



**Carrying out selected sectoral analysis as a solid ground for the preparation of
IPARD III programme and of Strategy for Agriculture, Rural Development and
Fishery 2021 - 2027**

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**Milk Sector Study Report
Final**



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List of Abbreviations

ALL	Albanian Lek
ANES	Albanian National Extension System
ARDA	Agriculture Rural Development Agency
ATTC	Agricultural Technology Transfer Centre
AUT	Agricultural University of Tirana
CVO	Chief Veterinary Officer
DCM	Decision of Council of Ministers
EC	European Commission
EU	European Union
FAO	Food and Agriculture Organization
GAP	Good Agricultural Practices
HACCP	Hazard Analysis Critical Point
INSTAT	Albanian Institute of Statistics
IPARD	Instrument of Pre-Accession in Rural Development
FSVI	Food Safety & Veterinary Institute
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
MADA	Mountainous Agency for Development in Albania
MARD	Ministry of Agriculture and Rural Development
NFA	National Food Authority
NAVPP	National Authority of Veterinary and Plant Protection
PDO	Protected Designation of Origin
PGI	Protected Geographical Indications
RAAE	Regional Agency of Agricultural Extension
SARED	Support of Agriculture and Rural Economic Development of Disadvantaged Mountainous Areas (GIZ project in Albania)
USAID	United States Agency for International Development
VAT	Value Added Tax
WHO	World Health Organization

TABLE OF CONTENT

1	CHAPTER 1: INTRODUCTION.....	6
1.1	Introduction	6
1.2	Background	6
1.3	Methodology.....	6
2	CHAPTER 2: FARMERS/ GROWERS/BREEDERS.....	9
2.1	Overview of milk production.....	9
2.2	Dairy farms	10
2.3	Profile of dairy breeders and breeding systems	15
2.4	Milk production	21
2.5	Access to inputs and services.....	23
2.6	Milk production key features and challenges.....	25
3	CHAPTER 3: PROCESSING INDUSTRY	28
3.1	Structure of the industry	28
3.2	Profile of industry operators.....	29
3.3	Main products and product types /characteristics	30
3.4	Raw milk supplies.....	33
3.5	Key features and challenges.....	36
4	CHAPTER 4: GOVERNMENT POLICY FOR THE SECTOR	40
4.1	Strategic documents.....	40
4.2	Relevant fiscal and trade policies.....	40
4.3	IPARD implementation and absorption.....	41
4.4	MARD support programmes	41
4.5	Other agriculture direct and indirect support measures and facilities	42
5	CHAPTER 5: MARKET AND TRADE.....	43
5.1	International trade flows and evolution over time.....	43
5.2	Domestic market	47
5.3	Structure of milk and dairy distribution	51
5.4	Key features and challenges.....	52
6	CHAPTER 6: LEVEL OF ATTAINMENT OF RELEVANT NATIONAL & EU STANDARDS.....	53
6.1	Hygiene, food safety, animal welfare and environmental management	53
6.2	Occupational safety	56
6.3	Implementation of legal provision and attainment of standards	56
6.4	Use of inputs, PPP, veterinary medicines.....	58
6.5	Environmental aspects.....	58
7	CHAPTER 7: PAST TRENDS AND FUTURE DEVELOPMENTS IN TERMS OF INVESTMENTS	59
7.1	Past trends.....	59
7.2	Investment climate and investments enabling environment	61
7.3	Expected future trends	62
8	CHAPTER 8: VALUE CHAIN ORGANISATION AND ENABLING ENVIRONMENT	64
8.1	Value chain map.....	64
8.2	Value chain coordination: relations between milk producers and dairy processors	67
8.3	Collective actions.....	68
9	CHAPTER 9: IDENTIFICATION OF POTENTIALS AND NEEDS OF THE SECTOR.....	71
9.1	Swot analysis and potential needs of the sector	71
9.2	Assessment of investment needs and potentials	79
10	CHAPTER 10: IDENTIFICATION OF TRAINING AND ADVISORY NEEDS FOR THE SECTOR	82
10.1	Training and advisory needs to value chain actors	82
10.2	Supply of training and advisory services	83
10.3	Improving public advisory and technical services	84
11	CHAPTER 11: ALIGNING to the green deal.....	88
11.1	General aspects	88
11.2	Actions and investments contributing to alignment to EU Green Deal	89
12	CHAPTER 12: OUTCOME.....	92
12.1	Key findings and conclusions from the sector analysis related to IPARD III program	92
12.2	Priority investments in primary production.....	94

12.3	Priority investments in processing	96
13	ANNEXES	99
	Annex 1. Dairy products trade data	99
	Annex 2. Bibliography.....	101
	Annex 3. List of interviews and visits.....	102

List of Tables

Table 2.1:	Structure of milk production (2019)	9
Table 2.2:	Evolution of dairy livestock, milk yields and milk production	9
Table 2.3:	Number of dairy livestock 2014-2019.....	10
Table 2.4:	Dairy-cattle farms in 2018- distribution by size.....	11
Table 2.5:	Number of ewes in 2018	12
Table 2.6:	Number of dairy livestock by region, 2019	12
Table 2.7:	Dairy-cattle farms in 2018 - distribution by region and herd size category	13
Table 2.8:	Ewe farms in 2018 - distribution by region and herd size category	14
Table 2.9:	Does farms in 2018 - distribution by region and herd size category.....	14
Table 2.10:	Cows' breed structure (%).....	17
Table 2.11:	Sheep breed structure 2018 (%)	19
Table 2.12:	Goat breed structure 2018 (%).....	19
Table 2.13:	Trend of area, production and yield of forages	21
Table 2.14:	Forage data, cows per ha forage and milk per ha forages – distribution by regions	21
Table 2.15:	Milk production – trend and composition	22
Table 2.16:	Milk production by region	22
Table 2.17:	Evolution of milk yield (litres per head/year).....	23
Table 2.18:	Milk yield by regions, 2019 (kg).....	23
Table 3.1:	Milk sector development trends.....	28
Table 3.2:	Number of dairy processing operators	28
Table 3.3:	Milk for fresh consumption processed by dairy industry (Tons)	30
Table 3.4:	Yoghurt and buttermilk production (ton)	31
Table 3.5:	Cheese production (Tons).....	31
Table 3.6:	Milk collected (thousand tons).....	34
Table 4.1:	Dairy farms supported by NSS for milk production 2013-2017 (M-1)	41
Table 5.1:	Albanian international trade of dairy products	43
Table 5.2:	Import and exports of fresh milk, Albania by year (HS 0401)	43
Table 5.3:	Origin of milk imports (2019)	44
Table 5.4:	Import and exports of Buttermilk, curdled milk and cream, yogurt, kefir and other fermented or acidified milk and cream, Albania by year (HS code 0403).....	45
Table 5.5:	Import and exports of cheese and curd, Albania by year	45
Table 5.6:	Origin of cheese and curd imports (2019)	45
Table 5.7:	Import and exports of powder milk, Albania by year (HS 0402)	46
Table 5.8:	Milk and dairy commodity supply balance.....	47
Table 5.9:	Fresh milk per capita consumption – Albania and selected countries	48
Table 5.10:	Cheese apparent consumption in Albania.....	49
Table 7.1:	IPARD-like financed projects to milk processing units (Measure 3)	60
Table 7.2:	Milk primary production - IPARD II financed projects under Measure 1	60
Table 7.3:	Milk processing - IPARD II financed projects under Measure 3	61
Table 8.1:	Long term relationship versus spot market or short-term relations by regions	67
Table 8.2:	Type of relations with buyers.....	67
Table 8.3:	Type of transport	68
Table 8.4:	Dairy farmers' willingness to cooperate (answer the following statements)	68
Table 10.1:	Farmers needs for training and advice and the service providers	82
Table 10.2:	Milk processing workers/managers needs for training and advice and the service providers	82
Table 10.3:	Extension service training needs and possible service providers	86
Table 11.1:	Sector trends and impact on EU green Deal components	88
Table 12.1:	Proposed measures and eligible investments	94
Table 12.2:	Cow milk production Gross margin	95

Table 12.3: Proposed investments for support under IPARD III.....	96
Table 13.1: Import and exports of powder milk, Albania by year (HS 0402)	99
Table 13.2: Import and exports of Buttermilk, curdled milk and cream, yogurt, kefir and other fermented or acidified milk and cream, Albania by year	99
Table 13.3: Import and exports of whey, Albania by year	99
Table 13.4: Import and exports of butter, Albania by year.....	99
Table 13.5: Cheese consumption per capita (kg per year).....	99

List of Figures

Figure 1: Cattle-breeding farms in 2015 and 2018.....	11
Figure 2: Small ruminants farms by size in 2015 and 2018 ^[L] _[SEP]	12
Figure 3: Dairy animals' structure in livestock unit, 2019	13
Figure 4: Global SMP prices by area/state (€/Ton) (World average)	48
Figure 5: EU WMP prices (€/Ton)	48
Figure 6: Value chain map	66
Figure 7: The organization of ANES.....	85
Figure 8: Structure of RAAEs	85

List of Boxes

Box 1: AFADA – an association of input and advice provision to farmers.....	25
Box 2: BONUM.....	33
Box 3: Erzeni and its relations with its supplying farms.....	68
Box 4: Myzeqeja Farm	69
Box 5: The Livestock Entrepreneurs Association of Albania	69

1 CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

Albania is preparing the IPARD III Programme for the period 2021-2027. The objective of this sector analysis is to give a quantitative and qualitative description of the sector trends with special focus on the needs for investments and technical assistance. A SWOT analysis is prepared to identify the potential and weak points as a base to provide guidance for the support (namely investments). In addition to the recommendations in the frame of IPARD III programme. The study also provides recommendations for the development of the sector. Some of the recommended actions cannot be implemented within the framework of IPARD III but are nonetheless considered as important steps for balanced development in the milk and dairy sector.

1.2 BACKGROUND

Albania is a small European country located in the south-eastern part of the continent, covering an area of 28,748 square kilometres. The population of Albania as of 1 January 2018, amounts to 2.9 M inhabitants. The total land size of Albania is 2,875,000 ha, from which 699,000 ha or 24% is agriculture land, 36% forestry, 15% pastures and meadows, and 25% is classed as “others” (INSTAT, 2019).

Livestock rearing and milk production activities have a long tradition in Albania due to the favorable natural resources for cattle and small ruminants. Livestock is an important component of the farming system for the rural people. It generates cash income through the sale of animals and their products, serves as draught power for small holder farm operation, as a means of transportation, as a buffer against crop failures, and also is used for direct consumption, as fertilizer, etc.

Livestock production efficiency is affected by limited knowledge of farmers on modern farm management. The improvement of farmers’ knowledge should start with enhancing the role and performance of the public extension service, the motivation of the advisors and the financial support of the service. In the process of approximation to the European Union, the country is seeking to increase the competitiveness and food standards.

In the plains, cattle production is dominant, while the pastures and meadows in the hills and mountains are more suitable for small ruminants’ breeding. The Albanian territory has a significant natural potential, represented by large areas of pastures and hay land (15% of the territory), and animal breeds adapted to the natural conditions, particularly the small ruminants.

1.3 METHODOLOGY

The milk sector analysis includes qualitative and quantitative analyses, based on primary and secondary data collection. Primary data collection included semi-structured interviews and information retrieved from a structured survey carried out with the participation of MARD extension service. Secondary data included review of existing literature, data collection and processing. When information was common to several sectors, it was included in Context Analysis chapters; relevant data and information from that document were included as well. The following sections detail the methodology applied for this sector analysis.

1.3.1 Primary data collection

The primary data collection consisted in semi structured in-depth interviews carried out with key informants, representing value chain actors and sector experts.

More specifically, there are two categories of primary data:

- (i) Semi-structured in-depth interviews.
 - a. Interviews with value chain operators. The interviewed farmers were all commercial or semi-commercial operators. Whereas processors were of different typology (as shown in the relevant section).
 - b. Interviews with sector experts from both the public and private sectors and with leading operators at each stage in the value chain.

For semi-structured in-depth interviews, there were prepared interview guidelines, which were tested and fine-tuned before implementation.

- (ii) Structured survey with extension surveys. In this questionnaire, the first section collects information about the respondent’s profile. The second section has detailed questions related to farm structure, trends of the number of

farms by size, and also past trends and expected trends of investments, which is crucial information related to IPARD III program. Another similar section is designed for agri-processing, differentiating by subsector and size when applicable. There was added also a subsection on the impact of COVID pandemics on key agriculture sectors. In addition, there are two detailed sections on training/advice needs and investments needs. Other questions which address the needs for IPARD III program and for the strategy were added, also in close consultation with the team of the strategy project.

Semi-structured 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, more in qualitative terms. On the other hand, the findings from the structured survey with extension surveys enabled us to understand sector trends, enabling to incorporate quantitative assessment.

1.3.2 Secondary data collection

The secondary data was retrieved from MARD, INSTAT, ARDA, NFA, EUROSTAT (for international trades), UNSTAT COMTRADE (for international trade), FAOSTAT (for production and consumption). Data mining from other sources (e.g. CLAL, Global dairy trade etc.) was carried out as well.

A review of previous IPARD studies and 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 analysed.

1.3.3 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 neighboring countries was done, when applicable/necessary.

Regarding VC expert/actors interviews, notes are analysed 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 flows.

1.3.4 Limitations of the available data

The main constraint met is that for some indicators there are no available statistics, while for some others there are no recent statistics.

There are various gaps in the availability and quality of secondary data. The main gap lies in structural statistics (farm level statistics by structure, processing capacities etc.) and lack of market information.

More specifically, several constraints were found:

- Lack of proper Market Information System in place. Since 2012, the Market Information System was closed within the Ministry of Agriculture. Thus, Albania no longer has a Market Information System related to the agriculture sector. So, it was not possible to carry out in-depth price analysis.
- Farm data are missing. In Albania, it is not implemented yet Farm Data Accountancy Network (FADN), no substantial steps have been taken to introduce this system, which is both a requirement by the European Commission before accession to the European Union and an important tool for analyzing policy impacts and farm typology. Whereas the annual farm surveys carried out by MARD jointly with INSTAT are not made available.
- Data on NFA controls and level of compliance of food operators, based on inspection outcomes were incomplete or provided too late for inclusion in the sector study.

Limitation in milk production data is also linked to highly variable yields, to the level of self-consumption or use of milk for sucking calves and lambs. Inconsistencies are both a consequence of the general informality that dominates the Albanian economy (industries do not declare all their output for fear that data will be transferred to the tax administration), and of the inadequacy of the agriculture statistical system.

When the quality of international trade data was questionable (such as in the case of olive oil imports declared / reported by Albania for 2018), we used statistics reported by countries exporting milk, milk powder and cheese to Albania, namely EU countries (in the case of milk the is not simple, since majority of imports come from non- EU countries).

Needs for information were addressed through field interviews, however, COVID19 deeply impaired field operations – it was often difficult to interview operators especially in case of COVID19 contraction and those who showed special caution. Some of the interviews were done online or on telephone, although most were done in presence.

1.3.5 Information retrieved from the Context Analysis

The sector study is supported by a comprehensive analysis of the external context, which provides background information to the sector analysis, specifically related to: inputs and packaging; services to the value chains; information systems, data, research; collective action and contract farming; food safety and quality infrastructure and mechanisms; EU and national policies and strategies; education and human capital development; Geographical Indications, collective marks, brands, consumer behavior; description of the trends in the international and domestic markets; access to finance and insurance; licensing system, legal agribusiness definition, public food procurement, fiscal issues; short analysis of the consumers, domestic and international: behaviour, perceptions and preferences regarding product origin and quality.

2 CHAPTER 2: FARMERS/ GROWERS/BREEDERS

2.1 OVERVIEW OF MILK PRODUCTION

Error! Reference source not found. illustrates the small-scale structure and subsistence orientation of dairy farms in Albania. Dairy farms have in average 1.8 milking cows, 37.4 ewes or 28.8 does.

Table 2.1: Structure of milk production (2019)

Description	Cattle	Sheep	Goat
Dairy farms with cattle, sheep or goat (no.)	187,930	47,039	23,444
Milking animals (heads)	342,900	1,366,100	698,975
Milk production per year (thousand tons)	946	82	84
Average number of milking animals (heads/dairy farm)	1.8	37.4	28.8
Milk yield per cow (liter/head/year)	2,981	63	127

Source: MAFCP Statistics Yearbook of Albania for 2012 and authors' calculation.

Average milk yields per cow/year in Albania is approx. 3,000 l; milk yields increased by 10% in the last decade (from 2,620 litres per cow/year in 2010), but yields are still much below EU-27 average (7,346 kg per cow/year - EUROSTAT, 2019).

As a general categorisation, dairy production systems in Albania can be broadly categorized into mixed crop–livestock system and agro-pastoral system.

The small ruminant production is done in several ways: a) extensive system with the transhumance 6 to 8 months (all regions); b) the semi-intensive system to transhumance 5 to 6 months; c) grazing system on permanent pasture near to the farm; d) natural pasture within walking distance, with the return of sheep or goats in the evening on the farm. However, for the time being, sheep and goat milk production is organised almost totally as extensive breeding and milk yield per ewe with about 58 Litres/year and per doe with about 112 litres are also low. Comparing Albanian small ruminants' productivity with that one in EU member states is more difficult, as yields are quite variable even in regions with a similar production structure and similar natural conditions, but it is safe to state that available data show yields that range among 30% to 70% of average yields in EU member states comparable regions¹.

In the last decade, the process to increase productivity is slowly progressed: there is fewer dairy livestock (except does, which increased), but yields and total output increased; in particular, cow milk output remained essentially the same over the whole decade. The trend was different only for dairy goat breeding, which showed a slow, but constant increase in number of does and yields, with a resulting sizable output increase (+33%).

In particular, goat milk total output is sensibly increased; the comparison with the situation in 2010 and 2014 (beginning of the programming period 2014-20) is provided in Table 2.2 below.

Table 2.2: Evolution of dairy livestock, milk yields and milk production

Description	2010	2014	2019
Cow milk			
Milking cows (000)	354	358	316
Milk production (000 tons)	930	965	947
Milk yield (ltr. per head)	2,627	2,696	2,997
Sheep milk			
Ewes	1,337	1,419	1,257
Milk production (000 tons)	77	89	82
Milk yield (ltr. per head)	58	63	65
Goat milk			
Does	576	695	671
Milk production (000 tons)	63	79	84
Milk yield (ltr. per head)	109	114	125

Source: MARD (2010), INSTAT (2014; 2020)

¹ The average ewes' yield in Romania (tsigaja breed) is 70 to 90 l per lactation, in Sardinia (Italy) is 112 l per lactation, in Greece Chios breed achieve an impressive 120 to 270 kg per lactation.

Notwithstanding the above, the mix of persistent low prices (prices paid to small farmers are the same they were in 2005), application of extensive breeding systems, low capital investments, fragmentation of the production base and overall scarce competitiveness in production of animal feed create unfavourable conditions for development; as a result, smaller producers often prefer to keep only the animals they need for self-consumption and to shift towards meat-oriented production, using a good part of the excess milk to feed calves, lambs and goat kids. Buying calves from larger farms and feeding them with milk exceeding self-consumption need with the objective to sell after some months these calves for slaughtering is becoming an increasingly common practice among the smallest dairy cows' breeders.

Small ruminants' breeders also prefer to focus on meat production; as a result, many seasonal dairy plants in summer pastures are no more in use, both as a result of decline of transhumance practice and because lactation period is now mostly linked to lamb and goat kid meat demand seasonal pattern, which sees higher consumptions in the first four months of the year.

Milk production sector makes a considerable demand on feed and fodder supplies and its quality. A 20-years long lack of investments in pastures and depopulation of mountain and inner areas leading to abandonment of highland summer pastures and overexploitation of some meadows near to settlements is reducing the supply provided by this natural resource.

Increased feed must come from improved production of fodder such as alfalfa, maize and other grasses as well as improved utilization of industrial compound feed. For small ruminants' improvements in pasture management is one important aspect to increase productivity.

2.2 DAIRY FARMS

2.2.1 Number of milking livestock and trend over time

The inventory of cows, following the increase in 1991-1996, reaching to 484 thousand, has been showing a downward trend starting from 1997 up to 2019, reaching 316 thousand. On the other hand, the number of sheep and goats has had an ambiguous trend. After the increase in the period 1991-1996, it fell significantly in 1997 to increase again during the period 1998-2000, decreasing until 2005 and then slightly increasing. However, in 2019 compared to 2014 the number of cows, ewes and does decreased by 11.7%, 11.4% and 3.5%, respectively. Table 2.3 below contains updated data on dairy livestock in Albania.

Table 2.3: Number of dairy livestock 2014-2019

No.	Description	Years							index 2014=100
		2010	2014	2015	2016	2017	2018	2019	
1.	Cattle	493	500	504	492	475	467	416	83.2
1.1	Cows	355	358	357	355	349	343	316	88.3
2	Small ruminants	2,581	2,804	2,850	2,911	2,859	2,781	2,621	93.6
2.1	Sheep	1,806	1,896	1,918	1,972	1,926	1,864	1,758	92.7
2.1.1	Ewes	1,337	1,419	1,417	1,428	1,407	1,366	1,257	88.6
2.2	Goats	775	904	932	941	933	917	863	95.5
2.2.1	Does	576	695	700	716	717	699	671	96.5

Source: INSTAT (2020)

Current market conditions might support this trend, as farmers struggle with rising input and feed costs, high cost of land cultivation, and low price of milk.

2.2.2 Number of farms and distribution by size

Bovine dairy farming

Albania's agriculture changed significantly since the early 1990s. The land privatization programme initiated in 1991 created a structure of primary production that is characterized by extremely small plot and herd sizes. According to official data of MAFCP, in the year 2012 the total number of farms had been 350,916, of which 301,950 were keeping livestock.

In 2018, the majority of milk production units are very small with one to four cows per farm and their off-springs. 63.7% of the farms are breeding only one cow; the average is breeding 1.82 cows.

The farms with more than four dairy cows were 6,506, or 3.46% of all cow breeding farms, in reduction from 2015, when

there were 8,648 farms (4.4% of total) in this group.

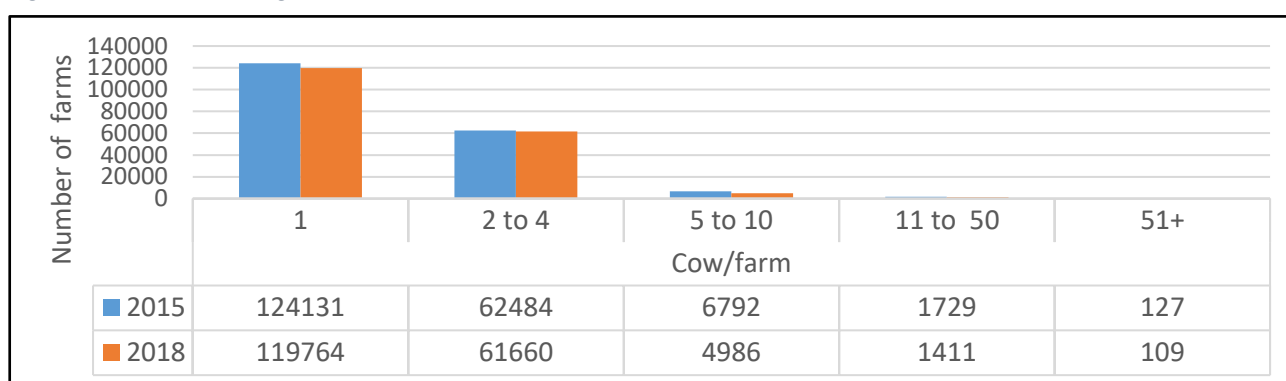
In terms of dynamics, between 2015 and 2018 we observe a decline in all cow farms groups, with an overall reduction of the total cow herd in Albania by 3.8%, as shown in **Error! Reference source not found.**below.

The reduction in cow numbers was very different in relation to farm size: decline was minimal among very small farms (4 cows and less), ranging among -1.3% to -3.5%, depending on farm size and much larger in the range 5 to 10 (-26.6%) and 11 to 50 cows (-18.4%); also, the number of farms with more than 50 cows is sensibly shrunk (-18.4%).

This trend reflects from one side the increase of productivity per head in semi-commercial farms (fewer cows, more productive) and the overall weakness of the milk sector.

In terms of practical effects, it confirms that in Albania the drive to rationalization (i.e. the stage in which a farm starts to operate as a semi-commercial or commercial entity) starts in farms having 5 milking cows or more.

Figure 1: Cattle-breeding farms in 2015 and 2018



Source: Elaboration of the author on MARD data

At the same time, this highly fragmented milk production structure and the nature of the ongoing trends (Table 2.4: Dairy-cattle farms in 2018 (the production base is increasingly consisting in low-productivity micro-farms, the commodity chain is becoming increasingly polarized in commercial and subsistence farming), increases the difficulty to develop appropriate policy instruments for primary production development and farms development strategies.

Table 2.4: Dairy-cattle farms in 2018- distribution by size

Regions	Cattle			Number of farms according to cows per farm									
	Number of farms	Cows	Cows per farm	1	2	3	4	5	6-10	11-20	21-50	51+	
Total	187,930	342,900	1.82	119,764	41,302	13,397	6,961	3,034	1,952	956	455	109	

Source: MARD, unpublished reports.

In spite of the reduction in number of heads witnessed in the last decade, especially in small farms (3-5 dairy cows), 83% of dairy cattle belongs to farms with less than 6 dairy cows, that is considered the minimum threshold size for a viable cattle dairy farm (see chapter 12.2.2 below); however, productivity is much higher in larger farms, so the share of cow milk sourced by large farms is higher than 15%, even if there are no exact data. Milk production is extremely fragmented; however, it should be also considered that most farms with one or two cows produce milk almost exclusively for self-consumption or as animal feed,

When considering the number of farms, the small size of the semi-commercial or commercial cattle dairy farms segment becomes even more evident, as only 1.8% of farms have 6 dairy cows or more.

Small ruminants' dairy farming

In 2018, there were 36,555 dairy farms with sheep and 24,244 with goats. The majority of farms that have sheep also have goats. The average size of the sheep flock and goat herds in the country was 37.4 ewes and/or 28.8 does. Throughout the country the small size of ewes' herds ranging between 5 and 50 heads are still very common (78.9% of total). The same situation is found with dairy goats' herds, as dairy farms with less than 50 heads account for about 84% of country total does' headcount.

Error! Reference source not found.Table 2.5 (below) shows the distribution of farms with ewes and does by size.

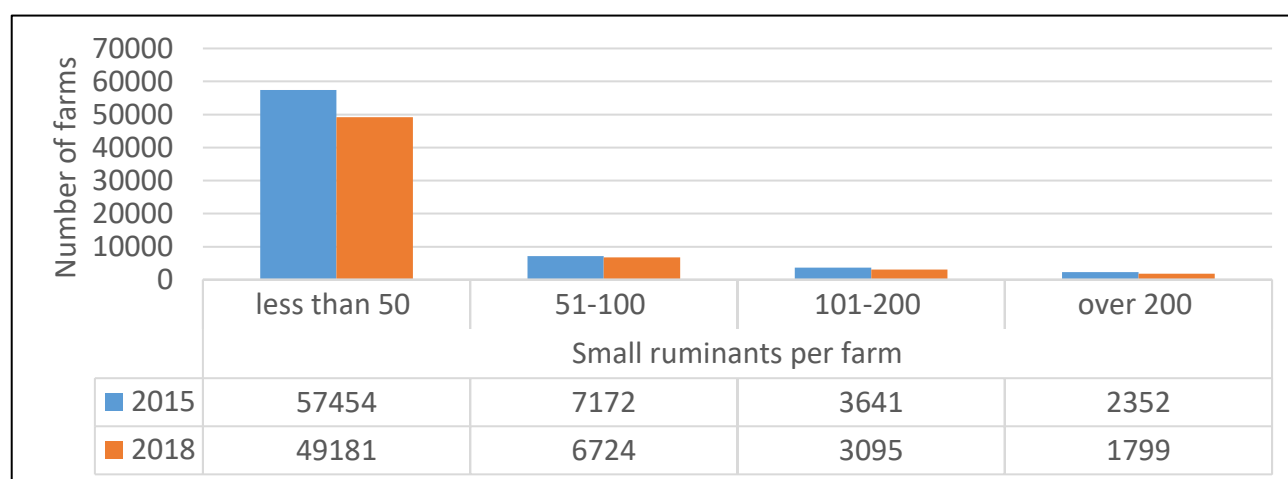
Table 2.5: Number of ewes in 2018

Nr	Total		Ewes/does per farm	Number of farms by ewes' herd size			% of farms with >50 heads
	Farms	Number		50-100	100-200	201+	
Sheep	36,555	1,366,100	37.4	4,583	1,917	1,223	21.1
Goats	24,244	698,975	28.8	2,141	1,178	576	16.1

Source: MARD, unpublished reports.

The minimum threshold for a viable small ruminants' farm was calculated in 120-130 sheep or goats (see chapter 12.2.2 below); according to available data, only 8.6% of sheep farms and 7.2% of goat farms have more than 100 milking heads, which indicates a higher number of specialized farms as compared with farms having dairy cows; also the newly established large ruminants' farms, especially goat farms, have a much higher productivity (in the case of goat farms there is a fivefold higher milk yield), so that milk production fragmentation is lower than in the case of cow milk.

Figure 2 **Error! Reference source not found.** depicts the comparison between the number of farms with small ruminants in 2015 and 2018. The evolution of small ruminants' dairy farms (including sheep and goats) over time shows a sizable overall reduction in the number of farms between 2015 and 2018 (-14.4%); the reduction in the number of farms is higher for larger farms: farms with over 200 small ruminants decreased by 23.5% in just four years (2015 to 2018).

Figure 2: Small ruminants farms by size in 2015 and 2018¹⁻⁷_{SEP}

Source: Elaboration of the author on MARD data.

Regional distribution of milking livestock

The analysis of regional distribution of dairy livestock provides important information about specialisation and concentration of activities in some regions. The region with the highest number of milking cows is Fier, contributing to 15% of total cows' population, and together with the regions of Elbasan, Korçë, and Tirane account for about 46% of the total milking cow inventory. The regional distribution of milking livestock in 2019 is shown in Table 2.6.

Table 2.6: Number of dairy livestock by region, 2019

	Cattle			Sheep			Goats		
	Total	Cows	% to total cows	Total	Milked	% to total Ewes	Total	Milked	% to total does
Berat	22,477	16,435	5%	138,942	108,901	9%	79,365	68,292	10%
Dibër	35,500	27,200	9%	113,000	94,000	7%	65,000	53,000	8%
Durrës	23,100	18,100	6%	33,000	26,000	2%	21,690	17,720	3%
Elbasan	43,125	33,900	11%	145,390	103,200	8%	98,920	76,500	11%
Fier	67,880	46,755	15%	268,490	157,232	13%	50,693	40,500	6%

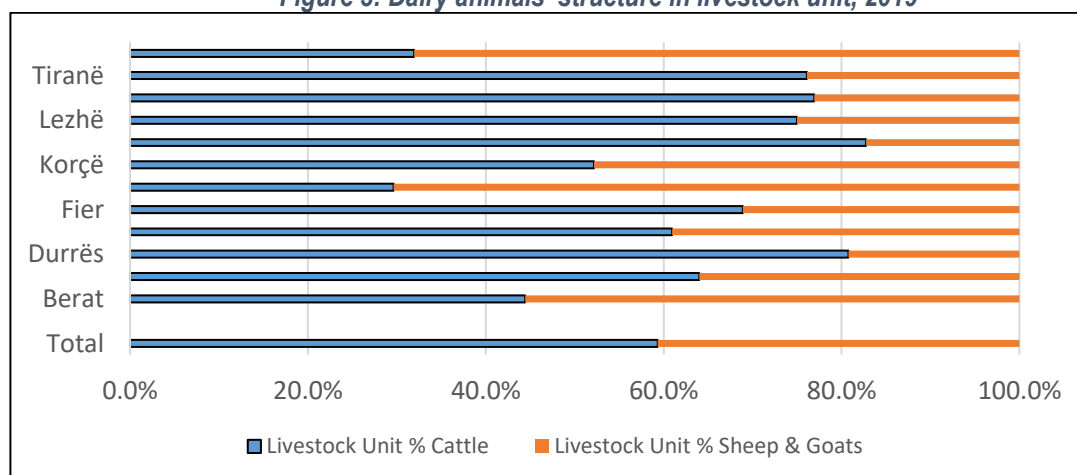
Gjirokaštër	18,800	13,020	4%	262,850	197,200	16%	121,800	92,300	14%
Korçë	39,377	31,590	10%	245,147	154,750	12%	90,085	72,603	11%
Kukës	25,390	22,500	7%	34,675	30,700	2%	18,654	16,550	2%
Lezhë	33,050	22,770	7%	31,510	22,050	2%	59,500	40,860	6%
Shkodër	40,155	30,150	10%	63,400	48,105	4%	59,980	46,940	7%
Tiranë	40,137	31,425	10%	65,085	50,250	4%	53,720	41,391	6%
Vlorë	26,618	22,581	7%	356,844	265,052	21%	143,458	104,260	16%
Total	415,609	316,426	100%	1,758,333	1,257,440	100%	862,865	670,916	100%

Source: INSTAT (2020)

Table 2.6 above summarises also the regional distribution of small ruminants. The population of small ruminants is more concentrated in southern regions: 21% of ewes and 16% of does are recorded in Vloora only and 49% of ewes and does are concentrated in the three regions of Vloora, Gjirokaštër and Korçë. The regional distribution of sheep and ewes is slightly different from that one of goats, which are more concentrated in mountain areas. As a consequence, while Fier is an important production area for sheep breeding (13% of total) it is not for goat breeding (6% of total), while Elbasan is more important for goat breeding (11% of total) than for sheep breeding (8% of total).

When considering Livestock Units², in two-thirds of regions cattle are predominant compared to small ruminants, as shown in Figure 3 below. Small ruminants are predominantly in regions of Vloora and Gjirokaštër and Berat. Vloora region has the highest number of ewes (21.1%), followed by Gjirokaštër (15.7%), Fier (12.5%) and Korçë (12.3%) which together account for up to 61.6% of the total ewes' population. Also, Vloora has the highest number of does (15.5%), followed by the regions of Gjirokaštër (13.7%), Elbasan (11.4%), and Korçë (10.8%); these four regions account for 51.4% of does headcount of the country.

Figure 3: Dairy animals' structure in livestock unit, 2019



Source: Elaboration of the author on INSTAT data

Distribution by region and herd size category

On average, farms have 1.8 cows. The average herd size is larger in Vloora, Korçë, Kukës, and Gjirokaštër. The majority of farms in Albania have herd size less than 5 cows; the proportion ranges from 94.3% in Gjirokaštër to 99.4% in Elbasan and Kukës. On the other hand, the regions with larger proportions of farms above 6 cows³ (in decreasing order) are Gjirokaštër, Vloora and Fier (Fier, Shkodër and Tirane, in terms of number of farms). Further, the regions with larger proportions of farms above 11 cows (in decreasing order) are Gjirokaštër, Vloora and Korçë (Korçë, Vloora and Gjirokaštër, in terms of number of farms, **Error! Reference source not found.**Table 2.7.

Table 2.7: Dairy-cattle farms in 2018 - distribution by region and herd size category

Regions	Cattle	Number of farms according to cows per farm
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² "The Livestock Unit (LSU) is a reference unit which facilitates the aggregation of livestock from various species and age as per convention, via the use of specific coefficients established initially on the basis of the nutritional or feed requirement of each type of animal" (EUROSTAT). In Albania the coefficient used by MARD to calculate the LSU is the equivalence between 1 cattle and 10 small ruminants, without specification by type and age

³Farms having more than 6 cows are of interest in terms of minimum herd eligibility criterion.

	Number of farms	Cows	Cows per farm	Up to 5	6-10	11-20	21-50	51+	% up to 5	over 6	Over 6, % to total	over 11	Over 11, % to total
Berat	9,720	16,880	1.74	9,541	116	52	11	0	98.2%	179	1.8%	63	0.6%
Dibër	20,307	31,570	1.55	20,146	115	33	12	1	99.2%	161	0.8%	46	0.2%
Durrës	13,857	20,500	1.48	13,713	71	54	14	5	99.0%	144	1.0%	73	0.5%
Elbasan	29,079	38,450	1.32	28,915	117	41	5	1	99.4%	164	0.6%	47	0.2%
Fier	21,046	47,180	2.24	20,309	556	130	41	10	96.5%	737	3.5%	181	0.9%
Gjirok.	5,794	13,430	2.32	5,463	124	76	94	37	94.3%	331	5.7%	207	3.6%
Korçë	16,695	41,390	2.48	16,323	147	93	119	13	97.8%	372	2.2%	225	1.3%
Kukës	12,088	28,810	2.38	12,015	27	42	4	-	99.4%	73	0.6%	46	0.4%
Lezhë	15,444	22,590	1.46	15,223	127	77	15	2	98.6%	221	1.4%	94	0.6%
Shkoder	19,410	31,260	1.61	18,980	267	136	23	4	97.8%	430	2.2%	163	0.8%
Tiranë	17,390	32,730	1.88	17,035	220	92	40	3	98.0%	355	2.0%	135	0.8%
Vlorë	7,100	18,110	2.55	6,795	65	130	77	33	95.7%	305	4.3%	240	3.4%
Total	187,930	342,900	1.82	184,458	1,952	956	455	109	98.2%	3472	1.8%	1520	0.8%

Source: MARD, unpublished reports.

Table 2.8 **Error! Reference source not found.** below shows ewes regional distribution; in all regions but one, the average size of the flock is smaller than 120, which is considered the thresholds for semi-commercial farming⁴. The average number of ewes per farm is larger than 50 only in Korca, Tirana and Vlora, and it is larger than 100 ewes⁵ in Gjirokaster.

As a whole, only 21% of farms (7,723 units) have more than 50 ewes; 20% of these relatively larger farms are in Vlora, mirroring the regional distribution in total number of sheep (all farms size, including all sheep).

Table 2.8: Ewe farms in 2018 - distribution by region and herd size category

Regions	Total		Ewes per farm	Number of farms by ewes' herd size			% of farms with >50 heads	% of farms with >100 heads
	Farms	Number		50-100	100-200	201+		
1 Berat	2,847	118,710	41.7	399	228	73	24.6%	10.6%
2 Dibër	3,390	95,390	28.1	254	102	47	11.9%	4.4%
3 Durrës	836	29,930	35.8	53	63	9	15.0%	8.6%
4 Elbasan	5,161	105,800	20.5	655	120	87	16.7%	4.0%
5 Fier	4,680	156,820	33.5	735	148	63	20.2%	4.5%
6 Gjirokastër	2,500	198,400	79.4	226	280	457	38.5%	29.5%
7 Korçë	2,070	254,350	122.9	731	325	180	59.7%	24.4%
8 Kukës	2,000	47,780	23.9	235	75	40	17.5%	5.8%
9 Lezhë	3,086	22,300	7.2	92	37	16	4.7%	1.7%
10 Shkodër	4,700	50,070	10.7	158	58	15	4.9%	1.6%
11 Tirana	875	54,930	62.8	160	38	16	24.5%	6.2%
12 Vlorë	4,410	231,620	52.5	885	443	220	35.1%	15.0%
Total	36,555	1,366,100	37.4	4,583	1,917	1,223	21.1%	8.6%

Source: MARD, unpublished reports.

Table 2.9 **Error! Reference source not found.** below shows milking goats' regional distribution; in most regions, the average size of the flock is smaller than 50. The average number of milking goats per farm is highly variable according to regions, with five regions out of twelve showing an average in the range of 47 to 58 does per farm and only one region (Korca) having average goat flocks clearly larger (116 does) than any other region. The distribution of does by region and dairy goats herds size structure also confirm that this activity is important in mountain areas and marginal in areas more characterized by hills and lowlands – the number of farms having more than 50 does is larger in Korca, Berat, Gjirokaster and Vlora; and so is for farms having more than 100 does⁶. Durres is an exception however.

Table 2.9: Does farms in 2018 - distribution by region and herd size category

⁴Gross margin and cash flow in typical farming and breeding activities in Albania (GIZ, 2010).

⁵Farms having more than 100 small ruminants are of interest in terms of minimum herd eligibility criterion.

⁶Farms having more than 100 small ruminants are of interest in terms of minimum herd eligibility criterion

Regions	Total		Ewes per farm	Number of farms by does herd size			% of farms with >50 heads	% of farms with >100 heads
	Farms	Number		50-100	100-200	201+		
1 Berat	1,221	71,200	58.3	178	161	90	35.1%	20.6%
2 Dibër	2,384	57,550	24.1	163	101	26	12.2%	5.3%
3 Durrës	337	18,930	56.2	58	45	6	32.3%	15.1%
4 Elbasan	5,164	84,100	16.3	370	102	90	10.9%	3.7%
5 Fier	1,721	42,180	24.5	164	69	18	14.6%	5.1%
6 Gjirok	1,715	92,300	53.8	180	156	166	29.3%	18.8%
7 Korçë	670	78,100	116.6	150	90	55	44.0%	21.6%
8 Kukës	1,050	26,470	25.2	76	45	51	16.4%	9.1%
9 Lezhë	3,419	41,650	12.2	181	49	20	7.3%	2.0%
10 Shkodër	3,823	49,725	13.0	244	50	0	7.7%	1.3%
11 Tirana	815	44,520	54.6	95	75	10	22.1%	10.4%
12 Vlorë	1,925	92,250	47.9	282	235	44	29.1%	14.5%
TOTAL	24,244	698,975	28.8	2,141	1,178	576	16.1%	7.2%

Source: MARD, unpublished reports.

2.3 PROFILE OF DAIRY BREEDERS AND BREEDING SYSTEMS

2.3.1 Profile of dairy breeders

Cattle/cow breeder profile

The majority of cattle are kept in the lowlands. Farms can be categorised in three groups: small farms, medium farms and large farms, as described below.

Small farms

Farmers who are breeding less than 10 cows (*small farms*)⁷, during morning feed the cows with a limited amount of concentrate and during the day let the cows graze near the canals and in the remnants of the plots that have been harvested or in the alfalfa plots that will no longer be used. When they return in the afternoon, during the autumn and winter period, they are fed with hay, straw and concentrates (corn and wheat bran), while during the spring and summer, fresh fodder (alfalfa, clover, Italian grass) and concentrates are given.

In the villages where there are communal pastures, it is practiced giving cows to a paid shepherd, who in the morning collect the cows of several farmers, take care for the cows in the communal pastures and return them in the afternoon to the owners, based on a monthly payment for each cow.

In both cases, low level and imbalanced feed rations (manly roughage feed is used like straw and low-quality hay) are the main causes for fertility problems and low milk yields. The lack of good-quality fodder to sustain animals through the winter is a critical issue. In many cases the cows lose their body weight during winter. Cows are kept tied and in poor quality shelters with bad ventilation which can often be worse than no housing in terms of risk of disease. Hand milking is used to milk the cows and no cooling tanks are available. Cows natural mating is widely spread. Farmers lack knowledge regarding animal health and welfare, mastitis and hoof care. Small farmers are facing market and price difficulty. Stable, cows and milking hygiene is an issue. The price of milk is 35-42 ALL/litre as the quality is low (high level of microbiological somatic cells loads). The milk is collected by private collectors or processing company collectors. These latter use movable non-refrigerated van with plastic containers, going in a certain time village to village to collect the milk. Many of the small farms sell the milk directly to the open market or sell the product door to door to final customers, for a 60-80 ALL/litre price.

A recent trend is that many farmers that are breeding few cows are not milking them at all. When one cow is calving, they buy from medium and large farm a seven-day old calf and leave the two calves to suck the cow, as they are not interested in milk due to the low price of it.

Waste management is the most crucial issue at the farm level, and most of the slurry is not collected.

⁷Law "On Livestock Breeding", No 9426, date 6.10.2005, article 15.

Medium farms

The medium farms usually provide to the cows the same feed ration all over the year, such as corn and grass silage, hay and compound feed (mixture of corn, wheat bran, sunflower cake, and vitamin and mineral premix). Movable milking machines and cooling tanks are used (especially by the farms that breed more than 20 cows). Farms that breed less than 20 cows, in summer and autumn, during the day leave the cows in the parcels/plots near the stable that are harvested from cereal crops. Cows are kept tied and shelters should be improved in order to adopt modern production techniques and raise productivity significantly. Stable, cows and milking hygiene are weak points that should be improved.

Several farms that breed up to fifty cows improved the shelters, applying the National Minimum Standards. They use the artificial insemination (A.I.) but the new trend is that most of these farms are using the beef breed to inseminate their cows (today 40%-50% of the cows are inseminated with beef breed such as “Belgian Blue”, “Charolais”, “Limousine”). Several farms are facing mastitis issues as they do not apply the California Mastitis Test (CMT) to prevent the cows from sub-clinical mastitis. Most of them keep the best female calves for replacement.

These farms are trying to improve the manure management, by sending the manure to the parcels that will be planted soon.

Large farms

The large farms usually feed the cows with the same feed ration all over the year, such as corn and grass silage, hay and compound feed (mixture of corn, wheat bran, soybean meal, and vitamin and mineral premix). These farms have significantly increased the milk production and sales. They are producing 7000+ litre/milk/cow. The cows are under A.I. and several of them started to use the sexed semen (to have female calves). They use the milking parlour and the largest installed in the last two years *rotolactor* type milking parlour. In both cases the cooling system is in place.

The owners usually are graduated from high school or university and have a high level of knowledge and skills. They rent land and bought part of it as they produce all the amount of animal feed, except the concentrate. For the concentrate, they buy the ingredients and grind and mix them by themselves on the farm. Except from the family members that are managing the farms, they hire the necessary workers.

The heifers partly are imported and partly raised by the farm. They apply the CMT to prevent mastitis and in general they have employed a part time veterinarian. They have contract with the processing plants and usually sell the milk to two processing plants to pressure the plant for better price. The milk quality is high and such milk is used for UHT milk, as the SCC and microbiological load meets the standard. Milk price achieved by the processing plants is 58-62ALL/litre.

They have done investments in collecting the manure and slurry, using it in their land or selling to other farmers.

Small ruminants' breeder profile

Small herds

Small herds (less than 50 heads) are kept in the village and in most of the cases are grazing in the communal pasture under the control of a member of the family that is breeding them or by village shepherds (the same system that was described above for breeding few cows); they use a grazing system on permanent pasture near the farm; or natural pasture within walking distance, with the return of sheep or goats in the evening to the farm.

The predominant breeding system is the extensive one. Usually such farms keep both dairy cattle and small ruminants, having 2-3 cows and 10-20 small ruminants. Another way is to rotate groups of animals belonging to different owners among different plots within the same neighbourhood: one week one of the owners takes his and some neighbours' animals in his own plot, next week another one does so, etc.

The manure and slurry management are a big problem and none of the farmers is trying to improve the situation.

Large herds

The majority of small ruminants are kept in the highlands in the north and south of the country, where are the abundant pastures that represent one of the important natural resources of the regions. Future development of rural incomes will heavily depend on the efficient use of this ample, but nonetheless limited, natural resource to produce low-cost, quality animal products for both domestic and export markets.

With forage availability strongly affected by altitude, transhumance (generally happening in the pastures of the same region) represents the most efficient and sustainable use of pasture resources for large herds. In the transhumance method that was commonly used in socialist time up to mid-90s, the small ruminants of northern part of the country were

transferred to lowlands in Winter: this system is not used anymore, as result of land privatization. Nowadays, small ruminants graze at the high altitudes in summer when those pastures are productive (from April-May), they then move to lower altitude pastures in autumn (September-October). Considering that grazing is one of the main dietary sources of their animals, the herders obviously are knowledgeable in the selection of grazing locations relative to soil, vegetation, water and altitude for the different climatic zones, as also about the seasonal influences of temperature, rainfall and vegetation growth patterns.

These herders exploit the preferential grazing patterns of their different animal types, which are essential to secure a balanced, efficient and sustainable exploitation of the available pasture resources. After October, the animals are brought down to the valleys for the winter, where they rely on a mixture of pasture hay, hay made in ditches, straw and crop by-products.

The reproducers' selection is done by the farmers themselves based on their experience and their empiric information. Natural mating is used for ewes and does however the herders every two years pay attention to exchange the rams and bucks with other farmers as they are aware of inbreeding negative consequences. Two months before the breeding season, the rams and bucks received improved feed ration better pasture and concentrate and milk and are kept separate from ewes and does).

The winter feed ration of small ruminants is low in protein and vitamins and minerals. Two to four weeks before and after lambing/kidding, the pregnant ewes/does are fed with concentrate feed (mainly wheat bran). Shelters are very simple in the pasture time and during winter. Hand milking is used to the small ruminants. In general, the milk is transported from the pasture to the small processing units, processing to cheese. The quality of milk is low due to high level of somatic cells and microbiological load. Prices of milk vary by region: for the sheep milk the range is 70-90 ALL/litre while for goat milk it is 48-55 ALL/litre.

Some of the small ruminants' farmers have shifted the herd profile from milk to meat which is the new trend. As the milking by hand is the most labour-consuming process and the distance to the processors is considerable, several farmers, with the support of the veterinarians, are using ewes' hormonal and feeding treatment for out-of-season oestrus (usually in Albania sheep are mating in July-August) and there are cases of herds that are lambing all the year around.

Small ruminants specialized farms.

In Albania very, few milk specialized farms breed ewes and does of exotic breed such as Alpine and Saanen goat breed and Lacuna or Awasi sheep breed. These farms are getting 600-800 litre/milk/goat or sheep and the breeding system is the same adopted by large cow farms as described above. Management of the stock is the same for feeding, stables, standards.

Several local ecotypes of sheep and goat such as "Shkodrane" "Syska e Matit" sheep breed, "Caporee Mokres" goat breed, "Lara e Polisit" are in the "at risk" and "potentially at risk" status. A total of 10 autochthon breeds (7 goat breed and 3 sheep breed) are included for conservation measures under Measure 4 (agro-environmental). Other autochthon breeds (e.g. Has goat) have been not included in the breeds considered "at risk" and therefore were not eligible in IPARD II for support under Measure 4.

Farmers are using empiric information/traits for selecting rams and bucks, and every second year they exchange rams and bucks with friend farmers to avoid inbreeding.

2.3.2 Breeds of animals and types of breeding

Cattle breeds and types of breeding

Cattle breeds

The main cattle breed in Albania are the Holstein (31%), Jersey (35%), and Holstein Friesian (14%), which account for about 2/3 of the cattle population. 1/3 of all Holstein population is bred in Fier region. The number of Holstein cows is increased and the trend is to continue such increase because the farmers who are breeding Black & White cows are shifting to Holstein breed which is becoming popular in growing dairy farms. Majority of the cows (63%) bred in low land are under artificial inseminations and Fier region is in the first place with 88.8%⁸.

Table 2.10: Cows' breed structure (%)

Breed	Breeding	Total
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⁸MARD unpublished report

	Pure breed	Crossed breed	
Holstein	4	27	31
Jersey	8	26	34
Black and White	2	12	14
Simmental	1	4	5
NRF	1	2	3
Brown Swiss	1	0	1
Tarentaise	0	1	1
Local	0	7	7
Other	0	4	4
Total	17	83	100

Source: MARD, unpublished report.

Regardless of the cows' decrease in numbers, it is important to mention that the imported bull semen and heifers with high genetic value have contributed to genetic progress on large scale farms.

Cattle types of breeding

Two types of breeding are used in cattle farming, namely low input production system and medium- and high-input production system; they are shortly described below.

Low-input production system is with the small-scale cow farms where feeding is based in fresh forage, hay and straw with limited quantity of cereals like corn and wheat bran. This is due to the lack of tradition of using compound feed and to its high price. In addition, insufficient area of land for cows' breeding due to the limited amount of land that farms owned and the use of this land for cultivation of mixed crops like wheat, maize, vegetables, forage, etc., makes the cows' feed ration to be insufficient.

Another factor that is observed in the small-scale dairy farms is the small body weight of the cows, as most of the farmers are not breeding pure breed cows but they are crossbred, and the majority is using natural mating. The small body weight of the cows (350-450 kg) is one of the factors of low milk production. Most of the animals are crossed with former crossed breed and not pure breeds.

Small scale dairy farms milk their cows by hand inside the shelter many of them still lack information or awareness related to standards. Many dairy farmers do not have cooling tanks 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. Lack of awareness about standards results in non-compliance, which implies lower market access and constraints in access of funds whose access is conditioned by meeting certain standards.

Majority of farmers do not know that the welfare of cows depends largely on how they are managed and that a range of factors can impact on their welfare including housing and bedding, space and crowding, transport conditions, etc. In addition, they are not aware that good standards of hygiene are of the utmost importance for the quality of the milk and dairy products, as well as for the producer profitability since the milk price often depends on quality; poor quality milk will be rejected. Thus, the extensionists should help the dairy farmer to improve their dairy farm management activities (housing, feeding, milking and health issue) for the production of clean and hygienic milk. The handling of milk strongly affects the quality of the finished product. The consumer wants a safe product and the processor needs good quality milk for processing. Also, the origin of production is considered as an important factor for most Albanian consumers.

Medium- and high-input production system is used by medium and large-scale dairy farms. Such farms have: (i) better stables, (ii) rented land for fodder production, (iii) machineries and equipment for their cows, (iv) are buying inputs like combined feed, (v) veterinarian and zootechnical services take a relatively important place and vi) the surplus of milk goes to the market. Milking process is mechanized using mobile milking machines (in medium farms) and milking parlour (in large farms- and milk storage tanks with cooling systems) even the *rotolactor* type⁹.

Small ruminants' breeds and types of breeding

Sheep breeds

Sheep breeding is a long-held tradition in Albania. The local sheep breeds are 33% of the sheep population and hold a

⁹TRIS-ALB farm and VJEN farm.

dual purpose for milk and meat and have a very good adaptation to the environment and the hard conditions of their breeding. Most important local breeds are: Recka, Ruda, and Bardhoka (Table 2.11). While 67% of the sheep population are imported breed mainly for milk production (Awasi and Greek), except Merino and Il de France breed.

Table 2.11: Sheep breed structure 2018 (%)

Breed	Breeding		Total
	Pure breed	Crossed breed	
Local	Recka (local)	20	20
	Ruda	7	7
	Bardhoka	-	5
	Mati	1	1
Imported	Cigaje	3	33
	Merinos	1	16
	Awasi	2	7
	Greek	5	8
	Il de France	-	1
	Others	-	2
Total	39	61	100

Source: MARD, unpublished report.

Goat breeds

About 89% of goats are native breeds or ecotypes and 11% are crossbreeding with the “Alpine” and “Saanen” breeds. The goat local breeds are the only species that have not been subjected to mass crossbreeding. Natural selection has favoured balanced genotype development. They are preserved in their area, taking their name from the geographical region where they are reared as goat of: “Hasi”, “Mati”, “Capore of Dragobia”, “Capore of Mokrra”, “Dukati”, “Liqenas”, as well as “Muzhake” in southern part of the country, Table 2.12.

Table 2.12: Goat breed structure 2018 (%)

Breed	Breeding		Total
	Pure breed	Crossed breed	
Local	Muzhake	36	36
	Mati	8	8
	Hasi	6	6
	Dukat	5	5
	CaporeMokres	2	2
	CaporeDragobise	1	1
	Liqenas	1	1
	Others	30	-
Imported	Alpine	1	7
	Saanen	-	3
	Greek	1	1
Total	91	9	100

Source: MARD, unpublished report

Sheep and goats' breeds – crosscutting issues

Farmers are using empiric information/traits for selecting of the rams and bucks, and by exchanging every second year the rams and bucks with their friends to avoid the inbreeding. Natural mating is use for sheep and goats which are being bred in pastures far from the living centres or in general, far from markets.

Thanks to the adaptation of harsh environmental conditions, and the quality of the natural pastures, autochthon sheep and goat breeds are much more adapted to the grazing environment, to produce more milk and meat with lower cost. The average live weight for sheep ranges 30 - 55 kg/ to female and 45- 80 kg/ per male, while the goat ecotypes range are 35- 55 kg for female and 40-80 kg/ for male¹⁰.

¹⁰UNDP (2019). Mapping the Genetic Resources of Autochthonous Farm Animals in Albania.

Small ruminants breeding systems

The livestock production of small ruminants is generally well adapted to the geographic and climatic conditions of Albania. The small ruminants bring value to the natural grasslands and have performances in line with the level of (poor) feeding. They are able to use limited food resources during winter or dry summer periods, to move for long distances during transhumance and resist diseases and parasites. Many breeders prefer local breeds. On the other hand, the productivity of these local breeds is low and the potential is limited, although not yet fully exploited.

The predominant farming system in hill and mountain regions of Albania is the extensive one. The management of the small ruminants is based on traditional rearing and the new technologies are of a little known by the farmers. The reproducers' selection is done by the farmers themselves based on their experience and their empiric information. Animal feeding is mostly based on the utilization of pastoral reserves as the small ruminants are kept in summer pastures for 5 to 6 months (from April to October). The concentrated feed (mainly maize and/or wheat bran) is used for ewes and milking goats at the amount of 100-150 g/day, only for one month before and after lambing/kidding. Makeshift materials are used to build the shelters. The farmers having very few heads do not migrate animals and they use communal pastures. Usually farmers practice only one lambing/kidding per year. The most labour-consuming process in sheep/goat farming, for example milking, is done manually.

The small ruminant production is done in several ways: a) extensive system with the transhumance for 6 to 8 months (all regions); b) the semi- intensive system of transhumance for 5 to 6 months; c) grazing system on permanent pasture near the farm; d) natural pasture within walking distance, with the return of sheep or goats in the evening to the farm. The new technologies are little known by the farmers.

The lambs/kids have slow growth rates, low fat level and an excellent taste. The extensive production system determines the consumer's expectations for naturally grown animals. The traditional production model is set to minimize costs and inputs, not to increase the output; given such objective, it is fairly efficient in the local conditions but not fitted to intensive production. Small flocks, between 10 and 50 heads, are still very numerous and the production is fragmented. Producers are mostly individual keepers, often middle-aged or elderly.

The farms that rear small ruminants of local breeds undergo a process of concentration and specialisation, which is linked with intensification of production, such as use of concentrates and control of inbreeding, and have better results as higher milk production, higher prolificacy, etc. They are more market oriented, and their income from small ruminant breeding is much higher than other farms. The largest farms apply more elements of intensification of production and tend to increase number of animals. Farms that rear small flock hardly may find themselves as prospective farms. In general, they have tendency to quit this activity as soon as they find another opportunity.

The import of exotic breeds is developing fast through imported reproducers and their breeding takes place on large commercial farms. At the same time, it is important to note that the number of farmers interested in crossing the native sheep and mainly goat breeds with exotic breeds is increasing.

To increase milk production of small ruminants, their nutrition must improve through increase of fodder production and more use of concentrate feed. In addition, the improvement of pasture management and the increase of the number of watering points in summer pasture are important aspects to increase productivity as well.

The introduction of imported breeds and application of crossbreeding can give better results, especially when applied in more intensive practices. There is evidence that breed-crosses produce good results in farms with better management and feeding systems. Any breed to be used for commercial crosses needs to be assisted by specialized institutions in Albania. For this, the ATTC (Livestock department) in Korça would be the most suitable partner.

2.3.3 Dynamic of forages area and production

Albania features rich land resources for growing dairy animals (especially small ruminants), with pastures and meadows that covers 15% of total land size. On the other hand, the land area devoted to forage represent more than half of cultivated land in Albania and it is increasing. The forage area has been increasing in recent years and in 2019 reached approximately 220 thousand hectares, or 7.8% more than in 2014. In addition, the fodder production has increased by 16.6% as a result of the increase of the area and the increase of the yield by 8.0%, Table 2.13.

Table 2.13: Trend of area, production and yield of forages

Forages	Year						
	2014	2015	2016	2017	2018	2019	2019/2014
Ha (000)	204.2	207.3	208.6	215.7	217.4	220.1	+7.8%
Ton (000)	6,100	6,000	6,144	6,689	7,050	7,115	+16.6%
Yield (ton/ha)	29.9	28.9	29.5	31.0	32.4	32.3	+8.0%

Source: INSTAT (2015-2020)

Table 2.14 summarises information on Forages (area, production and yields), cows per ha forages and milk per ha forages – distribution by regions. The largest area under foragers and highest production is in Fier region with 20.3% of total are under foragers and 26.9% of the total foragers production. Also, the highest yield of fodder is in the region of Fier with 42.9 tons/ha and the lowest is in the region of Kukes with 13.1 tons/ha. This difference shows that the production potential is considerable (based on the intensive production methods); although there are still other production factors that must be intensified like the use of: (i) quality seeds; (ii) phosphate fertilizers especially for perennial crops (alfalfa); (iii) equipment for soil preparation (bedding); (iv) proper irrigation methods; (v) proper pesticides for weed and pest management control. Fier region is the largest producer of cow milk and milk yield per cow, however Vlore (8,9 ton) and Kukes (6,04 ton) have the highest milk production per unit of foragers.

Table 2.14: Forage data, cows per ha forage and milk per ha forages – distribution by regions

No.	Region	Foragers			Cows	Cows/ha foragers	Cow milk (ton)	Cow milk production/ha foragers (ton)
		Surface (ha)	Production (ton)	Yield/ha (ton)				
1	Berat	14,020	427,760	30.5	16,435	1.17	47,909	3.42
2	Diber	25,904	554,611	21.4	27,200	1.05	64,710	2.50
3	Durres	18,583	691,397	37.2	18,100	0.97	62,574	3.37
4	Elbasan	22,833	829,191	36.3	33,900	1.48	120,821	5.29
5	Fier	44,641	1,915,045	42.9	46,755	1.05	198,690	4.45
6	Gjirokaster	12,089	216,000	17.9	13,020	1.08	20,674	1.70
7	Korce	17,356	461,726	26.6	31,590	1.82	92,313	5.30
8	Kukes	6,920	90,889	13.1	22,500	3.25	41,770	6.04
9	Lezhe	14,580	497,895	34.1	22,770	1.56	54,815	3.76
10	Shkoder	16,507	542,065	32.8	30,150	1.83	75,699	4.69
11	Tirane	19,848	559,338	28.2	31,425	1.38	105,861	5.33
12	Vlore	6,803	329,316	48.4	22,581	3.32	60,726	8.90
	Total	220,083	7,115,234	32.3	316,426	1.44	946,561	4.30

Source: INSTAT (2020) and authors' calculation.

About 50% of the area used for forage and fodder crops is alfalfa, for fresh consumption and hay production, followed by clover, ryegrass, etc. Alfalfa together with the meadow mixtures is currently more important and productive in terms of hay production. Corn and grass silage are becoming more important for the medium and large-scale cow farms and farms breeding and for imported small ruminants' breeds.

Approximately 75 thousand hectares are planted with cereals, of which corn is 55 thousand hectares. According to experts' opinion, about 90% of the cereal production is used as concentrate feed or corn silage for feeding the animals.

2.4 MILK PRODUCTION

Starting in the 1990s, two phases of dairy development have been seen: until 1994, increase in the number of animals was the main determinant of production increase, while in the second phase yield increase was observed. The increase of yield did not balance the decrease in the number of heads however - the reduction in the number of cows and ewes is one of the reasons for the reduction of cow milk production by 1.8%, and sheep milk by 5.7% in 2019 compared to 2015, while for goat milk an increase of 5% was observed. In 2019 the total national milk production was 1,112,000 Ton (Table 2.15).

Table 2.15: Milk production – trend and composition

Livestock	2010	2014	2015	2016	2017	2018	2019	Index 2014=100	
	Production (000 tons)							%	
Cow	930	965	964	975	983	974	946	85.1%	98.1
Sheep	77	89	87	85	87	85	82	7.4%	92.1
Goat	63	79	80	85	87	86	84	7.6%	106.3
Total	1,070	1,133	1,131	1,145	1,156	1,144	1,112	100.0%	98.1

Source: MARD (2010), INSTAT (2015-2020)

About 85.1 percent of raw milk was produced by cows, 7.4 percent by sheep and 7.6 percent by goats (Table 2.15).

The region with the largest milk production is Fier, contributing to 19.4% of total milk production, and together with the regions of Elbasan, Korçe and Tirane make together up to 52.5% of the total milk production of the country. The same regions are the largest producers of cow's milk (54.7%).

Table 2.16: Milk production by region

Region	Cows		Sheep		Goat		Total	
	Tons	%	Tons	%	Tons	%	Tons	%
1 Berat	47,909	5.1%	5,709	7.0%	6,776	8.1%	60,394	5.4%
2 Dibër	64,710	6.8%	5,000	6.1%	5,630	6.7%	75,340	6.8%
3 Durrës	62,574	6.6%	3,060	3.7%	3,402	4.1%	69,036	6.2%
4 Elbasan	120,821	12.8%	7,323	9.0%	13,772	16.4%	141,916	12.8%
5 Fier	198,690	21.0%	9,831	12.0%	7,271	8.7%	215,792	19.4%
6 Gjirokastrë	20,674	2.2%	10,550	12.9%	9,459	11.3%	40,683	3.7%
7 Korçë	92,313	9.8%	11,293	13.8%	8,626	10.3%	112,231	10.1%
8 Kukës	41,770	4.4%	2,022	2.5%	1,822	2.2%	45,614	4.1%
9 Lezhë	54,815	5.8%	1,401	1.7%	4,863	5.8%	61,079	5.5%
10 Shkodër	75,699	8.0%	4,192	5.1%	6,323	7.5%	86,214	7.8%
11 Tiranë	105,861	11.2%	2,771	3.4%	5,253	6.3%	113,885	10.2%
12 Vlorë	60,726	6.4%	18,517	22.7%	10,769	12.8%	90,012	8.1%
Total	946,561	100.0%	81,669	100.0%	83,966	100.0%	1,112,196	100.0%

Source: INSTAT (2020)

Fier is characterized by productive agriculture land which creates better condition for producing animal feed and supporting the cow milk production. In this region there are several farms specialized in milk production which expect to continue their activity in the long term (i.e. are not considering to change farm specialization or orientation). They have imported Holstein heifers, build modern cow barns, invested in milking parlours, improved the feeding systems and are using modern equipment in all the chain of fodder and 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 farms have much higher productivity when compared to the majority of very small dairy farms with 1-2 cow, with milk yields per cow/year exceeding 7,000 litres, i.e. more than double of the average milk yield of the country and in line with EU Member States average (7,346 in 2019¹¹).

The most important regions of sheep milk production are Vlore (22.7%), Korçë and Gjirokastrë all together are providing 49.4% of total sheep milk. In Elbasan region is registered the highest goat milk production (16.4%) and together with the regions of Vlore, Gjirokastrë and Korce they are producing 50.8% of total goat milk of the country.

2.4.1 Milk yield

Milk yield per cow per year in Albania is slightly lower than 3,000 litres (Table 2.17). Though it has doubled compared to 1990 but is very low compared to the average of the EU-27, which is slightly less than 7,000 litres per cow per year.

¹¹EUROSTAT (2019)

Table 2.17: Evolution of milk yield (litres per head/year)

Milk source	Year						Index 2014=100
	2010	2014	2015	2017	2018	2019	
Cow	2,620	2,695	2,700	2,817	2,840	2,981	110.6
Sheep	58	63	61	62	62	63	100.5
Goat	109	114	114	121	123	127	111.7

Source: *MARD (2010), INSTAT (2015-2020)*

The low yield of cow's milk comes as a result of several factors such as: (i) most cows are not purebred, (ii) inadequate feeding and nutrition, (iii) preparation of poor-quality feed and as result lack of nutrients in the feed ration of cows, (iv) lack of knowledge of farmers about proper breeding of cows, which has led to poor fertility, metabolic disorders and health and welfare problems. The low capital intensity of production has resulted in low productivity, relatively high production costs and low profitability; as a consequence, many farmers sold the cows and shifted to greenhouse production (Fier and Berat region) or left the country. Dairy cows are typically kept in simple stables, fed mainly on fresh forage and grazed on grasslands and meadows during spring and summer period, while in winter fed with hay and supplemented by concentrate feed and minerals. Only 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 and they do not use cooling tanks, while larger ones have modern milking equipment and cooling system.

Also, sheep and goat milk yields are low; namely 63 litres per ewe per year and about 127 litres per milking goat (doe) per year.

Table 2.18 below shows that the highest cow yield (4,203 kg) is recorded in Fier region (41% more than average of the country) and the lowest in Gjirokaster and Kukes- 38% less than average yield. Durrës has the highest milk yield from sheep and goats (51% and 87% more than average of the country); this situation is due to the presence of some large newly established small ruminants' farms using highly productive imported breeds, specialized for milk production.

Table 2.18: Milk yield by regions, 2019 (kg)

No.	Regions	Cow	Sheep	Goat
1	Berat	2,775	55	118
2	Dibër	2,379	53	106
3	Durrës	3,457	118	192
4	Elbasan	3,323	68	169
5	Fier	4,203	62	179
6	Gjirokastër	1,827	53	104
7	Korçë	2,979	58	119
8	Kukës	1,856	66	110
9	Lezhë	2,407	62	118
10	Shkodër	2,512	87	135
11	Tiranë	3,369	55	127
12	Vlorë	2,737	71	107
	Total	2,981	63	127

Source: *INSTAT (2020)*

2.5 ACCESS TO INPUTS AND SERVICES

Inputs and services in dairy production comprise access to genetic material, feed (both roughage and concentrate), seeds, fertilizers and plant protection products, farm tools and equipment, veterinary medicines, vaccines, and veterinary services. In addition to making these inputs and services available, it is also important to secure their accessibility and convenience to all producers in need.

Albanian agricultural production is entirely dependent on imports for agrochemical products, for the majority of quality seeds and fuel; the need to import most of the inputs has a strong impact on food products competitiveness, including milk and dairy. This dependence makes Albanian agriculture subject to international price volatility. Comparatively high-priced inputs are only available for cash, so the limited purchasing power of farmers restricts their use. Most small-scale

dairy farmers usually use their own carryover seed. In the main arable areas of the country, there is a tendency to use high seed rates. The VAT exemption on fertilizer, seed and pesticides has encouraged their use.

Access to genetic material

Import of pure breed heifers: during the last five years the import of breed heifers decreased (Holstein, Bruna Alpina, Simmental), except for the year 2017 and 2018 when 348 and 400 heads were imported, from the needs of the two largest dairy farms in Fier.

Importers of bull semen: for the period 2015-2017 there were 11 entities that imported bull semen, with about 300,000 doses per year¹². The import of bull semen in the last three years is decreased by 20% (importers interview) and the number of importers is reduced.

LEAA is the main actor of semen importation and distribution in Albania with 120,000 doses/year (from World Wide Sires company-US based). LEAA is the only entity that also imports sex-sorted semen (300 dose) and super-elite semen (500 dose). The large farms in the last two years are asking for such semen.

At present, the main service providers for bull semen and artificial insemination are: LEAA, B.O.F.A.K., and NORALB. In addition, there are several individual practitioners and/or entities that distribute the semen they buy from the main importers.

In the last three years, approximately 50% of the semen imported and distributed is beef breed (Belgian Blue, Charolais, Limousine, Angus), as the dairy farmers are interested that their calves have high daily body gain and to sell them at four months of age with body weight of 130-150 kg.

The international price of bull semen has increased by 15%, but in the country, this has not been reflected because the importers have reduced their profit to keep prices competitive.

The quality of bull semen is monitored by Regional Agency of Extension Service (RAES), for each lot of imported semen. Also, semen lots documentation is controlled at border posts by NFA veterinarians.

The opinion of the importers is that government should exempt VAT for bull semen and this will impact farmers to be more interested to use the AI.

Access to feed¹³ and seeds, fertilisers and plant protection products

The feeding of small farms dairy cows is based mainly on forage and grassland/meadows supplemented by limited quantity of concentrate feed and minerals. The concentrate feed in many cases is based on cereals and less protein feed. The feed ration is changed many times during the year according to the forage production and using hay of medium to low quality. While in the medium and large farms the feeding is based only in forage and compound feed. The large farm uses the same feed ration all the year (grass and maize silage, alfalfa and ryegrass hay and compound feed). The large farms mix the feed ration using TMR machine.

Concentrate feed, improved forage seed, heifers, breeding services, and veterinary services & veterinary medicines were identified as the main dairy inputs and services used by the farmers and significantly differed between the regions and between the size of the dairy farm.

The main *animal feed producers* are the operators of feed mills that produce mainly for the poultry industry (layers and broilers); however, they also produce and sell animal feed to dairy farms. The main feed mills selling 20-50% of their daily production to dairy farms are Agrotech, AIBA, Driza, Arna. Small sized dairy farms are buying the animal feed from them, while the medium and large farms are buying the ingredients from them or from agro-input dealers and prepare by themselves the finished product.

Suppliers of *agricultural and livestock inputs* consist of several different categories such as: (i) traders of agricultural inputs (seeds, chemical fertilizers, pesticides and some of them and animal feed or ingredient). These traders are (i) importers and wholesalers, (ii) wholesalers, and (iii) retailers or agricultural pharmacies. Their number is large, but 130 of them are members of the AFADA association, who "own" over 80% of the market for these inputs. Most of them also sell

¹² information from the interviews with the LEAA association, and wholesalers/distributors

¹³Refer also to section forages for access to feed.

cereals for livestock feed (corn, wheat, sunflower seeds and soybeans), while a smaller part also sells combined feed mainly imported from Serbia.

Box 1: AFADA – an association of input and advice provision to farmers

Albanian Fertilizers and Agro-Business Dealers Association (AFADA) was established in 1993, fully supported by IFDC-USAID project. AFADA members supply farmers with fertilizers, plant protection products, quality seeds (wheat, corn, vegetables, fodder, etc.), animal feed, greenhouse building materials, spray pumps, sampling and seedling, etc. AFADA offers also a wide range of services for its members such as: information on agricultural inputs both, local and international; legal counsel; links with other donors and financial institutions; technical consulting with local and foreign experts.

During its 27 years of existence, AFADA, has demonstrated the capability and the power to reach the agricultural inputs entrepreneurs, to contribute to the development of the national agriculture and to improve the business and the livelihoods of the Albanian farmers. With many years of experience behind them, the AFADA dealers have become competent in expanding their agricultural inputs businesses in a number of various markets and with many diversified products.

AFADA is one of the most active and organized structures inside the Agro-Business Council of Albania – KASH and is a leading force in reforming the agricultural policies not only for this particular sector, but for all other industries related to agriculture in Albania.

AFADA is a unique association of its kind in Eastern Europe. Its successful structure has served as an incentive and as a basis for creating other strong associations that cover various industries of agriculture and that work to develop their businesses. The recognition and the success of AFADA have already crossed the Albanian borders and its business model has been used by international donors in Kyrgyzstan, Azerbaijan, Kosovo, Tajikistan, Togo, Nigeria and Malawi in Africa, etc.

The main product sold by AFADA members are agricultural inputs (seeds, chemical fertilizers, pesticides) and animal feed, which in total make up 80% of their business. They do not enter into formal contracts with farmers as most of them are regular clients. 90% of them say that they sell inputs with a delay payment of 2-6 months and do so in order not to lose clients.

Access to advice and information

Most small size dairy farms have scarce information about inputs and find it difficult to find it. Some of input retailers in rural areas are not competent in what they may advise farmers. There is a limited awareness of knowledge about requirements, minimal standards and good practices in different aspect of animal husbandry, use of inputs and milking practices. However, according to experts' opinion, farmers tend not to comply with requirements even when they are aware of them. For example, the majority of farmers know that they should not use milk produced by cows treated with antibiotics, but they still use or sell such milk. In most cases, they are also informed from input suppliers about the appropriate use of inputs (including PPP for forage crops), but many of them forget or do not care as there is little or no compliance control at farm level.

Advice about input use is mostly provided by input dealers; the public extension services have not the resources to reach out all small farmers. AFADA members are also providing advisory services to farmers on the use of inputs. The cost of advisory services is included in the cost of the input, so that this advisory function is not paid separately.

2.6 MILK PRODUCTION KEY FEATURES AND CHALLENGES

Milk primary production development has been hampered for years by several factors, the main ones being: i) high fragmentation of production and small scale of farming, ii) poor farm management practices, especially feeding iii) limited access to high-quality inputs, iv) aging farm owners, which slow down process of change and reduce the scope for investments, v) inadequate service provision (veterinary service, extension service, natural mating and/or breed) and, vi) lack of farmers' organization and inadequate value chain coordination. These factors lead to lower productivity and farm efficiency; the specific aspects of the most important issue are detailed below.

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

Small farms are currently a turning point, facing the challenge to decide whether to grow and develop to meet the standards or to terminate commercial production. As a specific case, farms that rear small flock hardly may find themselves as prospective farms. In general, they have tendency to quit this activity as soon as they find another opportunity.

The situation of larger farms is better. Due to subsidies, these latter are able to invest in modern technologies, which is practically inapplicable to small farms due to their low turnover, which does not allow them to be competitive under economies of scale. Besides, larger farms are able to diversify their products, while smaller farms more often rely on direct communication with their customers and deliver their products at customers' home. In most cases small sized dairy producers has established their food chain in local market. These farms offer a growing market for suppliers of inputs like feed, stock and equipment, and for providers of extension, training, AI, veterinary, and financial services.

Access to high quality inputs

All agricultural inputs (farm inputs, animal feed and AI) are available in the market, but many small-scale dairy farms cannot afford to buy them due to lack of financial means.

More in general farmers in Albania face major constraints in achieving high-quality, consistent supplies. This is caused by financial constraints and in many cases by low input quality and a lack of technical capacity, among other things.

Need to combine improved genetic potential and improved animal feeding

The main reasons for relatively high production costs reasons for this situation are the lower milk yield (animals are crossbreeds), insufficient nutrition and the high cost of animal feed production; these issues are strictly connected, as investments to improve genetic potential are counter-productive, if not matched by appropriate improvement in animal feeding; at the same type, improved feeding does not mean just more feed; the overall feeding system must be adapted; as a result, the increase of production cash costs can be more than proportional to the increase of incomes from milk sale.

Very often, small farmers continue to manage the cows and small ruminants as they were managing local breed with much lower milk production potential, feeding them as they did when milk yield was 50% lower than now, thus getting no results or even negative results from investments made to improve the genetic potential of their animals.

Optimizing animal feeding quality and costs is a key topic in defining the profitability of a dairy farm, as feed costs represent 50-70 percent of the total milk production cost. In order to reduce these costs (especially in medium and large farms) balanced feed rations must be provided, tailored to the genetic potential of the animals (ideally to the needs of every single animal); the contents of the ratio must be also optimized, considering cost, quality and types of available feed components.

Also, animal feed should be analysed, to have reliable data on chemical constituents and safety.

Addressing the issue of animal feed cost and quality requires a combination of increased knowhow, investments in equipment and technologies (including simple software to optimise the feed rations), improved services for feed quality controls and improved fodder crops management.

Animal health, use of veterinary medicines

The increased and poorly managed use of antibiotics and other chemicals in animal production imply significant risks – for animal health (infectious animal diseases), but also for human health, mainly due to the development of multi-resistant strains of microbes. Zoonoses control is often deficient.

Many of the challenges faced by the Albanian dairy sector – such as low milk quality, low average yields and a high degree of seasonality – are linked to the small scale of farming operations. Investments in milking and cold storage equipment, improvements in feed and forage practices, introduction of specialized dairy breeds and, advanced techniques for animal husbandry are essential to face this challenge. However, such investments and improvements are unlikely, or even impossible on the small-scale dairy farms that dominate the Albanian dairy sector.

A specific issue is related to scarcity of qualified service providers for hoof care. Poor hoof cares results in production losses, reproductive problems, animal health problems and increased veterinary costs for treatment. Many small and large farms as many of them do lack the knowledge on hoof care and treatment and have little awareness on the impact on their activities of neglecting this issue. Moreover, there are very few good technicians for hoof care.

Milk quality

The quality of raw milk is affected by the inadequate hygienic and sanitary conditions on the farms, inadequate equipment used for animal milking, milk storage and transport, lack of knowledge, information and skills about milking hygiene, milking techniques, storage and cooling and food safety standards.

In small dairy farms (1 to 10 cows) cows are usually milked by hand, which negatively affects hygiene and food safety. A system of professional sampling, transport of samples to laboratories, laboratory analysis and reporting of the results to farmers, processors and food safety authority is not in place in Albania.

Only dairy farms specialized in milk production (normally more than 10 cows) started using the mobile milking machines over the last years. Farms with more than 50 cows usually have milk storage tanks with cooling system and farms with more than 100 milking cows have milking parlour. There are limited or no financial incentives to increase milk quality, since prices are determined mainly by quantity and fat content. The majority of the milk producers have little information about the microbiological status of their raw milk.

The process of animal and farm registration that is planned to be completed during 2021, the amendments to the law "On veterinary service" made it possible the reform in veterinary service. The establishment of National Authority of Veterinary and Plant Protection - NAVPP aims at improving the actual implementation of measures for the prevention and control of animal diseases through the strengthening of control and service structures. The measures taken are expected to improve the quality of milk, at least the cow milk.

The hygienic situation of milk from small ruminants is even worse, as most of small ruminant farms perform hand milking; also, animals are milked in open air or in makeshift shelters (when it rains) built in a very traditional way (i.e. making use if whatever available material is considered suitable for the purpose) and have not been renovated in the last 30 years. Cooling tanks are missing.

There is a huge gap between premises and practices of small sheep and goat farms and the few very large farms that have imported animals; in these farms' animals are kept all year round in the stable and milking is done by milking machines. This technology and management gap are duly reflected in milk quality and quantity, as the few modern small ruminants' dairy farms performance is as good as that one of similar farms in EU member states.

The influence of changes in market and demand

Evolution of demand plays a major role in defining challenges and prospects of dairy farmers. Even if most of the milk primary production sector appears somehow static or applying a defensive strategy, a process of overall adaptation to a changing operational environment is clearly visible. In particular:

- The demand for goat and sheep dairy products represented a powerful incentive for producers, which led to a decade-long increasing trend in the number of small ruminants which was reversed only after 2016, with a resulting larger increase in small ruminants' milk production (especially goat milk) as compared with cow milk¹⁴.
- Quality of milk is a crucial element for the success of the domestic dairy sector, as the segment of consumer willing safer and higher quality products (willing also to pay higher prices for this) is increasing and the large and modernized segment of milk processing industry needs adequate supplies in quantity and quality to match consumers' needs processor. Improving the whole milking process and investing in relevant equipment facilities and knowhow is essential to improve the quality of the finished product.
- The origin of production is considered as an important quality factor of milk and dairy products for most Albanian consumers. The traceability of the product, the development of in-farm artisanal dairy production and the establishment of quality schemes, including Geographic Indications, will be necessary steps to match consumer preferences with higher value-added productions.

¹⁴ In the period 2010-2019 the production of dairy cattle milk increased by 1.7%, sheep milk by 6.9% and goat milk by 10.9%

3 CHAPTER 3: PROCESSING INDUSTRY

3.1 STRUCTURE OF THE INDUSTRY

The milk and dairy industry is second largest industry in terms of number of enterprises (12.8% of total), after flour and bakery industry. The number of enterprises remained rather stable in the last programming period, ranging between 312 and 332 units. These figures reflect the formalised industry only. The total size of the industry may be much higher, as there are hundreds of informal processing plants that are not included in the official statistics¹⁵.

The production of milk and dairy products is one of the most developed agricultural sub-sectors in the country. Over the past five years, the dairy processing industry has undergone important changes. Large scale processing plants went through substantial modernization and even the medium sized dairy plants operate with good, modern equipment and have developed a competitive product line. The large milk processors invested mainly in technology and storage capacity, while for the small-scale processors (so-called “*baxho*”) the situation and challenges did not change. Table 3.1 below shows the dynamics of the sector in terms of expansion and the structural change.

Table 3.1: Milk sector development trends¹⁶

Sub-sector	Expansion/contraction (1-5strong shrinking-strong expansion)					Structural change (1-5 stagnant-changing fast)				
	1	2	3	4	5	1	2	3	4	5
Milk processing										
Large dairies										
Mini dairies (<i>baxho</i>)										

Source: Authors elaboration based on field interviews and expert assessment

The number of dairy processing companies in the market remained stable in the last five years (see **Table 3.2** below), despite the increase of scale and processing capacity.

Table 3.2: Number of dairy processing operators

Activity	2010	2014	2015	2016	2017	2018	2019
Milk and milk products	352	312	321	328	332	319	316
Total agro-industry	2,156	2,298	2,354	2,428	2,541	2,414	2,476
% Dairy industry/total agro-industry	16.3	13.6	13.6	13.5	13.1	13.2	12.8

Source: MARD 2010, AgriFish, 2018 and 2019¹⁷, MARD 2020

At present, the main dairy plants have a sizable spare capacity, as in average they use only 50-60% of their total capacity¹⁸.

The milk processing industry is very fragmented, with an average of three employees and processing capacity of 1 – 2 tons of milk per day. Only 10 milk processors are considered large ones with a processing capacity of 20-70 tons/day (“Lufra”, “Erzeni”, “Zepa-natyr”, “GjiroFarma”, “Shaka”, “Natyr”, “Ajka/Deltadon”, “Mireli”, “Klegen”, “Zagoria”), four others are considered medium ones with a processing 10-15 tons/day (“NZI”, “Bunafarm”, “Orhani”, “Vita 2001”)¹⁹. Smaller scale processors are operating in each district. Most of the small processing units are small cheese plants with simple traditional technology. The hygiene conditions of most of such small processing plants are not in conformity with requirements of the Albanian²⁰ and the European Union standards.

Geographically, the dairy processing plants are spread throughout all the territory and the largest ones are in the regions of Fier, Shkoder, Vlora and Gjirokaster, each with over 30 processing units.

Competition between the numerous strong players in the market for milk deliveries is rather limited, presumably due to the geographic separation of the milk-sourcing areas of dominant processors at regional level; also, leading processors seem to having succeeded in establishing permanent trade relations with medium-to large-scale producers of high-quality milk, ensuring consistency and punctuality in payments. This behavior favoured stability in trade relations between medium and

¹⁵ MARD unpublished data and ADAMA

¹⁶ Authors elaboration based on field interviews and expert assessment

¹⁷ European Union – Albania 11th Subcommittee Meeting Agriculture and Fisheries

¹⁸ Source: interviews with processors

¹⁹ ADAMA data.

²⁰ Law No. 944 date 11.11.2005, and Food Law No. 9863, date 28.1.2008.

large milk farms and dairy plants, even in presence of a sizable excess processing capacity, that would be expected to stimulate competition among dairy plants for the procurement of raw milk.

At present, the main obstacle to the achievement of large and modernized dairy plants production potential is linked to market outreach and marketing capacity; these limitations are in turn related to strong competition from small dairy units (both formal and informal) for the most popular dairy products. Should demand for their products increase, large and modernized dairy plants would be able to increase their output even in absence of an increase in domestic supplies of qualitative raw milk, as they could increase imports of semi-pasteurized milk or milk in powder, a practice they are already applying.

An important factor of the limited market outreach capacity of the large and modernized dairy industry is related to the unfair competition from semi-formal or informal dairy industry and informal market channels (for liquid milk). The large size of this semi-parallel market dents the market outreach of the formal dairy industry on the Ho.Re.Ca. segment, reduces the share of total milk and dairy sales channelled through formal retail market segment and create unfair competition conditions in the sales of cheese in the formal retail channel itself.

However, an important issue is that the overall demand segment willing to pay a premium price for a wider range of higher quality and more controlled milk and dairy products is growing, but still limited. The largest segment is still linked to traditional purchasing patterns, preference for a few, traditionally consumed products and, price focused, preferring cheaper and more traditional products, even at the expenses of quality and with some compromises on safety standards,

Considering the above, it is possible to conclude that in the present market scenario, there is potential for increasing the domestic milk supply without need for additional investments in milk processing, should new market niche be developed.

3.2 PROFILE OF INDUSTRY OPERATORS

The milk processing industry in Albania is characterized by a large number of small dairy processing plants (so-called “baxho”), many of which are semi-informal or informal businesses. Medium and large-sized plants are much less numerous; they are devoting efforts and investments in growth and improved compliance with standards and represent the core of the dairy industry.

The small plants/unit are in rural and remote areas. Most of them in mountain regions are seasonal ones, as they mainly as are process sheep and goat milk; during the production season they also process small quantities of cow milk. They use old/traditional technology, apply inadequate food safety and quality standards. Hygiene is an issue in most of these plants.

These plants do not have adequate storage capacities and milk is processed according the plant capacity. They face also the marketing problems. Their customers are small shops in urban areas but not in the main regions. They usually have several month delay payments to farmers, who on the other hand do not have the opportunity to buy feed and other materials for their animals.

On the other hand, they are much less demanding in terms of raw milk quality, as compared with larger and more formalized dairy plants: they measure only density and fat content of milk, but do not analyse the milk for SCC and microbiological load; in order to ensure food safety, they apply pasteurization for several minutes, thus affecting quality; the water used for dairy processing is not pre-treated; inputs and technological management are approximate. Wastewater management is not applied.

As a whole, the situation in the majority of these processing unit is not changing, remaining the same it was many years ago.

The medium and large sized plants are usually located near milk production areas. Medium sized ones produce mainly cheese, butter and curd, while the large ones have a wider range of products.

Milk collection and transport is one of the weakest points in the value chain, especially for medium and large processing plants, which need consistent quality in their milk supplies. In an effort to improve quality of raw milk, medium-sized and large dairy processing plants are distributing stainless steel milk tanks to farmers, establishing milk collection points, interacting with independent milk collectors and investing to ensure at least proper milk transport (refrigerated trucks) from milk collection points and larger farms to the dairy plant.

Most of these plants perform more comprehensive raw milk controls, as compared with small plants, that check only fat content and density.

In particular, **Large scale processing plants** went through substantial modernization, investing mainly in technology and storage capacity and to substantially widen their offer of liquid milk of different types and fresh dairy products.

These plants analyse the milk for SCC and antibiotics residues and regularly perform microbiological tests.

These companies operate with modern, good equipment and have developed a competitive range of products; they apply HACCP and several of them are fulfilling EU standards. Some of them have different ISO certifications.

Having made such investments, the main challenge for larger enterprises is to work with farmers for improving the quality of milk in order to secure EU-quality standard milk in the coming years.

Large and medium-sized processors are the only ones analysing the milk for SCC and antibiotics residues for each milk quantity received; the microbiological tests are regularly performed.

They pay attention to water and technological waste management, except septic holes they are looking for more advanced waste management program and systems.

In recent years, two of the large processing plants even managed to activate some export of liquid milk and cheese.

3.3 MAIN PRODUCTS AND PRODUCT TYPES /CHARACTERISTICS

The large and medium scale milk processing plants are the main suppliers of Albanian consumers in urban areas, especially those that prefer to buy pasteurized milk and processed milk products in shops and supermarkets.

Dairy plants now produce a wider range of various products and pasteurized and UHT milk as compared to a few years ago. These products are partially outcompeting imported UHT milk and are reducing the market space for informal trade of crude milk directly sold by farmers in green markets, corner shops or door to door.

Cheese and yogurt are the two main dairy products consumed by Albanian households; the production of these items increased in line with the demand for high quality milk products, the availability of raw milk and enhancement of local processing capacities.

The impact of dairy industry development, especially in recent years, is evident, as the quality of products improved and as new products such as liquid yogurt, fruit yogurt, yoghurt packed in various sizes have been introduced, in addition to the traditional ones as pasteurized milk, UHT milk, yoghurt, cheese, butter.

Pasteurized and UHT milk

A positive trend is observed in the increase of the amount in the consumption of fresh pasteurized milk and the decrease of the amount of unprocessed milk for the period 2014 to 2019 (Table 3.3); this is the milk processed by medium and large processing plants. The increase in the consumption of pasteurized and UHT milk is linked to changing lifestyles in urban areas rather than to an increase of consumption: the share of pasteurized and UHT milk sold in shops and supermarket is growing, while door to door sales and sales in green markets of crude (i.e. not processed) milk are declining. The adoption of UHT milk and Tetra Pak packaging greatly facilitated the distribution of liquid milk products and satisfied increasing demand for safer products.

Table 3.3: Milk for fresh consumption processed by dairy industry (Tons)

Type of milk	2014	2015	2016	2017	2018	2019
Pasteurized and UHT	3,652	4,652	6,424	10,599	11,057	13,174
Semi-skimmed milk	6,844	5,591	3,950	2,298	3,151	4,138
Unprocessed	1,021	829	533	391	93	264
Skimmed Milk	586	35	74	72	28	28
Total milk for fresh consumption	12,103	11,106	10,983	13,359	14,329	17,604

Source: INSTAT: Milk and its product (2014-2019)

It is worthy to notice that official statistics on total sales of pasteurized and UHT milk are almost equivalent to the net amount of imported milk (13,174 tons vs. 11,802 of net imports in 2019) and correspond to unrealistically low consumption levels (6.18 litres per capita/year). Even if part of the imported milk is used for dairy and cheese production, *it is clear that the consumption of fresh milk recorded in statistics intercept only a part of total consumption.*

Part of the increased quantity of pasteurized and UHT milk produced by Albanian dairy industry is made processing imported milk: in the six years from 2014 to 2020, the quantity of imported fresh milk is increased by 67%, reaching approximately 15 thousand tons, while the import of powdered milk rose 5 times, reaching 1,488 tons (refer to Table 13.1

in Annex 1).

In recent years, large processors substantially improved packaging and labelling of milk and dairy products: a wider range of retail packaging is being introduced and also materials have been diversified in relation to the type of product and its target market segment. The range of products has been widened, with the introduction of sterilised, UHT, semi-skimmed and skimmed milk, in addition to pasteurized full cream fresh milk.

The introduction of UHT and sterilised milk produced in Albania witnessed substantial progress in quality control along the supply chain (UHT milk can be produced only using good quality milk); the introduction of multi-layer cardboard packaging (aseptic tetra brick) provided the adequate packaging for these products, aligning Albanian UHT and sterilised milk to international standards.

The use of aseptic tetra brick packaging could also improve the environmental performance of milk and dairy industry, as it replaces plastic bottles; however, there are some enterprises operating basic facilities for PET recycling in Albania, while there are no enterprises equipped to recycle aseptic tetra bricks.

Fresh dairy products

Albanian consumers make large use of yogurt, buttermilk and curd.

The production of yoghurt & buttermilk, butter, and cream increased in the last years, while skimmed milk has significantly decreased, as consumers prefer the whole or semi-skimmed pasteurized milk.

Regarding yoghurt, the demand in urban centres increased, as families are buying more ready-made yogurt and prepare it less at home. However, demand for yoghurt and curd is still predominantly covered by domestic production. Widening the range of fresh dairy products also contributed to gain market shares at the expenses of home-made yogurt; leading dairy companies are now offering a much wider choice of yogurt, including: liquid yoghurt, fruit yoghurt, semi-skimmed and skimmed milk yoghurt, all in packages of different size (240, 480, 1,000 g). In addition, a wider range of other fresh dairy products have been introduced, such as dhalle, airan, kefir etc.

Table 3.4: Yoghurt and buttermilk production (ton)

Type of dairy product	2014	2015	2016	2017	2018	2019	Index 2014=100
Yoghurt and buttermilk	14,284	15,652	15,687	15,129	17,763	19,865	+39%
Butter	683	936	824	868	898	838	22,7%
Cream	248	22	184	266	327	399	60,9%
Skimmed milk	586	35	74	72	28	28	

Source: INSTAT: Milk and its product (2014-2019)

Also, in this case official statistics are recording only part of the market: the majority of yogurt is still home-made and part of the butter is purchased by quantity (i.e. not pre-packed by formalized dairy industry) in shops and green markets.

Cheese production

The production of cheese also increased during the last five years to meet consumer demand for safe and qualitative dairy products, as shown in Table 3.5 below. Such increase is the results of higher demand for better quality and safe dairy products, witnessed also by the parallel increase in cheese import (+121% between 2014 and 2019). Domestic dairy industry managed to intercept only a part of this shift of demand towards more qualitative and safer products and increasing use of formalized trade channels.

Table 3.5: Cheese production (Tons)

	2014	2015	2016	2017	2018	2019
Cheese from cow milk	8,618	10,207	10,516	10,895	11,401	10,955
Cheese from sheep milk	2,191	2,256	2,647	2,758	2,341	1,927
Cheese from goat milk	1,129	1,069	1,139	1,059	839	707
Total cheese	11,938	13 532	14 302	14 712	14,581	13,589
Cow milk cheese/ total cheese	72%	75%	74%	74%	78%	80%
Cheese import	1,274	1 509	2,181	1,698	2,084	2,816
Cheese export	8	29	54	14	22	70

Source: INSTAT: Milk and its product (2014-2019)

The investments of larger and formalized companies to enhance their processing and storage capacity and improve their cheese ripening facilities have somehow paid off, even if imported cheese remain more competitive in the higher market segment. Also, starting from 2018 a small, but growing certain flow of exports is emerging in statistics. Exports are mostly directed to Kosovo. Albanian dairy products cannot be exported to EU countries, due to concerns on food safety and potential foodborne animal diseases.

It is worthy to note that the price of exported cheese is 36% higher than imported one.

With reference to the range of products, the increase in cheese production and sales is entirely due to cheese produced from cow milk, where there is a negative trend in the production of cheese from sheep and goat milk, which is produced mainly in mini dairy processing unit (baxho). The reduction in production of cheese from sheep milk is mainly related to reduction in sheep milk supply, while, according to dairy industry stakeholders, reduction in goat cheese production is mostly related to weak demand.

However, since the majority of informal small dairy units produce white cheese from small ruminants' milk, official data reflect only a part of the actual consumption. In particular, the figure of 0.7 kg yearly per capita consumption of cheese from sheep milk seems underestimated or at least not consistent with sheep raw milk production²¹.

The most popular type of cheese is djath i bardhe (similar to feta), which is widely consumed in Albanian households. Djath i bardhe can be made with sheep, cow milk or mixed (sheep and cow) milk.

Other types of cheese are Vize and Kashkaval cheese (harder ones). The small processing units, located in rural areas where milk is produced in large quantities, are the main producers of white cheese. However, the white cheese is produced in most processing units, regardless of their size.

White cheese has quicker cash return compared to hard cheese, thus increasing working capital turnover. This is due to shorter ripening period (few weeks instead of several months needed for Vize and Kashkaval) and to the much larger market demand for white cheese (cheaper) than for hard cheese (more expensive).

Hard cheese is produced mainly during spring and summer when the small ruminants are milked and their milk is mixed with cow milk to produce the Kashkaval cheese. Other types of cheese based on cow milk are produced in limited quantities such as 'Mozzarella' type cheese (in Durres and Tirana) and 'Gouda' type hard cheese. In addition, one dairy processor (Klegen, in Shkoder) is producing cheese with herbs, pepper and blueberry.

Specificities of cheese and dairy products made with small ruminants' milk

The main types of cheese in Albania are apparently the same ("white cheese" and Kackaval) regardless of the milk they are made from; in fact, those ones made with sheep and goat milk have their specificities, as they are processed in a different way based on tradition, experience and knowhow. Quality also depends on the ripening period.

The main features to be considered to evaluate the potential of segmenting the sheep and goat milk based white cheese are the following:

- Processors, from South and South-Western Albania are more experienced in production of sheep and goat's milk cheese. Gjirokastra, Permet, Tepelena, Saranda are well-known areas for the production of white cheese in brine. White cheese from these areas is highly considered by customers²².
- The micro and small processors produce white soft cheese (milk pasteurized in 63-65° C for 20-30 minutes and after ripened for 2 weeks) while the medium and large processor are producing white mature cheese (milk pasteurized in 72° C for 20-30 seconds and after matured for at least 6-8 weeks). All the mini and most of the small cheese processing units do not produce ripened white cheese in brine, as they do not have storage capacity, and are facing liquidity problems²³, thus preferring products with quicker turnover²⁴.

²¹ Sheep milk production scores 82,000 Tons. Sheep milk is used only to produce cheese and curd; considering the conversion ratios of the two most popular types of cheese, the figure of cheese production from sheep milk should be four times larger.

²² New Medit (2016)

²³ Liquidity problems are transferred to small ruminants' farmers, who are paid for the milk delivered with 4-8 months delay (i.e. after the cheese is sold).

²⁴ This is a problem faced by the farmers of small ruminants that are paid 4-8 months delayed by processors (in the time when cheese is sold) for the milk delivered.

- All types of cheese are mostly sold by quantity, not pre-packaged and not labelled, as consumers traditionally prefer to see the cheese before buying²⁵. Some larger specialised dairy plants (e.g., Gjirifarm) sell goat and sheep white cheese in rigid plastic packages, containing the white cheese still in its brine. This expensive packaging is used as a marketing tool, but there is no evidence of impact on consumers' preferences.

So far, the company which is consistently pursuing the most thorough quality policy for goat cheese is "Bonum", a newcomer in the milk and dairy sector.

Box 2: BONUM

Bonum company was founded on 17 Dec 2014, located in Yrshek, Tirana, while the Bonum brand was commercialized in 2020. During the first two years of operating, the Company was focused on achieving breeding and dairy products production excellence.

The Company has invested not only in the purchase of the livestock (Alpine and Saanen breed) but also on the expansion of breeding facilities, creating the separate facilities for goats that produce milk, young goats, and male goats. The Company initially imported the goats from France and is carefully breeding them in order to keep the purity of the breed and improve the productivity of the offspring. Annual milk production of one goat ranges c. 700 litres of milk/year and they are productive for 6-7 years. Bonum is one of the largest farms in the country for goat breeding and is a supplier of goat milk for other companies operating in Albania. During these years, it has worked to ensure production capacity and to reach the premium standard for all products.

Bonum owns 20,000 square meters of land. Besides the breeding and processing facilities, the Company has created a beautiful landscape with olive trees and other fruit trees in order to create an attraction very close to the centre of Tirana. The Company has expanded the breeding facilities in Lushnja where the mother company owns 250 hectares of land and the goats' feed is produced. Furthermore, through the machinery and equipment, the milking process is automated and there is already a facility for processing the milk into dairy products.

The Company currently breeds c. 800 goats, producing on average 1,300 litres of milk per day. The company offers 8 types of cheese to the local market and 4 types of cheese are available for export due to the longer shelf life. The products include traditional Balkans and French types of cheese. The cheese is produced only by goat milk produced in the farm.

Bonum is created out of the desire to offer products that affect well-being. The Company has envisaged a strategic plan, which has begun to be implemented since the beginning of 2018. The strategic plan is expected to increase turnover and profitability of the Company, redefining distribution channels and establishment of a brand in dairy products. The Company plans to open several dairy shops in Tirana, with the purpose to increase brand visibility and reputation and increase turnover and liquidity. The Company has already opened a store in the central area of Tirana and is setting up the home delivery platform in collaboration with the largest local online food sales company.

3.4 RAW MILK SUPPLIES

The milk supply base of the Albanian dairy industry is made of: i) domestic production of raw milk and, ii) imports of semi-pasteurized milk and powder milk. The supply of raw milk from domestic producers is described here below. The imports of semi-pasteurized milk and milk in powder are described in **Chapter 5.1** - International trade flows and evolution over time.

3.4.1 Raw milk sources

In the last decade milk production increased and the milk and dairy industry was consolidated; leading industries achieved significant improvements in terms of quality standards, size and organisation. Notwithstanding this progress, a large share of the milk market is still informal.

According to INSAT, the quantity of cow milk collected scores 140,000 tons, or 14.7% of production; considering the high level of informality in dairy processing, these data probably correspond only to the raw milk collected in the formal sector. However, according to industry actors, more than 50% of the milk produced in Albania is used for self-consumption, sold directly in the informal markets or used for feeding animals, and less than 50% percent is processed by formal, semi-formal and informal dairy processing industry²⁶. In particular, large quantities of cow milk are consumed and directly marketed (corner shops or door to door) by the farm families.

²⁵The exception is mozzarella, which is sold in plastic bags

²⁶interviews conducted with milk processors and experts

In the last years, the trend in milk collection is positive only for cow milk, while the amount of milk collected from small ruminants is declining (table 3.6). Table 3.6 below shows the evolution of milk collection in the period 2014-19. Cow's milk makes up 89% of all milk collected during 2019.

Table 3.6: Milk collected (thousand tons)

Type of milk	2014	2015	2016	2017	2018	2019		Index 2014=100
	000 tons					000 tons	% to total	
Cows	95,1	105,2	103	109	120	125	89.3%	131.4
Sheep	10,8	11,7	13	13	12	10	7.1%	82.6
Goat	8,0	8,3	9	9	7	5	3.6%	63
Total	114,0	125,2	125	131	139	140	100.0%	122.8

Source: INSTAT: Milk and its product (2014-2019)

Dairy processing enterprises are obliged to deal with hundreds of small producers, with high milk collection costs and variability in production quality. This situation is also complicated by inadequate cooperation and partnership between milk processors and producers. As a whole, fragmentation and inefficiencies in the supply chain create serious difficulties in milk and dairy processing industry.

The difficulty in obtaining reliable milk supplies in desired quantities and with consistent quality is leading to imports of increased half pasteurized fluid milk, which in 2019 scored 14,700 tons. The import of fresh milk increased by 67% in 2019 compared with 2014 (see table 5.2 in chapter 5) and doubled as compared to 2010. In the last five years Albania imported an average of 7.0 to 8.7 M Euro of fresh milk, a trend consistent with the stagnation of domestic production.

Dairy industry actors state that a significant increase was recorded in 2020 too, even if complete data are not yet available. Imported milk is used to produce pasteurized milk or cheese production.

The import of fresh milk is directly made by the large processors (Lufra, Erzeni, Zepa, etc.).

In the last years, a seasonal milk export flow was recorded as well, entirely directed to Kosovo.

There are no official records about the powder milk share used in dairy products produced, although there is an opinion from experts on substantial use of powder milk. In dairy product labels, it is not stated whether powder milk is used, which is a concern also for the consumer.

Sheep and goat milk is almost exclusively processed into Djathi bardhe (a Feta) and kackavall (the most popular type of hard cheese).

3.4.2 Milk collection system

The quality of the dairy products is obtained at the farm and in the processing plant; it is maintained in commerce and is ascertained by the consumer.

Milk collection and transport is one of the weakest points in the value chain. Most of the raw milk is not refrigerated immediately after milking, and it is brought directly (i.e. without cooling) from the farmer to the consumer to milk collectors' dairy plants or to the market.

Low quality of raw milk is a major issue for Albanian dairy industry. The quality of raw milk is affected by on-farm inadequate hygienic and sanitary conditions, inadequate milking equipment, milk storage and transport, lack of knowledge, information and skills about milking hygiene, milking techniques, storage and cooling and food safety standards. In small dairy farms (1 to 10 cows), cows are usually milked by hand, which negatively affects hygiene and food safety. Only dairy farms specialized in milk production (normally more than 10 cows) started using the mobile milking machines over the last years. Farms with more than 50 cows usually have milk storage tanks with cooling systems and farms with more than 100 milking cows have milking parlours. The majority of the milk producers have little information about the microbiological status of their raw milk.

The large and medium size milk processors are interested to collect safe and qualitative milk; in consequence several dairy plants supplied farmers with milk containers and milk cooling tanks.

Larger milk processors rely on milk collectors and milk collection points for the supply of raw milk, owned and operated by the dairy plant or independent activities (milk intermediaries). Larger processors may have several collectors and may source the raw milk from a combination owned and independent milk collection points.

Independent intermediaries buy milk from farmers and add a margin to cover cost and profit and sell to the processor in the context of a long-term relation; actually, their independence is limited, as in most cases they largely depend from a single buyer.

Collectors of cow milk do not have cooling tanks and vans to be used for milk collection from farmers. Most small and medium sized dairy farms are not equipped with milk cooling systems or cooled tanks; only large farms have proper milk parlours.

The issue of milk quality for small ruminants sector is particularly serious, especially during the time when small ruminants are in summer pastures (April/May to October); now that the surface of summer pastures is shrunk and the available pastures are less used, the seasonal processing units located in summer pasture areas are no more in use; as a result, the time of transport of milk to the lowlands processing centres is longer and this transport is made in the period of the year when temperatures are higher. In such remote areas the hygienic conditions of the containers that transport milk are not the right ones. Moreover, common refrigerated milk cooling systems would be not enough too, as in these remote areas they would need a generator (too expensive to operate and polluting) or to be energy autonomous (e.g. equipped with solar panels).

However, small ruminants' milk quality is problematic during the whole year, as investments for cooling chain at farm level are largely missing (i.e. even when the flocks are in the winter stables, milking hygiene, milking equipment and milk storage are much sub-standard). Even future investments in small ruminants breeding farms cooling systems are expected to be limited, as these farms are located in remote areas where electricity supply is missing or intermittent.

The milk collection and distribution system is characterized by informal agreements (oral based agreements). The processors have contracts only with large milk producers (with a predetermined price) while with other milk producers there is no formalized contractual system; the transactions are based on trust and longevity of the relationship between actors. Small farmers base their decision about the using the milk on the farm (as animal feed) and choosing the market channel (collection point, dairy processing plant or direct sale in urban markets) depending on the price offered by milk collectors and/or processors and on the distance from the urban markets²⁷.

The complexity of milk collection from a highly fragmented production base is an important cost factor for large processors (which therefore sometimes prefer to import milk or milk in powder), while for small processors (baxho), located in the proximity of farmers, it is a factor that affects competitiveness positively; actually, they would have no chance to compete in a system structured on large farms and well-organized milk collections system.

Milk processing industry (the large and medium sized processors) underwent a process of improvement and consolidation, improving production technology, storage capacity and implementing food safety standards and practices (GHP-Good Hygiene Practices). Nevertheless, the quality of raw milk is still affected by the inadequate hygienic and sanitary conditions on the farms, inadequate equipment used for animal milking, milk storage and transport, lack of information and skills about milking hygiene, milking techniques, storage and cooling, food safety standards. Most dairy farmers have insufficient knowledge of the microbiological status of raw milk quality²⁸.

There are limited or no financial incentives to increase milk quality, since prices are determined mainly by quantity, dry and fat content. Only the large processors are analysing the milk for SCC and antibiotics residues for each milk lot received (small or large), while the microbiological tests are done periodically.

An initiative that will contribute to improve milk quality is the three-year partnership (started in 2020) of "Tetra Pak" and "Tetra Laval Food for Development"²⁹ with the Albanian dairy companies "Agroal & Global Services (AGS)" and "Lufra" to set up the Dairy Hub model.

Through the Dairy Hub model, Tetra Laval Food for Development supports Tetra Pak customer companies (in this case, the two dairy processing enterprises participating to the project) to improve their connections with small farmers and providing them technical assistance, practical knowledge and training for the development of milk production and collection.

The purpose of the Dairy Hub is to increase milk production volume by integrating small holders into dairy supply chains. In Albania, the partnership aims to involve more than 3,000 small farmers, whose milk production and income is expected to increase by at least 20-30%.

²⁷See also studies in Agricultural Economics (2017)

²⁸ See also Bulgarian Journal of Agricultural Science (2016)

²⁹both part of the Tetra Laval Group

As a conclusion, efforts and interventions to improve food safety standards for the vast majority of actors in the supply chain (small and medium cows farm, small ruminants' farms and small milk processing) should be increased.

Milk collection centres (independent or owned by the processors) can be supported by the large and medium processors, supported by NSS and IPARD.

3.4.3 Raw milk prices

The price of milk varies according to the region, the amount of milk delivered and the size of supplier. Small scale cow milk producers are getting a price of 35-43ALL/litre (0,28-0,35 Euro), while the medium-large sized ones are getting the price of 55-62 ALL/litre (0,44-0,50 Euro). Large farmers receive higher prices because they have closer contact with milk processors, provide raw milk in larger quantities with better and more constant quality and because it is less expensive and easier to collect milk from them. For example, dealing with hundreds of small farmers means establishing and running a collection point (or pay a margin to the independent milk collector), controlling every small lot of incoming raw milk and in general investing more time and work per litre of collected milk. Sheep milk is collected for 75-90 ALL/litre (0,60-0,72 Euro) and goat milk for 50-55 ALL/litre (0,40-0,55 Euro).

3.5 KEY FEATURES AND CHALLENGES

The key issues related to the milk processing sectors can be summarized as follows:

1. *Ensuring a sufficiently large reliable flow of qualitative raw milk is problematic.* Difficulty, cost and complexity of sourcing good quality milk from small farmers is leading to increasing use of imported raw milk and milk in powder.
2. *There is a growing polarization of the supply chain into two semi-parallel segments:* i) large farmers/formalized processing industry on one side and, ii) subsistence farming/informal processing; an increasing split into two parallel and almost separate supply chains are taking shape even down to retail sale; the polarization is partially visible even at retail level, with the products from the informal part of the supply chains (crude milk sold by farmers, cheese from small informal producers) sold directly to final consumers (crude milk) or in green markets.
3. *Competition by all actors in the value chain for a limited range of cheese products and insufficient labeling and marketing make segmentation more difficult;* but a more diversified fresh dairy products and liquid milk is occurring – the range of products is being widened.
4. *The whole small ruminants' milk and dairy products supply chain is being marginalized at production as well as processing level.* Good performance and initiatives of individual companies do not change an overall negative outlook

In addition to the above, there are also other issues which are affecting the overall performance of dairy industry, including: i) gaps in enabling environment (value chain infrastructures, taxation etc), ii) growing concern for environmental impact of dairy industry, especially of semi-formal or informal dairy units and, iii) the scarce adoption of quality and safety certifications and the discredit of private sector-based quality schemes.

The issues related to the raw milk supply and collection have been analysed in detail in **chapter 3.4** above. Other key issues are analysed below.

The polarization of the supply chain

The formal market is increasingly dominated by a limited number of companies (Erzeni, Lufra, etc), with some others enterprises strong at regional level or on specific market segments. Large farmers supply large industries and large industries distribute their products in supermarkets and shops.

A parallel and partially separate supply chain involves semi-informal or informal dairy units (hundreds of). They usually buy by small farmers through less structured or informal trade channels. Dairy products from small companies are primarily sold in green market and shops, while the habit to buy crude milk directly from farmers is still common, in green markets, corner shops or directly from farmers going door to door. This crude milk is not controlled and contained in recycled plastic bottles.

There are clear trends associated with this market polarisation, such as (i) total number of dairy plants is substantially stable, but the segment of the larger processing units made substantial investments, increasing processing capacity and improving quality, which were not mirrored by an investment flow in smaller plants; (ii) there is a substantial decrease in numbers of small and medium-sized farms; the number of subsistence farms is only slightly decreasing (1-2 cows) and large farms are decreasing, but becoming even larger; (iii) increasing imports of semi-pasteurized milk and milk in powder;

informal sales of unprocessed milk is declining, but is still quite common; cheese is sold in green market without reliable labelling.

In the last programming period, professional/largest dairy processors invested to increase in-house technical capacity (technologists, in a few cases veterinarians to advise farmers etc.), while for specific services such as business plan, marketing, advertisement they increasingly rely on external professional expertise. In many cases, their personnel are also being trained to make good use of the recently acquired technologies and equipment. Small processors on the other hand, remain very basic in terms of types of products, technologies, and also management/marketing aspects (typically, they produce 2 types of cheeses, not packed or labelled). At the same time, small informal processors typically disregard the standards, with the result that whenever the compliant processors increase the pressure on farms to improve the milk quality, there is a risk that they switch their supplies to informal processors less concerned with standards³⁰.

Consumers' preferences are changing less rapidly than the supply chain: many urban consumers still prefer to pay 60 to 80 ALL per litre to buy crude milk in recycled plastic bottles directly from the farmer than to pay 120-130 ALL per litre for pasteurized milk.

At the same time, the incentive for small farmers living near to urban areas to be paid cash 60 to 80 ALL/litre instead of 35-40 when selling to dairy plants (with payment delay) is clear, even considering the cost of bringing the milking to the city.

It is expected that commodity chain polarisation and split between formal and semi-formal/informal channels will become more pronounced for few years to come. Increased legal enforcement (veterinary and NFA inspections etc.) could contribute to mitigate the process, but eventually only changes in consumers' behaviour will make the difference.

Diversification of fresh dairy product but competing in the mainstream products for cheese

Larger dairy processing enterprises managed to widen and improve the supply of milk and fresh dairy products, while improved the quality of the two main traditional Albanian cheese (Djathibardhe and Kackavall), but did not invest much to widen the range of products. With a few exceptions large companies enter into direct competition with smaller and informal processing units, for products in which consumers' preferences are quite articulated and complex (origin is more important than packaging, traditional brands enjoy preference, the perception of products safety made by small local dairy plants is positive). At the same time, there is a consumers' segment which is looking for a more diverse range of products, with consequent increase in cheese imports (doubled in the last five years).

The policy of most of the larger dairy plants has been to become stronger in the mainstream products, rather than targeting niche markets. This approach is not bearing good results for cheese.

It would be quite important to start segmenting the cheese market, introducing a wider range of products and strengthening characterization of traditional products through appropriate marketing tools, including establishment of Geographic Indications (e.g. for cheese made with sheep milk in Gjirokaster) or even Denomination of Origin (e.g. Çajup, Zagori).

The decline of small ruminants' sub-sector

The decline of traditional eco-pastoral system led to the decline of all downstream value chain, with loss of knowhow, and decline of products which could have a strong marketing potential, such as sheep milk cheese from Gjirokaster.

Less sheep milk is produced, with consequent reduction in processing. There has been limited marketing and product renovation for goat cheese, so that this product is declining in consumers' preferences.

Decline of transhumance led also to loss of market part for some historic brands, such as Zagori and Libohove, which lost part of their production base³¹.

The specialisation of some larger dairy factories in cheese made out of small ruminants' milk (in traditional production areas as Gjirofarm or newcomers starting from zero a quality-oriented integrated business, such as Bonum) does not change the overall picture.

At the same time, there is also a small segment of highly specialized very large small ruminants' farms; this segment is largely detached from traditional small ruminants' breeding areas and is made by newly established large farms, usually

³⁰ It was emphasized by several milk processors during the interviews.

³¹ For example, Zagori point of strength was its focus in processing the milk from transhumant flocks in Gjirokaster summer pastures

located in low hills or lowlands. These large sheep or goat farms have several hundred of animals (>500) from imported specialized breeds, are fully equipped and compliant with most EU standards in terms of animal health, animal welfare, milk safety; compliance with manure and waste management standards is variable, but definitely better than in most other livestock farms, milk or meat oriented.

The problems related to milk collection described in chapter 3.4 above are particularly acute in traditional small ruminants' farms thus creating a disincentive for large and modernized dairy plants to enlarge their network of small ruminants' milk suppliers out of few larger or trusted suppliers.

As a conclusion, tackling the issue of in small ruminants' milk-oriented sub-sector would require an overall rethinking and re-organisation of the sub-sector, starting from investments in pastures down to marketing of local specialities and establishment of territory-based quality schemes (e.g. creating conditions for product with GI).

Such comprehensive effort is not in sight, so it is possible to expect a further decline of the sub-sector and an emerging dual sector: a few more qualitative productions not necessarily coming from traditional production areas and most of the product coming from semi-formal small dairy units. An overall loss of market part and knowhow and an overall decline of specialised brands that used to be segment leader, but now are struggling to adapt to the structural changes in the supply chain.

Enabling environment issues

Some important enabling policy environment issues associated with milk sector are the lack of a sufficiently structured network of quality control laboratories, need for enforcing the new food labeling norms, different rate of VAT at different value chain level, and scarce adoption of quality certifications and discredited private-based quality schemes.

1. *The lack of a sufficiently structured network of quality control laboratories.* A system of professional sampling, transport of samples to laboratories, laboratory analysis and reporting of the results to farmers, processors and food safety authority is not in place in Albania.
2. *Need for enforcing the new food labeling norms.* Most cheese is sold by the weight, not packaged. The only information comes from the counter label, which usually show the type of milk (cow, sheep, mixed etc.), the region of origin (or the brand for largest dairy plants) and the price. No indication on the content³² is provided and in most cases also the producer is not indicated. A new regulation "On Labeling of Food Products" is approved and will force all the processors to have in their labeling (in addition to other details) the list of ingredients of the food product and their share on total quantity.
3. *Different rate of VAT at different value chain level.* A 20 % VAT is charged on all processed products, which is a major obstacle for the industry. Since farmers are excluded from VAT payments and inputs have 6% VAT, the tax is levied on processed products only and increases the retail price. So, processors are required to pay VAT not only for their value added but also for most part of value added from farmers; actually, this is a kind of hidden tax for processors.
4. *Scarce adoption of quality certifications and discredited private-based quality schemes.* Safety and quality certifications are not common in the dairy sector in Albania, as most dairy farmers have gaps in terms of milk safety standards and the certification would be not obtained. Also, certification is generally considered a marketing tool rather than a system to regularly revise and fine tune processes to achieve a given standard. At the same time, the private sector is still not prepared to develop a proprietary system of control and previous attempts in this direction failed because of failure in establishing functional self-control bodies and lack of independent (state owned or certified) control bodies.

Increasing concern for environmental impact of dairy activities

The dairy industry is one of the largest sources of industrial effluents not only in Albania but also in Europe. The dairy wastewater usually contains proteins, salt, fatty substances, lactose as well as residues of chemicals used during cleaning processes. The characteristics of these effluents also vary greatly, depending on the type of system and the methods of operation used. Considering the increased milk demand, the dairy industry in Albania is expected to have the waste generation and related environmental problems are also assumed of increasing importance.

As for many other food processing operations, the main environmental impacts associated with all dairy processing activities are the high consumption of water, the discharge of effluent with high organic loads and the consumption of

³²Fresh milk or milk in powder, presence of starch etc.

energy.

In addition, environmental protection continues to be a major problem with dairy farms (except few large farms) and mini dairy processing plants, where animal waste or technological waste are not treated according to applicable laws and regulations.

In general, the treatment of waste water from cleaning and residues from production processes at dairy processing plants does not meet EU standards. The large and medium dairy processing plants pay attention to the waste management, they have their septic system and they are looking to improve the waste management system. For these larger units support through IPARD-III will be an option. More problematic will be enforcing the environmental standards on semi-informal or informal small dairy processing units.

4 CHAPTER 4: GOVERNMENT POLICY FOR THE SECTOR

4.1 STRATEGIC DOCUMENTS

The main strategic documents for the development of the agriculture and rural development, on which MARD performs its functions are: (i) the National Strategy for Development and Integration (NSDI), and (ii) The Inter-Sectoral Agriculture and Rural Development Strategy (ISARD), including sector, sub-sector and crosscutting strategies where are set the main objectives, measures and costs of the implementation policies, aligned to NSDI provisions.

ISARD is implemented by MARD in coordination with other ministries, mainly Ministry of Economy and Finance and Ministry of Tourism and Environment (MoTE). While the short-term policies are detailed in the yearly programs and the relevant activities in the yearly action plans, long term planning is related to seven-years programming periods such as Action Plan for ISARD implementation 2014-2020, prepared in 2014 and relevant update, i.e. Action Plan for ISARD implementation 2016-2018, prepared in 2016.

ISARD provides interventions in three policy areas: (i) national support schemes for farmers, development of rural infrastructure and ensuring equal opportunities; (ii) rural development policy; and (iii) institutional development, implementation and enforcement of the EU regulatory requirements.

Some of the priorities of the strategy are partly or fully accomplished and they were left for implementation in 2020 or were postponed due to unmet institutional conditions (e.g. the design of the food quality policies using tools such as Geographic Indications -GI). The decrease in the national agriculture budget is of concern, as IPARD should not be seen as a substitute for national support.

The Law on Agriculture and Rural Development³³ is the main legal framework and provides the legal basis for the national support schemes, which are set out annually in the National Action Plan and defines the institutions responsible for the implementation of agriculture policy by establishing the Agriculture and Rural Development Agency (ARDA). The law regulates the programming of policy measures related to agriculture and rural development. In addition, it provides guidelines for the public extension service, research and training, in the field of agriculture.

4.2 RELEVANT FISCAL AND TRADE POLICIES

Regarding dairy farmers' organizations, it is worth mentioning the lack of interest in creating cooperatives or producers' group. This is due to a lack of trust and financial incentives, but also a fear of losing independence in marketing milk production. Some efforts were made, by several donor projects in the past, towards building producers' groups to increase the bargaining power of members for purchasing inputs or finding market for milk sale.

Cooperation also could contribute towards addressing the limitation arising from fragmentation. The most prevailing collective action activities observed in a recent study (Imami *et al.*, 2017)³⁴ and during the interviews with milk producers (cattle and small ruminants) are the exchange of labour with other farmers, for example in mowing and collecting hay, preparation of silage, rotating shepherds, etc.

On agricultural inputs, in most of them VAT is levied at the rate of 20% and customs duties 0- 2%. Farmers are excluded from VAT payments and inputs have 6% VAT; VAT is levied on processed products only and increases the retail price

Only seeds, pesticides and fertilizers are VAT exempted, but is applied a custom duty of 2%. For heifers, sheep and goats that will be breed in the farm for reproduction purpose is applied 2% custom duty, while for poultry is 0%. For soy bean meal and sunflower/cotton seed meal is 0% custom duty while for all other ingredients of animal feed is applied 10%. For agricultural machineries is not applied custom duty.

Cardboard packaging materials have no customs duty, while the plastic one has 6%.

³³No.9817, date 22.10.2007

³⁴Imami, D., Skreli, E., Xhoxhi, O., Keco, R., Maci, M. (2017). National Economic Potentials of Contract Farming and Agriculture Cooperation in Albania, Report prepared for GIZ.

4.3 IPARD IMPLEMENTATION AND ABSORPTION

Milk and dairy were considered as a priority sector since the first IPARD programming period (2007-14) and considered eligible for support both in IPARD-like and IPARD II.

In IPARD-like, the data set does not allow identifying what support was given to milk primary production, distinguishing it from other types of primary production.

IPARD-like financed three projects for a total value of 1.54 M Euro, as detailed in Table 4.1 below, an amount comparable to the meat sector (3 projects for a total of 1.35 M Euro) and to cold storage and deep-freezing facilities (4 projects for a total of 1.45 M Euro).

In the first two IPARD II calls (programming period 2014-20) a total of 13 projects were financed under Measure 1, for a total of 3.78 M Euro and 8 projects were financed under Measure 3, for a total of 4.7 M Euro.

The impact of support to large cow farms can be summarized as follows:

- Improved animal welfare through the construction of new stables;
- Improved animal feeding, introducing new machinery for hay and silage preparation. and Total Mix Ration machinery.
- Introduction of breeds with higher production potential
- Improved milking facilities and equipment.

The impact of supported investments on main dairy processing plants has been evident, especially in recent years, leading to improved quality of products and introduction of a wider range of products. Investments in new production lines and the improvement of production technology have led some of these factories to export milk and cheese.

Considering both IPARD-like and the first two calls of IPARD II, the two IPARD facilities financed projects for 10 M Euro in primary production and processing.

IPARD II included also support to preservation of endangered cattle and small ruminants' breeds (Measure 4), but the measure was presented to the public only in March 2020 and, until the end of 2020, the Measure had not yet been activated.

Despite the difficult environment and constrains, support to milk producers and processors has proved to be effective, if companies that have potential to generate large increases in employment and sales are supported to serve as a model to other farms and SMEs.

4.4 MARD SUPPORT PROGRAMMES

The draft NSDI 2014-2020 considers agriculture to be one of the key sectors in Albania and it aims to enhance competitiveness and growth through innovation. The strategy also includes performance indicators to be improved, such as increase in labour productivity and value added in agriculture and the food-processing sector.

The agriculture sector is supported mainly by to public programs, such as National Support Schemes (NSS-annual program), and national co-financing to IPARD II (Rural Development Programme). NSS have multiple policy objectives and broader sector coverage, while IPARD-II aims at enhancing competitiveness and implementing EU (safety, quality, and environment) standards, targeting the most competitive businesses. The national support programs have not been guided by clearly set of consistent policy objectives and the measures were changed from year to year.

Since 2013 the milk production is supported by NSS with 23.2 M Euro through 8 measures but only the matriculation of small ruminants (60.5% of all support) has been consistently supported every year, while other schemes were supported for one to four years (table 4.1).

Table 4.1: Dairy farms supported by NSS for milk production 2013-2017 (M-1)

Year	Description of the measure	Total amount M. Euro
2013-2019 (except 2018)	Matriculation of sheep for milk production- Payment of 500 ALL / sheep or goats to farmers who breed not less than 100 heads with the condition of being matriculated	12.34
2013-2016 and 2018	Support for dairy farms that breed above 10 matriculated milk producing cows- 0.58 M Euro	0.94
2014-2019	Cow farms with 10 to 80 cows: 10 ALL/litre (0.07 Euro cent) milk for cow.	4.16
2017	Compensation of farmers that lost the cows from LSD with pure breed heifers	2.7

2013	Breeding of heifers- Payment with 20,000 ALL (162 Euro) per bred heifer >15 months, in areas with largest concentration of cattle, for farms or livestock farm groups having not less than three heifers	0.05
2017-2018	Support for small ruminant pure breed- Support of 35.7 EUR/head of pure race sheep and goat for farms with 10 to 50 heads	3.01
TOTAL		23.21

Source: ARDA (2020)

The most important NSS is the subsidy for matriculation of sheep for milk production. This scheme absorbed 53% (12.3 M Euro out of 23.2 M Euro) of all NSS resources devoted to the milk sector.

Based on field research outcomes, it is possible to state that large farms prefer the NSS direct payment support per cow, while medium and small-scale ones prefer the NSS support for the quantities of milk delivered to the milk processors.

In medium farms (mainly NSS support) an improvement in the milking system, stall hygiene, and milk has been observed. In small farms the results are not satisfactory as there are many feeding, nutrition, and hygiene problems.

The NSS-2020 objective was the increase of competitiveness of livestock and agricultural products and by providing support to investment and reduce the production cost. The problem with NSS is that the subsidy schemes have traditionally been changing from year to year (often drastically), and the budget allocated always was not more than 20 million Euro, the lowest from the South West Balkan countries.

4.5 OTHER AGRICULTURE DIRECT AND INDIRECT SUPPORT MEASURES AND FACILITIES

PROMALI and SARED

Since support to the milk sector was provided under IPARD and NSS, few international development projects supported directly or indirectly the milk production sector after 2007, the exceptions being the projects Promali (completed in 2012) and SARED (2014-18). Both these projects had a component devoted to support small ruminants' sub-sector.

In particular, Promali, a program funded by Danida and implemented by SNV focused on three value chains: (i) small ruminants, (ii) fruit, and (iii) MAPs). It provided capacity building and directly implemented some small investments.

Support to Agriculture and Rural Economic Development (SARED), financed by DANINDA and GIZ provided support to four value chains: (i) medicinal and aromatic plants, (ii) fruits and nuts, (iii) small ruminants, and (iv) rural tourism.

According to the information released by GIZ and MARD, SARED supported 727 small ruminants' breeders and feta micro-processors in terms of capacity building.

SARED also operated a small grants³⁵ line disbursed through ARDA; these grants were released with grant intensity and rules similar to IPARD-like and were mostly addressed to finance small investments (average size around 25,000 Euro); the majority of projects financed in the small ruminants' sub-sector were devoted to the purchase of equipment and machinery; 14 grants were also given to small Djathi bardhe (feta-like) small processors. There are no precise data on the grants released to the small ruminants' sector, as data provided in different documents are not comparable. The whole small grants line disbursed a total of 5.8 M Euro.

According to the project monitoring and evaluation documents, the combination of the advisory services and grant facility was considered very effective in providing good results for farmers and processors; in this way capacity development proved to be effective in generating a sustainable impact of the project.

Other main international development cooperation projects

The projects supported by the World Bank to support the forestry and pasture sector devoted almost all resources to forestry resources, with no investments addressed to pasture resources.

A component of the FFEM³⁶ "BiodivBalkans" project was devoted to support the establishment of a Geographic Indication (GI) for the products (dairy and meat) of the Hasi goat breed, an autochthon breed, whose number is declining. The project as a whole was aimed at supporting biodiversity resources through market mechanisms and was important not much for the amount of supported investments in material asset, but for establishing a first experience of a sustainable path, in the actual Albanian conditions of a disadvantaged area, for the establishment of a GI linked to agrobiodiversity.

³⁵ All SARED supported investments were under 10 M ALL. The average supported investment scored 3.2 M ALL.

³⁶Fond Français pour l'Environnement Mondiale

5 CHAPTER 5: MARKET AND TRADE

5.1 INTERNATIONAL TRADE FLOWS AND EVOLUTION OVER TIME

Albania has a significant trade deficit in dairy products amounting 28.4 M Euro in 2019. In 2019, Albania imported 30.3 Million Euro of dairy products and exported 1.94 Million Euro of dairy products, as shown in **Error! Reference source not found..1** below. The trade deficit almost doubled between 2010 and 2019; it has increase 1.8 times between 2014 and 2019.

Export to import ratio has been negligible up to 2018, but increased significantly in 2019 when exports covered 6% of imports in value and 13% in quantity. Year 2019 marked a significant improvement in Albanian dairy exports. Both export of fresh milk and export of cheese and curd contributed to this improvement, as shown in following tables.

Table 5.1: Albanian international trade of dairy products³⁷

Year	Exports		Imports		Trade balance		Export/ Import	
	000 EUR	Ton	000 EUR	Ton	000 Euro	Tons	000 EUR	Ton
2010	32	12	14,795	12,944	-14,763	-12,932	0.2%	0.1%
2014	50	17	16,281	13,429	-16,231	-13,412	0.3%	0.1%
2015	180	106	18,233	14,816	-18,053	-14,710	1%	1%
2016	287	174	20,870	16,995	-20,583	-16,821	1%	1%
2017	491	776	21,991	17,415	-21,500	-16,639	2%	4%
2018	432	539	25,009	18,940	-24,577	-18,401	2%	3%
2019	1,947	3,037	30,353	23,134	-28,406	-20,097	6%	13%

Source: EUROSTAT (2020)

Liquid milk

Liquid milk category includes semi-pasteurised milk (a semi-processed product), pasteurised milk in bulk and retail packaging and UHT milk.

Albania experienced an increasing trade deficit in liquid milk during last decade; a relative stabilisation in trade balance was observed in the years 2018-2019, mostly due to an increase of exports; 2020 data are not yet available, but the feedback from main industry actors indicate a sensible increase in half-pasteurized milk from Serbia.

As a whole, the trade deficit increased by 62.7% between 2010 and 2019, increasing from 7,386 tons (4.47 M Euro) in 2010 to 11,802 tons (7.27 M Euro) in 2019.

Imports have been growing over time from 7,386 tons (4.47 M Euro) in 2010 to 14,698 tons (8.73 M Euro) in 2019. Though exports of fresh milk are still modest, they have been growing from negligible amount in 2010 to 2,896 tons (1.46 M Euro) in 2019. Exports in 2019 covered 17% of imports in value and 20% in quantity, marking a significant improvement.

Table 5.2: Import and exports of fresh milk, Albania by year (HS 0401)³⁸

Year	Exports			Imports			Trade balance		Export/ Import	
	€000	Ton	Price €/kg	€000	Ton	Price €/kg	000 Euro	(Tons)	Value %	Weight%
2010	-	-	-	4,467	7,386	0.6	-4,467	-7,386	-	-
2014	3	2	1.7	5,978	8,784	0.7	-5,975	-8,782	0.05%	0.02%
2015	34	62	0.6	6,142	9,551	0.6	-6,108	-9,489	1%	1%
2016	61	104	0.6	6,444	10,408	0.6	-6,383	-10,304	1%	1%
2017	402	759	0.5	7,109	10,840	0.7	-6,707	-10,081	6%	7%
2018	278	498	0.6	7,669	11,569	0.7	-7,391	-11,071	4%	4%
2019	1,456	2,896	0.5	8,726	14,698	0.6	-7,270	-11,802	17%	20%

Source: Authors based on EUROSTAT (2020) data

³⁷Includes HS categories: 0401, 0402, 0403, 0404, 0405 and 0406

³⁸ HS 0401: Milk and Cream, not concentrated nor containing added sugar or other sweetening matter

Milk import prices for the latest three years are higher than those of exports indicating lower quality or less remunerating markets for domestic milk. The geography of imports and exports may bring more information on the type of export and import markets.

Regarding the geography of imports, the five main partners Albania has imported milk from in 2019 (in terms of volumes) are Serbia, Italy, Bosnia and Herzegovina, North Macedonia and Slovenia; Serbia and Italy actually represent 2/3 of milk import both in terms of quantity and value (Table 5.3).

Imports from Serbia consist almost exclusively in semi-pasteurized milk, while imports from most of the other countries mostly consist in UHT milk in retail packaging.

Serbia is the main partner in quantity and in 2019 exported close to 5 thousand tons of fresh milk (1.96 M Euro); Italy represents the main partners in value terms; Italy in 2019 exported close to 3.7 M Euro of fresh milk (4,857 tons). Other Albania's trading partners are Bosnia and Herzegovina and North Macedonia with 1,663 and 1,429 tons of milk export respectively toward Albania in 2019.

Table 5.3: Origin of milk imports (2019)

Partner	Quantity		Value		Price (euro /litre)
	Tons	% to total	000 Euro	% to total	
Serbia	4,987	33.9%	1,962	22.5%	0.39
Italy	4,857	33.0%	3,692	42.3%	0.76
Bosnia and Herzegovina	1,663	11.3%	827	9.5%	0.50
North Macedonia	1,429	9.7%	729	8.4%	0.51
Slovenia	827	5.6%	509	5.8%	0.62
Kosovo	324	2.2%	154	1.8%	0.48
Others	447	3.04%	592	6.78%	1.32
Total	14,697	100.0%	8,726	100.0%	0.59

Source: Authors based on EUROSTAT (2020) data

A closer look at the milk prices informs that Serbia, Bosnia and Herzegovina and North Macedonia export fresh milk at low prices – the prices these countries export to Albania range from 0.39 to 0.51 Euro; in fact, most of these imports consist in semi-pasteurized milk directly imported from the main dairy processing companies to be further processed in Albania.

It is important to underline that the price of the half-pasteurized milk imported in Albania from Serbia, including transport and first processing, is in average 39 Euro cent per litre, close to the *farm gate* price in Italy (38 Euro cents) and France (37 Euro cents). This price corresponds to 48 ALL/litre, much less than the price paid to large Albanian milk farms (58 to 62 ALL/litre – see also chapter 3 above) for a milk of comparable quality (but for Serbian milk transport and first processing costs must be considered, too). The price paid to small farmers is lower -35 to 42 ALL/litre- but quality is in average also lower and collecting milk from hundreds of small producers is much more complex and expensive than importing in bulk a half-finished product.

The above figures confirm the appeal of Serbian imported milk as compared with domestic supplies.

An interesting evolution of international trade relations is related to the liquid milk trade flow with Kosovo: some years ago, a seasonal bi-lateral flow of raw milk imports and export was witnessed: raw milk from Kosovo was exported to Albania in winter when Albanian domestic production was scarce and vice-versa in summer. In the last years milk imports from Kosovo have been replaced with import from other sources, while the strongest Albanian industries started to export UHT milk and other dairy products to Kosovo, no more raw milk.

Yogurt, kefir and other acidified milk products

Albanians are major consumers of yogurt; however, most of the yogurt is homemade.

Imports satisfy a minimal share of demand, but used to cover some market niches, such as pasteurized yogurt, fruit flavoured yogurt, kefir and liquid yogurt; niche products such as premium-quality yogurt offered in foreign-owned supermarket chains are also included.

The Albanian dairy industry started to produce an increasing range of products of this category and also to segment the supply, producing also premium-quality yogurt. However, trade deficit started to grow steadily after 2016 raising from 3.4 M. Euro in 2014 to 4.4 M. Euro in 2019, as shown in table 5.4 below.

Comparing imports with INSTAT data on domestic production of yogurt the ratio is as high as 22% (4.4 thousand tons vs. 19.9 thousand tons in 2019); this information could be misleading, as it does not consider that most of the yogurt is homemade and that output from semi-formal and informal dairy industry is only partially accounted for or not accounted. The figure of 19.9 thousand tons is most probably referred to formal industry only.

The interesting aspect is that both imports and domestic formal production are increasing, while there are no clear indications that total demand for yogurt, kefir and other fermented dairy products is increasing, as it is already among the highest in Europe. This should therefore consider as an indication the consumption is slowly shifting from homemade yogurt to a wider range of acidified milk and cream products made by the dairy industry (including domestic and imported products).

Table 5.4: Import and exports of Buttermilk, curdled milk and cream, yogurt, kefir and other fermented or acidified milk and cream, Albania by year (HS code 0403)

Year	Exports			Imports			Trade balance		Export/ Import	
	€000	Ton	Price	€000	Ton	Price	€000	(Tons)	Value	Weight
2010	-	-	-	3,258	2,675	1.2	-3,258	-2,675	-	-
2014	-	-	-	2,833	2,020	1.4	-2,833	-2,020	-	-
2015	2	1	1.3	3,188	2,058	1.5	-3,186	-2,057	0.055%	0.066%
2016	1	1	1.4	3,411	2,221	1.5	-3,410	-2,220	0.024%	0.026%
2017	0.1	0.2	0.6	3,766	2,370	1.6	-3,766	-2,370	0.003%	0.008%
2018	-	-	-	3,737	2,199	1.7	-3,737	-2,199	-	-
2019	11	9	1.2	4,443	2,592	1.7	-4,432	-2,583	0.2%	0.4%

Source: Authors calculations based on EUROSTAT (2020) data

Cheese, curd and other dairy products

Albania has a growing trade deficit in cheese and curd products – the trade deficit is doubled between 2010 and 2019, raising from 1,291 tons (4.16 M Euro) in 2010 to 2,747 tons (11.27 M Euro in 2019). The imports (though fluctuating) have increased from 1,294 tons in 2010 (4.17 M Euro) to 2,084 tons (8.78 M Euro). The export of cheese has also increased but remain modest and cover only 1 to 2% of imports (**Error! Reference source not found.**).

Table 5.5: Import and exports of cheese and curd, Albania by year

Year	Exports			Imports			Trade balance		Export/ Import	Export/ Import
	€000	Ton	Price (€/kg)	€000	Ton	Price (€/kg)	€000	(Tons)	Value (%)	Weight (%)
2010	11	3	3.7	4,173	1,294	3.2	-4,162	-1,291	0.3%	0.2%
2014	31	8	3.9	4,901	1,274	3.8	-4,870	-1,266	1%	1%
2015	119	29	4.1	5,675	1,509	3.8	-5,556	-1,480	2%	2%
2016	193	54	3.6	7,751	2,181	3.6	-7,558	-2,127	2%	2%
2017	66	14	4.7	7,064	1,698	4.2	-6,998	-1,684	1%	1%
2018	94	22	4.3	8,784	2,084	4.2	-8,690	-2,062	1%	1%
2019	394	70	5.6	11,667	2,816	4.1	-11,273	-2,746	3%	2%

Source: Authors based on EUROSTAT (2020) data

Average export prices for the whole last decade are higher than import prices. This may indicate that Albania exports (modest) decent quality cheese to niche market. The geography of imports and exports may bring more information on the type of export and import markets.

Regarding the geography of imports, the five main partners Albania has imported cheese and curd from in 2019 in terms of volumes and value are Germany, Italy, Austria, Netherland and Greece. German and Italy actually represent more than half (56.2%) of cheese and curd import in terms of quantity close to 2/3 (63%) in terms of value (table 5.6). Germany represents the main partner in quantity terms, having exported 858 tons of cheese and curd (3,091 M Euro) in 2019, while Italy represents the main partners in value; Italy in 2019 exported close to 4.257M Euro of curd and cheese (723 tons).

Table 5.6: Origin of cheese and curd imports (2019)

Partner	Quantity		Value		Price (euro per kg)
	Tons	% to total	000 Euro	% to total	
Germany	858	30.5%	3,091	26.5%	3.6
Italy	723	25.7%	4,257	36.5%	5.9
Austria	389	13.8%	1,435	12.3%	3.7
Netherlands	333	11.8%	1,070	9.2%	3.2
Greece	217	7.7%	802	6.9%	3.7
Hungary	113	4.0%	309	2.6%	2.7
Denmark	109	3.9%	457	3.9%	4.2
Belgium	43	1.5%	136	1.2%	3.2
Poland	15	0.5%	46	0.4%	3.0
Other	15	0.5%	64	0.5%	4.3
Total	2,816	100.0%	11,667	100.0%	4.1

Source: Authors based on EUROSTAT (2020)

Powder milk

Powder milk is used to produce cheese; it could be also used to produce fresh dairy products (e.g. yogurt), after reconstitution, but there is no evidence of such practice in Albania. The labelling norms in force do not oblige to indicate content and share of ingredients. However, the new regulation “On Labelling of Food Products” will introduce such obligation.

Imports of powder milk drastically declined between 2010 and 2014 (-70%); later in the decade, milk processing industry started to qualify and expand its output, needing increasing and reliable inputs, with consequent increase in imports of liquid milk and powder milk. In 2017 imports exceeded the 2010 level and kept growing. In 2019 the imports of powder milk were 63% larger than in 2010 and five times larger than those ones in 2014. The main source of powder milk is Ukraine (21% of total in 2019).

Table 5.7: Import and exports of powder milk, Albania by year (HS 0402)³⁹

Year	Exports			Imports			Trade balance		Export/ Import	
	€000	Ton	Price (€/kg)	€000	Ton	Price (€/kg)	€000	(Tons)	Value (%)	Weight (%)
2010	19	8	2.5	1,990	933	2.1	1%	1%	0.3%	0.2%
2014	16	7	2.4	888	282	3.2	2%	2%	1%	1%
2015	16	7	2.3	1,657	688	2.4	1%	1%	2%	2%
2016	21	8	2.5	1,685	833	2.0	1%	1%	2%	2%
2017	22	3	7.1	2,133	951	2.2	1%	0%	1%	1%
2018	49	11	4.3	2,782	1,443	1.9	2%	1%	1%	1%
2019	60	36	1.7	3,268	1,488	2.2	2%	2%	3%	2%

Source: Authors based on EUROSTAT (2020) data

Since Albania does not produce milk in powder it is not clear the nature of the limited, but growing export. Also, in some cases (2017 and 2018) export prices are much higher than import prices. Export data probably refer to of re-exports in the frame of a wider range of products.

³⁹Milk and Cream, concentrated or containing added sugar or other sweetening matter.

5.2 DOMESTIC MARKET

5.2.1 Commodity supply balance (food balance)

The overall commodity supply balance⁴⁰ remained rather stable in the last years, confirming that milk and dairy market is rather stable, as per capita consumption are already among the highest in the World⁴¹. The role of imports is small, but growing, especially due to the import of cheese, which accounts for 60% to 75% of the total imports, once calculated in milk equivalent quantities. The evolution of the commodity supply balance between 2014 and 2019 is provided in Table 5.8 below.

Table 5.8: Milk and dairy commodity supply balance

Category	2014	2015	2016	2017	2018	2019
Production (000 ton)	1,133	1,131	1,145	1,156	1,144	1,112
Import liquid milk (000 ton)	8.8	9.5	10.4	10.8	11.6	14.7
Import dairy products milk equivalent (000 ton) ⁴²	16.9	22.4	30.4	26.7	34.2	42.2
Export liquid milk (000 ton)	0.0	0.1	0.1	0.8	0.5	2.9
Export dairy products milk equivalent (000 ton) ⁴³	0.1	0.3	0.6	0.2	0.3	0.1
Supply (000 ton)	1,158.6	1,162.5	1,185.1	1,192.6	1,188.9	1,165.9
Production/supply (%)	97.8%	97.3%	96.6%	96.9%	96.2%	95.4%
Import/Supply (%)	2.2%	2.7%	3.4%	3.1%	3.8%	4.9%
Export/Import (%)	0.5%	1.3%	1.7%	2.5%	1.8%	5.3%

Source: Authors based on INSTAT (2020) and EUROSTAT (2020) data

5.2.2 International markets outlook

The relatively small, but increasing quantity of imported milk and dairy products is closely related to the difference between farm-gate price paid for good quality milk in Albania and in most European countries. The farm gate price in EU member states range around €30 (Hungary) to €38 (France) per litre, which corresponds to 37 to 47 ALL/litre. To buy milk of comparable quality in Albania, larger farms receive 58 to 62 ALL/litre and small farms receive 35 to 40 ALL/litres for much lower quality milk. At this price, many small farmers prefer to go in urban areas to sell directly the milk to final consumers or to use it as animal feed.

As a result of the above, if the farm gate price in other EU member states and in other Western Balkan countries will remain at the present levels, importing semi-pasteurized milk or milk in powder will remain an interesting option for Albanian dairy plants.

The expected evolution of prices in the next can be inferred from the long-term analysis of milk in powder international prices. In most countries, milk is subject to multi-annual price oscillation cycles: i) milk price rise, ii) more breeding farms re-orient their production towards milk production, iii) prices stabilize and then drops due to over-production, iv) breeding farms start to re-orient their production towards meat production (as it is happening in Albania now), v) milk supply decrease, vi) milk prices start to raise and, vii) the cycle start again.

The price of milk in powder is to be considered a proxy of the situation of the balance between milk multi-annual cycle in different countries, as part of the excess milk in oversupplied countries is transformed in milk in powder

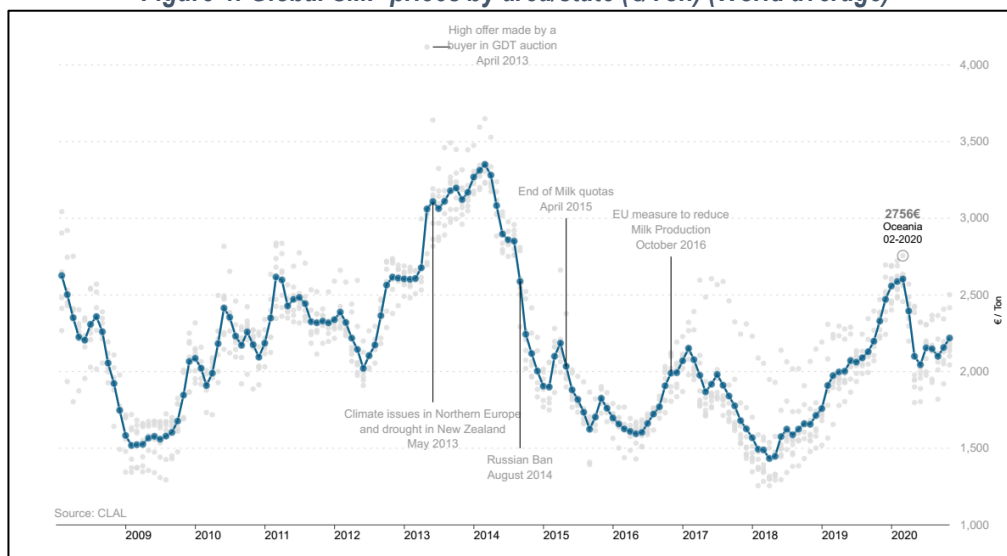
At World level, the situation Figure 4 shows a potential positive trend: the price could rise in the next three-four years, to decrease in the following years.

⁴⁰ In absence of official data, the commodity supply balance is estimated. It was calculated adding to domestic liquid milk production figures the liquid milk imports and the milk-equivalent figures of imported dairy products and subtracting the liquid milk exports and the milk-equivalent figures of exported dairy products. Dairy products have been converted in milk-equivalent figures utilising the equivalence coefficients of 1:1 for acidified milk incl. yogurt, 1:7.7 for powder milk and 1:10 for cheese

⁴¹ In absence of precise data, per capita consumption estimates are variable, but always put Albania among the 10 countries with highest yearly per capita consumption. According to FAOSTAT data, updated to 2013, Albania was ranking 6th in terms of per capita consumption. This estimate made in this document, based on INSTAT and Eurostat data, gives even higher results

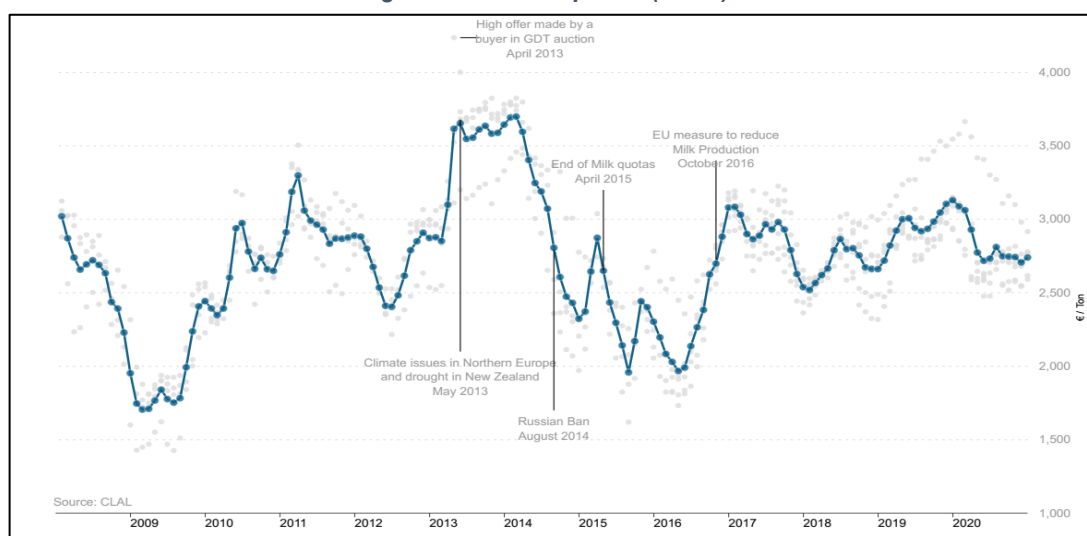
⁴² Estimate amount, using average equivalence coefficients

⁴³ Estimate amount, using average equivalence coefficients

Figure 4: Global SMP prices by area/state (€/Ton) (World average)

Source: CLAL (2020)

However, in EU countries the situation is different. The EU decision in 2016 to reduce milk production in EU member states contributed to stabilise the prices, which now are more stable over time than in the rest of the World, as it emerges from comparison between Figure 4 (World prices) and Figure 5 (EU prices).

Figure 5: EU WMP prices (€/Ton)

Source: CLAL (2020)

Considering the above, it is realistic to expect that in the next years the price of milk and milk in powder in Europe will remain stable; as a consequence, importing semi-pasteurized milk, milk in powder and cheese from neighbouring countries and EU member states is expected to remain an attractive option for Albanian larger dairy industries and for food traders.

5.2.3 Milk and cheese per capita consumption

With 316.8 litre of milk per capita consumption per year, Albania has the second highest per capita consumption in the Western Balkans after Montenegro (368.6 litres per capita) and ranks among the countries with highest per capita consumption in the World. Per capita milk consumption in Albania is much higher than the average milk per capita consumption for EU 27, Western Europe, Southern Europe, and Eastern Europe, as shown in Table 5.9 below.

Table 5.9: Fresh milk per capita consumption – Albania and selected countries

Year	Liter per capita per year					Index 2014=100
	2014	2015	2016	2017	2018	
Albania	297.7	301.7	318.0	320.5	316.8	106.4%
Montenegro	341.6	345.0	358.8	358.8	368.6	107.9%
Bosnia and Herzegovina	177.9	188.9	193.9	188.4	193.0	108.5%
Serbia	152.3	156.4	158.3	158.8	163.6	107.4%
North Macedonia	94.1	97.9	113.2	116.6	124.2	132.0%
Western Europe	175.2	179.9	184.1	186.5	186.4	106.4%
EU 27	174.5	178.0	180.0	181.3	184.6	105.8%
Southern Europe	174.4	175.8	175.6	174.1	181.2	103.9%
Europe	166.7	169.0	170.0	172.1	175.6	105.3%
Eastern Europe	142.6	143.5	145.6	147.0	150.9	105.9%

Source: Authors based on FAO (2021) data

In spite of the very high milk consumption per capita, the consumption per capita further increased in the last years by (+6.4% in 2018 as compared to 2014). The milk consumption per capita has increase for all selected countries as well with North Macedonia marking the highest increase also due to the quite low consumption compare to the rest of selected countries.

Apparent cheese per capita consumption in Albania – 5.7 kg per capita per year in 2019- is lower than the European average consumption per capita which in 2019 was 18.3 kg/capita (Table 5.10); however, domestic production reported by INSTAT is probably underestimated, as large quantities of cheese are produced by semi-informal and informal dairy units, especially feta-type cheese. Montenegro has the highest consumption per capita of cheese from Balkan countries, while Serbia has the lowest consumption per capita.

Table 5.10: Cheese apparent consumption in Albania

Category	2014	2015	2016	2017	2018	2019
Supply (ton)	13,204	15,012	16,429	16,396	16,643	16,335
Population (000)	2,889.1	2,880.7	2,876.1	2,873.5	2,866.4	2,854.2
Apparent per capita consumption (kg/capita)	4.6	5.2	5.7	5.7	5.8	5.7

Source: Authors based on INSTAT (2020) and EUROSTAT (2020) data

5.2.3.1 Consumer preferences

Milk and fresh dairy products

Albanian families consume large quantities of milk and dairy products, ranking among the first ten populations in the World in terms of per-capita consumption. Most of this consumption is made out of milk and fresh dairy products (yogurt, strained yogurt, curd, etc.).

Many Albanian consumers still accept and often prefer to buy milk directly from farmers offering the product in green markets, corner shops or through door-to-door selling. This crude milk is sold in recycled plastic bottles and must be boiled before consumption.

In parallel with urbanisation and change in lifestyles, increasing quantities of liquid milk (pasteurized and UHT) is sold in retail packaging⁴⁴ in shops and supermarkets.

Home production of white yogurt, directly made by final consumers, is also quite common, while less common is the production of butter and curd which, in terms of trading channels, is assimilated to cheese, with curd mainly traded by the weight (i.e. not in retail packaging) in green markets, shops and supermarket and butter sold in retail packaging (sometimes just consisting in a plastic foil with a label) or by the weight.

Other traditional types of fresh dairy products, the most common being strained yogurt or “yogurt sauce” and “dhalle” (ayran) are both home produced or purchased in greenmarkets and shops.

⁴⁴ 1 litre plastic bottle or tetra-brick is the most common packaging; 1.5 litres milk in tetra-brick is less common; 0.5 litres tetra-brick packaging is rare and only imported)

A wider range of fresh dairy products (pasteurized yogurt, flavoured yogurt, kefir, various drink beverages) have been more recently introduced in the market and are either imported or produced by the largest Albanian dairy plants; these products are almost exclusively sold in shops and supermarkets.

Cheese

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. 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 cheese⁴⁵. However, even if cheese produced with fresh milk is considered of superior quality, but there are diffused consumers concerns about the quality of fresh milk used (microbiological contamination), as well as on the process applied in cheese production (temperature, reaping period, storage). 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.

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 (e.g. Gjirokaster) or PDO (e.g. Çajup, Zagori)⁴⁶. However, a pre-requisite for giving added value to a traditional production is to adapt the product to the market, while keeping the core values of the traditional product (the origin, the way of production etc.).

The market opportunity of establishing a GI or other credible quality scheme require a comprehensive effort in terms of training, value chain coordination/governance and investments along the whole value chain. Moreover, without an effective control system, any quality scheme (including GI) is doomed to fail.

An important aspect is that many consumers became skeptical about "quality seals" (in fact, a kind of collective mark) or certified quality schemes, as all the recurrent attempts to introduce since late nineties such schemes failed, due to the lack of enforcement and controls on the respect of regulations which are behind the quality scheme certified by the collective mark. The first of such failures was just in the milk sector, where the "quality seal" introduced with support of a USAID development project lost credibility because of lack of controls.

Dynamics of consumers' preferences

Consumers' preferences are changing, in parallel with urbanisation and lifestyles modification; this is having also an impact on consumers' preferences. In parallel with the increase of revenues and the economic development of the country, new demand segments are emerging and demand for a wider range of products is increasing.

Economic development initially leads to increased consumption and later to market segmentation and shift of demand segments towards more qualitative products. Considering the already high level of consumptions of milk and dairy products, it is possible to expect that the Albanian market will witness a gradual segmentation. The leading Albanian dairy industries are already expanding their range of milk and fresh dairy products (yogurt, kefir etc.), but are not ready to offer a wider range of cheese, which are expected to be one of the most promising market segments, as witnessed by the rapid increase in imports.

Changes in consumers' preferences have also a major impact on the acceptance of traditional products and products protected by GI or other collective marks connected to a specific product regulation⁴⁷. Providing added value to traditional products and products from the territory through GI, PDO and collective marks is a work on the supply side only. It is also

⁴⁵Imami, 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.

⁴⁶Imami, 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.

⁴⁷ Each quality scheme is necessarily connected to a product regulation, which defines how the product must be done and processed and, in some cases (GI, PDO), defines also where the different steps of the supply chain must be performed. Only the companies which comply with the regulation (and are regularly controlled for compliance) have the right to use the mark (collective mark, GI etc.) connected to the quality scheme.

necessary to implement appropriate marketing policies to have the new generations of consumers appreciating these products.

5.3 STRUCTURE OF MILK AND DAIRY DISTRIBUTION

The structure of milk and dairy products distribution shows some differences, depending from the type of product:

- The liquid milk distribution system is still largely based on informal or semi-informal channels, even if the share of formalized products (bottled pasteurized, sterilized and UHT milk) is growing.
- Fresh dairy products, especially yogurt and other traditional milk-based beverages (e.g. dhalle), are largely homemade by final consumers, but also in this case a growing share of the market is covered by products marketed through formal trade channels. A wider range of acidified milk products (pasteurized and flavored yogurt, kefir etc.) and milk beverages is imported or produced by the largest Albanian dairy plants; this segment of products is totally sold through formal trade channels (i.e. shops and supermarkets)
- Cheese is sold in green markets, shops and supermarkets. In a few cases, final consumers buy directly the product (in most cases djathi bardhe i.e. feta-type cheese) from the producer.

Raw milk trade channels

Data reported in INSTAT on milk and dairy products account for 10% to 17% of raw milk production data⁴⁸.

In particular, INSTAT 2019 data indicate a production of 37.2 thousand tons of liquid milk (different types) and yogurt, plus 14.1 thousand tons of cheese (different types), these last being equivalent to approximately 76 thousand tons of milk; this amount should be compared with a total raw milk production figure of 1.1 M. Tons (including cow, sheep and goat milk), plus imports of liquid milk and milk in powder (which Albanian dairy industry import to produce liquid milk and dairy products), scoring 26 thousand ton (milk equivalent).

This figure could be taken as a first proxy of the share of products which is traded through completely formalized trade channels. Interviewed dairy industry actors are more optimistic and state that about 50% of the product is sold to dairy plant for processing (to produce all range of milk and dairy products) and the other 50% is self-consumed, used as animal feed or directly sold to consumers in semi-formal or informal trade channels (i.e. as crude milk).

Yogurt is largely self-produced at home by final consumers, so it is included in the share of liquid milk which is not accounted for in statistics. The figure of 19.9 thousand tons of yogurt produced in 2019 (INSTAT) should be considered as corresponding only to the yogurt produced by dairy plants.

Dairy products

Dairy products supply chain is largely driven by the structure local market. Small processors mainly supply traditional shops directly or via middlemen, while larger processors have established their distribution systems and supply directly to supermarket chains and other categories of shops.

All types of cheese are sold by quantity, not pre-packaged and not labelled, as consumers traditionally prefer to see the cheese before buying⁴⁹. The only written information provided on the counter are: i) the milk with which cheese is made (cow or small ruminant's milk), ii) the region where is produced and/or the name of the producer (large dairy plants only). The information about the type of raw milk (powder milk or fresh milk) is not available to the consumer. However, new norms on food labelling have been approved. These norms are more harmonized with EU *Acquis* and require indicate in the label ingredients and the quantities or share on total quantity of such ingredients.

Some larger specialised dairy plants (e.g. Gjirofarm) sell goat and sheep white cheese in rigid plastic packages, containing the white cheese still in its brine. This expensive packaging is used as a marketing tool, but there is no evidence of impact on consumers' preferences.

⁴⁸ Calculating cheese production in raw milk equivalent

⁴⁹The exception is mozzarella, which is sold in plastic bags

5.4 KEY FEATURES AND CHALLENGES

Albania has a significant and growing trade deficit in milk dairy products. Imports of semi-pasteurized milk and powder milk are used for further processing in Albania, while imported UHT milk in retail packaging is commonly found in most shops and supermarkets. Semi-pasteurized milk is imported from Western Balkans countries, mostly from Serbia, while UHT milk in retail packaging is imported from Italy, Greece and other EU member states.

Cheese imports are also growing and doubled in the last six years.

German and Italy actually represent more than half of cheese and curd import in terms of quantity close to 2/3 in terms of value.

Albania with over 90% of total demand covered by domestic production to supply ratio is almost self-sufficient in terms of fresh milk. However, the production to supply ratio decreased between 2014 and 2019.

Albania has the second highest per capita milk consumption after Montenegro. Milk per capita consumption in Albania is much higher than the average milk per capita consumption for EU 27; exact figures of cheese consumption are not known, as data in official statistics appear under-estimated or referred to formal industry only.

Difficulties in quality raw milk supply are leading the dairy industry to import increased quantities of semi-pasteurized milk and powder milk.

The trade channels show some differences, depending on the category of products:

- An important share of fresh milk is still sold as crude milk in recycled plastic bottles through informal or semi-formal trade channels, including green markets, corner shops and door-to-door sales. However, sales of pasteurized and UHT milk are increasing.
- Traditional fresh dairy products (yogurt and derivatives, such as dhalles and strained yogurt) are often home-made by final consumers, based on fresh milk. Also, in this case increasing quantities are being sold through formal distribution channels in retail packaging
- Innovative fresh dairy products are either imported or produced by largest dairy industries and entirely sold through formal distribution channels
- Cheese and curd are sold in green markets, shops and supermarkets. Small processors mainly supply traditional shops directly or via middlemen, while larger processors have established their distribution systems and supply directly to supermarket chains and other categories of shops.

In most cases, cheese is sold by the weight (i.e. not pre-packaged) and also Albanian consumers prefer to see the cheese they buy. Some brands sell packaged feta-type (djathibardhe) in brine. Mozzarella (imported or produced in two small specialized dairy plants) is always sold in retail packaging.

Albanian consumers prefer domestic cheese to imported cheese and have preferences for regional origin within Albania. This preference may be considered for supporting quality scheme in the sector, namely PDO and PGI.

6 CHAPTER 6: LEVEL OF ATTAINMENT OF RELEVANT NATIONAL & EU STANDARDS

6.1 HYGIENE, FOOD SAFETY, ANIMAL WELFARE AND ENVIRONMENTAL MANAGEMENT

The Albanian Government and the EC consider food safety and consumer's health protection a policy priority in the EU accession process agenda. In the EC report for 2020 is mentioned that Albania made some progress in implementing relevant measures in the food safety and veterinary sectors, as well as in the animal register.

The basic laws in Albania for the dairy sector and food safety are; i) Law 16/20, as amended (Food Law), ii) Law 9441/05 ("On the Production, Collection, Processing and Trade of Milk and Milk based Products"), iii) Law 10465/11 as amended ("Veterinary Law") and, iv) Law 9426/05, as amended "On Livestock breeding".

There is not a specific primary legislation on animal welfare. Animal welfare is covered by few articles in the veterinary law and in the law on livestock breeding; some more specific norms are included in secondary legislation.

The law no. 10463/11 "On integrated waste management" makes specific reference on livestock waste management (article 36). It should be integrated by secondary legislation relevant to the management and use of agri-processing waste to extract by-products, providing also more specific rules on management and disposal of specific types of waste.

The main provisions and contents of the above-mentioned norms and relevant secondary legislation are provided below

6.1.1 The Food law⁵⁰

The law provides the basis and principles for a higher standard necessary to better protect human life and health. It represents consumers' interests, and sets requirements for production and circulation of safe food and feed. The law is partially compliant with the EU provisions (European Regulation No.178/2002 on food law). According to the Food Law (Article 26), food production companies are obliged to implement Hazard Analysis and Critical Control Point (HACCP), as a self-control mechanism. HACCP is a basic tool to improve and ensure food safety in Albania.

Along with this law the National Food Authority (NFA) was established and became operational on 2010.

Secondary legislation has also been adopted in line with EU requirements. Current legislation dealing with food safety in Albania is partially aligned with EU provisions (namely the Food Hygiene Package); relevant secondary norms are listed below:

- DCM no. 434, dated 11.7.2018, "On food labelling and consumer information"⁵¹, which aims to lay the groundwork for ensuring a high level of consumer protection through food information, considering differences in consumer perceptions and their information needs, as well as ensuring the normal functioning of the market.
- DCM no. 760, dated 16.9.2015 "On food tracking and animal feeding requirements through the food chain". This decision aims to lay the groundwork for an efficient food and feed system throughout the food chain, setting mandatory minimum conditions for food and feed traceability under control of food business operators in order to reduce or eliminate any risk posed by the placing on the market of unsafe food and feed.
- Instruction no.5, dated 25.3.2011, "On specific hygiene requirements for production, collection and processing of milk and milk-based products", sets out specific health and hygiene requirements for the production, collection, processing

⁵⁰ Law No. 16/2020, "For some amendment and addition to the Law No. 9863, date 28.1.2008, "On Food".

The amendments to the Food Law aims to approximate further in the Albanian legislation, the Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety, Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules, Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs, and Regulation (EC) No 853/2004 of the European Parliament and of the Council of 29 April 2004 laying down specific hygiene rules for food of animal origin.

⁵¹This decision is partially aligned with: Regulation (EU) no. 1169/2011 of the European Parliament and of the Council, dated 25 October 2011, "On the provision of food information to consumers", amending regulations (EC) no. 1924/2006 and (EC) no. 1925/2006 of the European Parliament and of the Council and repealing Commission Directive 87/250 / EEC, Council Directive 90/496 / EEC, Commission Directive 1999/10 / EC, Directive 2000/13 / EC of the European Parliament and of the Council, Commission Directives 2002/67 / EC and 2008/5 / EC, and Commission Regulation (EC) no. 608/2004; CELEX 02011R1169; FZ L 304, 22.11.2011, p. 18.

and distribution of raw milk and milk-based products and their official controls.

- Instruction no. 20, dated 25.11.2010, “On the implementation of preliminary programs, good hygiene practices, good production practices and procedures based on risk analysis of critical control points (HACCP) in food facilities”. The purpose is to define the procedures for implementing good hygiene practices (GHP), good manufacturing practices (GMP), pre-programs and procedures based on risk analysis and critical control points (HACCP) in the facilities of food production and processing, the qualifications and responsibilities of the food business operator, as well as the methods of official control of HACCP procedures by the National Food Authority (NFA).
- Instruction no. 22, dated 25.11.2010, “On general and special hygiene conditions for food establishments and food business operators”.
- Order no. 286, dated 2.6.2014, “On an amendment to order no. 438, dated 7.10.2008, “On the conditions of public health and animal health, milk certificates raw material and milk-based products for human consumption”, provides the list of countries allowed for the introduction of raw materials and milk-based products in the republic of Albania.

6.1.2 Law - “On the Production, Collection, Processing and Trade of Milk and Milk based Products”⁵²

The purpose of this law is to: (i) ensure the production of milk on farms, the collection, processing and marketing of milk raw, consumer milk and milk-based products, production and marketing of quality controlled, according to the requirements and standards of the internal and external market. (ii) carry out control for the provision of licenses for milk production farms and centers its collection, standardization and processing; (iii) guarantee consumer safety for milk and milk-based products. The law partly adopts the Council Decision 92/608/EEC 92/608/EEC of 14 November 1992.

To complete the legal framework, MARD has approved two DCMs and several regulations setting out specific health and hygiene requirements for the production, collection, processing and distribution of raw milk and milk-based products and their official controls, such as:

- DCM no.1132, dated 5.8.2008 “On the approval of norms for the collection of raw milk”;
- DCM no 1131 date 5.8.2008 “On technical requirements and norms to be met by milk intended for the production of milk for consumption and milk-based products”
- Minister order no 261 date 10.09. 2009, on approval of the regulation “On microbiological criteria for food products”
- Minister order no.217 dated 14.05.2014, “On the approval of the action plan in the dairy sector and dairy-based products”.
- Instruction no. 7, dated 14.05.2014, on “National plan for monitoring raw milk, for the year 2014”.
- Instruction no.5, dated 25.3.2011, “On specific hygiene requirements for production, collection and processing facilities of milk and milk-based products”

6.1.3 Law “On Veterinary Service in Republic of Albania”⁵³

Law provisions

The law and relevant secondary legislation introduce EU requirements in the veterinary field such as regulation for the control of animal diseases, regulation for controlling zoonotic diseases, regulations for the functioning of the animal identification system, regulations for animal welfare and regulations on national and international trading conditions of all animals.

The implementation of legal provisions includes the preparation of strategic documents for the control of quarantine zoonoses. The main relevant documents are listed below.

- Strategy for the control of Anthrax, document No 4200, date 2.3.2018;
- Bovine Brucellosis Control Program, document No 4995, date 23.5.2018;
- Small ruminants Brucellosis Control Program, document No 493, date 16.1.2019;

⁵²No 9441, date 11.11.2005 and Law No.73/2013, date 14.02.2013: “For some Amendments and additions to Law No. 9441, Date 11.11.2005 “On the Production, Collection, Processing and trading of Milk and Milk-based Products”, as amended.

⁵³ No. 10465, date 29.9.2011

- Bovine Tuberculosis Control Program, document No 4747, date 15.5.2018;
- Lumpy Skin Disease Control Plan, document No 4997, date 23.5.2018.

The process of veterinary service reform

The implementation of the roadmap towards legal harmonisation, capacity building and implementation of the EU *Acquis* on official controls, animal health and plant health is continuing, within the framework of a consolidated national food safety policy. In 2020, an important step was taken, with the restructuring of the veterinary sector, based on EC recommendations relevant to the chain of command in veterinary service. The reform included the amendments of the Law on Veterinary Service⁵⁴ and the reorganization of the Veterinary and Plant Protection institutes, leading to the establishment of NAVPP⁵⁵. The amendments are expected to improve the structure and functioning of the Veterinary Service by avoiding fragmentation and improve the chain of command and communication.

The process to ensure the operational capacity of the newly established NAVPP is started at the end of 2020: 300 veterinarians were hired by the veterinary service to work in the four Veterinary and Plant Protection Agencies (subordinates of NAVPP). However, the reform is yet to be completed, and during 2021 it is planned to hire 95 more staff to be responsible for the animal markets and the slaughterhouses, responsibility that will be passed from veterinary service of municipalities to the NAVPP.

In addition, the amended Veterinary Law improves the provisions regarding the national reference centre, FSVI⁵⁶, giving to it the status of a scientific research institution; it also transfers to FSVI the control of the reference phytosanitary laboratory of Durres, which so far was under the control of Agriculture University of Tirana.

The European Regulation 882/2004/EC stipulates that the reference centre must conduct scientific research in the field for which it is a reference, so FSVI is expected to start to carry out research activities, too. At the same time, the Institute should prepare itself to join the European network of reference laboratories, opening negotiations with the EC for this purpose.

Regarding the implementation of the veterinary policy MARD, the following progress was recorded:

- Following the introduction and implementation of the disease control strategies (see above), a regulation was introduced: “On the setting of criteria for national plans to accelerate the removal of brucellosis, tuberculosis and enzootic leucosis in bovine”; the regulation establishes the criteria for national programmes aimed at accelerating the eradication of certain cattle diseases (e.g. brucellosis, tuberculosis and leucosis).
- The Implementation of programmes for the monitoring of brucellosis and tuberculosis in cattle herds of over 10 heads continued, as did vaccination against cattle lumpy skin disease, brucellosis on replacement animals in small ruminants and, anthrax.
- Animal numbers were verified and registered countrywide and are updated in RUDA system. The new data are expected to improve information on the real number of animals and help the veterinary service to plan the measures and budget for registration and animal disease control.

6.1.4 The law “On Livestock breeding”⁵⁷

The purpose of the law is to protect, improve and preserve the qualities of animal genetic resources, with the aim of encouraging farmers to increase livestock production, improve the quality of animal products and preserve the genetic variability of farm animals.

6.1.5 Norms on animal welfare

The general aim is to ensure that animals need not endure avoidable pain or suffering and obliges the owners or keepers of animals to respect the minimum welfare requirements. In 1998 Council Directive 98/58/EC on the protection of animals kept for farming purposes provided the minimum standards for the protection of animals bred or kept for farming purposes, which are based on the European Convention for the Protection of Animals kept for farming purposes.

⁵⁴ Law No. 71/2020 “For some amendments and additions to the Law “On Veterinary Service in Republic of Albania” No.10 465, date 29.9.2011, (amended on June 4, 2020).

⁵⁵ National Agency for Veterinary and Plant Protection

⁵⁶Institute of Food Safety and Veterinary

⁵⁷Law No. 9426, date 6.10.2005 “On Livestock Breeding”.

Albania has legislation on animal health aspects and disease control, but not specific primary legislation on animal welfare. Animal welfare is covered by few articles in the veterinary law and in the law on livestock breeding; some more specific norms are included in secondary legislation, including:

- Minister order no. 307 date 04/07/2008, “On rules of animal health and animal welfare”
- Minister order no. 4 date 09.09. 2008, “On the minimum housing standards for calves”
- Minister order no. date 04.03.2009, “On minimum standards of welfare for laying hens and pigs”
- Minister order no. 292 date 12.06.2006, “Animal welfare at the time of slaughtering”
- Normative Act no. 4 dated 16.8.2012, “Determining the rules for the slaughter of animals and the trade of their meat”

6.2 OCCUPATIONAL SAFETY

The base for the occupational safety lies in several articles of the law “On Public Health”⁵⁸. In the chapter Occupational Health (article 56 and 57) is mentioned that occupational health includes the creation of working and employment to reduce and prevent occupational diseases and accidents at work. These measures are applied to decrease and prevent professional illnesses and accidents at work, so that average life expectancy of employees corresponds to the life expectancy of the community in general. In this frame all the employers and employees are obliged to follow the rules of occupational health.

Other relevant legal framework for occupational safety and relevant control system include:

- Law no. 10237 dated 18.02. 2010 “On security and health at work”, as amended⁵⁹
- Law no. 9634 dated 30.10.2006 “On work inspection and labor inspectorate”, as amended⁶⁰
- Law 7703/93 dated 11.05.1993 “On social insurance in the Republic of Albania”, as amended⁶¹

6.3 IMPLEMENTATION OF LEGAL PROVISION AND ATTAINMENT OF STANDARDS

Food safety and quality

MARD prepared the categorisation of milk processing units according to the status of attainment of EU standards; the Albanian legislation mentions three criteria related to the milk quality:

- Total Bacteria Count (TBC): not more than 300 000 bacteria per ml;
- Somatic Cell Count (SCC): not more than 300 000 cells per ml;
- Antibiotics residues must be absent.

However, the control of raw milk quality in Albania is still weak and does not function very well, with consequent risks for public health.

The responsible institution to check for milk and dairy products safety is the NFA Sector of Food Inspection, Animal Feed and Business Operators. More in general, NFA mission it to guarantee food safety throughout the food chain from animal feed production to final consumption, enforcing relevant legislation, in order to protect human health and consumers’ interests.

NFA has 7 laboratories (in addition to the public national reference laboratory of FSVI) for food analysis. However, the food laboratories are currently mostly used to solve urgent hygienic / food safety problems at farms, milk collection points, milk processors or at other segments of the milk supply chain and are not really used as a tool for monitoring and improving of milk.

The NFA inspectors rarely take samples at milk collection points or entry points at dairy plants, and the system of sampling, transport of samples to the laboratory, laboratory analysis and reporting of results to farmers, collectors and processors as well as advice to improve situation is not in well organized. Actually, NFA inspectors should focus more on the microbiological content of the raw milk and find ways to improve this and meet EU standards.

⁵⁸No. 10138 date 11 May 2009 and the law No. 52/2013, date 14.02.2013 “For some amended of the “On Public Health”

⁵⁹ Law no. 161/2014 date 04.12.2014

⁶⁰Law no.24/2013, dated 14.02.2013, and Law no. 57/2017, dated 20.04.2017

⁶¹Law no. 104/2014, dated 31.07.2014; Law no.111/2016, dated03.11.2016; and Normative Act of DCM no.7, dated 30.11.2019.

Controls are difficult to be implemented due to several causes:

- An important share of the raw milk is still directly sold by farmers at roadside or door to door. These practices are still accepted by many consumers and not repressed by competent authorities.
- Most of the farmers are not aware of milk hygiene practices and do not know the microbiological status of the milk they sell. They do not send milk samples to laboratories for test, also because they should pay for the analysis.
- Only the large and medium sized dairies have implemented an internal system of quality control, including raw milk. Closed cooling chains from producer to consumer are still rare and EU quality and food safety standards have not yet been implemented.

The EC report (2020) states that, the National Food Authority carried out regular official controls in line with an annual risk-based plan, and took relevant measures, including warnings, fines, the seizure and disposal of non-consumable food, and activity suspension. However, risk assessment capacity based on scientific opinion remains weak and must be improved. This situation makes it more difficult to prepare targeted annual inspection plans and to design of specific policies in the sector.

Considering the above, an important objective for NFA should be to enhance official controls by adopting an improved risk-based methodology and to produce clear and detailed official control statistics, based on an improved information system.

Animal identification and registration system

The national animal identification and registration system, since September 2020, is working to maintain and improve the data registered in the RUDA system. The process of RUDA database improvement has not yet been finalized, which causes difficulties in the implementation of an effective food safety and an animal health control system. In spite of this, awareness regarding quality and health-related issues has been increasing in recent years.

Animal welfare

The welfare of food producing animals depends largely on how they are managed by humans. A range of factors can impact on their welfare includes housing and bedding, availability of space, transport conditions, stunning and slaughter methods, castration of males and tail docking. In order to improve animal welfare MARD introduced National Minimum Standards (NMS) in accordance with EU practice. However, animal welfare rules are poorly applied, as a considerable number of animals' bypass animal welfare controls in the various steps from breeding to slaughterhouse. This situation is confirmed by previous studies⁶² and the interviews conducted with owners of slaughterhouses and veterinary experts.

Farmers have limited access to guidelines and recommendations on the appropriate design of barns and animal husbandry. Many advanced dairy farmers reported that they received most of the information from their colleagues working in other countries or personnel from input and farm machinery suppliers.

More in general, the secondary legislation on animal welfare is loosely enforced and poorly implemented, primarily due to the lack of advocacy groups and public administration weaknesses.

Good Agricultural Practice - GAP

GAP implementation is a key issue for sustainable agriculture, as it foresees the application of more environmentally sustainable practices, which will also ensure better quality and safer food. GAP provides indications on the farming practices that a farmer should follow in the region concerned. The benefits from the implementation of GAP such policies include: i) increased added value and better access to markets for primary producers; ii) food processing industry, which will increase the quality of their products, thus increasing their competitiveness; iii) consumers, who will have access to better quality and safer food, produced in environmentally sustainable ways; d) general population, who will get benefits from a better environment.

FSVI accreditation in milk and animal feed testing

⁶²Belegu, K., Zalla, P., Belegu, M., Laçi, D., Ozuni, E., Andoni, E. (2014). Albanian consumer's perception towards animal welfare. *Albanian Journal of Agricultural Sciences*, Special edition, pp. 299-303.

In addition to public and animal health, FSVI is accredited in total for 102 tests according to the ISO / IEC 17025: 2017 standard (49 tests were accredited in 2020 only). One of the tests for which FSVI is accredited is the aflatoxin in milk and powder milk, while for milk products the accredited tests are for the number of enterobacter and *Listeria monocytogenes*. The number of microorganisms is accredited for raw milk and UHT milk.

6.4 USE OF INPUTS, PPP, VETERINARY MEDICINES

Albanian agricultural production is entirely dependent on imported agrochemical products, seeds, fertilizers, pesticides, semen and most of the animal feed or ingredients. All these inputs are no more subject to VAT since 2019, but are subject to international price volatility.

As in other emerging countries, the farmers and agro-input dealers in Albania, face major constraints in getting high-quality, consistent supplies. This is caused by financial constraints, low input quality, as well as by limited level of technical information and knowledge.

In many cases farmers complain about the low quality of forage seeds, pesticides, animal feed, veterinary medicines, and bull semen. Usually, such inputs are supplied by local input suppliers, which are: i) importers/wholesalers and retailers for seeds and pesticides; ii) feed mills or importers for animal feed; iii) veterinary pharmacies for the medicines and iv) importers or inseminators for the bull semen.

Many small farmers have the tendency to buy the cheapest inputs, in order to reduce production cost, but in most cases, they end up with losses due to weak production performance. Small farmers do not have information about inputs and have difficulty finding information, as the public extension services has not the resources to reach out to all farmers.

According to the interviews performed with private veterinarians, milk processors, experts and recently studies⁶³, a number of small farmers tend not to comply with requirements even when they are aware of them. Most farmers know that they should not use milk produced by cows treated with antibiotics (during treatment period and several days after the treatment), but they still use or sell the milk anyway. In addition, there are cases when mycotoxins were found in animal feed of cows and even in milk⁶⁴.

There is not a specific norm obliging farmers to properly feed the animals; however this is an issue, as many farmers lack knowledge and finances in the use the appropriate quantity and quality of animal feed; as a result, the improvements recorded in the genetic potential of milking breeds (through import of pure breed animals, use of artificial insemination with high quality semen etc.) was not paralleled by improvement in milk yields, as poorly fed animals are not enabled to express their full genetic potential. As a result, milk yields are among the lowest in the region.

6.5 ENVIRONMENTAL ASPECTS

Rules and regulations to promote the development of agricultural practices preserving the environment and safeguarding the countryside are incomplete and investments to improve environmental standards on farms and milk processing industry started recently to be supported by the IPARD-II; agro-environment schemes have been designed, but are not yet in place.

The main problem for environmental protection faced by dairy farms is the management of animal manure and slurry. Except the large dairy cow farms the rest do not have adequate manure storage.

To improve the situation, it would be necessary: i) to introduce a specific regulation for proper storage of manure and slurry and, ii) to make farmers aware of air and water pollution, as well as their health that is endangered by poor manure management.

The same situation is with small and mini milk processing plants that show very little interest to improve the situation with waste water coming from the production process. Such plants should be supported by investments aiming to meet the EU standards.

⁶³Mavromati (2018)

⁶⁴Mavromati and Shaqiri (2019)

7 CHAPTER 7: PAST TRENDS AND FUTURE DEVELOPMENTS IN TERMS OF INVESTMENTS

7.1 PAST TRENDS

7.1.1 Primary production

The medium and large-scale cow farms invested in their businesses to improve the animal housing, feed preparation, production and storage technology. Investment are mostly done using own financial sources; a limited number of farmers benefited from the support schemes.

In the last programming period investments have been also addressed to improve livestock animal husbandry. More Holstein heifers are imported, and the large farms use only Holstein cows, considered as the best milk breed. The large farms are willing to continue import and raise improved breed heifers by their own. cattle housing is much improved, from tied type stables to the free stall barns and more farmers are convinced to change their barn type. Fodder production improved as well as feed preparation, animal feed rationing, barns, cow, and milking hygiene; as a result, better and safe milk is produced.

The impact of support to large milk farms (mainly IPARD support) has been positive in terms of animal welfare, due to the construction of new stables; the quality of animal feed is also improved, thanks to the use of new machinery for preparing hay and silage; cows' nutrition is improved by using Total Mix Ration machinery. Also, milk production has increased from the Holstein imported heifers with high production potential. In addition, milk quality has been improved adapting feed rations to the physiological condition of cows. Hygiene improved in all production level stages, (stable, cows, udder, milking and cooling system).

The overall outcome of investments made in large cattle milk farms is largely positive. Productivity per head is comparable to EU average (7,000 litres per head/year) and milk quality is generally within standards (somatic cells and microbial load), due to the higher attention paid to animal health, application of good milking practices and use of milking equipment.

In medium farms (mainly NSS support) an improvement in the milking system, stall hygiene, and milk has been observed. In small farms the results are not satisfactory as there are many feeding, nutrition, and hygiene problems.

7.1.2 Processing

The large and medium sized processors invested in consolidation and technology improvements, with the result that several enterprises managed to introduce a wider range of products which would be not possible without improvements along the whole upstream value chain (raw milk collection, quality controls, processing, packaging, continuous monitoring system of the whole process). Larger industries also invested in increased storage capacity and implementation of GHP- Good Hygiene Practices (food safety standards).

The small-scale and mini processing plants (baxho) the situation and challenges did not change, as many of them have a liquidity problem associated with cheese technology process.

The impact of investments in dairy processing plants is evident, especially in recent years, leading to improve production quality and widen the range of products proposed by larger enterprises. Packaging is also much improved, with the introduction of a range of different types of plastic packaging for different products (bags for mozzarella in whey, rigid plastic boxes for djathi bardhe in brine, etc.) and also the introduction of tetra-brick (for UHT) and PVDC coated satin paper (for butter).

Investments in new production lines and the improvement of production technology led some of these factories to export milk and cheese (USA and Canada).

Export opportunities are great but what hinders are animal diseases and lack of traceability of milk production. Since the prices of exported products are higher than those ones in domestic market, the factories could collect quality milk at a higher price and this would motivate the farmers to produce more milk with higher quality.

Despite the difficult environment and constrains, support to milk producers and processors has proved to be effective, if companies that have potential to generate large increases in employment and sales are supported to serve as a model to other farms and SMEs.

7.1.3 Trade and services

In the last five years agro-input sector has made various investments such as warehouses (for storage of seeds and animal feed), technology (fertilizer blending); equipment (for storage of bull semen, veterinary medicines and vaccines. All the investments are done with their financial means.

The same positive trend was with private veterinary service where several veterinarian clinics and veterinary pharmacies were established. However, the majority of them are in the urban areas as most of the veterinarians moved with their families from rural to urban centers.

Most processing plants directly distribute their products to stores and supermarket chains, This required an initial sizable investment in vehicles and logistics, but these investments were largely completed some time ago.

7.1.4 IPARD II uptake

Milk and dairy were considered as a priority sector since the first IPARD programming period (2007-14) and considered eligible for support both in IPARD-like and IPARD II.

IPARD-like

In IPARD-like, the data set does not allow identifying what support was given to milk primary production, distinguishing it from other types of primary production.

IPARD-like financed three projects for a total value of 1.54 M Euro, as detailed in Table 7.1 below, an amount comparable to the meat sector (3 projects for a total of 1.35 M Euro) and to cold storage and deep-freezing facilities (4 projects for a total of 1.45 M Euro).

One investment was specifically devoted to establish an integrated production and processing facilities for goat milk and dairy products.

Table 7.1: IPARD-like financed projects to milk processing units (Measure 3⁶⁵)

No.	Type of investment	Project amount M ALL
1	Dairy processing and packaging line	67.6
2	Reconstruction of a breeding complex (goats)	41.6
3	Reconstruction of facility and milk processing line	107.3
Total		216.5⁶⁶

Source: ARDA

IPARD II⁶⁷

In the first two IPARD II calls (programming period 2014-20) a total of 13 projects were financed under Measure 1, for a total of 3.78 M Euro and 8 projects were financed under Measure 3, for a total of 4.7 M Euro.

The projects financed under Measure 1 can be grouped in three clusters of large, medium-sized and small investments (see Table 7.2 below), while projects financed under Measure 3 can be grouped in two clearly different categories, namely large (over 200 M ALL) and small ones (under 45 M ALL) as shown in Table 7.2 below.

Table 7.2: Milk primary production - IPARD II financed projects under Measure 1⁶⁸

Main types of investment	Total amount M.ALL	Project size range M.ALL	Number of financed projects
Farm machinery, stable, various	23.0	1-20	3
Stable, farm machinery	147.9	21-50	5
Stable, farm machinery	304.6	51-62	5

Source: ARDA

⁶⁵ Defined as "Masa2" in ARDA records

⁶⁶ Equivalent to 1.5 M Euro (average yearly exchange rate; source: Bank of Albania)

⁶⁷ First two calls only

⁶⁸ First two calls only

One of the largest investments (58.8 M. ALL, i.e. 0.47 M Euro) was specifically devoted to a goat farm specialised in Alpine breed.

The impact of support to large cow farms can be summarized as follows:

- Improved animal welfare through the construction of new stables;
- Improved animal feeding, introducing new machinery for hay and silage preparation. and Total Mix Ration machinery.
- Introduction of breeds with higher production potential
- Improved milking facilities and equipment.

Table 7.3: Milk processing - IPARD II financed projects under Measure 3⁶⁹

Main types of investment	Total amount M.ALL	Project size range M.ALL	Number of financed projects
Milk processing facilities equipment, water treatment	24.4	3-12	3
Milk processing lines	121.7	45-45	3
Milk processing lines	434.2	200-225	2

Source: ARDA

One of the investments is specifically devoted to waste water treatment facility and equipment.

The structure of IPARD II financed investments in the milk sector under Measure 1 and Measure 3 reinforced the spontaneous trend of sector polarisation.

At production level, 40% of beneficiaries (5 out of 13) received 68% of funds. Each of the 5 largest financed projects scores around 0.5 M Euro.

The results achieved by the largest supported farms (achievement of productivity, food safety and animal welfare parameters comparable to those in EU member states) show that the level of investments required to bring a milk farm to be a recognized partner by a leading processing company (which pay more per litre to large farms and more regularly) is in the range of 0.5 M Euro, an amount that is far beyond the means of vast majority of farmers.

At milk processing level, the structure of financed project reflected the dominant role of the two market leaders in the industry. Their investments represent 75% of all financed projects in dairy industry.

Also, in this case the results achieved (leap forward in terms of market outreach, range of products, food safety and quality) show that the size of required investments ranges in the order of millions of Euro (1.7 M Euro in average). One of the two leading companies already received one of the three grants given to dairy industry in the IPARD-like programme.

Considering both IPARD-Like and IPARD II, the two leading companies absorbed 502 M ALL, or 63% of all funds provided to milk industry.

7.2 INVESTMENT CLIMATE AND INVESTMENTS ENABLING ENVIRONMENT

The milk sector faces various challenges. Food safety and environmental standards need to be improved and respected. The quality of raw milk and the microbiological condition is problematic, while transport conditions are inadequate, often without the use of refrigeration tanks. In many small and mini processing plants there is no treatment of wastewater and milk processing waste.

The lack of qualified specialists (milk processing technology, laboratory, etc.) in rural areas is one of the factors that has hindered and will continue to hinder, in addition to poor law enforcement, the implementation of safety and environmental standards, discouraging relevant investments.

Priority for this sector will be to increase the capacity of the sector to meet the domestic market demand. There is a need for investment in the on-farm refrigeration chain. At the processing level, the support will aim to meet both food safety and environmental standards. Support will also be provided to improve packaging and labelling. Support for the implementation of standards should go hand in hand with building the capacity of farmers and processors, as well as improving law enforcement.

Persisting low prices (which anyhow are higher than farm gate prices in to EU member states for milk of comparable quality) refrain farmers from investing in milk production, with many considering it more profitable to remain as they are or

⁶⁹ First two calls only

even reducing the number of milking cows and use the milk exceeding self-consumption needs as animal feed.

In processing industry, needs for investments among medium-sized processing companies are evident, but at the same time the leading role of the two main milk processing companies seems difficult to challenge, thus limiting the willingness to make major investments.

Small processing units represent a quasi-parallel market: they deal with small producers and offer a very limited range of dairy products (usually two or three), always the same,

7.3 EXPECTED FUTURE TRENDS

7.3.1 Trends in primary production

The dairy farms owners are in need and willing to continue in the same types of investments performed in the last years, should the NSS and IPARD will continue to support them.

According to the opinion of farmers and expert this structural change toward fewer farms but much larger farms will continue. Families that own larger dairy farms combine the labour used on farms, with that labour provided by hired workers (farms with more than 100 cows). Cows are less likely to graze in pastures and are more likely to be confined within large barns. Most farms still grow crops for feed, but also part of the feed ration is purchased, especially concentrate feed.

Milk production continues to slightly decrease and many small and several medium sized dairy farmers find it difficult to earn their living. Even if dairy producers generally declare that they like their work, in the last years many of them sold their animals and shifted in other business because milk prices are low and remain the same in the last 15 years, while the gap between milk prices and expenses narrowed.

There are powerful cost incentives behind farm consolidation. Larger dairy farms have substantially lower costs of production, on average, than smaller farms. Polarisation of primary production towards medium-sized and large (or very large) dairy farms on one side and small farms shifting to other core activities or sizing down towards micro-activities will continue. Only the large medium and large farms are making important investments for growth, efficiency and compliance with standards (food safety, environmental etc.).

Another trend is that some dairy farms, facing the difficulties they have with selling milk, low price and the late payments made by the industry, have switched to meat production. Small cow farms whose cows are calving buy calves on large farms and put two calves on each cow to suck the milk. In this way they enter the market less often to sell the calves and the price has been better for meat compare with milk. The same trend has observed on several small ruminant farms (mostly sheep) where all the milk is left to drink by the lambs who sell them for meat.

In the last five years, the large cow farms have invested in new barns, imported heifers, milking parlours, cooling system, waste management that reach several hundred Euro per farm. The small ruminants and small cow farms have done small investments that are reaching 5-20 thousand Euro per farm.

Most of the interviewed large and medium sized farms emphasized that have plans to invest in the near future (hesitate for 2021 because the situation is unclear of C-19), in stable construction, stable renovation, in agricultural/livestock machines/equipment and milking & cooling system.

7.3.2 Trends in dairy processing

Milk processing industry continues to undergo a major transformation. In the last years is observed the consolidation of the industry. In the last programming period, the number of milk processing units decreased by 11.4%⁷⁰, but the segment of large and medium sized enterprises is stronger, as the dairy plants in this segment are now more consolidated and modernized.

In last decade the large sized plants invested heavily 1-4 million Euro each (their own means, bank loans, supported form NSS and IPARD-like and IPARD-II) in technology (new units for yoghurt and cheese productions, UHT, technology to improve quality and adapt to international standards), storage, innovation, ITC and, marketing outreach. Two of the leading companies (Lufra and Erzeni) are clear market leaders and own the largest share of the market. The other large

⁷⁰360 milk processing plants in 2013 and 319 in 2018 (MARD)

and medium sized ones are competing with the biggest ones and have done investments in technology, storage, and distribution system.

The experience gained during these last years has made possible the better management of these businesses. In addition, the competition has led to the adaptation of good production and hygiene practices of the production as well as the management of the waste water in the large and small sized units. These transformations, the experience acquired and the results obtained encourages to continue on the same path. However, the market dominance from the two leading companies is difficult to challenge and most medium-sized and large processing plants have now processing over-capacity, so that investments are expected to continue, but will change in type of investments.

Increasing investments are expected to be devoted to improve raw milk collection and compliance with environmental standards. A possible expansion of the ongoing partnership initiative between enterprises of Tetra-Laval Group and Albanian dairy processing industry or an autonomous replication of relevant experience could contribute to increase investments in milk collection hubs.

Regarding the product specialization usually the small and mini processing are more specialized curd and cheese production (especially from sheep and goat milk) and butter, while the large and medium sized are more in pasteurized milk, UHT, yoghurt, skimmed-milk, butter.

The large and medium sized processing units want to continue investing in new technology, product diversification, innovation and environment protection, for the near future.

In medium and small-sized dairy plants there is strong need for investments to improve the standard operation procedures and equipment for monitoring the technical parameters (temperature, fermentation, the right equipment for pasteurisation, skimming, and filtering, cooling, ripening storage), packaging, marketing and, labelling of the cheese. However, the actual capacity to translate these needs into actual investments is limited.

8 CHAPTER 8: VALUE CHAIN ORGANISATION AND ENABLING ENVIRONMENT

8.1 VALUE CHAIN MAP

8.1.1 Profile of main actors in the distribution chain

Cattle/cow Breeders Profile

Smaller farmers who are breeding less than 10 cows⁷¹ typically lack knowledge regarding animal health and welfare and have problems with milk quality standards. Small farmers face market difficulties, translated mainly into relatively low prices which are in the range 35-42 ALL/liter. The milk is collected by the private collectors or processing company collector. Many of these farms are selling the milk directly to the open market or deliver their products to households, at the price is 60-80 ALL/liter.

The medium farms usually provide better feed to animals and have better hygienic conditions and milk quality standards. They tend to use milking equipment and cooling tanks (especially the farms breeding more than 20 cows). They typically sell all their milk to dairy processors – they are better positioned in relations with dairy processors and can achieve slightly higher prices than the smaller farms.

The large farms (e.g. 100 or more cows) have increased significantly the milk production and sales. They typically produce above 7000liter/milk/cow. The milk quality is high and such milk is used for UHT milk, as the SCC and microbiological load meets the standard. Milk price collected by the processing plants is 58-62 ALL/liter. The new trend is that they sell the calves seven days old as specialized in milk production (different from smaller farms which keep calves for longer time period).

Profile and categorization of cattle farms is provided in details in **Chapter 2**.

Small ruminants' breeders' profile

Small herds (less than 50 heads) are typically kept in the village and in most of the cases are grazing in the communal pasture by the member of the family that is breeding them or by village shepherds. The predominant system is the extensive one and usually such farms are mix, 2-3 cows and 10-20 small ruminants. They supply milk usually to local milk collectors or processors.

The majority of **large herds** of small ruminants are kept in the highlands in the north and south of the country, where are the abundant pastures that represent one of the important natural resources of the regions. In general, the milk is transported from the pasture to the small processing units, processing to cheese. The quality of milk is generally low (high level of somatic cells and microbiological load), as the milking hygiene is an issue.

However, there are a few modern specialized goat farms, where quality is pursued, as described below.

Prices of milk vary by the region for the sheep milk 70-90 ALL/litre while for goat milk 48-55 ALL/litre.

A special category, is made by large small ruminants specialized farms. Very few milk specialized farms are in Albania breeding ewes and does milk-oriented breeds such as Alpine and Saanen goat breed and Lacuna or Awasi sheep breeds. These farms are getting 600-800 litre/milk/goat or sheep and the semi-intensive animal husbandry system matches the standards set by modern small ruminants' milk farms in Western Europe.

These specialised farms have not a fixed marketing model: some of them have regular supply contracts with dairy plants, other follow an integrated business model, having their own processing facility and even some shops and others follow a mixed system, with both supply contracts and some artisanal processing capacity.

A more detailed profile and categorization of small ruminants' farms is provided in Chapter 2.

Milk Processing Plants Profile

The milk processing plants can be categorized in small, medium and large ones.

⁷¹Law "On Livestock Breeding", No 9426, date 6.10.2005, article 15.

The small plants are in rural / remote areas. Most of them in mountain regions are seasonal because they process mainly small ruminant milk. They use old/traditional technology, standards and hygiene in most of them is an issue, and for most of them the situation and challenges remained unchanged in the last years. They have no restriction or control of standards of raw milk and the processed products. They typically produce traditional cheese: i) kashkavall (hard) and, ii) feta-like (white cheese), and other dairy products (butter and “gjize”), usually not packed. They usually supply through informal channels small shops, traders (intermediaries) or even households directly. Their storage and transport facilities are basic (also because they mainly store/sell cheese).

The medium plants are usually located near milk production areas and are supplied by different types of farmers. Medium-sized processors produce mainly cheese, butter and curd, they supply local shops and traders. Some of them have their own shops through which they supply only their dairy products.

Large scale processing plants went through substantial modernization and even the medium sized dairy plants operate with good equipment and have developed a competitive product line. The large milk processors have invested mainly in technology and storage capacity. They are supplied by a wide range of farmers – they tend to apply written contract with large milk producers (whose milk is used for high quality products including UHT milk). They produce a wide range of products including pasteurized milk, skimmed milk, yoghurt, butter, cheese and fruit yoghurt, also UHT milk. They have organized their own distribution logistics (e.g. cold storage cars etc.) and supply both supermarket chains, traditional dairy shops and other outlets throughout Albania.

Larger processors tend to assist or advice farmers about milk treatment after vaccination, use of antibiotics and milking and post-milking hygiene. To achieve/improve standards, larger processors tend to use written contracts where milk quality and financial issue are stipulated in (for more details regarding farm contracting and coordination, see the following subsection).

Market and trading channels

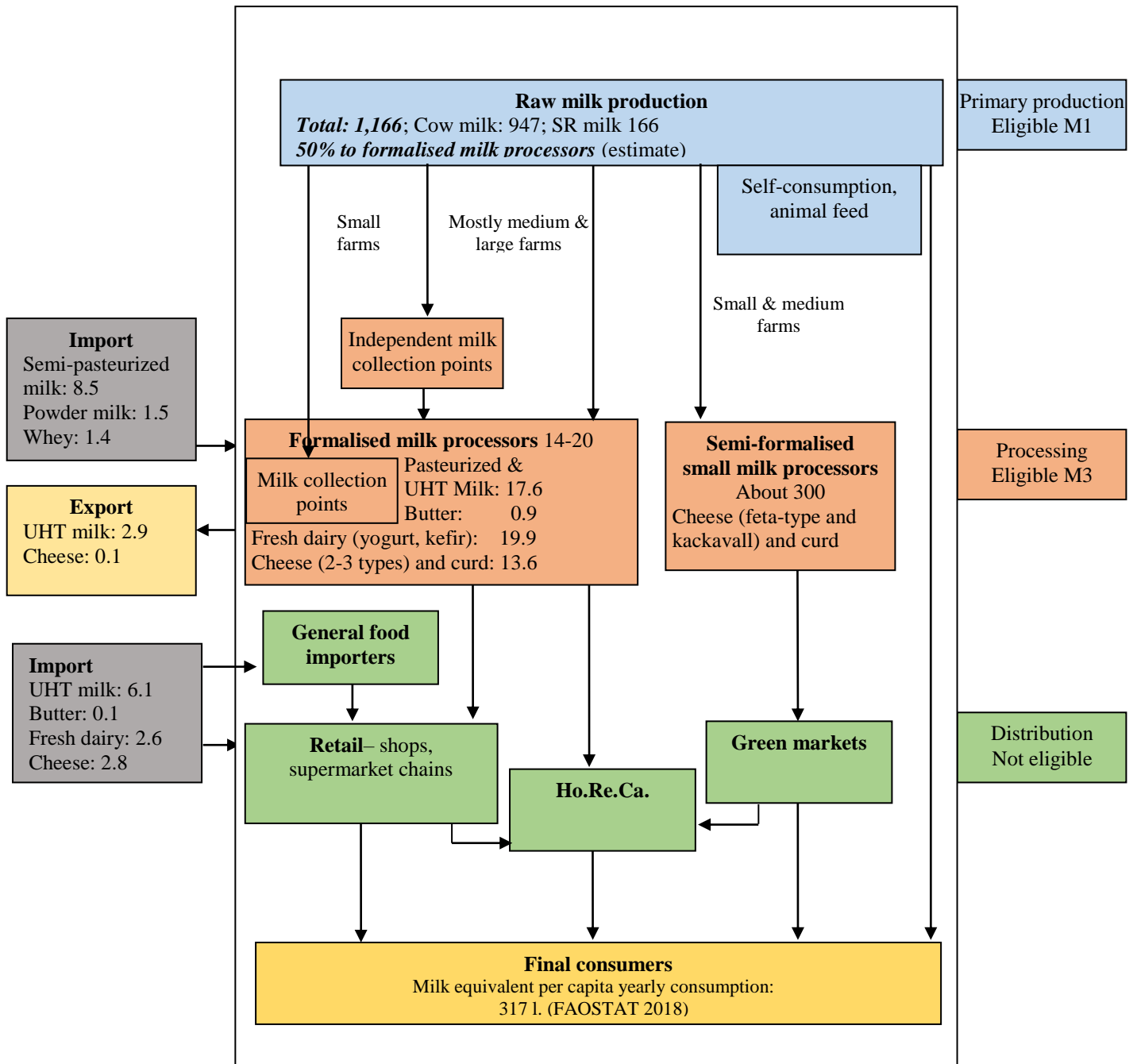
There are different traders' profiles. Wholesalers typically buy from smaller and medium size dairy processors and supply shops in urban areas.

There are four categories of traders:

- **Supermarket chains.** This channel is expanding. They are supplied from larger and middle size processors. Cheese is sold both packed/labelled and open.
- **Specialized shops of dairy products** – although they are specialized in dairy products they also sell a limited range of other food products. They emphasize quality of dairy products – they are typically supplied by small processors, and sell to households, all based on trust (cheese is hardly packed or labelled).
- **Convenience shops** - they are found in every neighborhood and sell a wide range of products including cheese. They are supplied by small or medium size dairy processors as well as from middlemen. Some of the shops of this category sell also products from larger processors – in that case they are typically equipped with a refrigerated counter where they store such products.
- **Bakeries** – some of them sell also dairy products, in addition to bread and bakery products – they typically have a refrigerated counter and are connected with one larger dairy processor.

As highlighted earlier, it is common to observe also short value chains – farmers supplying directly milk to households, and in some cases also dairy products processed on farm.

Figure 6: Value chain map
Data 2019 in 000 Tons



8.2 VALUE CHAIN COORDINATION: RELATIONS BETWEEN MILK PRODUCERS AND DAIRY PROCESSORS

Value chain coordination is crucial to improve value chain performance, especially compliance with food safety standards. In the milk and dairy commodity chain, the core issue is the relation between small farmers and large dairy plants. Actually, many of the constraints of this commodity chain are related to the trade relations between small farmers and large dairy plants.

A 2017 survey focused on small ruminants' dairy farmers⁷² shows that most dairy small ruminant farmers engage in short term or spot market exchange while the rest (around 44 percent) have long term relationships with dairy owners and managers. Thus, there appear to be limited coordination, resulting in challenges in the dairy and livestock sector. These results appear to be consistent across regions. The only outlier is represented by the region of Berat. In Berat is located Erzeni, one of the two largest milk processing companies in Albania, which emphasizes the use of contracts to ensure standards (see the case study later in this section).

Table 8.1: Long term relationship versus spot market or short-term relations by regions

Region	Spot market exchange/ short term relations		Long term relationship	
	No. farmers	Percentage	No. farmers	Percentage
Shkodër	32	56	27	44
Kukës	35	73	13	27
Dibër	31	67	15	33
Elbasan	32	65	17	35
Berat	11	23	36	77
Korçë	35	53	31	47
Total	176	56	139	44

Source: Gërdoçi et al. (2017)

Larger dairy farms are more likely to have stable relations with buyers, in the case of small ruminant sector⁷³. Trust, uncertainty⁷⁴ and investment in specific assets which are reflected in terms of flock size are key determinants of long-term relationships.

A previous survey with dairy cattle farmers provides a partially different picture, showing that most farmers regularly sell to the same buyer, as shown in the table below.

Table 8.2: Type of relations with buyers

Category	Frequency	Percent
Same buyer	143	99.3
Different buyer	1	0.7
Total	144	100.0

Source: FAO (2013)

However, having regular relations with a single buyer does not necessarily increase the quality of the relation, as small farmers are essentially price-takers.

Another recent study on cattle dairy sector in Albania found that several factors have a crucial role in farmers' engagement in contract farming, such as: i) farmers' trust towards the buyer, ii) dairy processor (buyer) capacity to

⁷²Gërdoçi, B., Skreli, E., Zhllima, E., & Imami, D. (2017). Determinants of long-term business relationships in the dairy value chain in transition countries: the case of Albania. *Studies in Agricultural Economics*, 119(1316-2018-168), 139-147.

⁷³Gërdoçi, B., Skreli, E., Zhllima, E., & Imami, D. (2017). Determinants of long-term business relationships in the dairy value chain in transition countries: the case of Albania. *Studies in Agricultural Economics*, 119(1316-2018-168), 139-147.

⁷⁴ "Milk producers face environmental and behavioural uncertainty in transactions with their buyers. Local supply and demand mismatch may contribute to price volatility and volume uncertainty (the volume requirements especially volume uncertainty (the volume requirements especially behavioural uncertainty too, because of the unbalanced negotiating power compared to dairy owners, resulting in contractual (although only verbal) commitment uncertainties. However, these different facets of uncertainty are very often seen by farmers as intertwined with each other. Uncertainty about volumes and price is often linked with opportunistic behaviour of dairy owners (behaviour uncertainty), not to the external market factors, although this might be the case." Gërdoçi (2017) op.cit.

influence attention to animal health and willingness to invest in partners farms, iii) farmers' risk aversion and, iv) need for innovation and obstacle to achieve it⁷⁵.

Box 3: Erzeni and its relations with its supplying farms

Erzeni is one of the largest dairy processors in Albania. It was established and it is still located in Berat and it has been operating for more than 25 years. Erzeni has been growing constantly. The company has implemented EUR10 million investments in the last years, relying on the latest technology from Italy. Erzeni is one of the largest dairy processors.

The company puts a strong emphasis on quality and safety standards, which is achieved both by advising farmers and through investment in modern production technology, cooling storage system etc. Erzeni stipulated written contracts with farmers, which include prices, payment terms and standards that the raw milk should have. The compliance with standards is the greatest challenge for the buyer to monitor and enforce. Low milk safety standards, expressed in various forms such as high microbe content and antibiotic presence, remain a great challenge.

Erzeni has invested in improving its laboratory capacities at the factories and milk collection centers and human capacities through employment of veterinarians to advise farmers. Nevertheless, awareness and enforcement always remain a challenge for all dairy processors. Being supplied by a cooperative enables higher milk quality as well as higher volumes and lower transaction costs.

Achieving high milk safety standards is a major factor in the cooperation between Erzeni and its suppliers, including the dairy cooperative Myzeqeja Farm (see also the following case/box). Erzeni supported the cooperative to establish a new modern milk collection center. Erzeni aims to improve safety standards, considering the low milk safety standard concerns. To tackle these gaps, the company is engaged in farmer education and awareness activities, including training. The company also provides training and advice through its own veterinary service.

Source: Imami et al. (2021) and field interviews

A recent survey shows that most surveyed dairy cattle farmers deliver the milk on farm. Thus, dairy processors organize milk collection. Almost 25% state that the farmers bring the milk to the processor, and only a few of them state that they bring the milk to the cooperative (see the following subsection on cooperatives for more details).

Table 8.3: Type of transport

Category	Frequency	Valid Percent
Directly on farm	166	71.60%
Transport to the buyer	63	27.20%
Collected by a cooperative	3	1.30%
Total	235	100.00%

Source: Sokoli et al. (2018)

8.3 COLLECTIVE ACTIONS

Cooperativism

Cooperation is still a limited feature among Albanian farmers. Despite the need for and benefits from cooperation, in post-communist countries including Albania agriculture cooperatives are not diffused as people are still less willing to engage in collective action. One of the reasons behind the lower willingness to cooperate in post-communist countries is that farmers are reluctant to the notion of cooperatives because of the reminiscence to the communist past.

Recent study results on cooperation in the Albanian dairy sector show that the role of local rules has an indirect effect on cooperation through social capital, the presence of leadership skills, reputation, and reciprocity as key determinants of farmers' willingness to cooperate⁷⁶ - scarcity of leadership may be an additional constraint.

A recent survey shows that more than about 45% of the farms show willingness to cooperate to buy inputs, pay for professional services and operate jointly equipment.

Table 8.4: Dairy farmers' willingness to cooperate (answer the following statements)

Statement	Indicator	Fully disagree	Disagree	Neither agree nor	Agree	Fully agree	Total
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⁷⁵Sokoli, O., XHoxhi, O., Imami, D., Skreli, E., Doluschitz, R. (2021). Contract Farming approach in the farm level: Evidence from the dairy sector in Albania. Working Paper.

⁷⁶Sokoli, O., Xhoxhi, O., Skreli, E., Imami, D., Doluschitz, R. (2021). "Are local rules the shadow factor in the development of cooperatives?". Working Paper.

		disagree					
I am ready to contribute as part of a group to pay jointly livestock specialist	Frequency	77	32	17	59	53	238
	Percentage	32%	13%	7%	25%	22%	100%
I am ready to contribute as part of a group to use jointly agriculture mechanics	Frequency	76	38	21	56	47	238
	Percentage	32%	16%	9%	24%	20%	100%
I am ready to be part of a group to buy jointly inputs	Frequency	78	26	25	47	62	238
	Percentage	33%	11%	11%	20%	26%	100%

Source: Sokoli et al. (2018)

In the Albanian context, marked by numerous deficits of public institutions and small farm sizes, the coordination task of ensuring sufficient food safety within the agri-food value chains can be realistically fulfilled by agricultural cooperatives⁷⁷. In addition, cooperatives benefit its members through enabling better market access (and better prices) as well as better services at lower cost. For more details, see the following case on Myzeqeja Farm.

Box 4: Myzeqeja Farm

Myzeqeja Farm is a group of farmers (cooperative) located in Gore (village) in the municipality of Lushnje. It is one of the few, if not the only successful cooperative, in Albania that functions as such. Members are located in Gore and the nearby village of Lumth. The main cooperative activities are milk collection and marketing, input provision, and agricultural machinery services. They started as a group of 12 farmers that begun to cooperate for producing animal feed (silage) in 1999. In 2004 they were registered as an association and in 2014 as an agriculture cooperative. Until 2006, the members cooperated only for animal feed production. When they received support from Heifer International, a charity organization, they enlarged and extended their activities. Then there was a need to professionalize management, as also they shifted to joint milk collection and sales. They started milk collection activity in 2006. Heifer International has provided support since the early days of transition to this group of farmers.

For all the members (farms), the main orientation and source of income is dairy cattle. Most member household farms have 2-5 head, 7 members have 7-15 head, while one has 20 head. Currently, the cooperative serves as the unique milk selling point for its members and other farmers. Although the members have not been forced by the cooperative to sell exclusively to/through the cooperative, there are no cases reported of farmers selling through other channels. The reason is that the cooperative offers the best terms compared to other buyers present in the area. That is also thanks to the favorable relations that the cooperative has established with Erzeni (leading dairy processor, described above).

The cooperative also provides mechanical services for producing animal feed at a lower price than other service producers and provides some of the inputs for its members. The members also sell calves and heifers. While the selling is carried out individually, the cooperative facilitates market contacts or arrangements. Veterinarian services are also obtained individually. However, the cooperative facilitates the relations with veterinarian who treat the members better (eg. applying lower prices). But for specific needs, the cooperative hires the veterinarian to provide group trainings.

According to Erzeni cooperation among farmers is the best way to make progress including milk safety standards, considering the small farm size, therefore the company has been very supportive to the supplying cooperative. Achieving high milk safety standards is a major factor in the cooperation between Erzeni milk processor and dairy cooperative Myzeqeja Farm. The cooperative has been very strict with its members regarding the standards of the delivered milk. Buying milk from the cooperatives not only ensures higher safety standards but also larger volumes and lower transaction costs for milk collection. Consolidation of milk collection is critical considering that most Albanian dairy farms are small

Farmers benefit from both higher milk prices and lower mechanical services prices when compared to other farmers who operate outside the umbrella of the cooperative, according to the interviews with cooperative members. Performance of member farmers is far better when compared to follow farmers who are not members of the cooperative – therefore the cooperative members tend to grow the flocks, while a reverse trends is observed in some parts among non-members.

Source: Imami et al. (2021) and field interviews

Role of sector associations

In the milk and dairy sector, there are two sector associations: i) The Livestock Entrepreneurs Association of Albania (LEAA) and, ii) the Albanian Dairy and Meat Association ADAMA.

LEEA is one of the strongest primary producers' associations in Albania, mainly due to its focus on providing services. The main activity consists in the coordination and support to the provision of insemination services, which is a key factor to improve the performance of the livestock sector. It also participates to several international development projects providing advisory and extension services for animal husbandry.

Box 5: The Livestock Entrepreneurs Association of Albania

⁷⁷ Imami, D., Valentinov, V., and Skreli, E. (2021). "Food Safety and Value Chain Coordination in the Context of a Transition Economy: The Role of Agricultural Cooperatives." *International Journal of the Commons*, 15(1).

The Livestock Entrepreneurs Association of Albania (LEAA), was established in 1999 and supported at the beginning by USAID project, with the main purpose of protecting the interest and supporting the businesses of livestock farmers. LEAA is the leading organization in Albania representing the majority of the Albanian Artificial Insemination Technicians and cattle & small ruminant farmers.

LEAA provides technical assistance through projects and its own internal organization structure, mainly related to breed improvement, and all issues related to it, including animal feed and hygiene. LEA assists several farmers' groups. LEA offers a wide range of services for its members and clients such as: breed and genetic improvement, breed assessment; information on animal feeding and nutrition, use of premixes; the expertise on livestock management; natural resources; pastures; farm economic analysis; product standards and quality; farm assessment; animal disease prevention and control; reproduction; hygiene related to animals, barn, and workers and milking.

Over the course of 20 years LEAA has implemented 29 projects working together with all leading donors. LEAA has provided support on capacity development initiatives for eight small ruminant groups throughout the value chain via training courses, technical assistance, and demonstration sites. The assistance has consisted of the identification of successful local shepherds, breed improvement, and establishing/strengthening relations between producers and processors through innovative pricing mechanisms. Specific support was provided to groups managing the "Ruda" local breed in Nizhavec, Podgorie, Alarup, Blace, Bratomire, the villages of Korca Region, and Caje in Kukes Region; group managing the "Bardhoke" local breed in Mjede village, Shkoder Region, and the "Hasi goat" in the Malsi e Madhe area.

Thanks to the assistance of LEAA, farmers have experienced breed improvement and improved overall farm performance.

ADAMA was established in 1997 to represent the interests of dairy & meat processing business; core membership is made by the largest main dairy plants of the country; however, among the members there are also medium and small dairy and meat processing companies. At present, ADAMA has 60 members.

Services are also provided to non-members if they are able to pay fees for services. ADAMA has a lab for chemical, physical and microbiological analysis which is used for raw milk, milk products as well as for meat and meat products. ADAMA is also actively involved in the implementation of international development projects, providing advisory services in milk processing; in some cases, it operates in parallel with LEAA, as it was the case of SARED project.

9 CHAPTER 9: IDENTIFICATION OF POTENTIALS AND NEEDS OF THE SECTOR

9.1 SWOT ANALYSIS AND POTENTIAL NEEDS OF THE SECTOR

Based the findings described in chapters 2 to 8 it is possible to summarize the points of strength and weaknesses, the opportunities and threats at production and processing level, as well as the SWOT synopsis of the sector as a whole. Considering the combined effect of each factor (i.e. strengths weaknesses opportunities and threats), possible actions and strategies for sub-sector (primary production and processing) and sector development were also produced.

9.1.1 Milk production SWOT analysis and proposed development actions

Milk production SWOT analysis

Strengths	Weaknesses
On-going improvement of cattle herds through artificial insemination	Low yields in fodder production.
Small ruminants' local breeds are well adapted to local conditions and products are appreciated by consumers	Poor quality of hay and silage in small and medium farms
A few large modernized milk farms (mostly cattle milk) with productivity comparable to EU Member States milk farms set a viable model	Majority of cows are crossbred with scarce genetic potential to allow a sizable growth of milk yield.
Some large SR farms with vertically integrated businesses and clear market strategies	Low milk yield from small ruminants
	Gap in milk production per head vs. potential - farmers do not exploit sufficiently their production possibilities
	Prevalence of several animal diseases
	Limited attention paid to animal welfare.
	Improper storage of manure. Increasing environmental threat caused by sub-sector evolution (small farms have no means to manage manure, large farms create potential environmental hotspot)
	Milk quality - Most dairy farms do not use milking equipment and cooling tanks which pose a risk to food safety.
	Milk quality National Minimum Standards are not known to most farmers.
	Very little production of organic raw milk, especially cow milk
	Fragmented production base. High share of non-specialized farms with very few animals.
	High milk production cost as compared with regional competitors. Low level of technology and labour productivity in milk production
	Strong farm heterogeneity (small and large), with huge differences of outputs/results between the best and the worst. The sub-sector is polarising
	High age of farmers, no successor. Labour and quality of labour is a problem. Working in rural areas is not seen as attractive.
	Persistent high level of informality in the sector penalize investments and slow down primary production sector reorganisation

Opportunities	Threats
Potential for larger fodder production	Socio-demographic trends and depopulation in mountain areas create negative outlook for small ruminants' sub-sector
Exploit dairy hub program with Tetra Laval and scale up the	Still unresolved issues of property rights management affect

experience, based on lessons learnt, also using existing bilateral cooperation tools	investments in stables and perennial forage crops.
Increase of dairy products consumption in large urban areas leads to overall increase in raw milk demand	Environment pollution due to overall farming and industry
Overall consumers preference for domestic products	Weak law enforcement in primary production compliance with legal requirements (animal health, hygiene in stables, management of manure and waste)
The reference legal framework is broadly harmonized to EU <i>Acquis</i> and is expected to remain stable.	Still incomplete legal framework on animal welfare
Milk production ranks high in agriculture policies priorities; NSS and IPARD consistently support milk production	Inadequate monitoring of plant protection products, additives and antibiotics residues
Access to a wider set of development support tools, increased flexibility in IPARD III structure and alignment to EU Green Deal could create a more suitable environment for the dairy production, especially small-ruminants	Persisting weakness of raw milk prices
The establishment of NAVPP is expected to improve commodity chain governance.	Availability of fresh milk and powder milk from other countries (especially Serbia) with very competitive quality/cost ratio
LEEA is a reliable and qualified service supplier	Animal Feed price increases
	Insufficient and inadequate provision of extension services
	Practice of large calves' weaning in small farms should be adapted to animal welfare requirements
	Interests of dairy farmers, especially small ones, are scarcely represented by agriculture and sectoral representative and advocacy groups

Milk production proposed development actions and strategies

Exploitation (<i>strengths-opportunities</i>)	Improvement (<i>weaknesses-opportunities</i>)
Continue and expand support to improve stables and technology, especially in cattle milk farms	Improve monitoring of animal health and welfare
Support the small ruminants' farms to improve stables and technology	Improve animal feed production at farm level through new equipment and technology
Support for the expansion of artificial insemination that help increasing milk yield	Give priority to investment to improve milk quality (milking machines, cooling tanks etc.)
	Support investment for stable improvement and building new ones
	Support the investments for milking machines and cool tanks for small ruminants
	Support the investments for milk collection points and seasonal dairy plants in summer pasture areas (diversification of primary producers) using solar panels
	Implement an overall policy of incentives to improve raw milk quality (milk collection points/hubs, subsidised counselling, targeted NSS).
	Provide more effective trainings to improve hygiene at cow and small ruminants
	Improve the marketing actions
	Awareness and Improve the knowledge of farmers and livestock experts on milk quality, animal welfare etc.
	Provide more and more effective trainings to improve hygiene in dairy cattle and small ruminants' farms

Adjustment (<i>Strengths-Threats</i>)	Protection (<i>weaknesses-threats</i>)
The system of land registration should be speeded up and the RUDA database should be timely kept up-to-date	Embed traditional small ruminants' milk and dairy value chain within Local Action Plans to be financed through LEADER
Improve the monitoring system through AKVMB and NFA	Shift more smaller dairy farms to meat-oriented production, using milk as animal feed
Blend stronger law enforcement and preferential access to IPARD for investments in farm waste treatment	Improving use of technology in animal feeding
	Increase incentives to produce organic milk.
	Support marketing campaign to promote artisanal dairy products
	Improve performance of public extension services
	Support the fodder and cereal production

9.1.2 Milk processing SWOT analysis and proposed development actions

Milk processing SWOT analysis

Strengths	Weaknesses
Technological changes in large dairy processing plants have a positive impact on quality of milk products	Difficulty to source quality milk from small farmers (hygiene). Most dairy farms do not use refrigeration tanks which pose a risk to food safety.
Large and medium-sized processing plant substantially improved range and competitiveness of milk and fresh dairy products offered	Underdeveloped raw milk collection systems in certain parts of the country. Poor infrastructure for milk collection in mountainous areas.
Most of the large and medium processing units apply HACCP and majority applied as well ISO 22000 which are the EU pre-requisite for export.	Poor technological expertise and hygiene in small dairies (baxho)
Management knowhow generally appropriate to business size: several processing plants have 2-3 experienced owners/managers; younger generation (family members) is involved in the business.	Dairy plants use only part of their processing capacity, especially large ones (average 60%-70%)
	Few established brands. Most cheese is sold without a brand
	Difficult to challenge the dominant position of the two dominant actors, due to limited market size and level of investments required to be competitive; little space for newcomers
	Seasonal price fluctuations for the raw material
	Very few companies treat waste and wastewater according to norms.

Opportunities	Threats
Increase of dairy products consumption in large urban areas	Increasing competition from milk and dairy imported products
Priority sector for agriculture policies and support facilities (IPARD)	Commodity chain governance and law enforcement still insufficient (traceability)
Increased consumers' income and market segmentation create space for products with higher added value	Lack of specific strategies for the development of bigger and smaller processing plants.
Segmentation of demand creates conditions for more articulated marketing policies: widening product range, development of premium product lines, artisanal and GI production	Weak demand for goat dairy products
Potential to increase cheese export	Increasing cheese imports, offering very wide range of products and good price/quality ratio
The legal framework on production, collection, processing of milk and milk-based products is updated and harmonized	Inadequate monitoring of plant protection products, additives and antibiotics residues
Consumers' preference for Albanian dairy milk products from the current consumers	Unfavorable VAT regulation for formalized the milk processors

Milk processing proposed development actions and strategies

Exploitation(strengths-opportunities)	Improvement(weaknesses-opportunities)
Enlarge milk collection network profiting from spare capacity, market opportunities and management capacity to deal with increasingly complex	Support the waste treatment. Improve the waste management in medium and small dairies
	Widen the small dairy plants range of products; develop artisanal products
	Support investment to improve technology in medium and small dairy units.
	Update the whole milk cooling chain, including support to famers (cooling equipment, transport system, quality control system)
	Support medium and small dairies for traditional products
	Complete harmonization with <i>Acquis</i> (recovery an se of by-products) and enforce existing environmental norms
	Upgrade the professional and educational level of producers

	and the services in agriculture.
	Improve the RUDA system for milk traceability.
	Improve raw milk and milk products monitoring system
	Better milk quality testing and payment systems based on quality will contribute to the awareness of quality at farmers' and collectors' level.

Adjustment (<i>Strengths-Threats</i>)	Protection (<i>weaknesses-threats</i>)
Bring in the checked the Albanian product brand	Improve the controlling and monitoring system of residues of chemicals and antibiotics in milk
Establish quality schemes to characterize products from the territory, including GI	Harmonize VAT at production and processing or reduce gap between raw material and final product VAT rate
Increase NFA performance and ensure full operational capacity of newly established NAVPP	Support marketing campaign to promote dairy domestic products
Strengthen public extension services and ATTCs	
Increase consumer awareness on milk and dairy safety and quality to help further market segmentation and reduce consumers acceptance for informal market channel	

9.1.3 Milk and dairy sector SWOT analysis and proposed development actions

Milk and dairy sector SWOT analysis

Strengths	Weaknesses
Favourable climatic conditions and tradition in livestock breeding	High informality in the milk supply chain
Considerable number of small ruminants' local breeds that are well adapted to local conditions and products are appreciated by consumers	High production costs and relatively low prices paid to small producers makes formalized trade channels scarcely appealing for most small farmers
Presence of good examples of efficient and specialised large dairy farms	Small and inefficient fodder and animal feed production
Large goat farms provide an alternative model for goat breeding	Traditional small ruminants dairy farming is not profitable anymore: farms are increasingly meat-oriented
Presence of a large number of milk processing plants in the country	High seasonal fluctuations in milk production
Leading milk and dairy processing segment made of efficient and modernised large dairy processing plants	The whole sector is becoming polarised between few medium-large formalised actors and many small semi-informal or informal operators, creating an overall negative outlook for sector development
Expanding network of milk collection points	Underdeveloped raw milk collection systems in most of the country. Poor infrastructure for milk collection in mountainous areas.
Technological changes in large dairy processing plants have a positive impact on milk products	Limits in milk collection and market outreach makes it difficult to reduce overcapacity of large modernized industry
Most of the large and medium processing units apply HACCP and the majority ISO 22000 - the EU pre-requisite for export. Established network of specialized agro-input dealers (seeds, fertilizers, animal feed) and veterinary pharmacies.	Total milk production is stagnant; increasing for goat milk, decreasing for sheep milk
	Scarce compliance with raw milk health and hygiene standards.
	Inadequate raw milk monitoring system: farm and milk production registers are often incomplete or not kept at all; raw milk quality controls are often not made using proper sampling system
	Inadequate farmers knowhow on milk Minimum Standards, hygiene in milk collection, animal husbandry, management of manure and waste.
	Scarce compliance with raw milk health and hygiene standards.
	Difficult relations farmers – processors, especially with small farmers.
	Scarce measures and investments for environmental management, especially at farm level and in small dairy units. Largest dairy farms risk becoming pollution hotspots.
	VAT regulation is currently a disadvantage for the formalized milk processing sector

Opportunities	Threats
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Milk and dairy sector ranks high in agriculture policies priorities; NSS and IPARD consistently support milk production and IPARD dairy processing	Increasing competition from other regional producers of milk products: it is easier and more cost/effective to import milk and powder milk than collect it from small farmers, even at lower prices
The Veterinary and NFA laws are amended, NAVPP is established	Commodity chain governance and law enforcement still insufficient, especially milk traceability.
Increasing market segmentation provide opportunities for marketing, developing new products and pricing	Inadequate monitoring of plant protection products, additives and antibiotics residues
Private-public partnership to develop improved milk collection points (Tetra-Laval milk hubs)	Lack of specific strategies for the development of bigger and smaller processing plants.
The legal framework is broadly harmonized to <i>Acquis</i> and is expected to remain stable in the near future.	Eco-pastoral systems are decaying: depopulation, loss of pastures, increasing damage to ecosystem
Potential from agro-tourism for artisanal dairy production	Mobilize a wider range of rural development tools to support mountain and inner areas, where eco-pastoral systems are declining
Two ATTC (Korçe and F/Kruje) specialized in cattle and small ruminants	20% VAT regulation is currently a disadvantage for the milk processing sector
	Non-functioning of the Committee of Dairy Experts in NFA
	ATTC (F/Kruje and Korçe) suffers from shortage of qualified staff and insufficient budget

Milk and dairy sector proposed development actions and strategies

Exploitation (<i>strengths-opportunities</i>)	Improvement (<i>weaknesses-opportunities</i>)
Support the increase of number of large specialised dairy farms	Increase NFA controls, better targeting reduction of informality; speed up the establishment of NAVPP control system, improve RUDA effectiveness
Support improvements in milk collection (Update the whole milk cooling chain, milk hubs, transport system, quality control system)	Support enhanced fodder crops and animal feed production, also using by-products from other value chains.
Support investment both at farm and processing level in the regions with potential in production and processing.	Facilitate the relations between farmers and processors and other stakeholders, providing extension and advisory services also through milk collection points
Support the NFA-Committees to conduct necessary scientific studies for risk assessment in the field of food safety and animal feed	Improve the milk collection system, especially in small farms
	Increase milk quality testing and improve payment systems based on quality.
	Increase controls and establish preference criterion for investments in manure and waste management if dairy farms and dairy plants.
	Increase dairy farmers' awareness and knowhow on existing regulations on animal health, animal welfare, milking hygiene, waste and manure management. Involving private and public extension services and giving a more proactive role to NFA and NAVPP inspectors (not only sanctioning)
	Collaborate on applied research & partnerships with industry to strengthen relevance of research and enhance the transfer of new knowledge to end users

Adjustment (<i>Strengths-Threats</i>)	Protection (<i>weaknesses-threats</i>)
Utilise a wider range of available tools to support the dairy sector (e.g. all IPARD III measures), including measures for restoration of ecosystems	Improve the controlling and monitoring system and implementing milk traceability
Embed the milk hub programme in a larger initiative using existing bilateral development programmes and pledged resources, including those ones for internal areas development	Start back to invest in pasture maintenance and watering points; almost no investments in the last 30 years
Utilise agro-tourism development as a leverage for the sale of artisanal food products, including dairy products	Mobilize a wider range of rural development tools to support mountain and inner areas, where eco-pastoral systems are declining
Finalise the missing parts of the GI registration and management/control system	Overall revision of VAT regime on inputs, equipment, and food products.
	Improve the situation with Extension Agencies and ATTCs: re-training of staff, introduce a new generation of extension service providers

9.2 ASSESSMENT OF INVESTMENT NEEDS AND POTENTIALS

9.2.1 Primary production

Medium-large farms and large farms (those with more than 50 dairy cattle or those with more than 200 dairy small ruminants) are expected to absorb the large majority of investments. The outlook for medium-small and small farms is not positive and, as a consequence, also their capacity to invest seems minimal.

Government programs and private initiatives by dairy processing companies have been established to support upgrading and growth of milk producers, to increase the viability of their activity. However, such upgrades are unlikely or even impossible to be realised on many small-scale farms.

The most commonly required investments in material assets are expected to include: i) investments to improve animal welfare (construction of new barns, improved quality feed, TMR equipment, cow cubicles), ii) introduction of milking equipment and cooling systems, iii) investments to improve quality of silage and hay, using new farm machinery and equipment.

More emphasis should be also given to measures to improve the hay quality production and storage, *in small and medium farms*.

A badly needed category of investments which so far did not generate a comparable actual investment flow is that one related to proper management of manure and breeding waste. This would include a wide range of investments, including improvement in the layout of barns and stables, manure handling and on-farm infrastructures.

There is little investment capacity in small farms; however, there are conspicuous investment needs and room for improvement. To improve the production and management of medium and small dairy cattle and small ruminants' farms, the key areas for improvement would be the following: i) animal nutrition, ii) housing conditions, including shelters, which need radical improvements iii) in-stable hygiene of animals and good milking practices and, iv) continuation of the process of dairy livestock genetic improvement.

Investments needs and potential in dairy cattle farms

Large cattle farms (51 cows and more) have potential to absorb larger investments for improving animal housing, equipment for the preparation of quality hay and silage (Round Baling and Wrapping), new milking equipment (e.g. rotolactor), the animal waste treatment, to install equipment and facilities to produce renewable energy (biogas, solar) which will lead to reduction of gas emissions, and to contribute to EU Green Deal alignment. Based on IPARD II experience, the few largest farms have the capacity to absorb investments in the range of 05 M Euro each.

Medium-sized cattle dairy farms (11-50 cows) have the potential to absorb some million Euro to invest in improving animal housing conditions, milking equipment (parlour type), and treatment of the animal waste by biogas production. In addition, they could invest in improving animal husbandry practices and farm productivity, including: i) genetic potential improvement, buying pure breed animals or gradually improving available stocks through artificial insemination with high quality semen; these investments would be primarily addressed to dairy cattle but would also include sheep and goats; ii) the improvement of fodder production purchasing hay binder machines; iii) improving feeding system with Cattle Feed Mixer Machine; iv) improving hygiene practices (milk cooling tanks) which will contribute to improve animal health and welfare within the framework of "One Health" approach⁷⁸.

Investments in basic infrastructure and equipment are much needed, but conditions are set to invest also in items with higher technological content, which could much enhance productivity and food safety. This is the case of milking robots. For the largest farms, investing in at least one milking robot unit may seem an unrealistic wish, but the same opinion was for rotolactor 10 years ago, and now there are several farms that are using it, not only for cows but also the small ruminants.

More in general, investments for milk collection and cooling systems are needed. In many cases the milk collection from small farmers is unacceptable with very low hygiene conditions. Collectors need to have cooling tanks, even the vans used to collect the milk from farmers.

Investments needs and potential in small ruminants' dairy farms

⁷⁸"One Health" approach stresses the relationship between animals, humans and the planet they share and the concept that healthy animals contribute to human health

In small ruminants' dairy farms, the cold chain at farmer level is missing, with very few exceptions. Even for the future the investment in cooling system at small ruminants is expected to be limited because given that these farms are in remote areas where electricity is missing.

Many of the small ruminant farm owners want to change the management of their farm and if the support exists, they will introduce changes and improvements such as new barns and milking equipment.

In small ruminants the most needed investments include: i) new stable construction and renovation; ii) improving production by establishing new large-scale dairy farms (Alpine and Saanen goat breeds and Awassi, Chios, Lacaune sheep breeds); iii) improving hygiene and quality in milking system, including hygiene in milking practices, animal health, equipment and facilities.

9.2.2 Investments needs in dairy processing

There are real opportunities to support investment for small and medium processors such as: i) increasing and improving milk processing capacity (construction of new lines and renovation of the existing ones), ii) expanding processing and storage capacity, iii) purchase of quality control equipment (laboratories), iv) optimize the use of energy, through energy-saving measures (more efficient equipment, heat-recovery methods etc.) and production of renewable energy for the needs of the dairy plant.

Interventions to improve food safety standards in dairy processing companies, especially in small processing plants and mini-dairy units) needed more efforts and time for creating awareness and demonstrating benefits and this should be strengthened by active involvement of IPARD measures. The relatively high importance of agriculture and food processing to the overall economy (in terms of both its contribution to the GDP and the potential for sector development) demonstrates why agro-processing (including milk processing) is a priority sector for the MARD. The implementation of the IPARD programme, together with other national and donor-driven programmes, is paving the way for the positive development of the sectors.

The consolidated milk processing factories have invested in cows' milk collection system (cooling tanks installed at large and medium sized farms, and refrigerator trucks), however such investments must be made by processors who do not have these systems installed. Also, several milk processors are looking to invest in UHT lines, fruit yoghurt, refrigerated means of transport, and treatment and utilisation of waste.

Large processing plants have already made the main investments they needed, however the demand for investments would be from the medium and mini milk processing for improving the technology and storage capacity. The processing capacity of the plants is used 50 - 60% as the result of limited quantity of milk.

In medium and small-sized dairy plants there is strong need for investments to improve the standard operation procedures and equipment for monitoring the technical parameters (temperature, fermentation, the right equipment for pasteurisation, skimming, and filtering, cooling, ripening storage), packaging, marketing, and labelling of the cheese.

In many cases, these investments should be mandatory to comply with national standards (e.g. for treatment of processing waste), but they will be implemented only if controls will become more effective, forcing smaller semi-informal operators to comply with norms or terminate their operations.

It would be of interest to support young people or returned emigrants with start-ups for new milk processing lines especially for producing local/typical/new products. It is the sector with highest potential for investments contributing to EU Green Deal alignment, particularly in the *farm-to-fork* component. Investments for the large processors could be focused on certified products, to products that should be under consideration to be granted GI recognition, as well to start the investments for solar energy to increase efficiency and start transition to the EU Green Deal.

Regarding small dairy processing plants, needs are high, but actual potential is limited.

Measures suitable to address the transition challenges present in dairy sector vary depending on supply chain level and the specificities of the challenge. Some require solutions on the national policy level, others can be met through capacity building and yet others necessitate public and/or private investment.

9.2.3 Typologies of needed investments with higher potential

There are real opportunities to support investment for small and medium dairy production and processing companies:

Primary production

- *Improved waste management* is the most important investment area.
Large and medium sized farms should invest and are expected to invest in improving barns infrastructure, manure handling, equipment and structures for manure management. This is a must, and investments must be spurred also by increased control for completion with environmental norms. If the trend is towards consolidation of primary production (i.e. fewer, larger dairy farms, especially in lowlands), then the issue of improper manure and waste management will become much more compelling.
For the small farms, the situation is more problematic, as their individual polluting capacity is lower, but their large numbers create a major threat in terms of water pollution, public health threats and climate change impact.
For a part of these small farms (those having not less than 10 milking cows or 70 small ruminants) there will be a need of more intensive support, as compared with the one that IPARD can offer, in the form of suitable policies and additional public investment (e.g. through NSS).
Even Smaller enterprises have not the capacity and knowhow to invest in this area. In this case there is a major gap between needs and actual potential for investments.
- *Investments for new barns, milking & cooling systems.* These investments are key to increase performance in primary production and value added along the whole supply chain.
- Capacity building measures (education, training) for farmers to improve feeding, milk yield and quality, farm and waste management. This will be possible through a combination of tools: i) improvement of public extension services, ii) expansion of the milk hub network, where also some advisory is provided and, iii) flexible use of IPARD Measure 4.
- In an effort to stimulate cattle herd improvement and farm size increase, it could be considered the opportunity to provide direct support (through NSS) for farmers who are purchasing improved breeds cattle and small ruminants.

Dairy processing

- *Improving dairy plants, especially medium and small sized ones.* Needed investment include construction of new lines and renovation of the existing ones. Major investments have been already done in leading dairy plants, so improvement should be focused on medium and small sized viable dairy plants.
- Investments for quality control equipment, including laboratories; these investments are particularly needed in larger dairy plants.
- Investments for the treatment of water used in the process of processing milk and milk-based products
- Investments for waste processing unit in large and medium sized plants and septic installations/system in the small sized ones. These investments are mandatory to comply with national standards, and smaller semi-informal operators should be forced to comply with norms or terminate their operations.
- Investments to improve milk collection, including milk collection hubs, milk tanks, transports
- Investments in energy efficiency and production of renewable energy for self-consumption.
- investments to establish quality schemes

10 CHAPTER 10: IDENTIFICATION OF TRAINING AND ADVISORY NEEDS FOR THE SECTOR

10.1 TRAINING AND ADVISORY NEEDS TO VALUE CHAIN ACTORS

Training needs assessment is one of the crucial steps towards identifying the area of farmers/processors/extension, interest, design and development of curriculum that can best suit to the existing real conditions of farmers.

Farmers need to be trained and advised regarding cows and small ruminants' breeds, animal feeding, nutrition, feed nutrients content etc., in order to get the highest production. A training need which is often neglected is that one related to the improvement of forage harvesting and storage, especially hay.

According to the interviews conducted with the stakeholders of the dairy value chain training topics are described in **Error! Reference source not found.**, and **Error! Reference source not found.**

Table 10.1: Farmers needs for training and advice and the service providers

Farmers training needs	Possible service providers
1. Feeding management, including: <i>modern fodder production and harvest management; hay and silage preparation technology; feed ration calculations; pasture management for small ruminants; advantages of premixes in compound feed in relation with production and reproduction; feeding mistakes that influence cows health ("production diseases"); feeding mistakes that influence the quality of raw milk (fat and protein content); feed ration preparation according to cows and small ruminants' physiological stages of production; adequate amount of compound feeding, according to the breed, yield and production stage; feed ration for the calves, lamb and kids.</i>	<ul style="list-style-type: none"> • ATTC of Fushe-Kruja and Korça • RAAE extension staff
2. Animal welfare and the hygiene of stables, cows and environment, including: <i>stable construction, animals, feeding and watering space; cows body hygiene, hoof control; care of the dairy animals at the time and after of calving/lambing/kidding; manure and slurry storage and treatment and environmental aspects.</i>	<ul style="list-style-type: none"> • ATTC of Fushe-Kruja and Korça • RAAE extension staff • Private veterinarians • Projects and NGOs
3. Milking and milk hygiene, including: <i>good milking practices under special concern of udder health and hygiene; udder health and treatment; introduction of pre and post-milking teat dipping which is essential to control the spread of mastitis organisms during milking; advantages of using milking machines and cooling tank.</i>	<ul style="list-style-type: none"> • ATTC of Fushe-Kruja and Korça • RAAE extension staff • Private veterinarians • Projects and NGOs
4. Reproduction, including: <i>indicators of infertility; methods of heat detection; artificial insemination and its role.</i>	<ul style="list-style-type: none"> • ATTC of Fushe-Kruja and Korça • RAAE extension staff • Private veterinarians • Projects and NGOs
5. Animal health, including: <i>animal disease control; animal breeding and herd management; identification, management and control of main diseases; isolation of infected animals; identification, management and control of main parasites; deworming.</i>	<ul style="list-style-type: none"> • ATTC of Fushe-Kruja and Korça • RAAE extension staff • Private veterinarians • Projects and NGOs
6. Other topics, including: <i>importance of record keeping; business and finance plans; calculation and analysis of basic economic and financial indicators; contracts and sales with buyers; how to apply for IPARD supported investments in agriculture holdings, standards.</i>	<ul style="list-style-type: none"> • RAAE extension staff • Private consultants • Projects and NGOs

Source: Authors interviewed with farmers and expert assessment 2020.

Table 10.2: Milk processing workers/managers needs for training and advice and the service providers

Milk Processing workers/managers training needs	Possible service providers
1. The importance of milk samples and testing.	<ul style="list-style-type: none"> • Faculty of Biotechnology and Food- AUT • Private consultants
2. Somatic cells and microbiological load.	<ul style="list-style-type: none"> • Faculty of Veterinary- AUT • Faculty of Biotechnology and Food –AUT • Private consultants
3. Hygiene standards, GMP, ISO, HACCP- advantages.	<ul style="list-style-type: none"> • Faculty of Biotechnology and Food –AUT • Faculty of Veterinary- AUT

	<ul style="list-style-type: none"> • Private consultants
4. Quality of production, storage, logistics and shelf control.	<ul style="list-style-type: none"> • Faculty of Biotechnology and Food –AUT • Faculty of Veterinary- AUT • Private consultants
5. Waste water treatment for dairies.	<ul style="list-style-type: none"> • Faculty of Agriculture and Environment- AUT • Private consultants

Source: Authors interviewed with processors and expert assessment 2020.

10.2 SUPPLY OF TRAINING AND ADVISORY SERVICES

Present situation

At present, farmers get knowledge and receive advice from different sources:

- (i) *Education and research:* Agricultural University of Tirana and Agricultural Faculty of the University of Korça, and higher agricultural vocational education schools.
- (ii) ATTCs (namely Fushe Kruje and Korçe).
- (iii) *Input suppliers,* individual veterinarians or commercial extension agents, veterinary centres, private operators of artificial insemination
- (iv) *National and local non-governmental organizations / NGOs* and farmer business organisations / FBOs
- (v) *Other relevant public institutions/agencies*
- (vi) *International partners' current programmes and projects*

Training courses are offered by public and private training centers. There are 10 public VTCs that are today under the supervision of National Employment Service located in eight regions (Durrës, Elbasan, Fier, Gjirokaster, Korçe, Shkoder, Tirana and Vlore)⁷⁹. These centers are offering vocational skills training to people who are unemployed or looking for retraining to quickly enter the labour market⁸⁰. Recently, curricula on milk processing and milk-based products was developed by the Elbasan Regional Directorate of Vocational Education and Training.

Several associations (such as LEAA, RASP, ADAMA, ALMAKO TIRANA Centre, NUCLEUS,) working in the field of agriculture and rural development are engaged in short term trainings with farmers, and are licensed by the National Licensed Centres, and are providing certificates to the participants.

Prospects and development path at institutional level

In the long term, the first tool to increase farmers' knowhow is the professionalization of farmers themselves; in this respect, technical and vocational training institutes should play a key role.

The role and capacity of the advisory and extension services provided by public bodies, first of all by MARD extensions service must be also analysed, in order to assess the available options to match training needs with training supply provided by existing public services. This analysis will provide information to better focus to the advisory and counselling activities that can be provided through international development initiatives and IPARD III Measure 10.

10.2.1 Technical and vocational training

Vocational Education and Training (VET) together with active employment and job creation policies remain high on the agenda of Government of Albania. In this framework a new VET Law⁸¹ was adopted in 2017, replacing the 2002 Law and its amendments. The new law aims to complete the legal framework, create and develop a unified VET system responsive to the socio-economic and technological changes, in full accordance with the needs of the domestic and global labour market. It contains novelties regarding the governance framework and an increased autonomy of VET providers. National Agency for Vocational Education and Training and Qualifications (NAVETQ) under the responsibility of the Ministry of Finance and Economy is responsible for developing the system of vocational qualifications based on the labour market needs and in line with Albanian Qualifications Framework.

The majority of the training programmes follow a 2+1+1 structure, consisting of a two-year basic vocational training, one year of specialisation and one-year consolidation. Upon completion of the final examination, students are awarded both a

⁷⁹National Agency for Vocational Education and Training and Qualifications- <http://shkp.gov.al/trajnime-4/>

⁸⁰Review of Albania's Vocational Education and Training System, May 2020

⁸¹15/2017 date 16.02.2017

certificate as a Technician or Middle Manager, corresponding to level 4 of the Albanian Qualifications Framework, and a Vocational State Matura Diploma, allowing access to tertiary education.

According to the legislative framework, VET governance rests mainly in the hands of government, the national agencies and the public VET providers. The ministry in charge of VET is the Ministry of Finance and Economy, which closely cooperates with other central-level institutions such as the Ministry of Education, Sports and Youth and its subordinated institutions in VET-related issues such as recruitment and continuous professional development of teachers of general subjects or the organisation of the Matura Exams for secondary VET students.

There are eight schools offering agricultural vocational (Berat, Durres, Elbasan, Fier, Korçe, Pogradec, Shkoder, and Tirane)⁸², but only two of them offer veterinary and animal production knowhow (Shkoder, Fier), and one is offering food technology know-how (Durres). The number of students graduating from agricultural vocational high schools is much *smaller* as compared to two decades ago. The number of graduates from agricultural vocational education and training schools is now several hundred per year⁸³.

A new project (PEMA – Project of Emilia-Romagna for Albania)⁸⁴ started to support the Ministry of Economy and Finance in policy advice and in the establishment of an agricultural multifunctional Vocational Education and Training Centre in Fier Region, in order to increase the employability of VET graduates and to contribute to the enhancement of the country competitiveness in the agriculture and in the agro-food processing sectors.

The Department of Animal Science⁸⁵ at Agricultural University of Tirana (AUT) offers two years professional study program in Zoo-Veterinary (including milk production)

In addition, the department of Animal Science offers both bachelor and master degree programs in Animal Production (including milk production), while the faculty of Biotechnology and Food has also its own dairy laboratory intended mostly for the student practice.

10.3 IMPROVING PUBLIC ADVISORY AND TECHNICAL SERVICES

The Advisory Service in Albania underwent major changes after 1991 when agriculture began its privatization and land was distributed to families working in centralized agriculture state farms and cooperatives. The advisory service in Albania, as it stands today, started in 1992, and for the period 1994-2001 was supported by the EU and Dutch Government, with technical assistance in training the agriculture specialists with the concepts and principles of extension and communication. During this period, private extension services have also emerged.

Several authors emphasize that the impact of government/public extension service on farm performance and, the coverage of public extension services are limited, while the private advisory services are the main source of advice for most of the modernized medium and large farms⁸⁶.

As whole, notwithstanding improvements in some private and public services, most services are poorly provided or non-existent.

ARES – the present structure of Public Extension Service

After 2001 the extension service went through several “reforms” and since March 2018⁸⁷ the advisory service was reorganized. The recommendation of the Improvement of the Performance and Quality of the Public Extension Service in the Livestock Sector project (IPESA) was to create an organization based on semi-independent agencies with decision-making management autonomy overseen by a board, ultimately responsible to the Minister of Agriculture. The idea was to establish a more cost-efficient structure that more easily adapts to the market and the farmers’ needs. However, the restructuring and related strategic planning is an ongoing process and more and positive change is possible in the medium and long term.

At present, the Albania National Extension Service (ANES) is funded 100% by the MARD. Its structure is shown in **Figure 7** below

⁸²http://www.vet.al/ofruesit_arsimit_profesional/publike/teknike

⁸³Strategjia Ndejsktoriale për Zhvillimin Rural dhe Bujqësor (2014-2020)

⁸⁴<https://www.ifo.it/en/servizi/institutions-schools-and-international-activities/international-projects/support-to-vocational-education-and-training-through-innovation-in-albania>

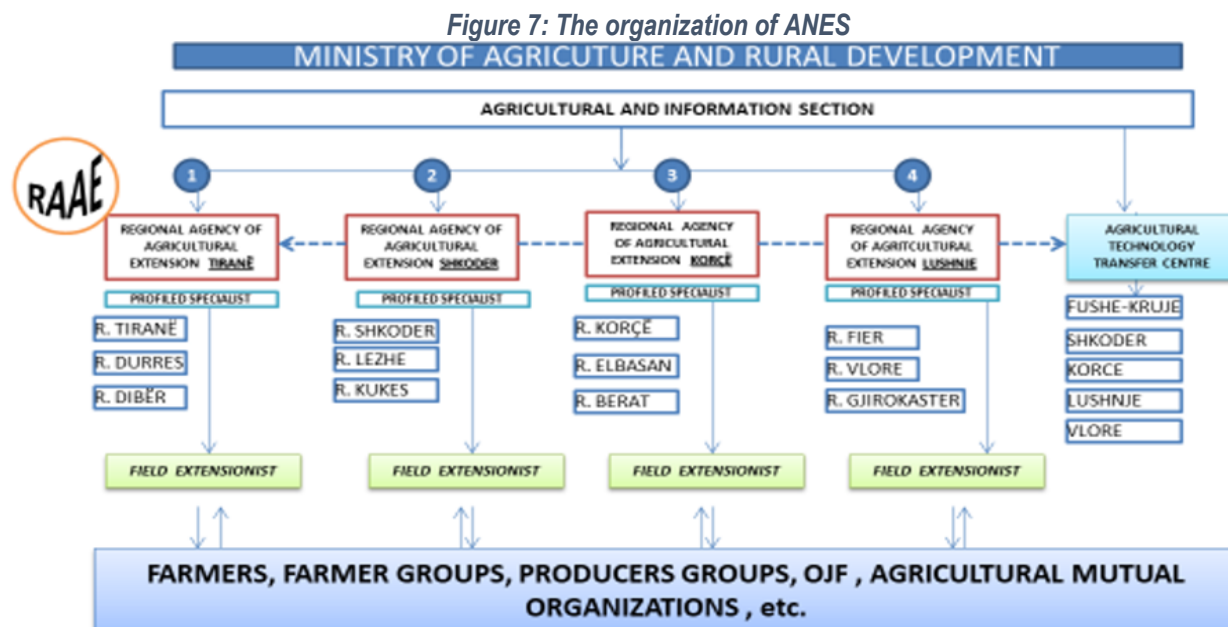
⁸⁵The department is part of the Faculty of Agriculture and Environment.

⁸⁶Skreli et al. (2014)

⁸⁷DCM no. 147, dated 13.3.2018 "On the establishment, organization and functioning of Regional Agricultural Extension Agencies

The field advisors are responsible to provide information, consultation and training (individual or in group) to farmers. According to ANES monitoring reports, up to 70,000 farmers receive ANES free of charge support of some kind each year; however, this figure represents less than 25% of the farmers' total population.

ANES can play a very central role in the Agricultural Knowledge and Innovation System (AKIS)⁸⁸ in Albania. The decided new organization changed the number of regional units from 13 to 4 but did not in practice change the relations between the units and the MARD though the units changed the names from regional centres to agencies.



Source: IPESA- Strategic Action Plan 2020-2021

ANES structure foresees an overall MARD coordination and control function and an articulation on the territory into four Regional Agricultural Extension Agencies (RAAEs), organised as follows:

- 1) AREB Shkodra covering the regions of Lezha, Shkodra and Kukës;
- 2) AREB Tirana covering the regions of Durrës, Tirana and Dibër;
- 3) AREB Lushnjë covering the regions of Fier, Vlora and Gjirokastra;
- 4) AREB Korça covering the regions of Korça, Elbasan and Berat.

Figure 8: Structure of RAAEs

Director	
1. Sector of finance and services	
Head of sector	
Specialists	
Other support staff	
2. Subject-matter specialists Sector	
Head of Sector	
Horticulture expert	
Livestock expert	
Machineries and fertilizers expert	
Plant protection expert	
Farm management and cooperation expert	
Total RAAEs staff	
Director	4
Sector of finance and services	16
Subject-matter specialists Sector	28
Advisory Service Sector	213

⁸⁸The term Agricultural Knowledge and Information (or more recently, Innovation) System (AKIS) is a concept to describe the exchange of knowledge and the services which support these exchanges in rural areas. AKIS is a system that links people and organizations to promote mutual learning, to generate, share, and utilize agriculture-related technology, knowledge, and information. Components of an AKIS can be diverse actors from the private, public and non-profit sectors relating to agriculture. The system may include actors such as farmers, farm workers, agricultural educators, researchers, non-academic experts, public and independent private advisors, supply chain actors, other agricultural sector actors. Research and education actors (both private and public) create knowledge and innovation, provide education and – in some countries – also advisory services. The private sector is widely represented in AKIS in EU countries, for example as many thousands of consultants that operate either independently (e.g. Italy) or as part of a large advisory organisation (e.g. in Finland or Sweden).

Statistical expert	
3. Advisory Service Sector (each region)	Of which:
Head of sector	Head of sector 12
Agriculture Specialist	Specialist/extensionist 189
Statistical Specialist	Statistical specialist 12
	Total 261

According to the DCM the regional agencies of agricultural extension have as their mission to become key factors in the development of a competitive and sustainable agricultural sector in the country, working in long-term partnership with beneficiaries. The main duties and responsibilities of the RAAEs are as follows:

- To provide information and advice on the technical development of agricultural farms, in order to increase competition in agriculture;
- To promote and facilitate the establishment and functioning of various forms of cooperation of farmers;
- Organize and develop professional training of farmers in the field of agriculture and rural development;
- Provide information on standards related to the environment, quality, marketing, organic agriculture, products with geographical indications, etc.;
- Inform and advise farmers on the selection and use of agricultural machinery and equipment;
- Provide general information to the entire farming community and to the public through the mass media.

Other support and administrative tasks of RAAEs are as follows:

- Participate in the design of support schemes and implementation of programs in agriculture;
- Carry out observations in the Farm Accounting Data System (FADN);
- Participate in the collection of statistical data and forecast of agricultural production, and in the assessment of damage caused by natural phenomena in agriculture, etc.;
- Provide ongoing training of advisory staff;
- Provide services for agricultural properties, institutions, local government units (such as development plans, investment programs, business plans, economic management plans, rural development programs, analysis, etc.);
- To perform other tasks from the Ministry of Agriculture and Rural Development;

ARES performance and need for training and updating public extension service staff

Despite the changes and the achievements of extensive service, this sector still faces some major problems such as:

- Low ratio extension specialists/beneficiaries: on average, there is one extension specialist per 1,700 farmers;
- excessively broad extension specialists' task description; technical staff have duties in many areas, which are often outside their specific competence field;
- insufficient financial support in the form of investments in agricultural information centres and operational costs to carry out extension activities (1.5% of the budget for activities);
- high average age of extension specialists (55 years old) and much limited knowhow in using IT;
- much limited capacity in farm management, marketing and business planning.

According to numerous information obtained from farmers, existing advisors are often not able to provide useful and up-to-date information, especially related with implementation of new technologies and establishment of intensive production systems.

The existing public services is unable to provide necessary support to agro-food sector (milk processing), because there are no agro-industry experts employed.

The Albanian National Extension Service has potential to greatly improve technological advancement on farms, but its expertise and services have been allowed to decline due to lack of financial resources for professional development of advisers, modern information and communication technologies, lack of strategic direction and inadequate leadership and management.

Intensive short courses can be designed to improve technical knowledge of advisors so to prepare the advisors for field challenges as soon as possible. Intention of such courses purpose is not to substitute the faculty level education but to show most relevant solutions, tips and suggestions, for practical work on the field.

An extensionists' training needs assessment was carried out on the base of interviews conducted with the AREB extension service in Tirane and Korçe in 2019 and 2020; the outcomes are shown in **Error! Reference source not found.** below.

Table 10.3: Extension service training needs and possible service providers

Extensionists training needs	Possible training service providers
1. Basic advisory skills training, including: i) <i>knowhow on standards and good practices in agriculture – selection of practices, training design, communication and dissemination; ii) knowhow on different communication methods, modalities and media; iii) knowhow on motivational training; iv) ability to organize focus group discussion; v) ability to determine customer needs; vi) problem-solving methods knowhow; vii) ability to organize demonstration activities; viii) planning and preparation of Extension Activities Program</i>	<ul style="list-style-type: none"> • Faculty of Agricultural and Environment-AUT • Faculty of Economy and Agro-business – AUT • Projects and NGOs
2. Farm Management, including: i) <i>support to farmers in facilitating access to finance; ii) marketing, including purchasing marketing (dealing with suppliers); iii) farm management</i>	<ul style="list-style-type: none"> • Faculty of Economy and Agro-business – AUT • Faculty of Economy- University of Korça • Projects and NGOs
3. Technical knowledge transfer, including: i) <i>chemical fertilization and use of PPP in fodders crops; ii) agricultural and livestock machinery and equipment; iii) knowledge on hay and silage preparation; iv) animal feeding and nutrition; v) animal health, especially mastitis and parasitic diseases; vi) milk quality, including compliance with GAEC & Statutory Management Requirements.</i>	<ul style="list-style-type: none"> • Faculty of Agricultural and Environment-AUT • Faculty of Agriculture- University of Korça • Projects and NGOs
4. Other topics including: i) <i>establishment of demonstration/model farms for trials and demonstrations to improve usage of available technologies; ii) knowledge on Food Innovation Hubs to promote greater opportunities for small-scale/niche food development among rural dwellers; iii) support and speed up technology transfer from research centres, including involvement of potential actors of innovation and development projects; iv) assist farmers in the preparation of applications for funding through IPARD measures; v) use of ICT in agriculture, vii) options for farm diversification;</i>	<ul style="list-style-type: none"> • Faculty of Agricultural and Environment-AUT • Faculty of Economy and Agro-business – AUT • Projects and NGOs

Source: Authors interviewed with staff of AREB Korçe and Tirana (2019) and staff of AREB Lushja (2020).

11 CHAPTER 11: ALIGNING TO THE GREEN DEAL

11.1 GENERAL ASPECTS

The milk and dairy sector rank among those ones raising more environmental issues, second only to the meat sector; environmental impact include: i) high contribution to agricultural greenhouses gases emission, ii) high consumption of natural resources per output unit⁸⁹, iii) need of sizable investments for manure management and, iv) relatively energivore processing cycles, based on cooling and heating processes.

In addition, the drive to production efficiency induce increasingly intensive breeding systems, with consequent problems of pollution hotspots, animal welfare, gradual agrobiodiversity loss (due to the use of few, highly specialised breeds) and increased risks for animal disease.

The main environmental issues that can IPARD can contribute to address are: i) primary production waste and manure management, ii) optimisation of production cycle, reducing use of inputs, including veterinary medicines, applying the Farm to Fork approach, iii) partial self-production of the increasing needs for energy and, iv) agrobiodiversity preservation.

With reference to the contribution of the sector to the alignment to the EU Green Deal in Albania, milk and dairy sector is mainly relevant to the components “Farm to Fork”, “Energy” (“Supplying clean, affordable and secure energy”) and “Biodiversity” (“Preserving and restoring ecosystems and biodiversity”). Table 11.1 below shows the sector trends and issues which will have a direct impact in relation to alignment to the EU Green Deal components. The column “impact” shows the expected impact in absence of interventions (i.e. impact of spontaneous trend).

Table 11.1: Sector trends and impact on EU green Deal components

Ongoing trends by commodity chain segments	Green Deal relevant components	
	Impact	Component
Dairy cattle primary production		
Reducing autochthon breeds population	-	Biodiversity
Inadequate manure management in larger breeding farms	-	Farm to Fork EU Climate Ambition
Inadequate animal husbandry, especially in animal feeding, leading to yield lower than genetic potential	-	EU Climate ambition
Prevalence of dry pastures	+	Farm to Fork
Increasing energy intensiveness	-	Clean affordable energy
Small ruminants' milk primary production		
Reducing autochthon breeds population	-	Biodiversity
Declining transhumance	+	EU Climate ambition
Declining pasture resources in size and quality	-	Farm to Fork EU Climate ambition
Milk Processing		
Reduction in number of small and informal dairy processing units	+	Farm to Fork
Increasing energy intensiveness *	-	Clean affordable energy

Note: * 35% of energy consumed in Albania from renewable resources; 95% of electricity production from hydroelectric

Primary production is by far the most problematic sub-sector in relation to environmental impact; in particular, poor manure management and still inadequate animal husbandry (low milk yields in relation to potential means that more animals are necessary to produce a given quantity of output) are the main issues.

The identification of issues relevant to the Green Deal and the assessment of potential impact in absence of intervention provide a guidance to identify actions and investments reinforcing the positive impact or mitigating/upturning the negative impact.

⁸⁹The most quoted ratio water consumption/milk production is 1000 l per 1 lt of milk, including animal feed production. Empirical research shows high variability according to farming regime: water consumption is much higher in irrigated farms (with difference scoring over 450 lt per lt of milk).

11.2 ACTIONS AND INVESTMENTS CONTRIBUTING TO ALIGNMENT TO EU GREEN DEAL

Supporting agro-biodiversity

The ongoing process of polarisation of primary production (slow decrease of subsistence farming, increase of commercial milk farming and decline of semi-commercial milk farming) also leads to increasing number of some popular breeds much diffused at international level, such as Holstein, Tarantese, etc.

Most of the other bovines are mixed race animals. There is little or no work for selection of Autochthon breeds, in order to maintain relevant biodiversity presidia. At the same time, at the farm level, figures of bovines and small ruminants from autochthon varieties are decreasing and remaining one are increasingly consisting in mixed breeds.

As for small ruminants breeding, the decline of the traditional eco-pastoral socio-economic system and lack of investments in pastures is leading to a general decline in small ruminants' breeding, which also translates into reducing numbers of most autochthon breeds, in favour of a few most popular breeds and imported ones.

In IPARD II there was already a provision to provide incentives for endangered autochthon breeds, which should be confirmed and possibly extended to all autochthon breeds, not only endangered ones. Endangered cattle and small ruminants could be made eligible for support under Measure 4⁹⁰, while not endangered autochthon breeds (such as the Has Goat) could be also made eligible for a preferential criterion under Measure 1.

In particular, it can be useful to draw upon the experiences of preserving and giving value to biodiversity through market mechanisms; these experiences were implemented in different international development projects, where quality schemes were linked to biodiversity-based products⁹¹ (such as the case of Has Goat products⁹², now protected by a Geographic Indication) or to a mix of specific breeds and traditional breeding systems (such as the case of the "Ionian lamb" quality scheme). A preferential criterion could be therefore considered under Measure 1 for animal products (in this case milk and dairy) obtained within the framework of quality schemes (Geographic Indication, collective marks, origin marks, etc.) which also include biodiversity-based products.

Issue: Reduction in numbers of autochthon ruminants' breeds	EU GD relevant topics: Biodiversity
<p>Proposed actions:</p> <ol style="list-style-type: none"> 1. <i>Measure 1:</i> Preferential criterion for investments in which the production base is made <i>exclusively</i> by non-endangered autochthon breeds 2. <i>Measure 4:</i> Eligibility for endangered autochthon breeds 3. <i>Measure 10:</i> Preferential criterion for counselling and advisory services for endangered vegetal and animal species, including development of biodiversity-based marketing schemes, autochthon breeds selection, specific animal husbandry needs, 	

Improving manure and breeding waste management

This is the most environmentally sensible topic of the sector, especially when considering that some larger-scale milk breeding activities are being established, with a potential major environmental impact at the local level. Breeding waste and manure impact on two EU Green Deal components, namely EU Climate Ambition (because of production of greenhouses gases) and Farm to Fork, which is highly relevant to all aspects of animal breeding.

If properly managed, manure can also give positive contributions to EU GD components such as Clean and Affordable Energy (through biogas production) and Farm to Fork itself (as availability of mature manure in sufficient quantities is a key factor for organic farming growth).

Investments in improved manure management and in facilities and equipment that would facilitate manure management is therefore to be considered a high-ranked priority in animal breeding in general and milk primary production in particular.

⁹⁰ In IPARD II, only 7 goat breeds and 3 sheep breeds were eligible for support under Measure 4. No cattle breeds were included

⁹¹A biodiversity-based product is a product whose main characterization and/or marketing point of strength is linked to biodiversity and use as a leverage the marketing concept that the more a good is scarce, the higher the price is to be paid; biodiversity-based products are rather common in the wine and meat sector (quality schemes related to specific and rare cultivars or breeds) and niche food products (e.g. some "superfood" which can be found only in some eco-systems)

⁹²The support to development of biodiversity products through Geographic Indications was the core concept of the FFEM BiodivBalkans project.

The actions that could be supported through IPARD III are summarized below.

Issue: improving management of waste and manure	EU GD relevant topics: Farm to Fork; EU Climate ambition
Proposed actions:	
1. <i>Measure 1:</i> Eligibility and preferential criterion for equipment, machinery and improved facilities for manure and waste management, including improved design of stables and other storage facilities.	
2. <i>Measure 10:</i> Preferential criterion for counselling and advisory services for in-farm manure and waste management	

Optimize the use of inputs, including feeding, and veterinary medicines

Animal feed costs heavily contribute to milk breeding sector scarce competitiveness. Maize production cost is also higher as compared to Serbia and other regional competitors. The reconsideration of the whole supply chain to optimize the use of inputs (from fertilizers and PP used for forage and fodder cultivation to water, veterinary medicines etc.), the increased attention to animal health and animal welfare and the use of locally available byproducts as components for animal feed, the introduction of control system along the whole production chain (e.g. automated feed dispenser), are all elements which contribute both to production efficiency and to the achievement of GD *Farm to Fork* objectives. Since material investments to optimize the use of inputs are also increasing production efficiency, it has been considered that there is no need for a preferential criterion linked to GD *Farm to Fork*. However, much improvement can be obtained through counselling and advisory services on optimal use of inputs, animal welfare, production system controls, regardless from investments in equipment, farm machinery and fixed assets. The provision of these specialized advisory services which are focused on improving sustainability of milk production is considered to be worth of preferential criterion for Measure 10.

Issue: Optimisation of raw milk production cycle, to increase sustainability and efficiency; supporting transition to organic farming	EU GD relevant topics: Farm to Fork;
Proposed actions:	
1. <i>Measure 4:</i> Support to transition to organic production regime	
2. <i>Measure 10:</i> Preferential criterion for counselling and advisory services aimed at optimizing the raw milk production cycle, optimizing the use of inputs for animal feed production, improving welfare and animal health to reduce use of veterinary medicines, treating manure to be used as input in other production stages or for other products, making use of renewable energy, establishing schemes for reusable packaging or introducing use of bioplastics.	

Drive to more complex, energy intensive processing activities

Improving quality along the milk supply chain and establishment of larger and more competitive farms is requiring increasing quantities of energy, especially in primary production (farm machinery, milking stations, cooling system, different in-stable equipment); The overall energy balance in milk processing industry is to be considered quasi-neutral, as a larger and more complex processing plant require much more energy than a traditional plant (which do need only some heat and do no treat the effluents), but a single modern dairy plant replaces several informal or semi-formal dairy units (so-called “baxho”) whose energy-efficiency per output unit is lower. A significant consumption of inputs and energy (direct and indirect) is related to packaging.

The actions that could be supported through IPARD III are summarized below.

Issue: Matching increased demand for energy with increased energy efficiency in milk production and dairy processing; producing renewable energy for self-consumption	EU GD relevant topics: Clean and affordable energy; EU climate change ambitions (some actions); Circular Economy (some actions)
Proposed actions:	
1. <i>Measure 1:</i> Preferential criterion for investments (equipment and installations) for self-production of energy from wind, solar (photovoltaic) and biomass (manure and biogas from manure) sources; solar and wind water pumps, equipment and machinery, including farm machinery, with higher energy efficiency.	
2. <i>Measure 3:</i> Preferential criterion for investments (equipment and installations) for self-production of energy from wind, solar (thermal and photovoltaic) sources; equipment, processing systems and lines with higher energy efficiency, including equipment and systems for heat recovery and pre-heating. ICT systems for control and	

optimization of energy use.

3. *Measure 10*: Eligibility and preferential criterion for counselling and advisory services for energy saving and self-production of energy using renewable sources.

The issue of pasture management

Lack of investments and decline of traditional eco-pastoral systems contributed to the loss and degradation of pasture resources, especially summer pastures in highlands. The decline of traditional socio-economic patterns in mountain and inner is leading to an alteration of the whole ecosystem, which, among others effects, leads to increased soil erosion, loss of biodiversity and further negative impact on local economy. The reduction in quantity and quality of pasture resources and depopulation of inner areas has negative effects is several sectors: small ruminants' breeding (milk and meat), wild MAPs and NTFP collection.

With specific reference to milk-oriented small ruminants' breeding, the decline of the economy of transhumance (small ruminants' transhumance to summer pastures, seasonal dairy processing units in highlands) has been not structurally replaced by a different system, with resulting re-orientation of small ruminants' breeding towards meat production and overall stagnation of the activity.

There is a need to start to invest again in pastures, which is possible through different IPARD measures. As a principle, pastures should be supported through the agro-environmental measure (Measure 4), but some activities (e.g. watering points) can be also supported through Measure 11 (forestry) and Measure 5 (LEADER), through inclusion in Local Development Plans. Actually, due to the fact that most pastures are owned by Municipalities (which, according to present policies, are not allowed to apply to IPARD), this could eventually result the most feasible options.

Issue: Decline of pasture resources negatively affect small ruminants' milk –oriented breeding	EU GD relevant topics: EU climate change ambitions; Biodiversity (which includes eco- systems preservation)
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Proposed actions:

1. *Measure 4*: Eligibility of pastures restoration and improved management system
2. *Measure 5*: Foresee inclusion of common areas (pastures, NTFP, productive forests) in Local Action Plan design guidelines
3. *Measure 10*: Eligibility and preferential criterion for counselling and advisory services for pasture management and to draw Municipal Forest and Pastures management plans
4. *Measure 11*: Eligibility of investments in infrastructures (small dams, watering points) for pasture restoration

The issue of plastic packaging

As compared with traditional and informal supply chains, supply chains ensuring safety controls utilise much larger quantities of mono-use plastic and aseptic packaging (such as TBA-Tetra Brik Aseptic) packaging, which must be recycled in specialised plants.

For food industries like milk and dairy, the EU Green Deal empathize recycling and use of bio-plastics rather than re-introduction of schemes for recyclable packaging rotation (i.e. glass bottles), but in Albania bio-plastics is not used and a few types of plastic can be recycled (PVC), while no recycling facilities are available for TBA.

Increasing plastic packaging recovery is part of the EU Green Deal Recycling component (mobilising industry for a clean and circular economy), but these actions cannot be included within the perimeter of actions and investments eligible for support under IPARD.

12 CHAPTER 12: OUTCOME

12.1 KEY FINDINGS AND CONCLUSIONS FROM THE SECTOR ANALYSIS RELATED TO IPARD III PROGRAM

The milk and dairy sector have been among the highest ranked priority sectors for government support. Milk and dairy sector have been supported by IPARD since the establishment of the facility in the programming period 2007-13. Complementary support was also provided through NSS. Major efforts and investments were also devoted in the last twenty years to improve the livestock sector governance and control, with a long-term effort to improve animal identification, and animal health and food safety controls along the whole supply chain.

The main driver for change in the last fifteen years has been the process of EU integration, with the consequent thrust for compliance with higher safety and quality standards and for consolidation of the sector in fewer, larger and more professional farms and dairy industries. This thrust was accompanied by the availability of the support opportunities offered by IPARD.

Changes in milk and dairy products market and demand, as well as socio-economic changes in rural areas played also a role in the evolution of the sector, but cannot be considered as the main driving force for sector change. Demand became more segmented and is qualitatively changed (larger demand for cheese, larger demand for higher quality products and branded products in retail packaging), but basically maintained the same characteristics: i) large per-capita consumption (among the highest in the World), ii) prevalence of demand for milk and fresh dairy products and, iii) demand for cheese still mostly limited to the two main traditional products (one feta-like cheese and one hard cheese) and preference for purchasing cheese by the weight (i.e. not pre-packed).

The outcomes of reforms, investments and socio-economic changes affecting both demand and supply are mixed and can be summarized as follows:

- Progress was recorded in animal identification, control of quarantine zoonoses and food safety controls in the formalized part of the supply chains; as a whole, milk and dairy products are safer than they were at the beginning of the previous programming period; in particular, the products from the largest dairy processing companies are broadly complying with EU safety and quality standards. Notwithstanding improvements, situation is still far from ideal, with an estimate 50% of milk being traded through scarcely controlled channels.
- The commodity chain is becoming more polarized: the main dairy plants are now working with standards and performance similar to those applied EU member states; large restructured farms also have a technical performance comparable to EU Member states and achieve good standards in terms of animal health, food safety and animal welfare standards; however, this formalized and reformed segment of the commodity chain represent only a part of the sector; the gap between the formalized and semi-formalized or non-formalized sector is widening and the majority of primary production sector is finding increasingly pressure to upgrade, with consequent need for substantial investment and an overall rethinking of business model, or scale back their size and development prospects.
- The sector is struggling to invest to upgrade standards while being scarcely profitable. Unfavourable VAT regime for formalized dairy industry and the limited controls on semi-informal and informal dairy processing units (in food safety, fiscal and environmental aspects) contribute to the polarization of the market and introduce factors of unfair competition, consumer protection and environmental protection, but also prevented a steeper decline of the sector.
- The restructuring of the primary production sector is proceeding much more slowly than that on in the milk processing sub-sector, especially in small ruminants' dairy farms.
- Farm-gate prices for raw milk of comparable quality are higher in Albania than in most EU countries, as production cost are also higher: in large, modernized cattle dairy farms farm productivity and quality is comparable to the average in EU countries, but farm gate prices are higher by 30% (60 ALL vs. 37 Euro cents), while prices paid to small farms are much lower (35-40 ALL), but average quality also is lower.
- The largest and restructured dairy plants are in most cases over-sized, in many cases by 40%, when considering their market outreach. The evolution of market (segmentation, demand for safer products, demand for products with longer shelf-life) will gradually increase demand for larger and modernized processing plants, thus decreasing overcapacity, partially at the expense of small semi-formal or informal dairy units.
- Milk collection is a major issue in terms of quality of milk and complexity of the organization. The large and formalized dairy plants can get a relatively small part of supplies from large dairy farms; they have to source an increasing share of milk from small farmers, directly establishing milk collection points or making agreements with independent milk collectors; however, the increased costs and complexity of collecting milk from hundreds of small farmers and quality problems of milk sourced from small farms contribute to increasing gaps between raw milk prices paid to large farms (higher) and to small farms (lower). Such difference is in the range of 25% to 70%, depending on regions, quality of milk and options available to small farmers.

- Large and formalized dairy plants are increasingly relying on imported semi-pasteurized milk and powder milk, which is cheaper, easier to buy and more controlled. In particular, flows of semi-pasteurized milk from Serbia are increasing in recent years.
- Raw milk prices are low in respect to production costs, being broadly at the same level they were over ten years ago; however, prices are still higher than in EU member states for comparable milk quality. The issue of low farm-gate price is affecting breeders all around Europe and it is not expected that they will rise anytime soon.
- Small farmers are facing the negative market outlook adjusting their business: some of those ones who have access to milk collection points undergo a process of gradual formalization and improvement in animal husbandry practices and facilities, while many others reduce their participation to formalized raw milk market. The practices followed by this second group include: i) sell the milk to semi-formal and informal dairy processing units (the majority) ii) continue selling raw milk to final consumers in totally informal channels (those near to main urban areas), iii) using part of the excess milk as animal feed and, iv) scale down their activities.
- Prospects are particularly unfavorable for small ruminants' dairy farms: socio-economic changes leading to depopulation and decline of traditional eco-pastoral systems, lack of investments in pastures⁹³ and low prices paid for small ruminants' milk are contributing to an overall decline of the sub-sector, with the partial exception of goat milk production, which is increasing and where sizable investments were made in a few (less than five) farms which introduced a radical rupture with the past, establishing specialized intensive-breeding goat farms in lowlands.
In particular, it is confirmed that in traditional small ruminants' breeding systems (eco-pastoral systems) and with the current price structure the income from sales of animals for slaughtering is higher than the income from milk, even in milk-oriented small ruminants' farms.
- Few investments were addressed waste management in the whole supply chain and few controls are performed for enforcement of existing rules for environment protection. The situation is particularly harmful at primary production level (manure and waste management) and in small semi-formal and informal dairy processing units (whey and wastewater management).

In terms of future prospects, demand is expected to further segment; in particular, the segment of higher added-value is expected to grow, while the total demand of milk and dairy products in quantitative terms is not expected to increase much, as it is already among the highest in the World. In terms of milk quantity, some increase could come from the replacement of fresh dairy products and feta-type cheese with other types of cheese whose production require a larger amount of milk.

Leading dairy processing industries have already invested in modernizing and expanding their production capacity, so their spare processing capacity is expected to be sufficient to absorb increased demand for milk and dairy products. The key challenges will consist in: i) Ensuring an increased supply of qualitative raw milk from domestic sources, ii) stepping up investments in waste management, especially at primary production level and, iii) reducing the level of informality in the sector, still very high, without impacting decisively the prospects of the sector. Among other measures, a revision of the current VAT provisions could help to expand the formalised segment of the market, reducing the unfair competitive advantage of enjoyed by scarcely controlled semi-formal and informal dairy processing plants.

Improvements are needed in primary production and processing levels. Many dairy production farms have good opportunities to increase their production, but the collection of milk at cheap price hinder the growth of primary producers, and limit the domestic sector's ability to seize existing opportunities; as a result, domestic milk supply is following declining trend,

The large and formalised milk processors are increasingly working with imported semi-pasteurized milk and powder milk. If international prices of raw milk and powder milk will remain stable, the growing trend of imports is expected to continue, as domestic production will find it difficult to increase its standards while keeping the prices low.

An important role in upturning an overall negative outlook for domestic primary production can be played by the expansion of the network of milk collection points and milk hubs, which can play an important role in conveying to the formalised dairy industry increasing quantities of milk from small farms and at the same time contribute to increase the provision of advisory services to small farmers, eventually increasing quality and food safety in the whole supply chain.

⁹³Especially lack of watering points maintenance and restoration of damaged pastures

12.2 PRIORITY INVESTMENTS IN PRIMARY PRODUCTION

12.2.1 Types of investments

The most investment having highest priority in milk and dairy primary production are relevant to the following topics: i) overall raw milk safety and quality, including milking practices, animal health, raw milk storage and transport from farm to dairy plant and, ii) manure and waste management, especially in medium sized and larger cattle farms.

Eligibility includes a much wider range of investments; it is advised to include for eligibility under IPARD III the following investments in favor of agricultural holdings:

Table 12.1: Proposed measures and eligible investments

Proposed measure	Type of eligible investment
Measure 1	<ul style="list-style-type: none"> • Watering points, including water pumps. • Purchase of specialised machinery and equipment such as specialised tractors and cultivators, sprayers, harrows, trailers, harvesters or other specialised equipment for fodder production. • Construction, refurbishment or reconstruction of stables. By the end of investment, stable must comply with EU standards for hygiene, animal health, animal welfare, occupational safety, environment protection. • Facilities for animal feed storage, excluding annual structures such as silage trenches. • Equipment for animal feed administration • Milking and milk collection equipment and facilities, including automated and semi-automated milking systems, milk parlors, refrigerated milk storage containers, refrigeration equipment • Farm machinery and equipment barns and sheds • Waste and manure treatment facilities; manure treatment and handling equipment • Equipment and installations for on-farm renewable energy production; installed power must be limited to self-consumption needs related to farming, equipment and machinery. • Internal road network and parking places within a farm holding. • Investment for production of renewable energy, including biogas and photovoltaic energy for self-consumption needs.
Measure 4 (agro-environmental)	<ul style="list-style-type: none"> • Transition to organic production. • Breeding of endangered autochthon breeds, as listed in the Measure. • Investments for pasture and watering points management/rehabilitation in pastures owned by municipalities
Measure 10 (counselling)	<ul style="list-style-type: none"> • Advisory and knowledge transfer on animal husbandry • Advisory and knowledge transfer on milking and milk storage hygiene, food safety and quality standards • Advisory and knowledge transfer on manure and slurry management
Measure 11 (forestry)	<ul style="list-style-type: none"> • Investments for establishment and recovery of watering points in highland pastures and forested areas (included in sub-measure 11.2 - agroforestry)

12.2.2 Proposed eligibility criteria

Dairy cattle farms

Minimum size at the beginning of the investment

Not applicable

Minimum size by the end of the investment

The minimum size by the end of investment must be 6 dairy cows in production.

The farms to be supported must have a clear perspective on its business for the coming years. Based on interviews to farmers and experts and existing documentation⁹⁴, farms that are breeding at least 6 dairy cows are considered as financially viable⁹⁵.

⁹⁴AASF (2019)

⁹⁵ In the last two IPARD programming periods, the conventional threshold utilised to define the limit between subsistence farming (not eligible for IPARD) and semi-commercial farming (eligible) was defined by the capacity to generate a gross margin equal or higher to two-full time employed persons at minimum wage, which in 2021 corresponds to a gross margin of 720,000 ALL.

Table 12.2: Cow milk production Gross margin

No	Description	Value (ALL)	
		10 dairy cows	6 dairy cows
1	Income	3,400,000	1,782,000
2	Milk 10 cows * 5,500 litre * 54 ALL/litre	2,970,000	150,000
3	Calves 9 * 30,000 ALL	270,000	96,000
4	Manure 100 ton * 1,600 ALL/ton	160,000	2,028,000
5	Expenses (feed + veterinary cost +energy + water)	2,113,550	1,268,130
6	Gross margin (1-4)	1,286,450	759,870
7	Labour cost	360,000	252,000
8	Fixed cost	376,800	376,800
	Profit (6-7-8)	549,650	131,070

Source: Author calculations based on farmers and experts' interviews

Size of projects

The minimum and maximum limits of total value of eligible investments per project are:

- Minimum € 5,000
- Maximum € 500,000

Preferential criteria

Farmers having a delivery contract or other documents confirming a stable relationship with milk processors/collectors.

Small ruminant farms

Minimum size at the beginning of the investment

Not applicable

Minimum size by the end of the investment

The minimum size by the end of investment must be 130 milking small ruminants in production.

The farm to be supported must have a clear perspective on its business for the coming years. Based on farmers and experts' interview, farm that are breeding at least 130sheep or goats are considered as a representative for farm sustainability.

Table 12.2: Small ruminant Gross margin

No	Description	Value (ALL)	
		100 milking SR	130 milking SR
1	Income	1,276,500	1,659,450
2	100 Sheep x 65 litre milk x 85ALL/litre	552,500	718,250
	80 lamb x 23 kg x 350 ALL/kg	644,000	837,200
	Manure 50 ton x 1600 ALL/ton	80,000	104,000
3	Expenses (feed +veterinary cost +energy. etc)	727,500	945,750
4	Gross margin (1-3)	549,000	713,700
5	Labour cost	270,000	310,500
6	Fix cost	20,000	20,000
	Profit (4-5-6)	259,500	615,250

Source: Author calculations based on farmers and experts' interviews

Projects size

The minimum and maximum limits of total value of eligible investments per project are:

- Minimum € 5,000
- Maximum € 500,000

Preferential criteria

Farmers having a delivery contract or other documents confirming stable relationships with milk processors/collectors.

Estimate absorption level

Dairy farmers, especially small ruminants' dairy farms, are scarcely profitable; they would need to invest to increase profitability and comply with standards, but they do not manage to accumulate the necessary capital; moreover, most small farmers have not the will or capacity for a substantial scaling up and change of their business model: in most cases, marginal improvements (e.g. from 6 to 10 dairy cows) would only increase immobilizations, without substantially increase profitability.

However, sizable investments would be anyhow necessary to approximate standards in terms of hygiene, animal safety, milk quality and manure management, especially in largest farms. Most of the large farms which made important investments in the two previous IPARD programming periods will need to continue to invest in IPARD III programming period, especially to reduce the environmental impact of their activities.

With the present enabling environment and price system, only large dairy farms are really profitable, so it is possible to expect relatively few and large investments in milk primary production, in line with what happened in IPARD II, where the average investment scored 290,000 Euro.

Considering the sub-sector outlook and the overall prudent sentiment of dairy farmers it is possible to expect a total absorption of 4 to 6 M Euro over the whole programming period.

12.3 PRIORITY INVESTMENTS IN PROCESSING

12.3.1 Types of investments

Priority needs for the dairy industry are: i) to improve the milk collection capacity in terms of quality and quantity, ii) reduce the level of informality and, iii) improve the environmental performance of dairy units, especially in terms of wastewater management.

The first priority can be directly achieved expanding and improving the network of milk collection centres and milk hubs and indirectly support the establishment of a larger number of large dairy farms, the second coupling a more incisive policy of controls on semi-informal and informal dairy plants with a real effort to help the small and medium-sized dairy units to formalize their activity and diversify their production and the third giving priority (i.e. preferential terms) to investments in compliance with environmental management standards.

The range of investment needs, in addition to those with highest priority at sector level is much wider and is different from case to case. Among the most common needs recorded among dairy industry actors the following topics were more often mentioned: i) increase milk processing storage room capacity; ii) introduce new technologies to improve, quality and standards, iii) improved infrastructures and, iv) internal quality control laboratories.

The following investments should be considered for support under IPARD III:

Table 12.3: Proposed investments for support under IPARD III

Proposed measure	Type of eligible investment
Measure 3 Processing	<ul style="list-style-type: none"> • Equipment and facilities for milk hubs and milk collection points • Specialized refrigerated transport vehicles and trailers for raw milk transport (to processing plants). • Dairy processing equipment and processing lines, including packaging lines, excluding equipment and facilities for powder milk production. Only processing lines with a capacity over 1,000 lt/day are eligible • Milk and dairy storage facilities, including conditioned and refrigerated facilities, containers and equipment.^[SEP] • Equipment for internal handling and loading, unloading and loads moving. • Self-control laboratory and quality control devices. • Operation waste and wastewater treatment equipment and facilities. • Wastewater treatment in milk processing and collection points. • Investment for production of renewable energy for self-consumption needs, including thermal and photovoltaic solar energy. • Equipment and ICT systems for control of storage conditions, internal handling control and automation, processing processes control, energy use control, administration. • Equipment and solutions, including infrastructural solutions, for energy efficiency, heat recovery, thermal stabilization, passive and active control and conditioning of air flows. • Investments for implementation of traceability systems and improved control of residues. • In-factory transport and administrative facilities, including internal roads and parking, administrative facilities
Measure 7 Diversification	<ul style="list-style-type: none"> • In farm refrigerated raw milk and dairy storage facilities and equipment. • In-farm equipment and facilities for dairy processing, with a capacity >300 l per day and <700 l per day. • Dairy products conditioned facilities, containers and equipment. • Wastewater treatment in milk processing and collection points. • Equipment and installations for renewable energy for self-consumption only, from solar (thermal and photovoltaic) source.
Measure 10 (counselling)	<ul style="list-style-type: none"> • Advisory and knowledge transfer on hygiene, food safety, quality standards and certifications, organic certification. • Advisory and knowledge transfer on milk and dairy processing technical aspects • Advisory and consulting services for improvement of energy management, environmental and waste management and occupational safety. • Management advisory and consulting services.

12.3.2 Proposed eligibility criteria and size thresholds

Proposed eligibility criteria and size thresholds

The potential eligible beneficiaries are:

- Registered milk processors and milk collectors
- All physical and juridical persons meeting stated criteria, profitability and viability criteria

Projects size

The maximum and minimum limits of total value of eligible investments per project (according to the interviews are:

- Minimum € 50,000
- Maximum € 2,000,000

Preferential criteria

- Processors having a delivery contract or other documents confirming a stable relationship with dairy farmers for quantities sufficient to cover at least 80% of existing processing capacity.
- 50% or more of the investment devoted to one of the following investments: i) milk collection points or milk hubs and, ii) waste management and by-products recovery.
- Dairy plants (Measure 3) and in-farm dairy processing units (Measure 7) which participate to one of the following types of quality schemes: i) production regulation as foreseen in a registered Geographic Indication, ii) production regulation as foreseen in a registered collective mark, iii) certified organic production.

Estimate absorption level

The absorption capacity of the milk and dairy sector in the first two IPARD II calls scored 4.8 M Euro, with the two largest investments representing 74% of total.

At present, the main investments in the larger dairy processing plants have been mostly performed and all the largest dairy processing plants have processing overcapacity.

In the next programming period smaller plants could make smaller, but more numerous investments, in order to cope with demand trends for more qualitative cheese. At the same time, unfavorable fiscal conditions and a system of controls focused on larger processing units is limiting the willingness of semi-formal and informal to grow in size and become more formalized.

Considering the above, it could be possible to expect in the next programming period an absorption capacity ranging between 4 and 6 M Euro.

13 ANNEXES

ANNEX 1. DAIRY PRODUCTS TRADE DATA

Table 13.1: Import and exports of powder milk⁹⁶, Albania by year (HS 0402)

Year	Exports			Imports			Export/ Import	Export/ Import
	€000	Ton	Price	€000	Ton	Price	Value	Weight
2010	19	8	2.5	1,990	933	2.1	1%	1%
2014	16	7	2.4	888	282	3.2	2%	2%
2015	16	7	2.3	1,657	688	2.4	1%	1%
2016	21	8	2.5	1,685	833	2.0	1%	1%
2017	22	3	7.1	2,133	951	2.2	1%	0%
2018	49	11	4.3	2,782	1,443	1.9	2%	1%
2019	60	36	1.7	3,268	1,488	2.2	2%	2%

Source: EUROSTAT (2020)

Table 13.2: Import and exports of Buttermilk, curdled milk and cream, yogurt, kefir and other fermented or acidified milk and cream, Albania by year

Year	Exports			Imports			Export/ Import	Export/ Import
	€000	Ton	Price	€000	Ton	Price	Value	Weight
2010	-	-	-	3,258	2,675	1.2	-	-
2014	-	-	-	2,833	2,020	1.4	-	-
2015	2	1	1.3	3,188	2,058	1.5	0.055%	0.066%
2016	1	1	1.4	3,411	2,221	1.5	0.024%	0.026%
2017	0.1	0.2	0.6	3,766	2,370	1.6	0.003%	0.008%
2018	-	-	-	3,737	2,199	1.7	-	-
2019	11	9	1.2	4,443	2,592	1.7	0.2%	0.4%

Source: EUROSTAT (2020)

Table 13.3: Import and exports of whey, Albania by year

Year	Exports			Imports			Export/ Import	Export/ Import
	€000	Ton	Price	€000	Ton	Price	Value	Weight
2010	-	-	-	568	574	1.0	-	-
2014	-	-	-	1,320	991	1.3	-	-
2015	6	6	1.0	1,224	924	1.3	0.5%	0.6%
2016	6	7	0.9	1,219	1,268	1.0	0.5%	0.5%
2017	1	0.2	2.5	1,506	1,483	1.0	0.0%	0.0%
2018	11	7	1.7	1,583	1,568	1.0	0.7%	0.4%
2019	16	25	0.6	1,511	1,409	1.1	1.1%	1.8%

Source: EUROSTAT (2020)

Table 13.4: Import and exports of butter, Albania by year

Year	Exports			Imports			Export/ Import	Export/ Import
	€000	Ton	Price	€000	Ton	Price	Value	Weight
2010	2	0.5	3.9	339	83	4.1	0.5%	0.5%
2014	0.5	0.4	1.3	361	79	4.6	0.1%	0.4%
2015	3	1	4.5	348	87	4.0	0.9%	0.8%
2016	6	1	4.5	362	84	4.3	1.7%	1.6%
2017	0.3	0.1	2.8	413	73	5.7	0.1%	0.2%
2018	-	-	-	455	77	5.9	-	-
2019	10	1	7.5	738	132	5.6	1.3%	1.0%

Source: EUROSTAT (2020)

Table 13.5: Cheese consumption per capita (kg per year)

⁹⁶HS 0402: Milk and Cream, concentrated or containing added sugar or other sweetening matter

Country	2014	2015	2016	2017	2018	2019
EU-28	17,51	17,87	17,83	18,18	18,32	18,30
United States	15,62	16,05	16,65	16,90	17,35	17,48
Canada	11,41	11,52	12,59	13,72	14,48	14,41
Australia	11,23	11,28	11,33	11,84	11,77	11,78
Argentina	11,89	12,16	11,68	11,04	8,57	9,60
Russia	7,21	7,18	7,36	7,84	8,23	8,44
New Zealand	8,76	8,88	9,01	8,51	8,01	7,94
Belarus	7,10	7,31	7,52	7,62	7,62	7,72
Ukraine	4,37	4,10	4,18	4,23	4,47	4,66
Mexico	3,64	3,90	4,02	4,10	4,17	4,32
Brazil	3,72	3,78	3,81	3,84	3,75	3,77
South Korea	2,33	2,70	2,67	3,11	3,03	3,24
Japan	2,17	2,30	2,38	2,54	2,59	2,73
Taiwan	1,11	1,23	1,35	1,35	1,35	1,30
Philippines	0,20	0,28	0,31	0,38	0,38	0,39
China	0,23	0,24	0,25	0,25	0,27	0,28

Note: Per capita consumptions of each country are obtained dividing total consumption (Source FAS-USDA) by the population (Source FAO, Eurostat). Source: https://www.clal.it/en/?section=tabs_consumi_procapite⁹⁷

⁹⁷Clal is an Italian Dairy Economic Consulting firm that analyzes the Dairy Market, interprets trends and provides data, news and synthesis thanks to information and training activities

ANNEX 2. BIBLIOGRAPHY

- AASF (2019). Practical Guide on Technological Cards in Agriculture. Available online at <https://aasf.com.al/wp-content/uploads/2020/05/KartatTeknologjikeWEB.pdf>
- ARDA (2020). Dairy farms supported by NSS for milk production 2013-2017 (M-1).
- Belegu, K., Zalla, P., Belegu, M., Laçi, D., Ozuni, E., Andoni, E. (2014). Albanian consumer's perception towards animal welfare. *Albanian Journal of Agricultural Sciences*, Special edition, pp. 299-303.
- CLAL (2020). Prices of milk in powder – evolution graph. Retrieved from https://www.clal.it/en/?section=grafici_polveri
- EU (2019). European Union – Albania 11th Subcommittee Meeting Agriculture and Fisheries
- EUROSTAT (2020). EUROSTAT database. Available at https://ec.europa.eu/eurostat/data/database?node_code=earn_ses_monthly
- FAOSTAT (2020). FAOSTAT database. Available online at <http://www.fao.org/faostat/en/#data>
- FAOSTAT (2021). Per capita consumption data - FAOSTAT database. Available online at <http://www.fao.org/faostat/en/#data>
- FSP (2019). Interim Narrative Report, 2019.
- Gërdoçi, B., Skreli, E., Zhllima, E., & Imami, D. (2017). Determinants of long-term business relationships in the dairy value chain in transition countries: the case of Albania. *Studies in Agricultural Economics*, 119(1316-2018-168), 139-147.
- Gjeci, G., Bicoku, Y. and Imami, D. (2016). Awareness about food safety and animal health standards – the case of dairy cattle in Albania. *Bulg. J. Agric. Sci.*, 22: 339–345.
- GTZ (2010). Milk Sector Study. Capacity Building for Implementing the Rural Development Strategy”. Support to the Albanian Ministry of Agriculture, Food and Consumer Protection. April / May 2010.
- Imami, D., Valentinov, V., and Skreli, E. (2021). “Food Safety and Value Chain Coordination in the Context of a Transition Economy: The Role of Agricultural Cooperatives. *International Journal of the Commons*, 15(1).
- Imami, D., Skreli, E., Xhoxhi, O., Keco, R., Maci, M. (2017). National Economic Potentials of Contract Farming and Agriculture Cooperation in Albania, Report prepared for GIZ.
- 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.
- 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.
- Imami, D., Skreli, E., Zhllima, E., Cela, A., & Sokoli, O. (2015). Consumer preferences for typical local products in Albania. *Economia agro-alimentare*.
- INSTAT (2019). The population of Albania. Retrieved from <http://www.instat.gov.al/en/themes/demography-and-social-indicators/population/>
- INSTAT (2019). Land structure by Land structure, Type and Year (2017). Retrieved from http://databaza.instat.gov.al/pxweb/en/DST/START_BU_AGI/NewBU0009/table/tableViewLayout2/?rxid=243b6be0-5b40-4ba3-a237-f32b68f64a3c
- INSTAT (2020). Published data from INSTAT. Retrieved from <http://databaza.instat.gov.al/pxweb/sq/DST/?rxid=255251ae-dc36-4fbf-87c4-f6f35737cb21>
- Knierim, A., Boening, K., Caggiano, M., Cristóvão, A., Dirimanova, V., Koehnen, T., Labarthe, P. & Prager, K. (2015). The AKIS concept and its relevance in selected EU member states. *Outlook on Agriculture* 44(1), 29-36.
- Mavromati, J. (2018). Antibiotic residues in milk, by using chemotherapy for mastitis in dairy cows and the challenges for using therapy with natural products in the future. In *2nd International Conference on Agriculture and Life Sciences ICOALS, May* (pp. 07-09).
- Mavromati, J., & Shaqiri, L. (2019). An overview in the region regarding different toxic residues in the products of animal origin and future cooperation possibilities for a better food safety. *International Journal of Food Technology and Nutrition*, 2(3-4), 15-19.
- NFA (2019). Raporti Vjetor in AKU 2019 (Annual report of NFA).
- OPEN DATA (2020). Popullsia Urbane dheRuralenëvitet 1950-2050.
- Pro-Mali (2010). Study of small ruminants' sub-sector in Albania. Prepared For SNV- Albania In the framework of Pro-Mali Programme.

- Reed, B. F., &Skreli, E. (2013). 4 Albania's Agriculture Industry. *Agricultural Markets in a Transitioning Economy: An Albanian Case Study*, 52.
- Skreli, E. and Imami, D. (2019). Milk Sector Study. Albania Agribusiness Support Facility (AASF), Institute of Economics Studies and Knowledge Transfer, Tiranë, 2019.
- Sokoli, O., Xhoxhi, O., Imami, D., Skreli, E., Doluschitz, R. (2021). Contract Farming approach in the farm level: Evidence from the dairy sector in Albania. Working Paper.
- Sokoli, O., Xhoxhi, O., Skreli, E., Imami, D., Doluschitz, R. (2021). "Are local rules the shadow factor in the development of cooperatives?". Working Paper.
- Thoma, L., Boshnjaku, A., Kapaj, A., and Dashi, E. M. (2017). Brand awareness and consumer profile for milk: case of the Tirana market. *Annals of Marketing Management and Economics* 3(2):113-119. DOI: 10.22630/AMME.2017.3.2.22
- UNDP (2019). Mapping the Genetic Resources of Autochthonous Farm Animals in Albania.

ANNEX 3. LIST OF INTERVIEWS AND VISITS

Date	Place of interview	Person	Business/organization	Position	Telephone
4.11.2020	Tirame	Tana Kika	MARD	Advisor of Minister	0684030604
6.11.2020	Tirane	Engjell Jazexhi	Agro-input dealer (Seeds, fertilizer, pesticide)	Owner	0682026643
9.11.2020	Tirane	Sabah Sena	Animal feed and livestock expert	Freelancer	0692072210
12.11.2020	Tirane	Festim Shytaj	MARD	Head of Extension service,	0676898050
12.11.2020	Kavaje	Kadri Malaj	Agro input (fertilizers, animal feed, seeds)	MBM co-owner	0682024308
13.11.2020	Tirane	Luigj Turmalaj	Veterinarian and AI	Private veterinarian and AI expert	0689002599
17.11.2020	Fier	Ethem Resuli	Dairy farm	Owner	06
17.11.2020	Fier	Ervin Resuli	Veterinarian	Veterinary clinic	0692946222
18.11.2020	Berat (Samatice)	Luljeta Abazaj/Mezini	ERZENI milk processing company	Veterinarian/technology	0698806210
18.11.2020	Lushnje	Qemal Petriti	Animal feed dealer	Owner	0674059653
20.11.2020	Tirane	Valbona Ylli	LEAA (semen importation and distribution)	Executive director	0682054905
23.11.2020	Tirane	Petrit Dobi Roland Bardhi	Small Ruminants	RASP	0692067991
23.11.2020	Tirane	Genc Juka	NFA expert	Former NFA director	0682033171
25.11.2020	Tirane	Merita Uruçi	Dairy expert/ADAMA	Executive director	0682054275
27.11.2020	Tirame	Altin Telo	Veterinarian	freelancer	0684037737
28.11.2020	Grabjan	Elton Ndoi	Dairy farmer (600 cows)	Owner	0684041429
28.11.2020	Grabjan	Saimir Shehu	Dairy farmer (30 cows)	Owner	0686286500
28.11.2020	Gorre	Edmond Gjata	Milk processor	Owner	0682027195
1.12.2020	Korçe	Roland Meçaj	QTTB -Korçe	Director	
1.12.2020	Korçe	Sotiraq Jankull, Romeo Prifti, Lazart Suraj	ATTC- Korçe- Small ruminants department	Director and veterinarians	0682630700 0698493091
2.12.2020	Bilisht	Ardian Xama Fatmir Kutrolli	AREB-Korçe	Extensionists Bilisht	0692562412 0684680333
2.12.2020	Miras/Bilisht	Bashkim Çeliku	Farmer- Cows (10)	Owner	0698141341
2.12.2020	Pilur/Bilisht	Ferdinand Shkempi	Farmer (250 goats)	Owner	0692145646
2.12.2020	Pilur/Bilisht	Mirela Tinolli (Piro Plasa)	Farmer (Cows 35)	Manager	0692891666
2.12.2020	Plase/Maliq	Agim Orhan	Milk processor Morava	Owner	0672012128
3.12.2020	Elbasan	Hysen Moli	Veterinarian/Inseminator		0682079704
3.12.2020	Elbasan	Mimoza Bevap	Animal Feed Pharmacy	Owner	
3.12.2020	Elbasan	Luftar Moli	Farmer (cows 15)	Owner	0682393000
3.12.2020	Elbasan	KujtimGjoni	AREB- Korçe/Elbasan	Extensionists	0682354258

Sustainable Development of rural areas in Albania –Sector Analyses – 2017.2192.7- 001.00

3.12.2020	Elbasan	VeliStarja	AKU Elbasan	Inspector	0692596059
7.12.2020	Tirane	Arben Kip	FAO-Albania		
12.12.2020	Fier	Arjan Kanini	Levan, municipality	veterinarian	06822182233
12.12.2020	Fier	Agron Kusta	Importer-Veterinary drugs	Veterinarian	0692073873
12.12.2020	Fier	Endri Sauli	Agency of Veterinary- Fier	veterinarian	
14.12.2020	Tirane	Ali Lulo	MARD	Head of Epidemiology-Identification and Registration	0683445278
18.12.2020	Tirane	Luljeta Çuko	MARD	Director	0684681827
13.01.2021	Tirane	Dervi Kanina Xhulia Bakiasi	Goat Farm+ Gout milk Processing (BONUM)	General Manager Dairy technologist	0693943948 0685915630
13.01.2021	Tirane		BONUM shop	Shop-keeper	
13.01.2021	Tirane	Keti Margariti	MARD	Head of Veterinary	
22.01.2021	Tirane	Luljeta Cuko	MARD	Director of Directorate of Food Safety and Veterinary Policies and Programs	0684681827
28.01.2021	Fier	Piro Rapushi	Former AZHBR	Livestock expert	0684073732
28.01.2021	Fier		I&R – RUDA System	expert	
29.01.2021	Libofshe/Fier	Ligor Zaka	TRIS-ALB cow farm	veterinarian	
29.01.2021	Fier	Andon Cuko	Veterinary and Plant Protection Agency	Chief Veterinarian Fier	0692296993
30.01.2021	Fier	Ervin Resuli	Private veterinarian	Veterinarian	0692946222
30.01.2021	Grabian/Lushnje	Saimir Shehu	Goat manager	expert	0686286500
5. 02.2021	Tirane	Irfan Tarelli	General Directorate of Agriculture Policies, Food Safety and Rural Development	Director	0682078716
12.02.2021	Tirane	Lauresh Grezda	Directorate of Agriculture and Rural Development Policies and Programs	Director	
15.02.2021	Tirame	Tana Kika	National Authority of Veterinary and Plant Protection	General director	0684030604

