects milk from 250-300 livestock farmers. Since Gjirofarm collects milk even from distant locations (Tepelena and even Vlora), the factory uses the milkcollectors' services. It used to establish a milk collecting centre inTepelene.

Information flows. The company has established rather close relationships with supply farmers. Company's professionals advise farmers on post-milking practices with special focus on milk treatment after the use of vaccines and antibiotics.

Financial flows. The company pays the farmers, as a rule, every month. To deal with liquidity issues, the company avails a short terms loan (overdraft, to use their terminology). '

Formalization. Gjirofarm has signed written contracts with milk supply farmers. Main issues stipulated in the contracts are time delivery, product characteristics and prices, payment modalities, and company advice to farmers.

Public support. The valued added reimbursement to farmers has benefited directly the company, and indirectly the farmers – the company collect sheep milk at 100 ALL/litter; the company argues that – given the current conjuncture - lower market - without government support, the company would have been obliged to lower milk price. The company has plans to apply for IPARD II funding to finance planned investment.

Source of raw data: Authors elaboration based on interviews

5. PRODUCTION TECHNOLOGY PROCESSES

Dairy farms with a small number of cows usually milk their cows by hand. Only dairy farms whose main activity is milk production (normally more than six cows) have started buying simple milking machines. If a farm has more than 50 cows it usually also invests in a milking parlour and milk storage tanks with cooling systems.

Based on the information collected during the interviews, milk processors complain about low levels of hygiene and about problems with raw milk quality. Most of the milk supplied comes from small farms, which have the biggest problems regarding milk standards.

The factors that determine the poor quality of the milk at farm level are:

- The farming system and unsanitary conditions on the farm;
- The system of animal milking; most of the cows and the SR flocks are milked in their sleeping areas;
- The farm equipment used for animal milking, milk storage and transport;
- Health conditions of flocks of small ruminants;

Lack of knowledge, information and skills about milking hygiene, udder health, milking techniques, storage and cooling, food safety standards etc.

Milk collection and storage

Cows are usually milked twice a day and the milk processors or milk collectors usually collect the milk once a day for most of the year. During the summertime when temperatures are high, milk collection is organized twice a day (but may not be always the case).

As mentioned above, most dairy farmers have insufficient knowledge of the microbiological status of raw milk quality. Most farmers do not know which institutions are in charge of food safety, animal health, or stable standards control. Although most farmers state that they have a farm livestock book/register, they are not aware of the institution responsible for controlling them¹¹.

Breeding

Local breeds are dominant and well adapted to local conditions. In northern Albania, the main sheep breeds are Ruda, Bardhoka; and the main goat breeds: are Hasi, Capore, Alpine (French cooperation). In Southern Albania the main sheep and goat breeds are local breeds crossed with foreign/French breed.

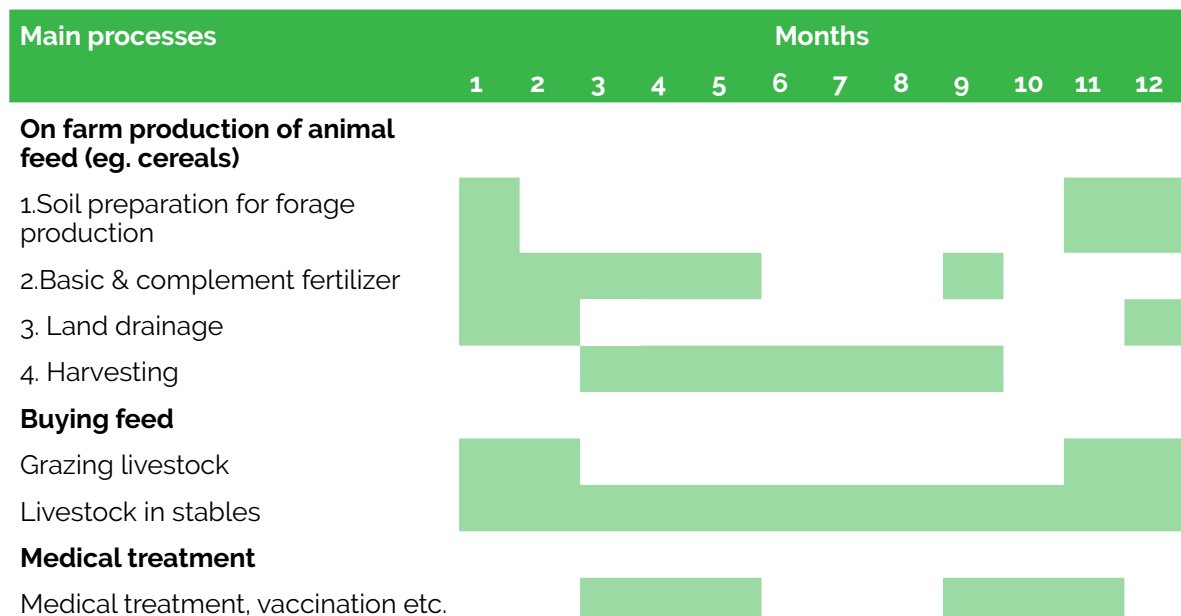
Table 16 below provides an overview of the main livestock (eg. cow) production processes including feed and other relevant services, which are related to expenditure. Small ruminant breeding is highly dependent upon access to pasture – intensive small ruminant breeding

11 Gjeci, G., Bicoku, Y., & Imami, D., (2016). Awareness about food safety and animal health standards – the case of dairy cattle in Albania. *Bulgarian Journal of Agricultural Science*, 22(2), 339–345.

businesses are rare (few). In terms of the business model, we see a difference affected by location. As a matter of comparison, there is a different breeding pattern more typical of highlands or Northern Albania, where the price of milk is lower (when compared to South-West Albania), making it more profitable to focus on meat production. In the Southern part of Albania (such as Gjirokaster), since the price of sheep and goat milk is much higher than in the North, there is more profitable to sell the lamb/goatkid as soon as possible, in order to have available for sale as much milk as possible.

Cattle production is almost exclusively focused on dairy production – meat is considered as by product. There are very few cases of meat-oriented cattle farming, but this orientation is not very feasible due to high production cost and strong competition from cheaper imports from more competitive countries.

Table 16: Calendar of livestock (production) processes with focus on cattle



Source: Expert assessment, based on desk review and interviews

The main methods of raising the level of productivity of livestock production are: i) selection and improvement of breed; ii) choice of a balanced food ration in relation to the level of production, iii) sheltering conditions and health care, iv) appropriate and timely nutrition and; v) a good combination between use of pasture and concentrated food.

Average yield of cattle is ca 2,800 liters/year. For small farmers, with yield 2000-3000 liter/year, feed conversion rate is 1.1 – 1.3 feed unit per 1 liter milk, while fertility is 85-90% according to the interviewed experts. Although most farms, including small ones, use artificial insemination, it is still common in some areas and farms to use the natural way.

Below (Table 17) there is an overview of the milk production calendar which is a proxy for income (farmers tend to get paid 2-4 weeks from the delivery of the milk, or 2-3 times per month).

Table 17: Calendar of milk production

Type	Months											
	1	2	3	4	5	6	7	8	9	10	11	12
Sheep												
High productivity			■	■	■	■	■					
Average/normal								■	■			
Low productivity								■	■	■	■	■
No production	■	■	■	■					■	■	■	■
Goat												
High productivity			■	■	■	■	■	■				
Average/normal							■	■	■			
Low productivity								■	■	■	■	■
No production	■	■							■	■	■	■
Cow												
High productivity		■	■	■	■	■	■					
Average/normal							■	■	■			
Low productivity										■	■	■

Source: Expert assessment, based on desk review and interviews

The gap between the expenditure (which tend to be widespread throughout the year) and income (eg. time when calves or lambs or goat kids (or milk) are sold) may represent a potential for short term loans.

6. SWOT ANALYSIS AND FINANCING NEEDS

6.1. SWOT ANALYSIS STRATEGY

The following SWOT analysis strategy is conducted with the objective identifying financing opportunity in the milk sector.

Table 18: Milk sector: SWOT analysis strategy

STRENGTHS (+)		WEAKNESSES (-)	
Pastures in Albania are good/high quality (for grazing)		Poor breeds resulting on low milk/meat yields	
Long tradition in livestock breeding		Small farm size which makes production of animal feed expensive, and dependence on expensive imports high.	
Investment modern milk farms (mainly cow) by a significant number of business minded farmers		Insufficient feed resources, especially during winter; poor maintenance of pasture and meadows	
Investment in facilities and up to date technology by a significant number of milk processing factories		Inappropriate stables	
		Poor milk safety and quality	
		Poor infrastructure for milk collection	
		Out of date milk processing technology and (often) incomplete set of equipment for smaller dairy processing plants	
		No waste processing and disposal systems in large farms and milk processing plants	
		Limited investment in animal processing by-products	
OPPORTUNITIES (+)	S (+) / O (+) STRATEGY	W (-) / O (+) STRATEGY	
Access to high animal genetics		Support breed improvement	
Stable domestic demand for dairy/cheese	Support increasing milk processing capacity	Support the infrastructure improvement in pastures, including water points	
Potential to increase the number of animals	Support investment in milk processing diversification, including (fruit) yogurt or yogurt drink	Support increase the number of animals, by supporting particularly larger farms	

Donor support for investments and TA to improve standards		Support technology improvement and completion
		Support stable construction/renovation
		Support waste processing and disposal systems
		Support cool milk collection system
Sufficient quantity of animal by products (hides and others)		Support animal by products processing industry
		Support investment in safety and quality control capacities at processor level, targeting middle and larger operators.
THREATS (-)	S (+) / T (-) STRATEGY	W (-) / T (-) STRATEGY
No significant exports to date – limited supply and safety problems		Support supply and safety related investment (as above)

6.2. FINANCING NEEDS

6.2.1. Investment trends and financing needs

Investment trends

Dairy cattle farms whose main activity is milk production (normally more than six cows) tend to invest in milking machines. Farmers with more than 50 cows are more likely to invest in cooling tanks. Several farms that intend to continue their farm businesses in the long term tend to invest in purchasing of heifers, improving simple cattle barns, and improving feeding systems in order to specialize in milk production. Also, the establishment of some new dairy cattle farms with modern equipment and more than 50 cows per farm has been observed in recent years. These types of dairy farms already have a much higher productivity than the majority of very small dairy farms with 1-2 cows.

Evidence suggest that there has been an increase in the number of sheep and goats in recent years. Small ruminant farms with larger heard have also invested in improving stables. In some cases, new farmers enter small ruminant sector investing in buying sheep and goats – indeed there have been reported few cases of startups in goat farming that have made significant investments.

Large consolidated milk processing factories have invested in cooling milk collection system (cooling tanks to be installed at farmers' location, and refrigerator trucks). Installing cooling chain at farmer level has occurred mainly at relatively large cow farms rather than at small ruminant farms. The investment in cooling system at small ruminants is expected to be limited given that these farms are located in remote areas where electricity is missing.

Investment in milk processing factory startups or increasing capacities and improving technologies of existing milk processing in areas where there is potential small ruminants' milk production has also been observed. In some cases, this kind of investment has been supported by donor projects.

Largest processors have also made significant investments in distribution logistics – they tend to supply directly to retailers.

Investment financing needs

Following the SWOT analysis strategy and investment trends, investment financing needs are summarised in Table 19.

Table 19: Investment financing needs

Type of investment	Farmers	Consolidators	Processors
1. Support animal purchase for establishing new milk producing by using improved animal breed - mainly cow but also sheep and goats	Yes	No	No
2. Support new stable construction and renovation	Yes	No	No
3. Support waste processing and disposal systems	Yes	No	No
4. Improving watering conditions for animals in pastures (water points) – constructing water points	Yes	No	No
5. Improving animal feeding by supporting agricultural machinery (and irrigation and certified seeds)	Yes	No	No
6. Support cool chain at processor level (and possibly at milk collector level), with the objective of improved safety and product quality	No	Yes	Yes
7. Support increasing and improving milk processing capacity (construction and renovation of milk processing plants, expanding processing capacity or investment in new milk processing lines)	No	No	Yes
8. Support business tied to milk by products use – hog and salami production	No	No	Yes
9. Support construction of byproduct processing plants in promising livestock areas.	No	No	Yes
10. Support investment in safety and quality control equipment (eg. small labs) for average size processors.	No	No	Yes

Source: Authors' own work

Improved efficiency and the concern to meet safety standards of processors has motivated a significant business-minded people to invest in establishing larger milk farms (both cow and small ruminants), buying better breeds, and investing in improved stables. These kind of investments represent a good opportunity for financial institutions, although they should be treated with caution – start-up investors entering dairy farming are exposed to higher risk (considering the difficulties of this sector).

Other investment to be considered for large cow farms are waste (manure processing) separators, biogas production and solar energy production (solar panels installed on the stable roofs).

While milk processing start-ups may be considered very carefully given the high risk associated to them (due to supply, marketing, and technology related risks), there a real opportunity to support technology upgrading and capacity enlargement for already well-established milk processors. Diversification of products (production of yogurt, fruit yogurt, drinking milk) may also be carefully considered for those not producing these kinds of products yet.

The milk cooling system – farm to processor - is yet to be established. Only large industrialised companies (eg. Erzeni, Gjirofarm, Lufra) have invested in the cooling system but there is still a lot to do. The opportunity to finance milk cooling chain are real. The actor to target in this type of investment is the (large) milk processor.

Some large milk processing companies (for example, Gjirofarm), have plans to invest in starting up businesses tied to milk processing by products. Such a business is hog farming and possibly salami production. These plans may be carefully considered by financial institutions.

Support construction of livestock byproduct (hides, etc.) processing plant in promising livestock areas ma also be considered, though it should be considered very carefully since a huge project.

According to interviewed experts, as safety standards control is expected to strengthen, dairy processors need to invest in internal safety and quality standards control capacities (eg. internal labs).

Box 2: Public support schemes for Albanian agriculture

There are two major public support schemes for Albanian Agriculture, namely Annual National Support Schemes (ANSS), and EU like Rural Development Programme, IPARD II. While the latter aims at enhancing competitiveness and implementing EU (safety, quality and environment) standards and targets the most competitive businesses, ANSS has multiple policy objectives and a broader coverage.

Objectives and measures for ANSS-2018 area summarized below:

- Increase of competitiveness by providing support to investment (investments in agro processing and marketing), supporting innovation technologies, and certification and insurance
- Improvement of food safety by supporting investments to improve the food chain safety of livestock products; and other food safety enhancing measure such as animal identification, support to safe milk delivery systems, safe storage and transport of milk and the like.
- Vertical and horizontal and business formalization
- Diversification of rural activities.

While the ANSS have traditionally provided support for meeting multiple policy objectives, including increased competitiveness, recently there has been a growing attention towards meeting the standards.

National subsidy schemes, have traditionally been changing from year to year (often drastically). The budget allocated for ANSS for 2018 is Euro 20 million. For investment support, similar scheme of partial grant policy (at least 50% public support) is valid.

Another major Program is EU like Rural Development Programme, IPARD, which enables support for investment aiming at improving competitiveness and meeting national and EU standards, through co-financing investment by a grant (eg. 50% however the exact value depends on a number of criteria). It is expected that IPARD calls for applications (which will also highlight the details of the eligibility criteria) will start in the second half of 2018. For this programme a budget has been approved of 71 Mill Eur from EC and 24 Mill Eur grant from Albanian government (75% EU; 25% Albanian government), so there is a 94 Mill Eur grant available for investments at farm and processing level during 2014 – 2020.

6.2.2. Operating capital financing needs

Working capital financing trends

Cheese technology process - the cheese become ready for sale 2 months after milk supply by farmers - leads definitely to dynamic product stocks. It appears that, except for large well established companies, most processors make late payment to milk suppliers. Usually, smaller milk processors make oral agreement with farmers about schedule of payments. They pay farmers partially as soon as they manage to sell and, in the best case, the accounts are settled by the end of calendar year.

The large milk processing companies behave differently. They pay milk suppliers every month (Gjrofarm case) or even in shorter periods of time (for example Erzeni pays farmers at 2nd, 12th, 22nd date of each month). To solve the liquidity problem, these companies often avail short term loans.

Both large and small processing companies have started to pay milk suppliers through banking system. This is quite recent phenomenon

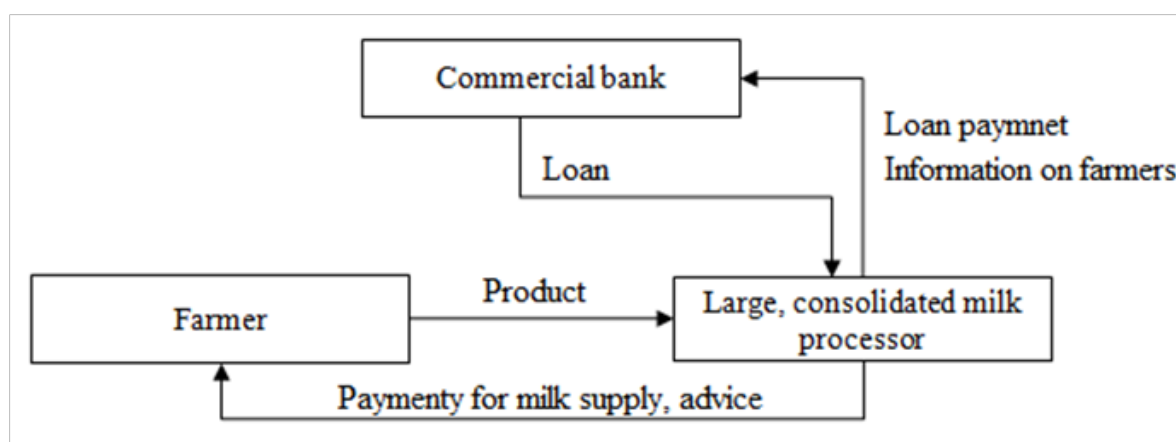
Working capital financing needs

Many milk processing factories have a liquidity problem associated with cheese technology process. The need is more manifest from large milk processing factories which have also resorted to short term loan to deal with the need.

6.2.3. Value chain financing

The (product, financial and informational) flows between milk processors and farmer contain potentials for value chain financing. The Figure 3 below synthesizes the way the value chain financing may be designed.

Figure 3: Value chain financing of the dairy sector



Source: authors' on design

There are quite established relationships between farmers and large, consolidated processors in the milk value chain. Farmers sell the large milk to the processor who tend make on time payments (some every 2 weeks, other every 10 days). In order to make timely payment to the farmers, the processors avail short-term loans at a commercial bank and transfer the money to farmers' bank account - the money transfer to farmers bank accounts is a recent phenomenon in Albania. Once the consolidator/processor sells the produce, he pays back the loan. It is important however to emphasise that the consolidator may provide the bank with relevant information on farmers, including when the money has been transferred to their bank account.

Two preconditions may be considered carefully in designing value chain financing in the milk sector, namely the size of the company and companies competition to provide needed milk supply. The target companies for value chain financing should be the large, consolidated companies. Additionally, for the company to be motivated to pay the farmers on time, there must be some competitive environment. In case of monopsony or tight oligopsony, even large companies tend to exhibit some degree of opportunism and delay payment to farmers.

The commercial bank may also explore financing farmers using information provided by milk processing companies and in only in exceptional cases using the guarantee provided by processors.

7. CONCLUSIONS

Since the early 2000's, there has been an increase in production of milk (and dairy products). While the number of cattle has decreased, production of milk has increased, confirming an improvement in yields (efficiency), triggered by investments in breeds and management (the latter, typical for the growing number of larger farms).

Overall, dairy production is destined to the domestic markets, thus the production increase is mainly triggered by increase in the domestic demand. The dairy trade balance shows a structural deficit, but much lower than meat trade deficit. Thus, within the livestock sector, dairy seems to perform better than meat production. Due to market conditions and production constraints (animal feed costs in Albania are structurally higher than in other countries of the region), the dairy trade deficit is to be considered as a structural one while due to constraints in standards and due to structural limitation (related to the small farm size) of the livestock sector.

Milk production mostly comes from small semi-specialized breeders and from mixed farms. Cow milk production comes mostly from lowlands and low hills; milk-oriented small ruminant breeding is concentrated in the South, where specialized cheese factories are also located.

The current study informs the financial institutions and other interested parties in supporting milk sector about the main opportunities to finance the sector. These opportunities include support to increase the number of (cow, sheep and goats) heads, finance animal stable construction, support cool chain at processor level, support milk technology improvement and capacity increase, but also consider supporting business tied to milk processing waste use or even consider supporting larger projects dealing with waste processing, improve feed production technology, pasture conditions, and standard related investment related to farming or processing.

The field evidence informs that there is a slight trend in increasing the number of milk animals, mainly cow farms but also goat and sheep, either increasing the herd size or establishing new farms. These larger farms are more prone to improve stable conditions – and they often do. Hence an opportunity to support investment at farm level.

The milk collection and transport is one of the weakest points of the value chain. In most cases the milk remains without refrigeration during the whole in-farm storage period and during transport to the dairy plant. Therefore, there is an obvious opportunity to finance this stage of value chain, with preference at larger processors.

Given the current investment trend by leading companies in the dairy processing industry (Gjirofarm, Lufra, Erzeni, etc) to invest in modern milk processing technology, financial institutions may exploit the opportunity by supporting the trend. Investments are expected in dairy plants with a capacity of 4-10 Mt per day (medium-sized for Albanian standards) in function of the slow consolidation of the processing sectors, aimed at increasing efficiency, improving quality and introducing better packaging and new products. Milk processing company start ups investment may also be considered though very carefully since they are rather risky.

Supporting business tied to milk processing waste, waste processing plants, feed production technology, improving pasture conditions, and standard related investment related to farming or processing may also be considered.

Milk sector is considered a priority sector for Albanian government, - the sector has been included in all public financial support schemes, including recent support schemes. The current partial grant policy has important implications for financial institutions - they have the opportunity to co-finance the investment (stables, cooling chain, milk processing, etc. for 100% of investment amount out of which at least 50% short term loan (the part to be reimbursed by the grant after the investment implementation) and 50% loan term loan for the part to be paid by the beneficiary.

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