REPUBLIKA E SHQIPËRISË
MINISTRIA E BUJQËSISË
DHE ZHVILLIMIT RURAL

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

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

Project number: 2017.2192.7-001.00

MEAT SECTOR STUDY REPORT

Final

AGT INTERNATIONAL

DSA DEVELOPMENT SOLUTIONS ASSOCIATES

May 2021

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List of Abbreviations and Acronyms

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 and 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

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 meat sector.

This study is focused on the meat and meat products commodity chain, including some Animal By-Products (ABPs). Those ABPs which are not directly related to the commodity chain, such as waste of international catering and carcasses of animals used for experiments, which are include in the definition of ABP, but are not part of the commodity chain have been only considered in terms of needs for ABP processing plants of different types.

The analysis does not include the analysis of skin and wool commodity chains, which are relevant for overall rural development, but not for IPARD III.

1.2 METHODOLOGY

The meat sector analyse 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.

1.2.1 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 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.

1.2.2 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).

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.

1.2.3 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 neighbouring 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.

1.2.4 Limitations of the available data and the reliability of the data collected

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 meat production data is also linked to highly variable slaughter average live weight (depending on the type of product, and market segments for which it is produced, breed etc.), and to the level of self-consumption. When the quality of international trade data was questionable, we used statistics reported by countries exporting meat and meat products to Albania, namely EU countries (in the case of meat 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.

1.2.5 Information retrieved from the Common Annex

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; 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: behavior, perceptions and preferences regarding product origin and quality.

2. FARMERS/ GROWERS/BREEDERS

2.1 OVERVIEW OF MEAT PRODUCTION

Table 2.1illustrates the small-scale structure and the subsistence orientation of meat farms in Albania. Meat farms have in average 2.5 cattle, 51.0 sheep, 37.8 goats, 9.3 pigs or 139.0 broilers.

Table 2.1: Structure of meat production in 2019

Description	Cattle	Sheep	Goat	Pigs	Poultry (broiler)
Meat farms with cattle, sheep, or goat (no.)	187,930	36,555	23,444	19,736	35,688
Meat production per year (thousand tons)	66	35	19	17	20
Average number of animals (heads/ farm)	2.48	51.0	37.8	9.32	139.0
Slaughter live weight (kg/head/year)	201.7[1] 226.9[2]	26.7	23.98	80.23	2.04

Source: INSTAT (2019), FAOSTAT, and authors' calculation.

In the last decade, the process to increase productivity slowly progressed, with an increase in total output and a growth in average meat yield of slaughtered animals; in particular, beef meat output remained essentially the same over the whole decade. The trend was different for sheep, goat, and broiler breeding, which showed a slow, but constant increase in meat yield, with a resulting sizable output increase (+12.9; 46.0% and 17.6%, respectively).

At present and for the foreseeable next future, meat production is organised almost totally as extensive breeding, especially for ruminants.

Beef meat production

Beef meat production is not a separate activity- farmers produce both milk and meat; the average slaughter live weight was 202 kg/head in 2019, which is much lower than the EU average slaughter live weight 520 kg per head[3] (ranging between 200 to 800 kg/head depending on breeds and type of product[4]). Notwithstanding relatively low productivity, meat production is at present more profitable than milk production. The mix of application of extensive breeding systems, low capital investments, fragmentation of the production base, low farm gate prices paid to small breeders[5] and overall scarce competitiveness in production of animal feed create un-favourable conditions for milk-oriented cattle breeding; as a result, smaller milk producers are increasingly shift towards meat-oriented production, using a good part of the excess milk to feed calves. Buying calves from larger farms and feeding them with milk exceeding self-consumption needs, with the objective to sell for slaughtering these calves after some months is becoming an increasingly common practice among the smallest dairy cattle breeders.

The consequence of the above is that most of the beef meat for fresh consumption is sourced by small non-specialized farms rather than by larger specialized farms.

Small ruminants' meat production

Comparing Albanian small ruminants' productivity with that one in EU member states is more difficult, as lamb and mutton slaughter live weight are related to consumption patterns (some markets demand only lamb meat, others lamb and mutton meat etc.), breeds (chosen in function of consumption patterns) and evolution of animal husbandry practices[6].

[1] MARD, unpublished report. This figure has been used for the remaining part of the report.
[2] FAOSTAT
[3] FAOSTAT (2019)
[4] The lightest category is "white meat veal", which is made with calves fed only with milk, an average slaughter live weight of 200 kg/head, used for a small market niche, to the most common "beef" 14-20 months male old and with an average slaughter weight of 400-800 kg; also, increasingly popular is "scottona" category, a female 12-16 months old with an average slaughter live weight of 350 to 500 kg.
[5] The price gap between farm gate raw milk prices paid by large dairy processing plants to large and small dairy farms can easily reach 50% (60 ALL/l vs/ 40 ALL/l). For more details see the milk and dairy sector analysis.
[6] Lambing seasonality is primarily linked to consumption patterns but is also related to the predominance of transhumant or permanent breeding systems.

The same factors affecting milk-oriented cattle breeding are also causing an increasing orientation of traditional and small/medium small ruminants' breeders (i.e., those breeders with less than 100-150 milking animals) towards meat production; at present, except for the largest milk-specialized small ruminants farms (those with over >500 milking animals of highly productive breeds, located in lowlands) the income from sale of lambs and goat kids regularly exceed incomes from milks.

The decline of transhumance and the increasing difficulty to find young shepherds is also contributing to an overall reorientation of traditional small ruminants' breeding towards meat production.

The trend of several large herds to shift to meat production is also linked to seasonality in lamb and goat kid meat demand pattern, which sees higher consumption is the first four months of the year, when herds are kept in lowlands or near to settlements. This implies that animals in summer pastures are already producing small quantities of milk.

Pork meat production

The average slaughter live weight of pigs in Albania is 25-30% lower than the average of EU countries; in this case, considering the orientation of pig breeding (mostly for the fresh meat market segment, pork meat for processing is largely imported as frozen meat), there would be ample room for increasing meat yields.

Poultry meat production

Poultry meat mostly consists in chicken meat. Core production is made by broiler factories (i.e., integrated poultry breeding activities) following an internationally standardised pattern bringing to produce a 1.5-2.0 kg broiler.

There are also small-scale turkey breeding activities, mostly centered in Central Albania (Fier and Elbasan).

Table 2.2: Evolution of meat livestock, yields and production

Description	2010	2014	2019
Bovine meat			
Meat production (000 tons)	68	71	66
Slaughter live weight (kg. per head)	175.4	195.8	201.7
Lamb and mutton meat			
Meat production (000 tons)	31	35	35
Slaughter live weight (kg. per head)	23.9	26.6	26.7
Goat meat			
Meat production (000 tons)	13	15	19
Slaughter live weight (kg. per head)	21.8	23.5	24.0
Pig meat			
Meat production (000 tons)	16	18	17
Slaughter live weight (kg. per head)	78.6	80.03	80.2
Poultry meat			
Meat production (000 tons)	17	17	20
Slaughter live weight (kg. per head)	1.9	2.0	2.0

Source: MARD (2010), INSTAT (2014; 2019)

Meat 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 an important aspect to increase productivity. While for pigs and broilers the increase of cereal production will also increase their productivity.

2.2 MEAT FARMS

2.2.1 Number of livestock and trend over time

The inventory of cattle, following the increase in 1991-2000, reaching to 728 thousand, has been showing a downward trend starting from 2001 up to 2019, reaching 416 thousand.

On the other hand, the number of sheep and goats did not follow a clear 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 until 2016, when it started to decrease again.

The number of pigs had a significant decline in the period 1990-1999 and after 2000 the number started to increase, reaching 184 thousand pigs and 14 thousand sows. Although, the number of pigs raised, has not yet been reached the level of 1990 (220 thousand).

The number of poultry after a decrease in 1991-1992 (by 50%) started to increase for about 20 years (1993-2011), as several eggs and broiler production units started to operate. For the period 2012-2014 the number is oscillating around a figure of 8.5 million poultry; changes in number depends on market demand, competition from imported broiler meat and diseases affecting the national poultry stock.

In 2019 compared to 2010 the number of cattle, sheep, and poultry has decreased by 15.6%, 2.7% and 3.0%, respectively. While the number of goats and pigs increased by 11.4% and 12.2%, respectively. Table 2.3 below contains updated data on livestock in Albania.

Table 2.3: Number of livestock 2010-2019 (000 heads)

Description	Years							Index
	2010	2014	2015	2016	2017	2018	2019	2010=100
Cattle	493	500	504	492	475	467	416	84.4
Sheep	1,806	1,896	1,918	1,972	1,926	1,864	1,758	97.3
Goats	775	904	932	941	933	917	863	111.4
Pigs	164	172	171	181	180	184	184	112.2
of which sows	*13*	*11*	*11*	*13*	*12*	*12*	*14*	*107.7*
Poultry	8,437	9,493	8,558	8,326	7,835	8,362	8,179	97.0

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, often, and low price of meat, compressed by availability of cheap frozen meat imports.

2.2.2 Number of farms and distribution by size

The regional distribution of livestock in 2019 is shown in Table 2.4 below.

Table 2.4: Number of livestock by region 2019

Region	Cattle	Sheep	Goats	Pigs	Poultry
Berat	22,477	138,942	79,365	3,400	641,800
Dibër	35,500	113,000	65,000	2,900	311,000
Durrës	23,100	33,000	21,690	5,400	1,962,700
Elbasan	43,125	145,390	98,920	5,500	859,800
Fier	67,880	268,490	50,693	25,300	1,600,000
Gjirokastër	18,800	262,850	121,800	1,200	168,300
Korçë	39,377	245,147	90,085	10,100	491,600
Kukës	25,390	34,675	18,654	1,700	121,300
Lezhë	33,050	31,510	59,500	65,900	257,400
Shkodër	40,155	63,400	59,980	49,800	698,600
Tiranë	40,137	65,085	53,720	2,600	636,300
Vlorë	26,618	356,844	143,458	10,000	430,400
Total	415,609	1,758333	862,865	183,800	8,179.200

Source: INSTAT (2020)

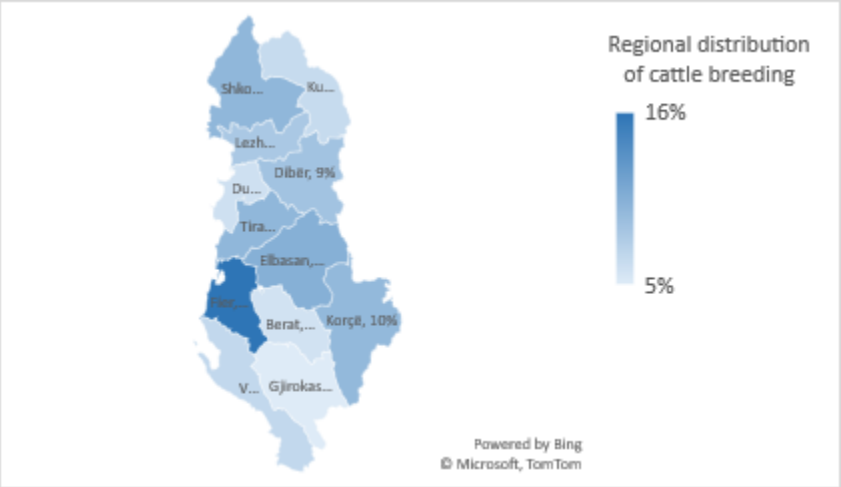
The analysis of regional distribution of livestock provides important information about specialisation and concentration of activities is some regions.

Cattle: number and regional distribution

The region with the highest number of cattle is Fier, contributing to 16.4% of total cattle population, and together with the regions of Elbasan, Shkoder and Tirane account for about 46% of the total cattle inventory. Cattle breeding is spread all over the country: there are only two regions (Fier and Elbasan) with more than 10% of total cattle heads each and only one (Gjirokaster) with less than 5% of total cattle heads.

Figure 1below maps the regional distribution of cattle. Distribution appears only related to several factors, including the presence of lowlands and the concentration of population.

Figure 1: Regional distribution of cattle (%)



Source: Author processing of INSTAT data.

Small ruminants: number and regional distribution

The population of small ruminants is more concentrated in southern regions: 19% of small ruminants are recorded in Vlora only and 55% of sheep and goats are concentrated in the four regions of Vlora, Gjirokaster, Korçe and Elbasan. The regional distribution of sheep and is slightly different from that one of goats, which are more concentrated in mountain areas. Consequently, Fier is an important production area for sheep breeding (15.3% of total), but not for goat breeding (5.9% of total), while Elbasan is more important for goat breeding (11.5 % of total) than for sheep breeding (8.3% of total). Table 2.5 blow show the volumes of regional distribution of small ruminants.

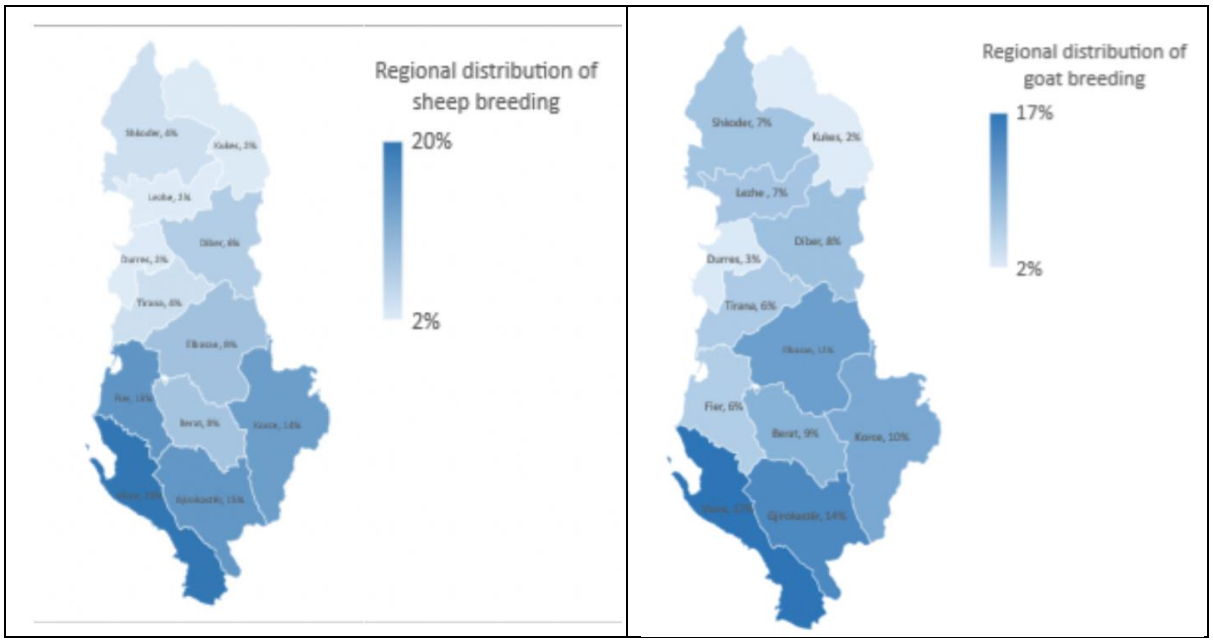
Table 2.5: Small ruminants' regional distribution

	Sheep				Goats		
Region	**Number**	**Share**	**Cumulated share**	**Region**	**Number**	**Share**	**Cumulated share**
Vlorë	356,844	20.2%	20.2%	Vlorë	143,458	16.6%	16.6%
Fier	268,490	15.3%	35.5%	Gjirokastër	121,800	14.1%	30.7%
Gjirokastër	262,850	15.0%	50.5%	Elbasan	98,920	11.5%	42.2%
Korçe	245,147	13.9%	64.4%	Korçe	90,085	10.4%	52.6%
Elbasan	145,390	8.3%	72.7%	Berat	79,365	9.2%	61.8%
Berat	138,942	7.9%	80.6%	Dibër	65,000	7.5%	69.3%
Dibër	113,000	6.4%	87.0%	Shkoder	59,980	7.0%	76.3%
Tiranë	65,085	3.7%	90.7%	Lezhë	59,500	6.9%	83.2%
Shkoder	63,400	3.6%	94.3%	Tiranë	53,720	6.2%	89.4%
Kukes	34,675	2.0%	96.3%	Fier	50,693	5.9%	95.3%
Durrës	33,000	1.9%	98.2%	Durrës	21,690	2.5%	97.8%
Lezhë	31,510	1.8%	100%	Kukes	18,654	2.2%	100%
Total	1,758,333	100%		Total	862,865	100%	

Source: Author processing of INSTAT data

Figure 2provide a visual indication of the importance of different regions for small ruminants' breeding.

Figure 2: Regional distribution of sheep (left) and goats (right)



Source: Elaboration of the author on INSTAT data

Pigs: number and regional distribution

The population of pigs is concentrated in northern regions: 63% of pigs are recorded in Lezhe and Shkoder only. The regional distribution of pigs is slightly different from that one of sows, which are more concentrated in southwest of Albania. Consequently, Fier is the third most important area for pig breeding (14%), but the most important area for sows breeding (30%).

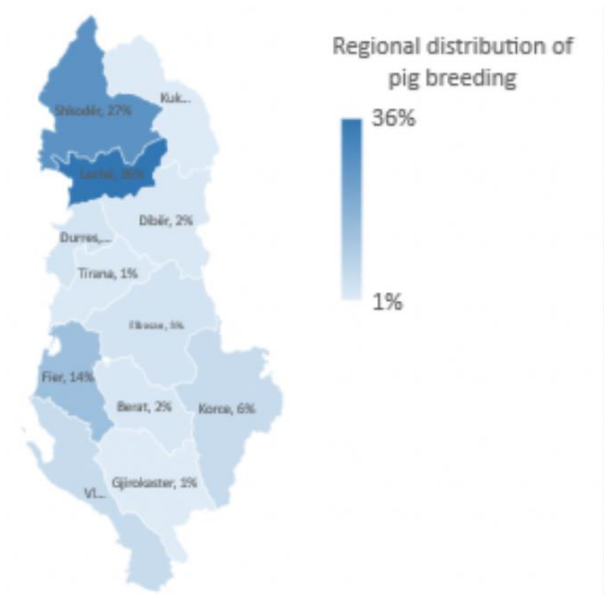
Table 2.6: Pigs and Sows' regional distribution

Pigs				Sows			
Region	**Number**	**Share**	**Cumulated share**	**Region**	**Number**	**Share**	**Cumulated share**
Lezhë	65,920	35.9%	35.9%	Fier	4,035	29.6%	29.6
Shkodër	49,778	27.1%	63.0%	Lezhë	3,100	23.0%	52.6
Fier	25,350	13.8%	76.8%	Shkodër	2,530	18.7%	71.3
Korçë	10,057	5.5%	82.3%	Korçë	1,004	7.4%	78.7
Vlorë	9,870	5.4%	87.7%	Vlorë	716	5.3%	84.0
Elbasan	5,555	3.0%	90.7%	Durrës	619	4.6%	88.6
Durrës	5,440	2.9%	93.6%	Elbasan	369	2.7%	91.3
Berat	3,427	1.8%	95.4%	Tiranë	306	2.3%	93.6
Dibër	2,900	1.6%	97.0%	Kukes	250	1.8%	95.4
Tiranë	2,620	1.4%	98.4%	Berat	240	1.8%	97.2
Kukës	1,700	0.9%	99.3%	Diber	200	1.5%	98.7
Gjirokastër	1,230	0.7%	100%	Gjirokaster	170	1.3%	100%
Total	183,800			Total	13,539		

Source: Author processing of INSTAT data

Figure 3 provide a visual indication of the importance of different regions for pigs' breeding.

Figure 3: Regional distribution of pigs



Source: Author processing of INSTAT data

Poultry: number and regional distribution

The population of poultry is more concentrated in southwest and central regions: 24% of poultry are recorded in Durres only and 54% of them are concentrated in the three regions of Durres, Fier and Elbasan. The regional distribution of turkeys is slightly different from that one of poultry, consequently, while Durres is an important production area for poultry breeding (24% of total), but not for turkeys breeding (5% of total), while Elbasan is more important for turkeys breeding (26% of total) than for poultry breeding (10.5% of total). Table 2.7below show the volumes of regional distribution of poultry and turkeys.

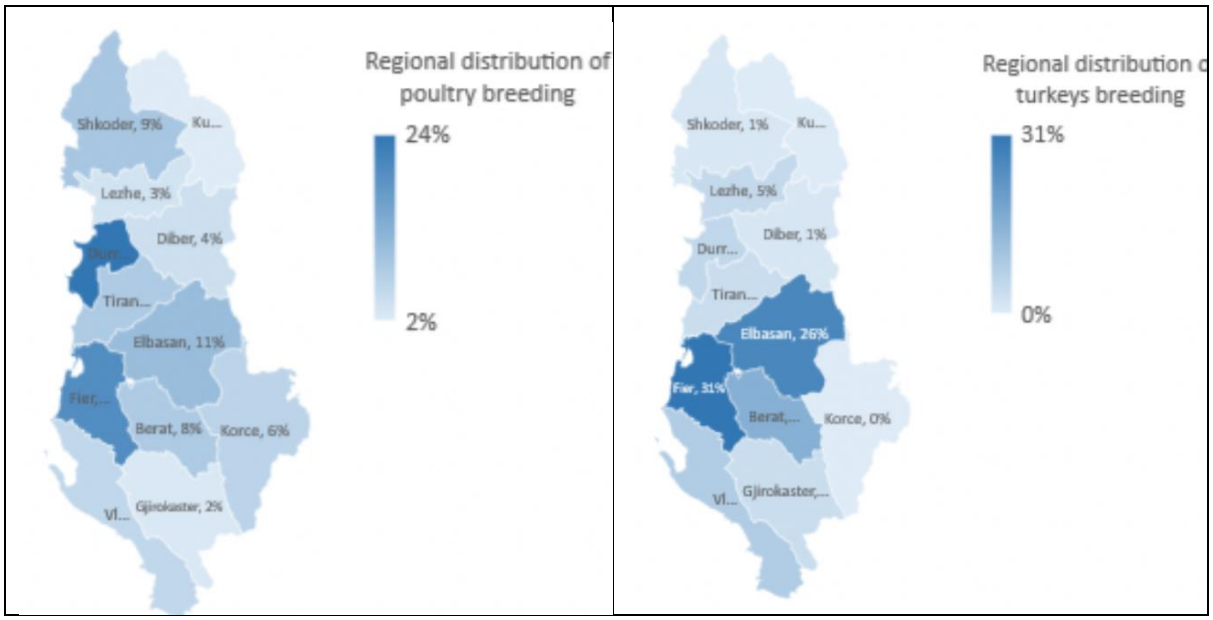
Table 2.7: Poultry and Turkeys' regional distribution

Poultry				Turkeys			
Region	**Number**	**Share**	**Cumulated share**	**Region**	**Number**	**Share**	**Cumulated share**
Durres	1,962,700	24.0%	24.0%	Fier	123,840	30.6%	30.6%
Fier	1,600,000	19.6%	43.6%	Elbasan	106,530	26.3%	56.9%
Elbasan	859,800	10.5%	54.1%	Berat	62,700	15.5%	72.4%
Shkodër	698,600	8.5%	62.6%	Vlorë	32,220	8.0%	80.4%
Berat	641,800	7.8%	70.4%	Durrës	21,320	5.4%	85.8%
Tiranë	636,300	7.7%	78.1%	Lezhë	18,790	4.6%	90.4%
Korçë	491,600	6.0%	84.1%	Gjirokastër	15,080	3.7%	94.1%
Vlorë	430,400	5.3%	89.4%	Tiranë	14,550	3.6%	97.7%
Dibër	311,000	3.8%	93.2%	Dibër	5,000	1.2%	98.9%
Lezhë	257,400	3.2%	96.4%	Shkodër	3,900	1.0%	99.9%
Gjirokastër	168,300	2.1%	98.5%	Kukës	400	0.1%	100%
Kukës	121,300	1.5%	100%	Korçë	-	0.0%	
Total	8,179,200				404.400		

Source: Author processing of INSTAT data

Figure 4provide a visual indication of the importance of different regions for pigs' breeding.

Figure 4: Regional distribution of poultry (left) and turkeys (right)



Source: Author processing of INSTAT data

Farm size

Bovine farming

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

In 2018, the farms keeping cattle were187,930. Most farms are very small: the average number of cattle per farm is2.48 animals; 65.5% of the farms have 1 or 2 cattle.

Smaller cattle farms are typically oriented to meet self-consumption needs, so cattle are in most cases dairy cows; however, most farms also keep for some months one or more calves, including one or more purchased by larger dairy farms.

Many livestock farms are not specialised and keep several species of animals.

The farms with more than four cattle were 13,463, or 7.16% of all cattle breeding farms, showing an increase 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 an increase in cattle farms groups with more than 4 cattle (21.8%), with an overall reduction of the total cow herd in Albania by 3.8%, as shown in Figure 5below.

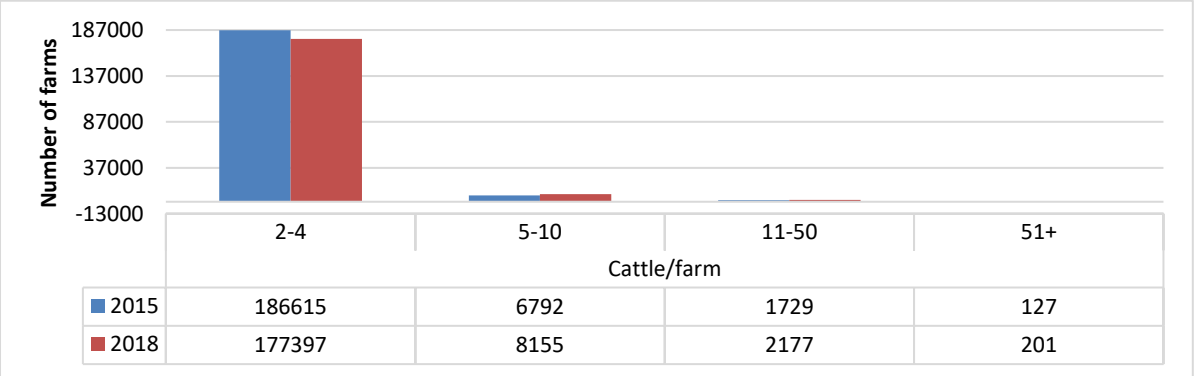
The cattle numbers were very different in relation to farm size: decline of about 5% was recorded among very small farms (4 cattle and less), while the number of larger farms is increased.

The dynamic of growth between 2015 and 2018 was quicker for largest farms: +20% having 5 to 10 cattle, +26% in the range having 11 to 50and +58% for farms with more than 50 cattle.

This trend reflects the increase of interest of farmers per meat production and the overall weakness of the milk sector, as in the same period the number of large farms with dairy cattle is decreased[7].

[7] -27% in the range 5 to 10, -18% in the range 11 to 50 dairy cows and -14% in the group >50 dairy cows; see also Milk sector study.

Figure 5: Cattle-breeding farms in 2015 and 2018



Source: Elaboration of the author on MARD data

This highly fragmented cattle production structure and the nature of the ongoing trends (the production base still consists 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.

Small ruminants' farming

In 2018, there were 36,555 farms with sheep and 24,244 with goats. Most farms that have sheep also have goats. The average size of the sheep flock and goat herds in the country was 51.0 sheep and/or 37.4 goats. Throughout the country the farms with less than 50 sheep heads are still very common (78.9% of total). The same situation is found with goats' herds, farms with less than 50 heads account for about 84% of country total population.

Table below shows sheep regional distribution according to size of farms; in most regions, the average size of the flock is smaller than 50, which is considered the thresholds for semi-commercial farming[8]. The average number of sheep per farm is larger than 50 only in Korça, Gjirokaster, Tirana, Vlore and Berat. Only 21% of farms (7,723 units) have more than 50 sheep per farm.

Table 2.8: Number of sheep by region in 2018

Regions	Total			Number of farms according to sheep per farm			% of farms with more than 50 heads
	Farms	Sheep	Sheep/farm	50-100	100-200	201+	
Berat	2,847	161,968	56.9	399	228	73	24.6
Dibër	3,390	130,150	38.4	254	102	47	11.9
Durrës	836	40,836	48.8	53	63	9	14.9
Elbasan	5,161	144,354	28.0	655	120	87	16,7
Fier	4,680	213,965	45.7	735	148	63	20.2
Gjirokastër	2,500	270,697	108.3	226	280	457	38.5
Korçë	2,070	347,135	167.7	731	325	180	59.7
Kukës	2,000	65,191	32.6	235	75	40	17.5
Lezhë	3,086	30,426	9.9	92	37	16	4.7
Shkodër	4,700	68,316	14.5	158	58	15	4.9
Tiranë	875	74,946	85.7	160	38	16	24.5
Vlorë	4,410	316,022	71.7	885	443	220	35.1
Total	36,555	1,864,006	51.0	4,583	1,917	1,223	21.1

Source: MARD unpublished reports and author calculations

Table below shows the goats' regional distribution; in six regions, the average size of the flock is larger than 50. The average number of goats per farm is highly variable according to regions, with six regions out of twelve showing

[8]Gross margin and cash flow in typical farming and breeding activities in Albania (FAO, 2014).

an average in the range of 16 to 3 goats per farm and only one region (Korça) having average goat flocks clearly larger (153 goat) than any other region.

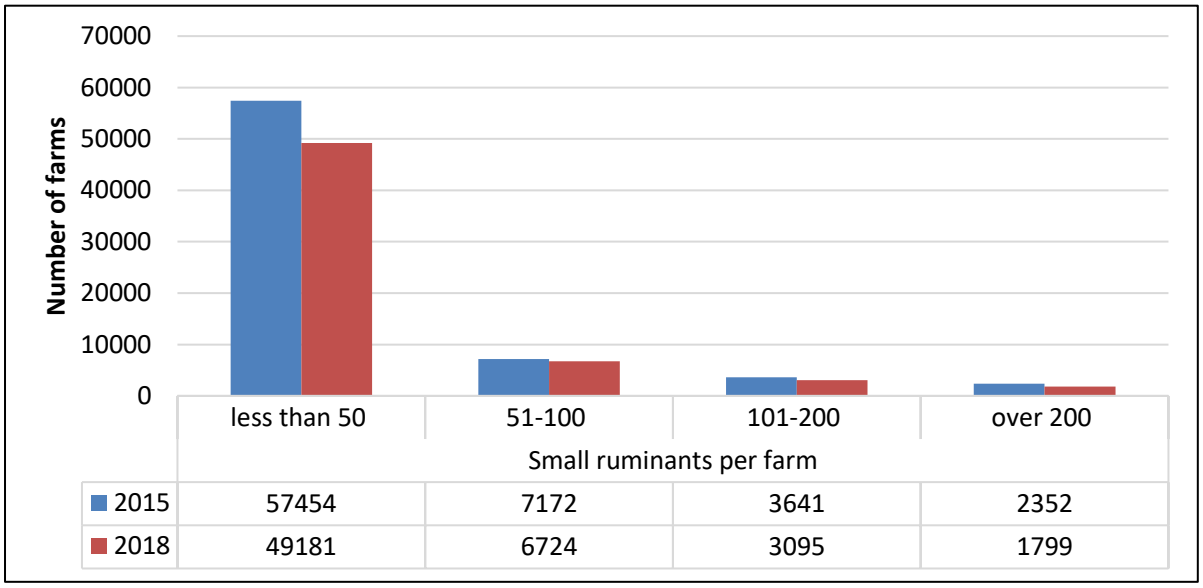
Table 2.9:Number of goats by region in 2018

Regions	Total			Number of farms by dairy goats' herd size			% of farms with >50 heads
	Farms	Number	Goat/farm	50-100	100-200	201+	
Berat	1,221	71,200	76.3	178	161	90	35.1
Dibër	2,384	57,550	31.7	163	101	26	12.2
Durrës	337	18,930	73.7	58	45	6	32.3
Elbasan	5,164	84,100	21.4	370	102	90	10.9
Fier	1,721	42,180	32.2	164	69	18	14.6
Gjirokastër	1,715	92,300	70.6	180	156	166	29.3
Korçë	670	78,100	152.9	150	90	55	44.0
Kukës	1,050	26,470	33.1	76	45	51	16.4
Lezhë	3,419	41,650	16.0	181	49	20	7.3
Shkodër	3,823	49725	17.1	244	50	0	7.7
Tiranë	815	44520	71.7	95	75	10	22.1
Vlorë	1,925	92250	62.9	282	235	44	29.1
Total	24,244	698,975	37.8	2,141	1,178	576	16.1

Source: MARD, unpublished reports and author calculations

Figure 6depicts the comparison between the number of farms with small ruminants in 2015 and 2018.The evolution of small ruminants' 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 6: Small ruminants farms by size in 2015 and 2018



Source: Elaboration of the author on MARD data.

Pig farms

In 2018, there were 6,136 farms with pigs. Most farms that have pigs also have sows, because a limited number of farms are only fattening piglets. The average size of the pigs and sows per farm was 19.9 and/or 1.92 heads respectively. Throughout the country the pig farms with less than 5 sows are the large majority (92.4% of total).

Table 2.10below shows pigs and sows regional distribution according to size of farms; in most regions, the average size of the herds is smaller than 5sows. The average number of sows per farm is larger than 5 only in Tirane, Vlore, Fier and Gjirokaster. As a whole, only 7.6% of farms (466 units) have more than 5 sows per farm. Even if the tradition of breeding pigs is stronger in some parts of the North-Western Albania (Lezhe and Shkoder), the largest (commercial) farms are located in Central and Southern Albania.

Table 2.10: Number of farms according to sows per farm -2018

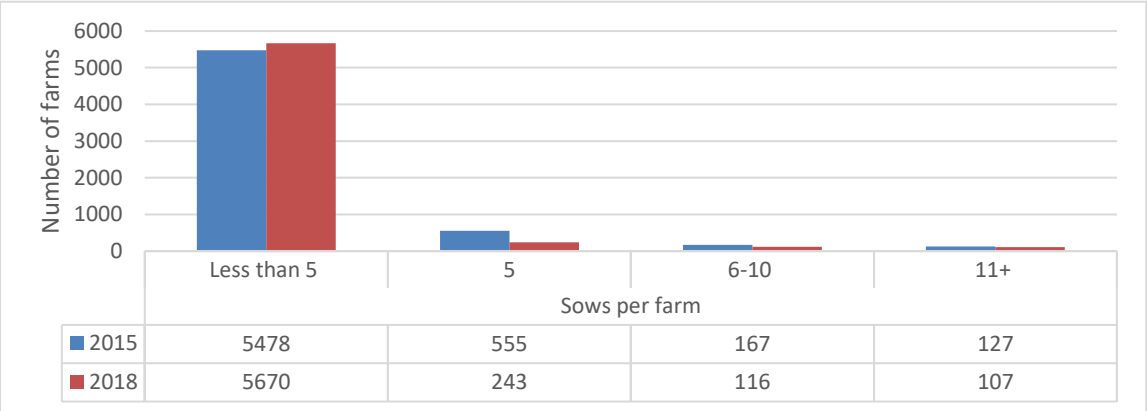
Region	Total			Farms according to sows per farm			% of farms with 5+ heads
	Farms	Pig/farm	Sows/farm	5	6-10	11+	
Berat	56	61.2	4.4	1	7	3	19.6
Dibër	58	38.0	3.7	0	0	0	0.0
Durrës	631	8.6	1.2	10	2	3	2.4
Elbasan	96	57.8	3.8	16	10	4	31.2
Fier	328	77.3	7.1	56	20	38	34.8
Gjirokastër	23	53.5	6.6	2	1	1	17.4
Korçë	190	52.9	4.8	24	12	14	26.3
Kukës	250	6.8	1.0	0	0	0	0.0
Lezhë	2,256	29.2	1.4	87	31	25	6.3
Shkodër	2,171	22.9	1.2	32	20	8	2.8
Tiranë	27	97.0	12.4	6	3	4	48.1
Vlorë	50	192.5	9.7	9	10	7	52.0
Total 2018	6,136	29.9	1.92	243	116	107	7.6

Source: MARD, unpublished reports and author calculations

It is worthy to remark that during planned economy the largest pig farms were in the area between Fier and Vlora; these farms were dismantled after the collapse of planned economy and only some small farms continued the activity of pig breeding in the area between Lezhe and Shkoder, which is still the core area for small pig farming. Larger pig farms were re-established in South-Western Albania only in the last decade.

Figure 7 below depicts the comparison between the number of farms with sows in 2015 and 2018. The evolution of pig farms (breeding sows) over time shows a sizable overall reduction in the number of farms between 2015 and 2018 (-3%); the reduction in the number of farms is higher for larger farms: farms with over 5 sows decreased by 45.2% in just four years (2015 to 2018).

Figure 7: Pig farms by the size of sows in 2015 and 2018



Source: Elaboration of the author on MARD data.

Poultry/broiler farms

In 2018, there were 35,688 farms with broilers. The average size of the broilers per farm is 139 heads. Throughout the country the small size of broiler farms with less than 1,000 broilers are the majority (99.8% of total). However, most broilers are produced in the 24 largest broiler farms.

Table 2.11 below shows broiler regional distribution according to size of farms, where not only 99.6% of all the broiler farms are in Fier, but also ½ of the farms breeding more than 1,000 broilers.

Durres is also in important poultry breeding area both for production of broilers and eggs.

Table 2.11: Number of broiler and broiler farmsin 2018

Regions	Total			Number of farms		
	Farms	Broiler (heads)	Broilers/ farm	1000-5000	5001-10. 000	Over 10.000
Berat	4	340,000	85,000	--	--	4
Dibër	0	0	0	--	--	--
Durrës	10	775,000	77,500	4	1	5
Elbasan	0	0	0	--	--	--
Fier	35,547	3,458,247	97	16	2	6
Gjirokaster	0	0	0	--	--	--
Korçe	4	180,000	45,000	--	--	4
Kukes	0	0	0	--	--	--
Lezhe	3	5,500	1,833	--	--	--
Shkoder	117	110,350	943	--	--	2
Tirane	2	60,000	30,000	--	--	2
Vlore	1	32,000	32,000	--	--	1
Total	35,688	4,961,097	139	20	3	24

Source: MARD

Turkeys' farms

In 2018, there were 33,933 farms breeding turkeys. The average size of the broilers per farm is 21.6 heads. Throughout the country the small size of turkeys' farms with less than 10 turkeys are the majority (57.9% of total).

Table 2.12below shows turkeys regional distribution according to size of farms, only in three regions, the average size of the herds is smaller than 10 turkeys/farm. The average number of turkeys per farm is larger than 50 only in Durres and Gjirokaster. Only 5.5% of farms (1,881 units) have more than 50turkeys per farm. Fier is accounting for the largest number of turkeys (61.1% of total) but only 4.6% of farms are breeding more than 50 turkeys per farm.

Table 2.12: Number of Turkeys and farms in 2018

Region	Total			Number of farms with		
	Farms	Turkeys (heads)	Turkeys/farm (heads)	10-50 (heads)	51-100 (heads)	Over 100 (heads)
Berat	4,918	64,140	13.04	120	137	14
Dibër	115	1,500	13.04	0	0	0
Durrës	73	22,480	308.0	40	19	14
Elbasan	7,080	108,550	15.3	1,220	445	100
Fier	12,697	447,630	35.3	9,090	415	166
Gjirokastër	279	14,680	52.6	159	90	4
Korçë	0	0	0.0	0	0	0
Kukës	150	1,000	6.7	0	0	0
Lezhë	386	18,500	47.9	94	53	40
Shkodër	595	3,900	6.6	117	8	3
Tiranë	1,400	14,475	10.3	831	247	36
Vlorë	6,240	35,600	5.7	720	70	20
Total	33,933	732,455	21.6	12,391	1,484	397

Source: MARD

2.3 PROFILE OF MEAT BREEDERS AND BREEDING SYSTEMS

2.3.1 Profile of meat breeders

2.3.1.1 Cattle Breeders Overall Profile

Most beef production farms are kept in the lowlands. Most of the farms are relatively small[9], breeding 25-30 calves, and only few of them (mainly importers) are breeding more than 100 calves per production cycle. In these larger farms, calves are usually imported (mainly from Romania and Bulgaria). Smaller farms buy the animals from

[9]Annual Statistics of the MAFCP(2012)

importers (after ordering them) or are buying in live animal markets. While the big farms are those of importers, who is after importing for several years' calves for other farmers decided to grow also in their own. The calves are imported with a 160-200 kg live weight and kept until reaching 300 kg live weight, as butchers do prefer meat from younger and smaller calves for fresh meat consumption (meat to be used for processing is mostly imported frozen meat). Only restaurants that organize events take calves weighing over 400 kg.

This practice of slaughtering younger and lighter animals is supposed to correspond to consumers' preference (who prefer tender meat with a lighter color) and is in line with the practices followed in the past, when no maturation was applied (meat was released for retailing after a few hours from slaughtering). However, the application of this practice contributes to the scarce competitiveness of the bovine meat sector in Albania, as after this weight calves could gain more weight and at a lower cost.

Organoleptic qualities of meat obtained from these young animals are also inferior, as compared to properly matured beef meat. However, consumers' preference is what eventually leads the characteristics of the product supplied.

The feed ration of both type of farms is the same: concentrate, hay and straw. Calves of the small farms are kept tied and in relatively poor-quality shelters. Small farmers are facing market and price difficulty, notably during 2020. The liveweight price is 350 ALL/kg.

In recent years, many farmers who have few cows (1-3) are not milking them at all, if not for family self-consumption needs. When one cow is calving, they buy form medium and large farm a seven-day old calf (30,000 ALL/calf) and leave the two calves to suck the cow, as they are not interested to sell the milk, due to the low price. It should be noticed that this practice would not comply with EU animal welfare standards, as so young calves should be not moved away from the cow and there are also risks connected to the transport[10].

The waste management is the most crucial issue, as most of the slurry is not collected.

Manure is generally collected and sold, but there is an overall issue of its maturation for use as fertiliser.

2.3.1.2 Main differences between low input/most extensive beef farming and higher input/semi-intensive beef farming

Low use of inputs/extensive farming

An important issue is related to the mismatch between improved of genetic potential of animals and their actual performance. Most of this mismatch is because, especially in small farms, improvements in genetic potential were not matched by improvement in animal feeding patterns.

In fact, larger farms which are using compound feed and appropriate animal husbandry practices are achieving productivity like that one in EU member states, while small farms which base feeding practices on fresh forage, hay and straw with limited quantity of cereals like corn and wheat bran barely reach half of this productivity level.

The use of pastures rather than compound feed could be not a major issue, should sufficient pastures of adequate quality and/or land devoted to forage crops be available; in fact, cattle is mainly grazing on fallow land rather than in proper pastures.

In addition, insufficient area of land for cattle 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 cattle feed ration to be insufficient.

Another factor that is observed in the small-scale cattle 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 calf weight at birth which is related to daily body gain during all the fattening periods.

[10]In seven days the belly button is not completely cicatrized.

Finally, the present re-orientation of cattle breeding from milk to meat production did not bring, so far, to significant changes in the choice of breeds for artificial inseminations, which are still prevalently oriented to milk production; therefore, these animals have a lower weight gain rate as compared to meat-oriented breeds.

Most farmers do not know that the welfare of cattle 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, all factors which have an impact on daily body gain.

The small farmers sell their fattened calves in the live animal markets or directly to the butchers.

Medium and high use of inputs/intensive farming.

These systems are used by medium and large-scale cattle fattening farms. Such farms have: (i) better stables, (ii) rented land for fodder production, (iii) machinery and equipment for animal husbandry, feeding etc. (iv) buying inputs such compound feed and, (v) regularly get veterinarian and zootechnical services.

The specialized farms have their own transport means to transport the animals to the slaughterhouse. Usually, the large farms are fattening imported calves, mainly from Romania and Bulgaria, as the prices are cheaper as compared with other EU member countries.

2.3.1.3 Small ruminants' breeders' profile

Most the small ruminants' breeding farms are micro or small farm; the few very large and modern farms are all milk-production oriented; the lambs and goat kid they produce are in most cases sold as soon as possible to other farmers, who keep them until ready for market requirements (20-22 kg live weight for lambs and something less for goat kids).

The flocks sized 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 traditional production model is set to minimize costs and inputs, not to increase the output; given such objective, it is efficient in the local conditions but not fitted to intensive production. Small ruminants' breeding is generally well adapted to the geographic and climatic conditions of Albania. Small ruminants bring value to the natural grasslands and have performances in line with the level of the available (poor) feeding. They can 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 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 the farm; d) natural pasture within walking distance, with the return of animals in the evening to the farm.

The predominant system in hill and mountain regions of Albania is the extensive one. The management of the small ruminants is based on traditional raring, and the new technologies are little known to 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). 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.

Transhumance was quite common in socialist time up to mid-90s.The main transhumance routes were from the South-West coast areas (Vlora and Saranda) towards highland pastures in Gijrokaster and from Dinaric Alps to Shkoder. Nowadays these transhumance routes are much reduced, in the north due to land privatisation (so the animals remain in mountain areas all year round) and in the South also due to pasture and watering points degradation.

At present, most small ruminants are kept in the highlands in the north and south of the country, where are located the abundant pastures that represent one of the important natural resources of those areas., Future development and rural incomes will depend heavily on the efficient use and maintenance of this ample, but nonetheless limited, natural resource to produce qualitative animal products for both domestic and export markets at competitive prices.

With forage availability strongly affected by altitude, transhumance (within the same region or between neighbouring regions) represents the most efficient and sustainable use of pasture resources for the large herds.

In transhumance practices, small ruminants graze in summer in highland pastures, when these are more productive (from April-May to September-October), and are transferred to lowland pastures in in autumn. 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 well as about the seasonal influences of temperature, rainfall, and vegetation growth patterns. These herders are also fully knowledgeable of the preferential grazing preferences and 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. In the past oak leaves were also used as animal fodder.

The winter feed ration of small ruminants is low in protein and vitamins and minerals.

Shelters are very simple both in highland pastures and in wintering locations. Radical improvements would be necessary for these shelters in terms surface for each animal, stable height (as they are very low), ventilation, lighting, and hygiene.

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.

Some of the small ruminants' farmer have shifted the herd profile from milk to meat which is the new trend. Prices of lamb and kids is 300-350 ALL/kg (live weight); in all the gross margin simulations made for the purpose of milk and meat sector studies, incomes from lamb and goat kid meat exceed incomes from small ruminants' milk, except in the case of the large (>500 heads), intensive and highly specialised milk-oriented small ruminants' farms, all located in lowlands and using imported highly productive breeds. Several farmers with the support of the veterinarians are using ewes hormonal and feeding treatment for oestrus out of season (usually in Albania sheep are mating in July-August) and are cases of herds that have lambing all the year around.

Box 1: Endrit Pepa's sheep farm

Endrit is the third generation of a sheep breeding farm. He is breeding 800 ewes of "Ruda" breed.

Until 10 years ago he bred local breed sheep and goats for milk production. Facing the difficulties in selling milk and the unsatisfactory price he sold all the animals and bought in Kosovo and Albania sheep of the Ruda breed. Endrit liked Ruda breed for their features such as greater body weight compared with the local breed and greater weight of lambs at birth, as well as the very good daily body gain. Initially with the help of veterinarians he treated the sheep with hormones to make offspring off-season and distributed throughout the year.

Today Endrit sells lambs all year round and get a very high price from the season that he sells the lambs and from their very good quality.

He has rented 100 ha of land to produce alfalfa and a part of the concentrate, while the rest of the concentrate needed, he buys in the market.

The fertility of the sheep is 120%, and in the first days of January 2021, when the farm was visited, the farm had newly born lambs, lambs of 10 kg, 15 and 20 kg body weight, as well as pregnant ewes.

The sheep herd is in very good health and one of the reasons is that every 5 years Endrit changes the place of the stables to prevent the diseases, except the vaccination plan that he applies correctly. The stables are with cheap materials but very functional.

The decline of transhumance has an important impact on small ruminants' productions and population: in particular, in the South, which used to host the main population of sheep, the lambing season in Vlora is now mostly limited to wintertime and early spring, with the objective to sell within March-April all the lambs and goat kids which are not used for elder sheep and goats' replacement. This choice becomes necessary because summer pastures in South west coast are quite poor and transhumance is limited. At the same time, the flocks which are now living all year round in highlands have their lambing period in summer, when pastures are richer.

This has brought to season-wise supply specialisation: lambs and goat kids from South-West and Southern regions satisfy two peaks in lamb meat demand, which are related to the New Year and to Easter, while small ruminants' flocks in mountain areas satisfy demand for the remaining part of the year.

2.3.1.4 Pig farms Profile:

- Only a handful of farms are breeding 100+ sows. The sows and boars are imported (mainly from Greece), the sows are usually "Large White" and "Landrace" or "Topigs", while boars are "Duroc" and "Pietrain"; Piglets from "Large White" breed are partially kept for replacement.
- Several of the largest pig farms comply with EU housing standards and environmental control.
- The compound feed is produced at farm level; protein feed is purchased from importers (AIBA, NDRAXHI, MBM, etc.) and other feed components from input suppliers.
- The reproduction performance in these farms scores 5 pregnancy per sow in two years. Piglets are weaned in 21-25 days;
- They have their slaughterhouse, however time to time they sell the pigs to butchers or restaurants. The pigs are slaughter at 100-110 kg. The price of pork meat is 550-600 ALL/kg.
- Some of the large growers are using dry feed, where in-farm cereals are grinded and mixed with a purchased supplement containing the protein source(s), vitamins and minerals, in order to provide a balanced diet. Some other are delivering feed via a liquid feed administration system; and other producers utilize a blend of both types, where a liquid feedstuff is provided along with a complete dry feed. Very few of the large farms have a complete feed delivered via feed auger line to individual pens or sows from a storage bin.
- New technology, such as computerized feeding systems, have been installed in some largest pig farm to allow for continual changes in diet composition thus providing an optimal match with their growth curves and changing nutrient requirements. There is a variety of feeder design for the producers utilizing dry complete feed.
- Medium farms are breeding 20-40 sows. Most of them started to improve the sows and piglets same used in large farms, and the way of feed preparation. They are taking experience from the large ones, which are their clients. Reproductive performance is 4-5 pregnancy per sow in two years.
- The piglets are weaned in 24-28 days and these farms are taking.
- Several of them have their shops (where they sell pork meat) aside the national roads (i.e., Fushe/Kruje, Mamurras, Laç), however they also sell the pigs to butchers, restaurants, or individuals. The price of pork is 550-600 ALL/kg.
- Small farms are the most numerous and keep 2-10 sows. Most of them use very extensive breeding systems. The housing conditions in most of them are poor and sows are not from pure breeds. Most of them are facing feeding issues and often have problems with animal diseases. The pigs are slaughtered at 85-100 kg (depend by the market price and feed availability), and the meat has fatter than that produced by large and medium-sized farms. Most of these farms are in the north and northeast of the country.
- While small farmers have simple building and feeding is done by hand. In addition, the farms that fatten pigs (1-2 heads) for their own consumption usually have very primitive barns, and feeding is very simple with low protein level of feed and use the leftover food of the family.

2.3.1.5 Broiler farms Profile:

- Few farms are breeding 200,000 broiler per cycle (Driza, Chicken Farm, Erogert, Tik-Tik). Most of them are importing the 24-hour old chicks from Italy or Greece. The largest broiler factories centralize the upstream (procurement of chicks or hatchery management) and downstream (slaughtering, packaging, distribution) functions, while the proper breeding function is divided between the farm itself and several external contractors, who receive the chicks and the feed, grow them, and sell them back to the main farm.
- Driza farm has also the parent stock and the hatchery, used to supply the farm itself and some external contractors with hybrids chicks (Ross, Cob and Colored/Backyard). Most of the farms are buying 1-day chicks imported from Greece and Italy and some of them are buying from the largest farms, as DRIZA which has a hatchery and keeps parent stock.
  In general, all the large farms have new buildings equipped with controlled environments and feed is delivered via feed auger line. The housing and feeding technology are purchased from well-known EU and Turkish companies. These companies have their own slaughterhouses, storage, and packaging, where they slaughter/package the broilers from their farm and the contracting ones, two of these farms also invested in slaughterhouse waste treatment (Erogert and Driza).

- The medium sized broiler farms are those with 50,000-100,000 broiler per cycle and are about 20 of such size. They have the same characteristic of the large ones.
- The small farms with 10,000-20,000 broiler per cycle usually are contractor of the large farms. They have done improvements in the last years, and have a secure market, as they buy chicks and feed from one of the large farms and at the end sells the broilers to the same large farm which has the slaughterhouse.

2.3.2 Type of breeding and breed of animals

Cattle breeding

The main cattle breed in Albania are the Holstein (31%), Jersey (35%), and Black & White (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 continue to grow, as the farmers who are breeding Black &White cows are shifting to Holstein breed. Majority of the cows (63%) bred in lowland are under artificial inseminations and Fier region is in the first place with 88.8%[11].

It is well-known that Holstein, Jersey and Black & White are dairy breed, and the daily body gain of the calves are low in comparison with the calves of dual-purpose breeds (Simmental, Brown Swiss, NRF or Tarentaise), and this is one of the reasons for the low cattle meat slaughter average weight.

Table 2.13: Cattle breed structure 2018 (%)

Breed	Breeding		Total
	Pure breed	Crossbred	
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.

Sheep and goat breeding

Sheep breeding has a long-held tradition in Albania. The local sheep breeds represent33% of the total sheep population, have a dual purpose for milk and meat production and are very well adapted to the environment and to the hard conditions of their breeding.

The most important local breeds are: Recka, Ruda, and Bardhoka (Table 2.14).

Most of the sheep population (67%) is made of imported breeds mainly specialized for milk production (Awassi, Chios), except Merino (specialised for wool production) and Ile de France breed (specialised for meat production).

Table 2.14: Sheep breed structure 2018 (%)

Breed		Breeding		Total
		Pure breed	Crossbred	
Local	Recka (local)	20	-	20
	Ruda	7	-	7
	Bardhoka	-	5	5
	Mati	1	-	1
	Cigaja	3	30	33
Imported	Merinos	1	15	16
	Awasi	2	5	7

[11]MARD unpublished report 2019

Breed		Breeding		Total
		Pure breed	Crossbred	
	Chios	5	3	8
	Ile de France	-	1	1
	Others	-	2	2
Total		39	61	100

Source: MARD, unpublished report.

About 89% of goats are native breeds or ecotypes and 11% are crossbreeding with the "Alpine" and "Saanen" breeds (Table 2.15). The goat local breeds are the only species that have not been subjected to mass crossbreeding.

Table 2.15: Goat breed structure 2018 (%)

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

Source: MARD, unpublished report

Natural selection has favoured balanced genotype development. They are preserved in their area, taking their name from the geographical region where they are reared: "Hasi", "Mati", "Capore of Dragobia", "Capore of Mokrra", "Dukati¨, "Liqenas", as well as ¨Muzhake¨ in southern part of the country.

Several local ecotypes of sheep and goat have ¨at risk¨ and ¨potentially at risk¨ conservation status and unfortunately there are no ongoing conservation programmes. 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 they prevent inbreeding effects. Natural mating is common for sheep and goats which are being bred in pastures far from the living centres or in general, far from markets.

The native sheep and goat ecotypes are much more adapted to the grazing environment, and they produce more milk and meat at lower cost. Specialized and more productive breed would also need a substantial change in feeding patterns and animal housing.

In fact, investments to improve the genetic potential of sheep and goats (mostly importing rams and bucks) often did not bring the expected effects on productivity, as feeding pattern were not adapted to the needs of the animal.

The average sheep liveweight ranges 30 - 55 kg/ to female and 45- 80 kg/ per male, while the goats range are 35-55 kg for female and 40-80 kg/ for male[12].

Pig breeding

The large pig farms are using mainly imported breeds, such as "White Large" (as sows), Landrace, Duroc and Pietrain (as boars). In addition, the sows of the company "Topigs" imported from Greece are very suitable for the large and medium pig farms, for their high indicators in piglet breeding and their growth. The large (100+ sows) and medium (20-60 sows) pig farms have done important investments in shelter, environmental control, and

[12]UNDP (2019).Mapping the Genetic Resources of Autochthonous Farm Animals in Albania.

feeding technology, as the most important part of swine production is in knowing the correct way to feed pigs. They feed the pigs according to technological cards.

Poultry growers (broiler-meat) are using only hybrids, namely Ross, Cob and Coloured/Backyard as they have the fastest growth rate.

2.3.3 Animal feeding, dynamic of forages area and production.

The feeding of small cattle and small ruminants 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 in hay compound feed and silage.

The feeding of pigs and broilers is based on compound feed. The difference between the small and big farms is that the small ones (mainly in pigs) use lower level of protein feed.

The extension and conservation state of pastures and meadows and the cultivation of forage crops are therefore key issues, especially for ruminants' production. Albania features rich land resources for animal production (especially small ruminants), with pastures and meadows that cowers 15% of total land size.

The area cultivated with forage crops increased in recent years and in 2019 reached approximately 220 thousand hectares, or 7.8% more than in 2014. In addition, the fodder production increased by 16.6% as a result of the increase of the area and the increase of the yield by 8.0%.

Table 2.16: Forages

Forages	Year						2019/2014
	2014	2015	2016	2017	2018	2019	
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)

Fier is the region with the largest area cultivated with forage crops (20.3 % of total surface) and that one with the highest productivity per ha (42.9 Tons/ha), as a result, Fier provides 26.9% of the total forage production.

The region with lowest productivity per ha is Kukes (13,1 tons/ha).

This large difference in productivity among regions shows that there is considerable room to improve forge production using better inputs and farm machinery and intensifying the cultivation methods. Improvements should be introduced in the use of the following inputs, equipment, and cultivation methods: i) quality seeds; ii) phosphate fertilizers especially for perennial crops (alfalfa); iii) equipment for soil preparation (bedding); iv) proper irrigation equipment and methods; v) appropriate use of PPP for weed and pest management control.

A significant difference between productivity in lowlands and mountain areas will remain, but there is real possibility to improve and increase the production of forage crops, with a positive impact both on milk and meat production (costs reduction) and on environmental aspects (maintenance of soil fertility, prevention of erosion, increased carbon sequestration).

About 50% of the area under fodder is covered by alfalfa, for fresh consumption and hay production, followed by clover, ryegrass, etc. Alfalfa together with the meadow mixtures is currently the mostimportant and productive solution in terms of hay production. Corn and grass silage are becoming more important for medium and large sized cattle farms and for large, small-ruminants' farms using imported breeds.

Table 2.17: Foragers by region

Region	Foragers			Cattle	Cattle/ha foragers
	Surface (ha)	Production (ton)	Yield/ha (ton)		
Berat	14,020	427,760	30.5	22,477	1.6
Diber	25,904	554,611	21.4	35,500	1.4
Durres	18,583	691,397	37.2	23,100	1.2

Region	Foragers			Cattle	Cattle/ha foragers
	Surface (ha)	Production (ton)	Yield/ha (ton)		
Elbasan	22,833	829,191	36.3	43,125	1.9
Fier	44,641	1,915,045	42.9	67,880	1.5
Gjirokaster	12,089	216,000	17.9	18,800	1.6
Korce	17,356	461,726	26.6	39,377	2.3
Kukes	6,920	90,889	13.1	25,390	3.7
Lezhe	14,580	497,895	34.1	33,050	2.3
Shkoder	16,507	542,065	32.8	40,155	2.4
Tirane	19,848	559,338	28.2	40,137	2.0
Vlore	6,803	329,316	48.4	26,618	3.9
Total	220,083	7,115,234	32.3	415,609	1.9

Source: INSTAT (2020) and authors' calculation.

In addition to forage crops approximately 132 thousand hectares are cultivated with cereals, of which corn is about 55 thousand hectares (Table 2.18). According to experts' opinion, about 90% of the cereal production is used as concentrate feed or corn silage to feed the animals.

Table 2.18: Area of cereals, 2019

Region	Cereals	Wheat	Maize	Rye	Barley	Oats
Berat	8,165	3,365	2,843	2	55	1,900
Diber	6,925	834	5,475	80	44	492
Durres	7,014	2,445	3,532	-	7	1,030
Elbasan	20,571	10,625	7,497	91	-	2,358
Fier	31,176	15,190	10,715	-	596	4,675
Gjirokaster	5,230	1,990	1,200	-	-	2,040
Korce	20,122	11,970	4,811	584	1,757	1,000
Kukes	3,268	370	2,153	418	-	327
Lezhe	6,549	3,100	3,429	-	-	20
Shkoder	7,022	1,330	5,692	-	-	-
Tirane	8,247	3,800	3,473	8	195	771
Vlore	7,914	2,311	4,328	-	88	1,187
Total	132,203	57,330	55,148	1,183	2,742	15,800

Source: INSTAT (2020)

2.4 MEAT PRODUCTION

2.4.1 Output and evolution over time

The evolution in the figures of meat production largely mirrors that one of livestock heads.

However, several factors contributed also to an increase in the average live weight of some categories of slaughtered animals (cattle, pigs and, in a certain measure, sheep), which reinforce the meat production trend when the animals' stock are growing and mitigate the impact of decreasing number of heads, as it happens for cattle and sheep.

In particular, the reduction in the total number of cattle and sheep eventually led to a reduction in bovine meat production by 8.4%and lamb/mutton meat by 5.4% in 2019 compared to 2017. For goat meat an increase of 26.6% was observed, while pig and poultry meat are in the same level.

In 2019 the total national meat production was 157,000 tonnes (Table 2.19).

Table 2.19: Evolution of meat production (000 tons)

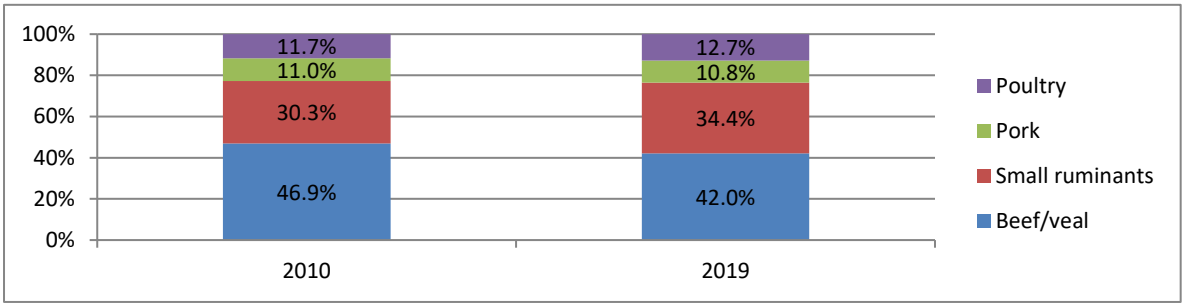
Description	2010	2014	2015	2016	2017	2018	2019	Index 2010=100
Bovine meat	68	71	71	72	72	68	66	97
Sheep meat	31	35	37	36	37	36	35	113
Goat meat	13	15	16	15	15	20	19	146
Pig meat	16	18	17	17	17	17	17	106
Poultry meat	17	17	17	20	20	20	20	118

Description	2010	2014	2015	2016	2017	2018	2019	Index 2010=100
Total	145	156	158	160	161	161	157	108

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

At present, the main component of meat production is made of beef/veal meat (42% of total); however, this share decreased in the last decade, while the contribution of poultry meat, especially broilers and small ruminants' meat, especially goat kid meat, increased. The comparison between structure of meat production in 2010 and 2019 is provided in Figure 8 below.

Figure 8: Meat production dynamics



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

However, the evolution of meat production is not exclusively related to the evolution in the stock of different categories of livestock bred in the country, as there is also a variable flow of imports of live animals to be finished (i.e., grown up to the stage of being ready for slaughtering) which modify the impact of changes in national livestock stocks.

The region providing the largest contribution to meat production is Fier, which provides 19.3 % of total meat production; Fier, Vlore, Elbasan and Korçe make together up to 46.2% of the total meat production of the country. The same regions are the largest producers of cattle meat (52.2%).

Table 2.20: Meat production by region

Region	Meat					Total
	Cattle	Sheep	Goat	Pigs	Poultry	
Berat	3,699	2,709	1,075	507	2,019	10,009
Dibër	5,118	2,474	1,056	270	461	9,380
Durrës	4,695	1,061	589	669	1,472	8,486
Elbasan	9,425	3,591	2,275	475	1,307	17,074
Fier	12,386	4,780	1,000	3,297	8,832	30,295
Gjirokastër	1,950	4,594	2,085	119	177	8,926
Korçë	6,424	4,674	1,753	870	413	14,133
Kukës	3,299	897	363	159	153	4,871
Lezhë	3,121	512	793	5,195	644	10,265
Shkodër	4,135	1,214	1,244	3,876	736	11,205
Tiranë	5,591	1,277	962	249	3,246	11,325
Vlorë	6,273	7,350	5,767	974	566	20,930
Total	**66,117**	**35,133**	**18,963**	**16,661**	**20,025**	**156,898**

Source: INSTAT (2020)

The most important regions of small ruminants' meat production are Vlore (24.2%); Vlora, Gjirokaster, Korçe and Elbasan are providing 59.3% of total small ruminant meat.

The region with the largest pig meat production is Lezhë, contributing to 31.2% of total pig meat production; Lezhë, Shkoder and Fier make together 74.2% of the pork meat production of the country.

In Fier region is registered the highest poultry meat production (44.1%); Fier, Tirane and Beratproduce70.4% of total poultry meat output.

2.4.2Slaughter live weight

The average live weight of slaughtered cattle in Albania is approximately 200 kg (Table 2.21); the figure is higher in Fier region (236 kg - 17% more than average of the country) and lower in Shkoder, Lezhe and Gjirokaster– 30.6% less than average yield; This figure is higher than it was in the last three decades, but is very low compared to the average of the EU-27, which is 520 kg per cattle head.

Table 2.21:Live weight of animals in the moment of slaughter in 2018

Regions	Live weight kg				
	Cattle	Sheep	Goat	Pig	Chicken
Berat	200.8	23.8	20.0	53.4	1.8
Diber	204.7	24.3	19.1	49.2	1.8
Durres	221.6	30.9	26.6	110.6	1.9
Elbasan	235.2	30.6	28.9	62.7	1.5
Fier	236.0	29.5	22.4	80.0	2.5
Gjirokaster	149.7	24.7	25.4	55.3	2.4
Korçe	205.0	25.3	24.8	75.8	1.2
Kukes	210.0	29.7	27.7	120.0	1.9
Lezhe	145.1	23.3	20.5	81.5	2.4
Shkoder	126.0	24.2	26.0	92.9	1.2
Tirane	225.3	25.4	23.1	94.9	3.3
Vlore	231.3	25.5	24.7	96.7	2.2
TOTAL	201.7	26.7	24.0	80.2	2.0

Source: MARD-unpublished report

The low cattle meat slaughter live weight 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 meat breeding techniques, which has led low daily body gain, health and welfare problems. Only a handful of large cattle fattening farmers have invested in modern stables and started to implement proper feeding regimes. Cattle in small farms 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.

Also, sheep and goat average slaughter life weight are low; namely 26.4 kg per sheep per year and about 24 kg per goat per head. From the figures in Table 2.21it appears that Durrës and Elbasan have the highest meat yield from sheep (15.7 and 14.7% more than average of the country), while Elbasan and Kukes have the highest meat yield from goat (20.4 and 15.4% more than average of the country) and this as a result of farms that are breeding imported sheep & goats (Durres and Elbasan), and farms that are focused in meat production from small ruminants.

Average pigs slaughter live weight is 80.2 kg and compared to the EU average slaughter live weight of 110-120 kg (87,1 kg carcass weight per head) is over 30% lower[13]. The slaughter live weight is increased by 16% as compared to the period 2007-2011 when the slaughter live weight was 68,8 kg[14].From the figures in Table 2.21 above it appears that pigs in Kukes and Durrës are slaughtered with a higher live weight (15.7 and 14.7% more than average of the country).

Broiler production is quite standardized, as in many other countries, such as 1.3 to 1.6 kg broilers with a 35-40 day growing period (60-day production cycle, all included). However, food distribution starts to ask for a segmentation of supplies, where separate production lines are established for light, medium and heavy broilers, these last generally to be retailed sold in pieces. The inability, so far, of Albanian poultry breeders to provide heavy broilers is limiting their market outreach. Only in Tirana region the weight of broiler is 3,3 kg or 65% more than average of the country, while in Shkoder, Korçe and Elbasan is 25-40% less than average. This is explained with costumer preferences. Regarding the owner of ARNA broiler farm in Korçe they could have higher profit if they grew the broilers one more week and could also increase the production. In one week, they would spend 1 kg more

[13]Pig farming in the European Union: considerable variations from one Member State to another. https://ec.europa.eu/eurostat/statistics-explained/pdfscache/3688.pdf

[14] Meat Sector Study-2013- GCP/ALB/014/EC IPA 2009

feed/broiler, that cost 60 ALL and will get 0,5 kg meat/broiler more. So, the additional net profit of growing broilers one more week will be 39 ALL/broiler (feed cost is 66% of all expenses).

2.5 ACCESS TO MARKETS, INPUTS AND SERVICES

Fertilisers, PPP, veterinary medicines

Input supply, service delivery, and output marketing are core elements in meat development. These inputs and services may need to be provided in an integrated way because efficient production requires all of them. Inputs and services in meat production comprise feed (both roughage and concentrate), breed supply, farm tools, farm 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 imported agrochemical products and for most quality seeds and fuel and this has a strong impact on the competitiveness of food products, including meat. 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 meat producers usually use their own carryover seed. In the main arable areas of the country, there is a tendency to use high seed rates. The Value Added Tax (VAT) exemption on fertilizer, seed and pesticides has encouraged their use.

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 control over 80% of the market for these inputs[15].

Input's suppliers play an important role in knowhow transfer and provision of advisory services, advising farmers on the way to solve different issues or improve performance making appropriate use of inputs; in practice input suppliers and their personnel operate as a private extension service. Farmers do not pay separately for advisory services, as the cost of the service is embedded in the price of the input they buy (so they contribute to pay for the service regardless of the fact they use it or not); however, some of input retailers in rural areas have not a sufficient knowhow to provide state-of-the-art advice in the wide range of information that farmers may need in relation to all inputs.

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

Box 2: AFADA

Albanian Fertilizers and Agro-Business Dealers Association (AFADA)was established in 1993, fully supported by IFDC-USAID project. During its 27 years of existence, AFADA members demonstrated the capability and the power to extend their network to the whole country, providing agricultural inputs to the majority of the farmers, to contribute to the development of the national agriculture and to improve the business and the livelihoods of the Albanian farmers.
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.
With many years of experience behind them, the AFADA dealers have become competent in expanding their agricultural inputs businesses in several various markets and with several diversified products.
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 AFADA success story led international donors to replicate the experience in other countries, including Kyrgyzstan, Azerbaijan, Kosovo, Tajikistan, Togo, Nigeria, and Malawi in Africa, etc.
The main products sold by AFADA members are fertilizers, PPP, quality seeds (wheat, corn, vegetables, fodder, etc.), animal feed, greenhouse building materials, spray pumps, propagation material (sapling and seedling), etc.
AFADA offers a wide range of services for its members such as: information on agricultural inputs both, local and international; legal counselling; links with other donors and financial institutions; technical consulting with local and foreign experts.

[15]Interview with executive director of AFADA.

Source: AFADA

From the interviews conducted it appears that the agro-input dealers (members of AFADA) are all licensed, all male, almost all with higher education, and most of them sole partners in business. The main product they sell is agricultural inputs (seeds, chemical fertilizers, pesticides, and animal feed), which in total make up 80% of their business. They do not enter into contracts with farmers as most of them are regular clients for the inputs they sell. Majority of traders thinks that the government should help subsidize animal feed and/or ingredients (by reducing VAT) as many of our neighbouring countries do, to reduce farmers' production costs and make the latter competitive with neighbouring countries. 90% of them say that they sell inputs with a delay payment of 2-6 months and do so in order not to lose clientele.

All the imported inputs are subject to control from several institutions of MARD, such as Seed Testing Laboratory (seeds), ATTC- Fushe/Kruje (fertilizers), NFA (pesticides and animal feed).

Animal feed

Concentrate feed, improved forage seed, animal replacement breeding services, and veterinary services & veterinary medicines were identified as the main livestock inputs and services used by the farmers, with major difference between the regions and in accordance with the size and specialization of the farm, with smaller and not specialised farm making minimum use of inputs and services.

The main animal feed producers and importers are the feed mills that produce mainly for the poultry industry (layers and broilers); however, they produce and sell animal feed to cattle and pig farms. The main feed mills that sell to other subjects 20-50% of their daily production are AGROTECH, AIBA, DRIZA, ARNA, etc. The small size 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.

Bull semen

Bull semen is all imported. In the last three years, approximately 50% of the semen imported and distributed is beef breed (Belgian Blue, Charolais, Limousine, Angus), as the cattle farmers are interested that their calves have high daily body gain in the fattening period.

In the years 2015-2017 there were 11 entities that imported bull semen[16].

The import of bull semen in the last three years is decreased by 20%[17]and the number of importers is decreased. At present, the main importers are: LEAA Association, B.O.F.A.K. Association, and NORALB. In addition are several others physical persons and/or entities that distribute the semen that they buy from the main importers.

The quality of bull semen is monitored by Regional Agency of Extension Service (RAES), for each party of semen import. Also, the border veterinarian of NFA do the inspection of all the documentation.

The opinion of the importers is that government should exempt VAT for bull semen (as it was done for PPP) and this will impact farmers to be more interested to use the artificial insemination.

[16]Data obtained from the interviews with the LEAA association, and wholesalers/distributors.
[17] Interviews with importers

3. PROCESSING INDUSTRY

3.1 STRUCTURE OF THE INDUSTRY

Agro-industry is the sector that not only provides a significant contribution to the GDP of Albania, but it is also considered as a sector with great employment potential.

Meat processing is one of the most developed agricultural subsectors in the country. Over the past five years, the meat processing industry has undergone important changes. Large scale processing plants went through substantial modernization and even the medium sized meat processing plants operate with good equipment and developed a competitive product line. The large and most of medium sized meat processors have invested mainly in technology and storage capacity, while for the small-scale processors the situation and challenges did not change. Figure 9 below, shows the dynamics of the sector regarding the expansion and the structural change.

Figure 9: Meat sector key development trends[18]

Sub-sector	Expansion (1 strong shrink - 5 strong expansion)					Structural change (1 - stagnant – 5 - changing fast)				
	1	2	3	4	5	1	2	3	4	5
Meat processing										
Slaughtering										
Meat										

Source: Authors' elaboration based on field interviews and expert assessment

Overall meat processing in Albania is divided in three segments, deeply different in terms of performance and financial sustainability: i) slaughtering, and ii) meat processing and connected large-scale importers of frozen meat and, iii) plants specialized in animal by-products (ABP), processing.

3.1.1 Slaughterhouses and slaughtering points

There were 200 slaughtering points and slaughterhouses in 2013[19]. The number of slaughtering points is significantly decreased in the last five years as most of them were closed. According to MARD and NFA most of their facilities were outdated and they did not even comply with Albanian hygienic standards.

At present, there are 52 slaughterhouses and 54 slaughtering points in operation (Table 3.1). According to the generally accepted distinction in Albania, slaughtering points are supposed to be more complaints, at lease from the structural points of view with national standards.

Table 3.1: Active Slaughterhouses by region in 2019

Region	Slaughterhouses	Slaughtering point	Total
Berat	12	1	13
Diber	4	--	4
Durres	4	6	10
Elbasan	4	2	6
Fier	5	7	12
Gjirokaster	3	4	7
Korçe	4	5	9
Kukes	--	5	5
Lezhe	2	15	17
Shkoder	--	--	--
Tirane	11	7	18
Vlore	3	2	5
Total	52	54	106

Source: MARD Extension Service Survey (2021)

[18]Authors' elaboration based on field interviews and expert assessment. Note: Pandemic impact has also been considered.
[19] Meat Sector Study (2013)

The efforts to establish a functional network of slaughterhouses in Albania did not bear yet substantial results, despite sizable investments made using bilateral and multilateral development cooperation resources (addressed to municipal slaughterhouses) and private investments. Some improvements were recorded in taking out slaughtering activities from meat shops backyards. However, irregular butchering/slaughtering is still common, especially in rural areas.

Most meat shops in urban centres are supplied by the slaughterhouses. Most facilities are built in the last five years and comply the Albanian and EU standards on hygiene, traceability, and HACCP. The capacity of most slaughterhouses is under-utilized; in most cases the workload is limited to5-15 cattle, and/or 10-20 small ruminants, and several pigs per day[20].

The main reason for slaughterhouses under-utilisation is the lack of enforcement of existing rules in most levels of the supply chain, which also led to inadequate re-organisation of the supply chain; in particular: i) butchers and farmers are not forced to take their animals to the slaughterhouses, as law enforcement on animal slaughtering is difficult to apply and anyhow not regularly enforced and, ii)the cost of transportation and complexity of logistics and payment for slaughtering the animals is an incentive not to use a proper slaughterhouse, unless law is actually enforced.

A slaughterhouse compliant with all food safety and environmental requirements is a sizable investment, which becomes financially sustainable only with a relatively high turnover; this would require a substantial re-organisation of the fresh meat supply chain in the whole country, which could be triggered only by bolder law enforcement.

The 52 slaughterhouses in operation (table 3.2) can be grouped in four categories:

1. *Slaughterhouses of the large broiler growers*, which slaughter their broilers and those of the contracted medium-sized farms; these poultry slaughterhouses are functioning very well, and one of them is investing in slaughterhouse waste management; The broiler slaughterhouses that have also the packaging and storage. All are private ones and are large broilers property. The slaughtering also the broilers of the small farms that they buy in based of contracts.
2. *Specialised pig slaughterhouses*, owned by pig importers and meat processors, where only their animals are slaughtered. The customers are meat processing companies (which buy carcasses), individual butchers and HO.RE.CA. (which buy carcasses or meat cuts); some of these larger pig slaughterhouses are planning to establish some lines to make use of second-choice or residual cuts to produce sausages and salami; smaller pig slaughterhouses also operate retail shops on the nearest national road.
3. *The slaughterhouses of larger meat processors*, such as TONA, that also imports pigs, or KMY that slaughter animals to supply their network of retail meat shops.
4. *The public (municipal) and private slaughterhouses* that operate as service providers, slaughtering the animals brought by farmers and butchers. Their main activity consists in slaughtering cattle and small ruminants; in some cases, the property of the slaughterhouses is linked to that one of the nearby live animal markets (such as one in Kamza-Tirana and one near Fushe-Kruje). All the slaughterhouses of this category are largely under-utilized, as law enforcement on animal slaughtering has been weakly enforced and irregular slaughtering is still common.

Those slaughterhouses that perform better are those run by major importers/traders and processors of live animals, that deal with large volumes of animals, in the context of their trade/processing business. Investments in new slaughterhouses, or in modernizing existing ones will become viable only when there will be stronger law enforcement related to animal slaughtering – otherwise, financing new investments without such a pre-requisite in place, implies exposure to a high risk.

Table 3.2: Number of slaughterhouses

	2014	2015	2016	2017	2018	2019	2020
Slaughterhouses	105	97	100	103	65	54	52

Source: MARD

[20]According to the estimates based on the interviews with farmers.

A major issue is related to the treatment of slaughtering waste, as only a small part of them is used to produce by-products and traceability is not in place; slaughtering facilities comply with the rules contracting a company to collect and take away the waste; there is no real control on what happens after this step. Most slaughterhouses (but only part of slaughtering points) are equipped with septic tanks, but also in this case, the actual management of wastewater is not really controlled.

The numerous "Halal" retailers and fast food uses a parallel network of slaughtering and first processing facilities, based on shop-scale slaughtering facilities; in Tiranë, most of the supplies for "Halal" market segments come from Kavajë, where some more structured facilities for slaughtering and first processing have been established.

Considering the above, there is a major need and scope for investments in slaughtering facilities in Albania as well as on treatment of slaughtering by-products and relevant investments should remain eligible in IPARD III and supported by the enhancement of NFA capacity to enforcing the existing rules on veterinary controls, food safety and traceability.

All the slaughterhouses in Albania are considered small and medium-sized enterprises as they all have few employees and a small turnover.

3.1.2 Meat processing and Animal By-Products (ABP) industry

Meat processors

The meat processing industry is among the first food industries to be re-established and modernised in Albania after the collapse of planned economy and the 1997 economic shock. It was the first agro industrial sector to consolidate and now is one of the most efficient segments of the value chain. The main trends and challenges remained unchanged, and the investments proved in most cases sustainable, and it can be considered among the most advanced agro-industry sub-sectors.

The number of meat processing companies oscillated between 88 and 121 units in the last programming period(Table 3.3); at present the figure (96 units) is comparable to that one in 2014 (88 units) despite the increase of scale and processing capacity.

Table 3.3: Evolution in number of meat processing operators and whole agro-industry

Activity	2014	2015	2016	2017	2018	2019
Meat processing operators	88	86	82	121	101	96
ABP processing operators	30	29	34	33	30	24
Total agro-industry	2,298	2,354	2,428	2,541	2,414	2,476
% Meat and meat products/ total agro-industry	5.1%	4.9%	4.8%	6.1%	5.4%	4.8%

Source: EU- Albania 12th Subcommittee Meeting Agriculture and Fisheries, 2016-2020

The meat industry is the fourth ranked in terms of enterprises (3.9% of total), after flour and bread production, milk processing, and production of vegetable oils. The number of companies remained rather stable in the last programming period, ranging between 88 and 96 units. These figures reflect the formalised industry only[21].

The number of the meat processing plants maybe higher, as there are many of informal processing units (mainly family-based workshops operated by pig growing farms)[22], that are not included in the official statistics; the output of these units is limited, and they could be supported in a process of formalisation as cases of in-farm diversification as artisanal producers of processed meat. Usually, the meat processing plants are categorized in large, medium, and small ones.

Large and medium scale processing plants went through substantial modernization and operate with good equipment and have developed a competitive product line. They have invested mainly in technology and storage

[21] The information on the role of meat processing industry in terms of added value is not recorded or not made available by INSTAT or MARD.

[22]Interviews conducted with processors and expert assessment

capacity. They have written contract with frozen meat importers/middlemen; in some cases, they also have direct contracts with foreign suppliers.

Their main source of input is imported frozen meat. Those which also sell fresh meat have their own slaughterhouse (KMY, Tona) or buy the meat from producers who also operate slaughterhouses (poultry and pork meat, see chapter 3.1.1 above) or from other private slaughterhouses.

Geographically, the large meat processing plants are in Tirana and Korçe, while the medium ones are in Elbasan, Shkoder.

Only six meat processors, with a processing capacity of 5-8 tons/day can be considered as large ones ("EHW", "Hako", "KMY", "ERDA", "Tona"; "Fix").

All these processors have pursued vertical integration:

- Two of them have their own slaughterhouse for the share of products sold as fresh meat.
- All of them take directly care of distribution of their products to retail level.
- The leading meat processing company and the other main competitors also operate a network of retail shops (quite sizable in the case of two of these companies), which sell fresh and processed meat and a limited range of other fresh and frozen food products.

Several other are processing plants are considered medium ones with a processing capacity of 1-3 tons/day ("ISAI", "D.A.R.B.", "Klas", "Kaci")[23].

At present the main meat processing plants have a sizable spare capacity, as in average they use only 55-70 % of their total capacity[24].

The large and most medium sized slaughterhouses and processing plants operate with good equipment and have developed a competitive product line, applying HACCP system and ISO standards; many of them are fulfilling EU standards.

The meat processors of this category pay attention to water and technological waste management. However, important issues remain in relation to waste management and wastewater treatment:

- Meat processing and slaughtering waste are collected by different companies, but traceability is not in place and what happens to these wastes after retrieval is not known; it is expected that largest plants cooperate with rendering industry (see section below), but since traceability is not in place, it is not possible to provide figures on this issue.
- Wastewater treatment needs improvement. Formalized meat industries have septic tanks; some have some water treatment equipment, but improved wastewater systems should be introduced, also considering that some of the main industries are near to highly urbanized areas. Moreover, controls on environmental management are weak, so the performance of these wastewater facilities is not known.

Most of the large and medium meat processing plants would have the potential to produce for export, at least at regional level, but as the animals and meat lack the traceability in Albania the EU and neighbouring countries do not allow meat products from Albania to enter their markets.

The competition between players for raw material procurement is minimal, as the industry mainly works with imported meat.

The main obstacle to the achievement of meat processing plants production potential is rather linked to limitations in market outreach, as they could increase raw meat and other ingredient imports if they would be able to substantially increase their sales, these limitations in the market outreach of large meat processing plants are in turn related to competition from small meat processing units (both formal and informal) at regional level for the cheapest popular meat products.

Another important point is that the output of meat processing plants is mostly made of different kinds of cold cuts (sausages, würstel, cooked ham, roasted pork etc.), while the majority of fresh meat sales occurs through butchers'

[23]AMPA data.
[24]Authors elaboration based on field interviews and expert assessment.

shops owned by individuals who buy live animals, slaughter them (directly, in slaughtering points and slaughterhouses) and sell the meat.

The small plants/unit are in small urban areas and at regional level.

These small units are using simple traditional technology that produce salami, meatballs (qofte) and meat-cuts. The hygienic conditions in most of these small processing units are not in conformity with requirements of the Albanian norms[25] and with the European Union standards. Compliance with standards and hygiene in most of them are an issue, and for most of them the situation and challenges did not change. These plants do not have adequate storage capacities and they face also marketing problems. Their customers are small shops in urban and remote areas but not in the main regions. Water and technological management are not performed.

Animal by-products processors

ABPs are animal carcasses, parts of animals, or other materials which come from animals but are not meant for humans to eat[26]; however, some ABP after treatment are suitable for human consumption. They are divided into 3 categories based on the risks they pose (with category 1 ABPs having the highest risk). In Albania there are 24ABP processors[27].

Only some Category 3 ABPs, after treatment, are intended for human consumption or can be used to produce components for pharmaceutical industry.

Not all ABPs are sourced from slaughterhouses, as ABPs include carcasses of animals affected by illness (either spontaneously died or culled) and manure (which is produced at farm level and is not treated by ABPs processing industry)

All slaughterhouses in Albania are equipped to recover part of category 3 ABPs, including most of the offal's, some of which are commonly part of traditional consumption habits[28]; modern slaughterhouses are also equipped with a separate room for the pre-treatment of some ABPs or to process some Category 3 ABPs.

The industry specialized in ABPs processing (known as rendering industry) is subject to specific standards, authorizations, controls, and safety risk management, but the plants are still classified as meat processing or offal processing plants.

In Albania there are several processing plants[29] authorized to treat Category 3 ABPs and 3 of them (INCA Nord fish, Ital Casings and Diretto Group) have also an EC number, being therefore authorized to export Category 3 ABPs (including intestines, casing different types of offal's etc.) in EU member states. These three companies mainly process and export natural casings (collected from the slaughterhouses), used for production of sausages and salami.

Some of these products generate a remarkable added value, which is even sufficient to justify the import of raw Cat.3 ABPs from other countries, the processing in Albania and the export of the processed product.

As part of this segment of Cat.3 ABPs processing there is also an ongoing investment to start heparine production (a component for pharmaceutical industry) from pig and bovine ABPs; the fact that requirements and controls for a processing plant producing components used in pharmaceutical industry are particularly stringent provides a good indicator of the capacity achieved by part of the Albanian meat industry to comply even with very demanding standards.

[25] Law No. 944 date 11.11.2005, and Food Law No. 9863, date 28.1.2008.

[26] They can either be destroyed or can be used to make compost, biogas, or other valuable products: i) Category 1 ABPs are classed as high risk and can be only incinerated, used as fuel or disposed at certain conditions; ii) Category 2 ABPs are also at high risk, but can be treated to obtain different by-products iii) category 3 ABPs are classed as low risk, include, among other products, offal's and casings, and are object of a vast international trade.

[27] EU- Albania 12th Subcommittee Meeting Agriculture and Fisheries, 2020

[28] Kukurec, different types of fergese, etc.

[29] The sector association estimate that there are some 20 meat authorized processing plants

The ABPs processing plants authorized to treat Category 2 (riskier) ABPs are much less numerous[30]. At present, there are at least 5 rendering companies that can process Category 2 ABP (I.N.C.A, Erogert, Driza, BalcanZoo FARM - 2014) and fish waste.

Erogert and Driza are processing only the waste of their broiler slaughterhouses while two of them (INCA and Balkan Zoo Farm) are processing the waste of many slaughterhouses and fish companies.

They produce a range of pet food products and meat and bone meal that can be used as component for animal feed, with many limitations and not in all countries. The largest unit of this category in Albania is producing for domestic market and export a range of products, including fat (for different uses), pet food and meat and bone meal.

Box 3:AZ Group

AZ Group is a complex in Lezhe, Albania comprising four different companies that operate in the animal by-products processing industry. The first company, founded in 2008, was "I.N.C.A. shpk"- which stands for "Industry of Natural Casings Albania".

INCA started out as a facon (outward processing) company, providing services to foreign companies to process natural casings destined for the meat & sausage industry intended for human consumption. In 2010, the company entered the domestic market by distributing and supplying the Albanian meat & sausage companies with natural casings - since then having adopted an ever-growing market-leading position.

In 2015, INCA started collecting its own raw material from Albanian slaughterhouses. Since it was already collecting only a small part of the by-products, the management of the company always sought to find ways to give value to other animal by-products that slaughterhouses were throwing away. In this regard, the second company of the group was created in 2018, when management decided to invest in a new line for manufacturing natural organic chews for domestic pets made of animal by-products - which cannot be destined for human consumption.

The third company of the group started operating in 2020 to collect and process 100% of the waste generated by all animal, fish, poultry, and meat processing related industries in Albania.

"AZ Rendering" is a rendering company that processes all animal, fish and poultry waste that cannot be destined either for human consumption or domestic pets. The final products rendered from the company are animal protein and animal fat, and zero waste. The products find use in various industries but are mainly utilized as biodiesel and feed for the agricultural sector.

Six years after deciding to start processing Albanian raw material, AZ Group transforms nearly 2000 tons of Albanian animal by-products per year, in the process of which it has becoming perhaps the only Albanian company operating in a full-scale Circular Economy business model.

So far, there are no plants treating the blood of slaughtered animals, so that the way in which it is disposed after being retired from slaughterhouses is not clear. In fact, established companies of the Albanian rendering industry refuse to collect the blood.

In Albania there are no plants authorized to treat Category 1 (those with highest risk) ABPs, the lack of this type of plant or the impossibility to access to one of these plants in a neighbouring country is an important public health issues, as these processing units have the purpose to incinerate animal carcasses, parts of them or food that could pose public health risks (e.g., animals affected by diseases that can be transferred to humans).

3.2 MAIN PRODUCTS AND PRODUCT TYPES /CHARACTERISTICS

The large and medium scale meat processing enterprises are the main suppliers of Albanian consumers in urban areas, especially for those consumers who prefer to buy meat products in shops and supermarkets. The main products of this industry are sausages and other cold cuts, mostly based on pork meat. Also, beef and poultry are processed. The meat processing enterprises now are producing more than 70 kinds of salami (naples, milan spicy, tourist, würstel, parizier, saxony, montana, chicken arrosto, mortadella, llukanik, ham, ham with chicken fillet, chicken würstel, meatballs). The products are sold in their shops and in supermarkets. Due to the comparatively

[30] According to the sector association estimate, there are four or five enterprises with some capacity to treat Category 2 ABPs; manure, which is also a category 2 ABP, is part of a completely different value chain and is not considered in this chapter.

higher local prices (vs. import) of raw meat slaughtered in the country, the raw meat for processing is imported mainly from Brazil, USA and Canada.

Table 3.4: Meat Industry Production (ton)

Description	2014	2015	2016	2017	2018	2019
Fresh cattle meat	105	109	102	95.7	81	96
Frozen cattle meat	72	73	79	68.0	60	134
Fresh pork meat	890	901	1128	1,136	1,022	952
Frozen pork meat	1,250	-	-	-	-	-
Frozen poultry meat	2,300	1,300	2098	2,006	1,584	1,634
Fresh poultry meat	3,400	3,100	4830	4,100	4,015	6,015
Meat offal	-	-	-	-	12	12
Corned beef, dried, smoked (pancetta)	85	100	104	2.8	3	3
Sausages	9,266	9,455	5940	5,420	5,100	8,795
Hamburger, meatball	1,000	1,100	1951	1,908	2,000	2,490
Canned meat	135	138	200	210	204	691
Meat Production	18,503	16,276	16,432	14,946	14,081	20,822
Industrial Production value	452.7	459.4	489,6	514.5	534.3	569.3
Meat Production Value	47.1	43.4	43,1	44.1	37.1	57.6
% of Industrial production	10.4	9.4	8.8	8.6	6.9	10.1

Source: EU- Albania 12th Subcommittee Meeting Agriculture and Fisheries, 2016-2020

Demand for meat products is expected to increase slower than the meat demand. Prices are only one of the reasons. In this segment the market does not follow the dynamics of the meat market. Moreover, the meat industry efforts to keep stable prices for meat products in conditions of increasing costs brought further doubts regarding the quality of the raw imported materials used.

According to the data inTable 3.4, Albanians have spent about 33 million euros in 2019 on processed meat products, the most popular being the sausage/salami (81.8% of sales), followed by specialties such as hamburger and meatballs (12.1%), and canned meat (6.1%). In total, 11,980 tons of such products are consumed annually, i.e., 4 kilograms per capita/year.

The meat products are consumed mostly in Albania. Exports are negligible and mainly are edible offal, casings and live animals (Italy and Kosovo). In fact, due to non-compliance with EU standards, Albanian meat products (excepts some ABP Category 3) are banned from EU markets.

In recent years, large processors substantially improved packaging and labelling of meat products: a wider range of retail packaging is being introduced and materials have been diversified in relation to the type of product and its target market segment.

In line with increased demand for high quality meat products, the range of meat products produced by large meat processors was expanded, adding cured ham, new types of sausages and salami etc.

Meat products produced with fresh meat are considered superior to those ones based on frozen meat, but there are consumers' concerns about the quality of fresh meat used (microbiological contamination), as well about processing methods (temperature, pasteurization time, storage).

3.4MEAT SUPPLIES

The meat supply base of the Albanian meat industry is made of: i) imported frozen meat (cattle, pork and chicken), ii) imported live animals (mainly pigs) and iii) domestic production of raw meat. Imports of frozen meat and live animals are described in **Chapter 5.1** - International trade flows.

3.4.1 Meat sources

Despite increases in meat production and a relatively well-developed meat processing, only a small part of domestic production is processed by meat industry. Meat processing industry is working with frozen meat.

Most of the Albanian meat processors, usually, do not import the meat directly from abroad but uses the services of meat importers/middlemen. However, there are cases of direct imports from meat processing companies when market conditions are particularly favourable or when there are problems in trade relations with importers.

The quality of raw meat is affected by the inadequate hygienic and sanitary conditions on the farms, inadequate equipment used for animal feeding, animal health, disease treatment and animal transport, lack of knowledge, information and skills about meat production and food safety standards. The quality of the raw materials, the slaughtering technology and the meat industry processing conditions, the compliance with the hygiene criteria imposed by food production can decisively influence the finished product's quality and consumer safety.

A proper unfolding of the technological process is important in achieving the sensory, nutritional, biological, energy or hygienic features, essential in defining the quality of products intended for the food market[31]. In the primary meat processing plants, the added value is obtained by means of simple technological processes, usually by means of proper meat cutting and packaging, which allow to make the difference among quality classes, hygienic conditions of transport-marketing-display and facilitate the trade act by an adequate presentation and a better accessibility to the consumer. The complex secondary processing plants best exploit the animal resource, aiming at obtaining meat products and at using the secondary products resulted from slaughter.

In cases when the processors are buying live animals from farmers, they should intensify the relation with them by informing and training farmers on topics which are observed that are not applied according to the good animal practices such as: stable and animal hygiene, antibiotic residues in meat, etc. The information and trainings can be conduct in cooperation with extensionists and public veterinarians, therefore the relations between the processors and the extensionists should be raised to a higher level of cooperation with mutual interest (as it is part of their work but for many reasons little attention is paid to it). Interventions to improve food safety standards at farm level (small and medium cattle farm, small ruminants', and pig farms) and small sized meat processing needed more efforts and time for creating awareness and demonstrating benefits and this should be strengthened by active involvement of IPARD measures.

As mentioned above, the meat processing industry works with the imported ingredients suchasfrozen meat (beef, pork and chicken) that comes mainly from Brazil, USA and Canada, and in some rare cases use the pork meat from the imported pigs that are slaughtered by the importers. The large processors have invested in their own distribution and retail networks (EHW; KMY; HAKO, TONA; FIX). In recent years they have begun to feel the competition as some of them assisted by the IPARD-II program have significantly improved technology and consequently productivity.

The large and most medium sized slaughterhouses and processing plants operate with good equipment and have developed a competitive product line, by applying HACCP system and ISO standards and several of them are fulfilling the EU standards. The main challenge for them is measures of the government to eradicate the diseases such as Brucellosis, Anthrax, TBC etc. to secure meat EU-quality standard in the coming years. The large and medium processors have their labs for self-monitoring of their products and microbiological tests are done periodically, while the small sized ones are not applying any of these procedures.

[31]Bobe, M. and Procopie, R. (2011). Valoarea psihosenzorialaˇ a produselor alimentare – factor declanşator al deciziei de cumpaˇrare. Amfiteatru Economic, XIII (5), pp 662-670.

4. GOVERNMENT POLICY FOR THE SECTOR

4.1 LEGAL BASIS, STRATEGIC DOCUMENTS AND RELEVANT ACHIEVEMENTS

The Law on Agriculture and Rural Development[32] 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; the law also 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, agriculture research and training.

The main strategic documents for the development of the agriculture and rural development, on which the MARD performs its functions are: (i) the National Strategy for Development and Integration (NSDI), and (ii) The Inter-Sectorial Agriculture and Rural Development Strategy (ISARD 2014-20), which includes sector, sub-sector and crosscutting strategies, setting 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).

The action for ISARD implementation is specified in the Action Plan for ISARD implementation 2014-2020, prepared in 2014 as updated in 2016 (Action Plan for ISARD implementation 2016-2018).

Short term policies are detailed in the yearly programs and the relevant activities in the yearly action plans.

ISARD foresees 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.

ISARD priority for the meat sector were defined as follows: "*The **priority** for developing this sector will be to meet domestic market demand. There is a need for investments in safety and environmental standards and for investments in slaughterhouses. **Support** for safety and environmental compliance investments, especially for slaughterhouses, will be combined with a national effort to enhance law enforcement*."[33]

The overall orientation towards the domestic market of the meat sector and the consequent focus of investments has largely followed the expectations and priorities outlined in ISARD; it is worthy to notice that in the same period a sizable export-oriented sub-sector (that one of skins and ABPs) witnessed an overall decline, as reduction in export of skins was not balanced by increased export of ABPs (casings, offal's etc.).

Some of the priorities set in the strategy, notably the increased safety and environmental compliance were only partially accomplished, and they were left for implementation in the next programming period. The flow of dedicated investments for food safety was sizable, especially in meat industry, but the outcomes were limited, especially in the fresh meat sub-sector (the issue of the enduring limited use of the regular/modernized slaughtering facilities) as the "*national effort to enhance law enforcement"* gave limited results.

A more serious shortcoming is related to the compliance with environmental standards, which is now the first matter of concern, as both investments and level of law enforcement have been limited.

Other objectives that were incompletely achieved are related to unmet institutional conditions (e.g.,afull-fledged implementation of food quality policies such as through Geographic Indication- GI).

The decrease in the national agriculture budget is a matter of concern, as IPARD III should not be a substitute for national support.

4.2 RELEVANT FISCAL AND TRADE POLICIES

Regarding meat producers' organizations, it is worth mentioning the lack of interest in creating cooperatives or

[32]No.9817, date 22.10.2007
[33]ISARD (2014). Chapter 1.2.3

producers' group. This is due to a lack of trust, a lack of financial incentives, but also a fear of losing independence in marketing meat production. Some efforts were made, by several donor projects in the past, towards building producers groups, especially in connection with the attempts to establish quality schemes (Has goat GI, "Ionian lamb" quality scheme)

Cooperation also could contribute towards addressing the limitation arising from fragmentation. The most prevailing collective action activities observed in a recent study[34] and during the interviews with 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.

As for the fiscal policies, the main issue is related to VAT. On agricultural inputs, in several of them VAT is levied at the rate of 20% and customs duties 0- 2%. Only seeds, pesticides and fertilizers are VAT exempted, but is applied a custom duty of 2%. Therefore, meat producers' farmers benefit from VAT exemption of agricultural inputs, for fodder production. However, semen used for artificial insemination is subject to 20% VAT.

For soybean meal and sunflower seed meal is 0% custom duty while for all other animal feed ingredients is applied 10%.

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 the imported live animals for the purpose of slaughtering (within 72 hours) is applied 20% VAT. For agricultural machineries is not applied custom duty and VAT exemption of imported machineries and equipment for investment purposes, benefit slaughterhouses and meat processing sector.

4.3 MARD SUPPORT PROGRAMS

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 IPARD II (Rural Development Programme). NSS has multiple policy objectives and broader sector coverage, while IPARD-II aims at enhancing competitiveness and implementing EU standards (safety, quality, and environment) and targets the most competitive businesses.

The NSS-2020 objective was to increase of competitiveness of livestock and agricultural products and reduce the production cost, providing support to investment. The national support programs have not been guided by clearly set of consistent policy objectives and the measures were changed from year to year, and the budget allocated always was not more than 20 million Euro, the lowest from the South West Balkan countries.

As compared with other sectors, meat received less support through NSS. Meat primary production was supported only in 2013 by NSS with 146.4 thousand Euro for beef finishing[35] in medium-sized farms (10-50 calves).

In 2018 a more articulated support package was provided, providing a support (1.85 M Euro) similar to that one provided by IPARD II (50% of investment) for three specific categories of investment: i) the construction of facilities for poultry breeding, ii) improving animal market facilities (not eligible under IPARD II) and, iii) support to build new slaughterhouses or refurbish/improve existing ones (Table 4.1).

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

[35] i.e., to keep calves until they reach the weight for slaughtering

Table 4.1: Meat sector supported by NSS for meat production 2013and 2018 (M-1)

Year	Description of the measure	Total amount (M. Euro)
2013	Support of 35.7 EUR/head for fattening calves for farms with more than 10 heads but funding will be available for not more than 50 heads.	**0,146**
2018	50% of the tax invoice total value for Slaughterhouse construction, processing facilities and related equipment for livestock products, funding not more than 20,000,000 ALL, and for reconstruction/equipment in existing slaughterhouses to meet the standards of applicable legislation no more than 10,000,000 ALL. ii) construction of facilities for animal breeding, plants for poultry breeding, as well as machinery and equipment for mechanization of the modernization of working processes in livestock farms with not less than 10 cows, not less than 100 small ruminants, not less than 10 sows and with a capacity of not less than 10,000 heads of poultry, but not more than 15,000,000 ALL. iii) improving the infrastructure of animal markets, not more than 4,000,000 ALL per market.	**1,856**[36]
TOTAL		**2,002**

Source: ARDA, 2020

4.4 IPARD IMPLEMENTATION AND ABSORPTION

Meat and meat processing was considered as a priority sector since the first IPARD programming period (2007-2014) 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 meat primary production, distinguishing it from milk primary production.

There were three supported investments in meat processing, for a total amount of 1.35 M Euro.

Investments supported by IPARD II were more substantial; in the first two calls only, 2 M Euro primary production projects were supported (5 projects), as well as 12.29 M Euro meat processing projects (12 projects).

Investments in primary production have been focused on large farms: with an average investment of 0.44 M Euro each, primary meat production supported projects have been the less numerous and the largest sized of all sectors. The impact of supported investments on the sector as a whole has been limited; however, they have been properly focused on critical topics for primary production development:

- animal welfare through the construction of new stables.
- animal feeding, introducing new machinery for hay and silage preparation and,
- manure management (one investment)

The impact of supported investments on main slaughterhouses and meat 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 be ready to export meat products.

More in general, IPARD II resulted not well-tailored for meat production of small ruminants' breeders and no applications were financed for this category. The investments for broiler production were devoted to strengthen/consolidate already existing broiler factories and were mostly devoted to complement/improve the processing stage of the activity (slaughterhouses), with the only exception of one investment to produce by-products out of poultry manure.

Considering both IPARD-like and the first two calls of IARD II, the two IPARD programs financed projects for 15.2 M Euro in meat primary production and processing.

[36]In this figure is included and the support for the construction of new milk collection points and related equipment.

During the first and second IPARD implementation periods (IPARD-like 2012-14 and IPARD II 2018-20) the absorption capacity remained much larger for meat processing than for primary production, in terms of number of applications and average size of projects.

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 meat 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.

4.5 OTHER AGRICULTURE DIRECT AND INDIRECT SUPPORT MEASURES AND FACILITIES

PROMALI and SARED

Since support to the meat sector was provided under IPARD and NSS, few international development projects supported directly or indirectly the meat production sector after 2007; those projects were all focused on the small ruminants' sector, which was the one that was more heavily affected by overall structural changes in rural areas and that was also a key commodity in mountain and less developed areas.

The three main projects dealing with support to the small ruminants' sector were: i) "Improving the Performance of Livestock Sector in Albania" (UNDP 2009-12), the only one exclusively focused on meat, ii) Promali (SNV, completed in 2012) and iii) SARED (DANIDA-GIZ, 2014-18). The two last projects (Promali and SARED) supported a few commodity chains, one of which were small ruminants' breeding and products (milk and meat).

Box 4: The UNDP project "Improving the Performance of Livestock Sector in Albania"

The project was the last phase of a longer-term effort (2005-12) to establish a quality supply chain for small ruminants' meat. In its first stage (2005[37]), the project produced the first small ruminants meat commodity chain analysis made in Albania after 1991 and made some trials to establish all the elements of a quality-controlled supply chain, supporting a farmers' group, defining a traceability system from farm to meat shop and trying to involve some of the few private slaughterhouses which, at that time, were more compliant with standards, This initiative obtained only partial success, but was re-financed by Italian Cooperation. After further trials and failures, the last phase of the project, financed by EU and implemented by UNDP was focused on creating all the conditions to establish a GI for lamb meat in Vlora ("Ionian lamb"). As part of market analysis and prospect, the first research on Albanian consumers' preferences for lamb and goat kid meat were also produced (2005 and 2010).

The project still represents the most comprehensive effort to establish a quality-controlled meat supply chain in Albania, suitable for GI registration. Activities included: i) the establishment of a breeders' association, ii) technical assistance to improve animal husbandry, iii) agreements between the association and the slaughterhouse of Saranda, which was also refurbished, iv) agreements with butchers in Tirana, iv) the establishment of the traceability system trialed in 2005, vi) the preparation of the regulation to be followed for each stage of the supply chain (breeding, slaughtering, meat trading), to which participants to the scheme should comply with to become eligible to use the collective mark "Ionian lamb", vii) the registration of the collective mark and, viii) a package of marketing and promotion activities, also in cooperation with AIS (Albanian Association of Sommelier).

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 DANIDA 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 in terms of capacity building, of which 120 specifically in meat-oriented breeding.

[37] The first financing was provided by Region Lazio (Italy) through decentralised cooperation and implemented by UNDP.

SARED also operated a small grants'[38] 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. 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; 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 FFEM[39] "BiodivBalkans" project was devoted to support the establishment of a Geographic Indication (GI) for the products (dairy and meat) of the Has goat breed, an autochthon breeds whose numbers were declining. The project as a whole was aimed at supporting biodiversity resources through market mechanisms and was important not much for the number 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 agro-biodiversity.

[38] All SARED supported investments were under 10 M ALL. The average supported investment scored 3.2 M ALL.
[39] Fond Français pour l'EnvironnementMondiale.

5. MARKET AND TRADE

5.1 INTERNATIONAL TRADE FLOWS AND EVOLUTION OVER TIME

5.1.1 Overall meat, live animals, and meat products trades

Albania has an important trade deficit in meat and processed meat products amounting 91.0 Million Euro in 2019. In 2019, Albania imported 91.5 Million Euro of meat and processed meat products and exported 0.5 Million Euro. The trade deficit has been rather stable for the period 2015 through 2018, except for 2015, and particularly 2019 when Albania has experienced significantly higher deficit. A closer look at the data suggests however a growing trend in imports starting from 2016 on. Exports are too low and without significant changes for the whole period 2010 through 2019 and so is the export to import ratio.

Table 5.1: Trade balance in meat and meat products

Year	Meat and live animals		Prepared and preserved meat		Sausages		Total		Trade balance	Export to import (%)
	Export	Import	Export	Import	Export	Import	Export	Import		
	Thousand Euro									
2010	382	68,687	0	5,885	0	2,536	382	77,108	-76,726	0.5%
2014	582	70,997	0	3,931	21	2,604	603	77,532	-76,929	0.8%
2015	664	75,903	0	4,486	22	2,860	686	83,249	-82,563	0.8%
2016	384	60,237	3	4,359	36	3,101	423	67,697	-67,274	0.6%
2017	427	69,373	9	4,057	49	3,255	485	76,685	-76,200	0.6%
2018	289	69,493	0	4,474	50	3,082	339	77,049	-76,710	0.4%
2019	410	82,783	0	5,783	120	2,982	530	91,548	-91,018	0.6%

Source: Authors based on EUROSTAT (2020) data

The trade deficit in meat and processed meat products is mainly caused by the trade deficit in meat and live animals – the latest represents close to around 90% of total trade deficit (Table 5.1to Table 5.3). Starting from 2016, data suggest a growing trend of imports for both live animals and meat.

The meat processed products trade deficit remained relatively stable in the last decade, ranging around 7 to 8 M Euro per year, witnessing the difficulty for the domestic meat processing industry to pursue a policy of import substitution, despite evident qualitative improvements and production capacity expansion.

5.1.2 Meat international trades

Table 5.2 below shows the evolution of meat international trades over time. Meat imports are the largest import item of the sector, generating a yearly trade deficit ranging between 40 and 50 M Euro. Meat is primarily imported as frozen raw material for the domestic meat processing industry. However, part of the imported poultry meat is also intended for the fresh market.

Table 5.2: Albanian international trade of meat (000 Euro)

Year	Exports		Import		Total Exports	Total Import	Trade Balance	Export to import ratio (%)
	Live animals	Meat	Live animals	Meat				
2010	248	134	23,743	44,944	382	68,687	-68,305	0.56%
2014	350	232	24,452	46,545	582	70,997	-70,415	0.82%
2015	399	265	24,862	51,041	664	75,903	-75,239	0.87%
2016	268	116	21,134	39,103	384	60,237	-59,853	0.64%
2017	247	180	28,823	40,550	427	69,373	-68,946	0.62%
2018	105	184	27,274	42,219	289	69,493	-69,204	0.42%
2019	182	228	35,670	47,113	410	82,783	-82,373	0.50%

Source: Authors based on EUROSTAT (2020) data

The evolution of imports by type of meat shows a decreasing import trend (in quantity) of beef and pork meat and an increasing trend of poultry meat imports. The trends reflect changes in consumer preferences as consumption of poultry meat is sensibly increasing, while consumption of beef meat seems having levelled up and this is reflected both in domestic production and imports.

Meat import prices are rather low. Beef price ranges from 1.6 Euro per kg in 2010 to 2.8 Euro in 2019; Pork meat prices ranges from 1.4 Euro per kg to 1.7 Euro per kg; and chicken meat ranges from 0.8 to 1.0 Euro per kg (Table 5.3). The geography of imports may bring more information on the type of export and import markets.

Table 5.3: Import of main types of meat

Year	Beef total			Pork total			Poultry total		
	000€	MT	Price (€/ kg)	000€	MT	Price (€/kg)	000€	MT	Price (€/kg)
2010	4,066	2,558	1.6	14,582	10,390	1.4	20,488	19,960	1.0
2014	2,309	1,325	1.7	12,872	8,711	1.5	26,220	23,961	1.1
2015	2,649	1,347	2.0	15,141	8,926	1.7	27,306	22,587	1.2
2016	3,073	1,715	1.8	11,548	7,725	1.5	21,511	25,960	0.8
2017	2,643	1,437	1.8	13,927	9,600	1.5	21,343	24,837	0.9
2018	3,092	1,307	2.4	15,203	10,051	1.5	20,287	24,639	0.8
2019	5,450	1,943	2.8	11,825	7,481	1.6	25,558	28,643	0.9

Source: Authors based on EUROSTAT (2020) data

Table 5.4 shows the origin of imports: the main exporters (in terms of volumes) to Albania in 2019 are United States of America (USA), Brazil and Greece (these three countries represent 59% of total meat imported). The largest quantity of meat is imported from USA (24% of the total); USA overtook Brazil as main meat exporter towards Albania in 2010 (37% of Albania's meat imports).

Table 5.4: Geography of meat imports – total meat imports

	2010		2019		
Country	Import amount (tons)	% Share in import amount	Country	Import amount (tons)	% Share in import amount
Brazil	13,446	34%	United States	10,007	24%
United States	10,265	26%	Brazil	7,291	18%
Italy	7,561	19%	Greece	7,026	17%
Others	7,897	21%	Others	16,744	41%
Total	**39,169**	**100%**	**Total**	**41,068**	**100%**

Source: Authors based on EUROSTAT (2020) data

Table 5.5 below shows the evolution of imports by origin and type of meat.

The main countries Albania is importing bovine meat from are Netherlands, Italy, and Poland; the main countries Albania is importing swine meat from are Brazil, USA and Canada; the main countries Albania is importing poultry meat from are United USA, Greece and Brazil.

The main changes in sources of trade may be summarised as follows: USA is the main exporting country toward Albania for poultry meat and swine meat; Brazil, which used to be a major exporter in three categories of meat has lost market, particularly in bovine meat and poultry meat; Greece has emerged as a major player in poultry meat market; European countries (Netherlands, Italy and Poland) supplies have partially replaced those ones from Latin America countries (Brazil and Paraguay)

Table 5.5: Evolution of meat imports by origin and type of meat

	2010		2019		
Country	Import amount (tons)	% Share in import amount	Country	Import amount (tons)	% Share in import amount
			Bovine meat		
Brazil	807	32%	Netherlands	491	25%
Paraguay	719	28%	Italy	484	25%
Italy	515	20%	Poland	330	17%
Others	517	20%	Others	638	33%
Total	2,558	100%	Total	1,943	100%
			Small ruminants' meat		
Greece	126	96%	New Zeeland	425	94%
Others	6	4%	Others	25	6%
Total	132	100%	Total	450	100%

Country	2010		2019		
	Import amount (tons)	% Share in import amount	Country	Import amount (tons)	% Share in import amount
			Swine meat		
Brazil	4,859	47%	Brazil	3,373	45%
Canada	2,062	20%	United States	2,115	28%
Italy	1,164	11%	Canada	670	9%
Others	2,305	22%	Others	1,323	18%
Total	10,390	100%	Total	7,481	100%
			Poultry Meat		
United States	9,013	45%	United States	7,750	27%
Brazil	7,398	37%	Greece	6,748	24%
Greece	1,392	7%	Brazil	3,685	13%
Others	2157	11%	Others	10460	36%
Total	19,960	100%	Total	28,643	100%

Source: Authors based on EUROSTAT (2020) data

5.2 DOMESTIC MARKET

5.2.1 Domestic meat supply

There are no official data on total meat supply. Based on available information, it would be possible only to produce indicative figures, based on several assumptions.

In particular, MARD data on meat production are proportionate only to the live weight of animals born in the country and do not consider animals imported for finishing (i.e., kept by farmers until brought to the weight required for slaughtering). Also, data on imported animals are heterogeneous.

Export is negligible, so it is not included in the table 5.6 as in any case data cannot be added.

As a consequence of the above, it is possible to give indications on total supply trends, but not a figure on total meat supply.

Meat production from domestic breeds and imported live animals and meat import

Raw meat is used for fresh consumption and for the preparation of processed meat. The structure of raw meat inputs and production and import trends are different in accordance with the type of meat:

Bovine meat: Meat supply is primarily sourced from domestic breeding (about ¾ of total). Data on bovine meat production show a substantially stable production in the last decade, ranging around 35 thousand tons (35,360 tons in 2010, 34,381 tons in 2019) of equivalent carcass weight. During the same period, bovine meat imports, which were already relatively low (about 5% of total supply) declined, as well as the live animals' imports. It is not possible to give reliable evaluation of carcasses weight of the live animals imported for slaughtering after finishing[40], so it is not possible to provide a reliable figure on bovine meat supply; however, the trend is clearly pointing to stagnation or even to a slight reduction in bovine meat supply and consumption, as shown in Table 5.6 below.

Lamb and mutton meat: Meat supply is almost completely sourced from domestic breeding (over 97%); lamb meat production increased until 2014, remaining stable in the last programming period ranging around 17,5 thousand tons (carcass equivalent). Goat kid and goat meat production sensibly increased in the last decade (9.5 thousand tons carcass equivalent - +46%), as a consequence of increasing goat number and of shifting consumers' preference from lamb to goat kid meat.

[40] Not all the live animals imported are for slaughtering, the weight at slaughtering is different from the weight at the moment of import, as the added value is just coming from the difference of weight when imported and when slaughtered.

In fact, increased consumption of goat kid meat was satisfied by increased number of slaughtered animals and increase in average weight at slaughter, while the slight increase in demand for lamb meat was almost entirely by an increase in the average weight of slaughtered animals and by a modest increase in imports.

Notwithstanding the small role of imports, the number of imported live animals is rising fast in the last years. Part of these animals, especially goats, are not for slaughtering, but for specialised milk-oriented farms; a small, but growing import of lambs from Romania is recorded as well, witnessing that decline of lamb production in Southern regions is outpacing changes in consumer preferences[41].

Pig meat: Domestic breeding covers less than 40% of pig meat supply, a share which remains relatively stable over time; total supply is also relatively stable, ranging around 23 to28 thousand tons per year; the sub-sector is undergoing an in-depth change, characterized by an overall consolidation of breeding activities, leading to the re-establishment (after thirty years) of larger pig farms in Lushnje and Fier, an increase of imported live animals for finishing and slaughtering and decreasing meat imports, However, the total output of domestic breeding remained broadly the same over the last decade (10.5 thousand tons carcass equivalent in average); in-country pig breeding activity consist also in finishing (i.e. fattening for slaughter) imported piglets, an activity which is growing, more than balancing the reduction of pig meat imports.

Poultry meat: Domestic breeding covers less than 1/3 of total supply and this share is decreasing, in spite of increase and improvement of domestic supply. In fact, this is the sub-sector where demand and supply are rising faster (about 11 thousand tons carcass equivalent in the last decade - +36%, while domestic production rose by 18%).

Table 5.6: Total meat supply in Albania
(Tons)

	Category	2010	2014	2015	2016	2017	2018	2019
1	*Bovine meat*							
	Production *	35,360	36,660	37,128	37,492	37,572	35,791	34,381
	Import	2,558	1,325	1,347	1,715	1,437	1,307	1,943
	Import of live animals (live weight)	8,736	5,062	3,792	1,414	4,662	4,793	6,253
2	*Small ruminants' meat*							
	Production *	22,000	24,750	26,269	25,300	26,007	27,950	27,048
	Import	450	51	25	59	15	3	132
	Import of live animals (live weight)	70	30	26	0	121	712	1,778
3	*Pig meat*							
	Production *	10,400	11,375	10,920	11,245	11,051	10,993	10,829
	Import	10,390	8,711	8,926	7,725	9,600	10,051	7,481
	Import of live animals (live weight)	5,988	8,550	9,525	9,764	10,406	8,760	10,772
4	*Poultry meat*							
	Production*	12,580	12,876	12,802	14,578	14,813	14,601	14,818
	Import	19,960	23,961	22,587	25,960	24,837	24,639	28,643
	Import of live animals (live weight)	3,509	3,194	2,673	2,403	1,417	1,809	2,030

Source: Authors based on INSTAT (2020) and EUROSTAT (2020) data
** Equivalent of slaughtered weight*

Processed meat: output meat processing industry and ABP industry

[41] Romanian lambs are mainly from tsigaia breed, which is the same prevalent in Southern Albania and traditionally considered the most appreciated one by Albanian customers, as provides lean, light lambs

In order to compare processed meat domestic production and import, the same categories of products have been considered[42,43]. However, it should be taken into consideration that data on domestic production of processed meat include only the quantities declared by the formalized processing industry and therefore could be underreported.

Even considering all the above limits, all the collected information provides the image of a substantially stable market, with yearly oscillations that can be sizable (-11% in 2016, +36% in 2019) and an overall stability of import to total supply ratio.

Table 5.7: Processed meat supply (Tons)

Category	2010	2014	2015	2016	2017	2018	2019
Production (Tons)	*18,791	10,486	10,793	8,766	8,456	8,246	12,952
Import (Tons)	3,876	3,685	3,984	4,420	4,547	4,325	4,154

*Source: Authors based on Agrifish (production) and EUROSTAT (import) data; Note: *2011 data*

5.2.2 Meat consumption per capita and consumption preferences

After the transition into the market economy, which began in early 1990ies, Albanian consumers shifted consumption from a mainly cereals-based diet, towards a more meat-intensive diet as result of higher income per capita and market liberalization.

By the late 2000ies per capita consumption of meat was 3 times higher than during the pre-transition period. Despite the increase in consumption of meat, it remains significantly lower when compared to other European countries and EU Member States specifically.

Table 5.7 below shows the evolution of meat consumptions by type of meat in Albania and in EU member states (average). With 39.1 kg of meat per capita consumption per year, Albania has only half of the average EU (27) meat per capita consumption. In the period 2014-18 Albanian per capita consumption remained substantially stable, reaching a maximum in 2016 and a minimum in 2018.

*Table 5.8: Meat per capita consumption – Albania and EU-27 (*Kg per capita per year)

Year	Bovine		Mutton & Goat Meat		Pig meat		Poultry meat		Total	
	Albania	EU	Albania	EU	Albania	EU	Albania	EU	Albania	EU
2014	13.4	13.8	8.6	1.8	6.1	40.1	11.8	21.3	39.8	78.8
2015	13.7	13.6	9.1	1.7	6.3	41.3	11.9	21.7	41.0	79.9
2016	13.8	13.7	9.1	1.6	6.4	40.4	13.5	22.3	42.8	79.8
2017	13.8	13.5	9.1	1.6	7.3	40.9	11.5	22.1	41.8	79.4
2018	13.4	13.8	10.9	1.5	5.4	41.8	9.5	21.9	39.1	80.4
Index 2018/14	100	100	127.5	87.0	88.4	104.1	80.5	102.8	98.4	102.0

Source: Authors based on FAO (2021) data

Albania has similar bovine meat consumption as EU-27, much high small ruminant's meat consumption than EU-27 and much less poultry meat and particularly pig meat compared to EU-27 (Table 5.8).

The same pattern regarding meat consumption is observed also when Albania is compared to selected countries – it has similar bovine meat consumption per capita, much higher consumption of small ruminant meat, and much less consumption of pig and poultry meat (Table 5.9).

[42]These categories are: "Sausages and similar products, of meat, offal or blood; food preparations based on these products" (HS code 1601) and "Prepared or preserved meat, offal or blood (excl. sausages and similar products, and meat extracts and juices)" (HS code 1602).

[43] The same categories are some of those reported in chapter 3 (table 3.4) as under the item "processed meat" is also technically included the meat produced for fresh consumption (where processing consists in the slaughtering activity) and the production of frozen meat.

Table 5.9: Meat consumption per capita – Albania and selected countries for 2018

	Bovine	Mutton & Goat Meat	Pig meat	Poultry Meat
	Kg per capital per year			
Albania	13.38	10.9	5.35	9.48
European Union (27)	13.79	1.54	41.75	21.9
North Macedonia	7.38	0.67	10.54	19.73
Serbia	2.99	3.4	37.89	11.68
Montenegro	13.78	2.37	45.25	16.64
Bosnia and Herzegovina	12.32	0.47	9.81	19.76
Europe	13.59	1.73	34.75	24.44
Southern Europe	14.14	2.09	42.85	22.72
Western Europe	17.08	1.56	37.29	18.88

Source: Authors based on FAO (2021) data

The meat consumption structure recorded in Albania is quite peculiar and is different from that one of the other countries in the region, which consume much fewer small ruminants' meat. At the same time, consumption of pork meat is low, but not negligible, as it is in Middle East countries, where consumption of small ruminants' meat is comparable or even higher than in Albania. The consumption pattern is even different from that one in Kosovo, where bovine meat is more important in consumption patterns while pork and small ruminants' meat is less in demand.

Two interesting changes in consumer preferences occurred between 2005 and 2010 and created long term trends which are still having important effects on commodity chain dynamics:

1. *Preference in small ruminants' meat consumption shifted from lamb meat to goat kid meat*. In 2005[44], the consumption of goat meat, including goat kid meat was associated to rural and backward lifestyles, so that consumers were expressing preference for lamb meat, possibly from Gijrokaster. Between 2005 and 2010 consumers started to believe that lamb meat was fattier and less healthy than goat kid meat, so preference shifted towards goat kid meat. This preference was also related to the change in the structure of supplies of lamb meat: supplies from South decreased, due to reducing number of animals and a cluster of butchers from North-West Albania took a good share of the key market of Tirana. These butchers had stronger relations with producers from Northern Albania, where a larger and heavier (and fattier) breed (Bardhoka) is more common than in the South (where the smaller and leaner Cigaya is more common)[45]. The preference for goat kid meat vs lamb meat (especially in the first half of the year) remain nowadays.
2. The first "Halal" butcher established its activity in Tirana in the first years of 2000. Over time, a growing cluster of halal butchers, fast foods and pizza makers grew. The supply chain of the operators who were part of the initial group of "Halal" butchers established a small, dedicated supply chain in Kavaja, where they also established the first "Halal" slaughtering point and meat processing workshop. Other, more independent, operators followed, establishing micro-value chains including live animal trading, an owned slaughtering point (in most cases improvised) and one or more retail shops. "Halal" fast food and pizza makers often keep commercial links with the "Halal" cluster in Kavaja. In December 2016 was certified the first halal meat provider, Kazazi Company. The certification was carried by ALBINSPECT in cooperation with the Albanian League of Imams. Considering that 23% of the consumers were buying meat to Halal shop[46], this market segment is to be considered among the most important ones in Albanian market of meat and meat products.

[44]Leonetti, L. and Kristo, I. (2005). "The food chain structure of small ruminants' meat and dairy products in Albania" report for SMS project - UNDP 2005.

[45] Leonetti, L. (2012). "The value chain of small ruminant's meat supplying the Tirana-Durres urban area" report for project "Improving the performance of livestock sector in Albania" UNDP 2010.

[46]Zhllima, E. (2018). "Local products in the region of Kukes", ADAD 2018.

5.2.3 Consumer preferences

Consumers' preference remains for "fresh meat", which means mate from recently slaughtered animals. Also, there is a preference for "farm chickens" over "industrial" broilers. Also, meat form domestic production is considered of better quality as compared with imported meat.

There is still some diffidence for matured meat, which has also consequences on the age and weight at which animals are commonly slaughtered.

The origin of production tends to be quite an important factor for most Albanian consumers. According to various studies about consumer preferences for food in Albania, most consumers choose their products based on origin (domestic versus imports). 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 food including meat[47]. According to a previous study[48] consumer prefer domestic lamb meat, and moreover, domestic highland lamb meat is strongly preferred over domestic plain/lowland meat.

In Albania, as in most Mediterranean countries, consumers have strong inclination towards domestic production. Previous consumer surveys done by authors of this sector study, confirm that Albanian consumers prefer domestic meat to imported meat. According to a study[49], about 18 % of interviewees state that they prefer veal meat from Tirana – some interviewees commented that they prefer veal meat from "Malesite e Tiranes" (Tirana mountainous parts); 11% prefer veal meat from Skrapar while 7 % prefer Kukes and equally 7% prefer Erseke.

Skrapar and Tirana are the main regions of preferred origin for lamb meat – chosen by 14 % of interviewees each. Other preferred regions of origin include Vlora (10 %), Kukes (7 %) and Tepelene (6%).

For consumers, it is important that meat should be organic. Knowing the trader is an important source to ensure organic product – namely 37% of interviewees consider knowing the trader as the main source of ensuring that products are organic. The market for organic products in Albania is still small, but the consumers' willingness to pay support the potential for market development. Most consumers are willing to pay a premium for organic products – namely 30 % of the respondents are willing to pay up to 10% premium, 28% are willing to pay 11 – 30 % premium and 38 % are willing to pay more than 30 %.

However, other consumers' surveys show that consumers' trust in certified quality schemes or quality or origin certification is low, as consumers do not trust in the veracity of the product qualities/characteristics that should be guaranteed by the actual implementation of the quality or certification scheme. This scarce trust is based on the repeated failures of the numerous quality schemes established with donors' support, which failed for lack of controls in the actual correspondence of the products to the product regulations that are at the base of the quality scheme.

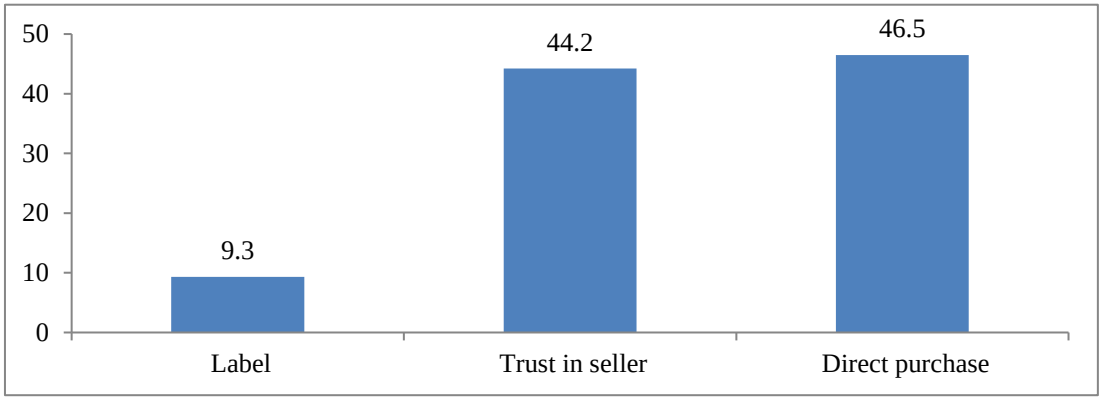
Consumers' trust is traditionally directly related to the shortness of the supply chain, as shown in figure 10 below: the shorter the connection between consumer and consumer, the higher the trust. In broader terms, consumer would even prefer in principle direct purchase from farmers than purchase from a trusted butcher. Trust in brands and large companies or supermarket chains lags at a much lower rate.

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

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

[49]FAO (2013). "Consumer awareness and preferences for organic products in Albania", 2013, developed by "Preparation of Inter-sectoral strategy for agriculture and rural development in Albania, financed by EU, implemented by FAO".

Figure 10: Consumers' perception on meat quality guarantee



Source: Imami and Skreli (2013)[50]

Direct purchase from producer and trust in the seller/retailers are the main sources of origin guarantee for most respondents for meat and dairy products – only about 10 % (9 % for meat) rely primarily on label to ensure product origin. Over 64 % of the respondents' state that they would pay more than 10 % premium for purchasing veal or lamb meat produced in their preferred region. Almost 36 % of the respondent's state that they would pay more than 30% higher price for veal meat or lamb meat from the preferred region.

There is a recent trend from many households to buy slaughtered animals directly from farmers. That is more likely for small ruminants (as one single household can order a complete lamb or goat kid) but it is the case also for calves – in such cases, 2-4 households can organize a joint purchase of a calve and share it. Purchasing directly from producers not only is a source of guarantee of quality but also of origin. Only about 10 % rely primarily on labels to ensure product origin.

Also purchase of processed meat products, such as dry meat, directly from farmers it is common. Thus, short value chain is common, but not as common as in the case of olive oil or raki.

Specific features of small ruminants' meat

Origin is the most important attribute for most consumers for (small ruminant) meat[51].Table 5.9 below depicts the type of buyers and relations in place with focus on small ruminant sector.

Table 5.10:Market levels

Market levels	Products	Buyers	Remarks on farmer – buyer relation
Farm gate level	Live animals	Final consumers, consolidators	Trust and relations
	Dried meat	Final consumers and specialised shops	Trust and relations
Local markets	Live animals	Consolidators and traders as well as restaurant managers	Spot market
	Meat	Final consumers	Trust and relations & spot
	Dried meat	Final consumers and restaurants	Trust and relations
National markets	Live animals	Restaurants	Spot market
	Meat	Restaurants	Spot market
	Dried meat	Restaurants and final consumers	Trust and relation

Source: Zhllima (2018)

Box 5: Experiences and limits in establishing certified quality schemes in Albania

[50]Imami, D. and Skreli, E. (2013). Consumer preferences for regional/local products in Albania. Technical report prepared for FAO GCP/ALB/014/EC IPA 2009.

[51]Cela, A., Zhllima, E., Skreli, E., Imami, D., & Chan, C. (2019). Consumer preferences for goat kid meat in Albania. Studies in Agricultural Economics, 121(1316-2019-4188), 127-130.

In the last two decades, it has been tried several times to establish quality or origin schemes, usually with donors' support. In most case the quality scheme was connected to the establishment of a producers' association or an association grouping both producers, processors and sometimes traders.

In all cases the quality scheme was based on one or more regulations (a description of production, processing and marketing practices that the member of the association was taking the duty to abide to) and to a quality or origin mark (a collective mark, a GI or even a mechanism similar to a franchising)

In all cases failure was linked to the non-sustainability and lack of capacity of the associations (in most cases not pre-existing but established by the development project itself) that was the subject entitled to release the use of the mark.

In many cases, the co-owners of the collective mark refused to support the association, unless this last would leave to all collective mark co-owners the possibility to use the mark without controls on the compliance to the product regulation. Also, the lack of specialised independent controlling bodies contributed to the impossibility to implement effective control systems.

The first example of this process was the dairy products "quality seal" established with Land O'Lakes support. The failure to control the correspondence between actual quality and quality that should have been guaranteed by the "quality seal" was so egregious that a quality scheme for cheese products was never proposed again, with the partial exception of the experience made by Slowfood in Lezhe. In the meat sector, UNDP tried twice (2005 and 2009-12 – see chapter 4 above) with lamb meat and FFEM with goat kid meat.

In both cases, the producers' association responsible for releasing the mark, realized that the conditions to control and trace the products sold with the collective mark or GI were not in place and stopped to market products with the collective mark.

Other cases, such as those ones established with SDC support ("Alpe Albania" and "Product of the South" quality and origin schemes) were structured in a way more similar to a certification body, where the owner of the mark (a NGO, not participated by producers or processors) provided technical assistance to the applicant willing (a producer or processor of any kind of food product) to use one of the two marks; helping it to develop an appropriate regulation and regularly controlling that this regulation is applied as a condition for the use of the mark. These schemes proved more sustainable, but also eventually failed to create a visible and trusted mark, able to gain consumers' confidence in the actual implementation of a quality scheme.

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 meat sector and food safety are: i) Law 16/20, as amended (Food Law), ii) Law no. 87/2012 "On the approval of the normative act no. 4 dated 16.0.2012, with the force of law "On determining the rules for the slaughter of animals and the trade of their meat", 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.

The Food law[52]

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 in 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"[53], 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

[52] 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.
[53]This 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.

to reduce or eliminate any risk posed by the placing on the market of unsafe food and feed.

- Ministers order no 261, dated 10.09. 2009, on approval of the regulation "On microbiological criteria for food products". This regulation sets out the microbiological criteria for certain micro-organisms as well as the rules that food business operators must meet when applying general and specific hygiene measures.
- 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. 21, dated 25.11.2010, "On specific hygiene requirements and official controls for products of animal origin". The instruction determines the hygiene requirements applied by food business operators in relation to the production, processing, storage, and transport of processed animal fats, treated stomachs, bladders and intestines, gelatin, collagen, bone and bone products, processed proteins, blood, and blood products, as well as the organization, performance, and documentation of official controls performed by the competent authorities.
- Instruction no. 22, dated 25.11.2010, "On general and special hygiene conditions for food establishments and food business operators". The instruction sets out the general conditions in the field of food hygiene for food business operators, relying in particular on the maintenance of primary responsibility for food safety by the food business operator, ensuring food security throughout the food chain, starting from primary production.
- Instruction no. 23, dated 25.11.2010, "on specific hygiene requirements for meat and meat products, including meat products, minced meat and mechanically separated meat". The purpose of this instruction is to determine the specific hygiene requirements applicable to meat production establishments, hygienic requirements for animal transport, slaughterhouses, meat cutting establishments, storage and transportation of fresh meat, minced meat, meat products and meat mechanically separated, as well as the duties of the competent authority, the frequency of inspections and the manner of conducting the inspection before and after slaughter (death) of the animal.
- Instruction no. 1, dated 5.2.2016 "On setting maximum levels for some contaminants in food products". This instruction is partially compliant with: Commission Regulation (EC) no. 1881/2006 of 19 December 2006 on setting maximum levels for certain contaminants in foodstuffs, as amended; CELEX number 2006R1881; Official Journal of the European Union, Series L 364, dated 20.12.2006.
- Order no. 178, dated 4.6.2012. for the approval of the regulation "On the lists of animals and products, subject to controls at the inspection points".

Law no. 87/2012 on animal slaughtering and meat trade

The object of this normative act is the establishment of rules for animal slaughtering and the trade of their meat, as well as the definition of the procedure for the prevention of violations, monitoring and obtaining measures for the implementation of these rules. In addition, it includes provisions for the protection of public health and environmental protection.

Secondary legislation includes:

- Order of Minister no.189, dated 4.5.2018 "On the approval of the veterinary health certificate for the meat of cattle, small animals, pigs, slaughtered in slaughterhouses.

Law "On Veterinary Service in Republic of Albania"[54]

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.
- 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 harmonization, capacity building and implementation of the EU *Acquis* on official controls, animal health and plant health are 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 Service[55] and the reorganization of the Veterinary and Plant Protection institutes, leading to the establishment of NAVPP[56]. 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, FSVI[57], 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.

[54] No. 10465, date 29.9.2011
[55] 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).
[56] National Agency for Veterinary and Plant Protection
[57] Institute of Food Safety and Veterinary

- 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.

The law "On Livestock breeding"[58]

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.

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.

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. 1 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"[59]. 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 amended[60]
- Law no. 9634 dated 30.10.2006 "On work inspection and labor inspectorate", as amended[61]
- Law 7703/93 dated 11.05.1993 "On social insurance in the Republic of Albania", as amended.[62]

[58]Law No. 9426, date 6.10.2005 "On Livestock Breeding".
[59]No. 10138 date 11 May 2009 and the law No. 52/2013, date 14.02.2013 "For some amended of the "On Public Health".
[60] Law no. 161/2014 date 04.12.2014
[61]Law no.24/2013, dated 14.02.2013, and Law no. 57/2017, dated 20.04.2017.
[62]Law 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.

6.3 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, 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.

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.

6.4 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 meat processing industry started recently to be supported by the IPARD-II. While the agro-environment schemes are not in place.

The main problem for environmental protection faced by meat production farms is the management of animal manure and slurry. Apart from the few largest farms, most livestock farms have no adequate manure storage. Several farms that were visited did not have adequate storage places for manure or slurry. Creating awareness on this issue by disseminating information and holding trainings will be necessary.

The law no. 10463/2011 “On integrated waste management” makes specific reference on livestock waste management (article 36).

To improve the situation, it is necessary to introduce a regulation for proper storage of manure and slurry, to increase farmers’ awareness on livestock breeding environmental impact, as well as on farmers’ health risks related to poor manure management.

The law is also applicable to meat processing plants wastewater and all slaughtering and meat processing solid waste, unless differently regulated. In fact, in the Albanian legislation there is not a specific norm for the management of Animal by products (ABP) and their treatment, so that in theory all these products should be managed as waste. In fact, there is an entire meat industry segment (ABP processing- 24 processing plants) which is working and growing in the specific business of processing solid slaughtering and meat industry waste into valuable by products. This meat industry sub-sector is broadly following EU and international norms on ABP classification and management (see **chapter 6.5** below)

Wastewaters are considered an agro-industry waste and should be treated as such (i.e., be treated before being released in the drainage system.

6.5 IMPLEMENTATION OF LEGAL PROVISION AND ATTAINMENT OF STANDARDS

Food safety and quality

The responsible institution to check for meat and meat 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, 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 and are not really used as a tool for monitoring meat products.

The NFA inspectors rarely take samples at meat processing plants, and the system of sampling, transport of samples to the laboratory, laboratory analysis and reporting of results to processors, as well as advice to improve situation is not in well organized. NFA inspectors should focus more on the microbiological content of the meat products and find ways to improve this and meet EU standards.

Controls are difficult to be implemented due to several causes:

- Most live animals' markets, often connected to slaughtering points, are far from satisfying the requirements to ensure public health protection, animal health, animal welfare, and environmental protection.
- An important share of slaughtering still occurs without proper veterinary controls in semi-informal or informal slaughtering points, which are far for compliance with national standards.
- The large and medium sized meat processing plants have implemented an internal system of quality control. In these plants, waste and wastewater management are formally in place; however, controls are scarce, and improvement would be much needed.
- Informal and semi-formal meat workshops are often connected.

Table 6.1:NFA inspection and seizures: meat and meat products

Region	Inspections in 2019		Meat and meat products seized Ton	
	Total	***Of which: meat sector***	**2015**	**2019**
Tirane	3,587	187	0	26.4
Durres	1,235	18	0.1	0.4
Shkoder	515	28	0	25
Elbasan	1,138	52	5.7	40.13
Fier	910	58	0.02	0.04
Vlora	1,278	23		2.1
Gjirokaster	795	15		6.1
Berat	518	15	0	0
Lezhe	401	32	2.5	0.03
Diber	573	0	0	0.2
Korce	898	47	0	1.1
Kukes	566	0	1.9	0.9
Total	**12,414**	***475 (3.8%)***	**35.21**	**102.41**

Source: NFA

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.

Considered 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. Despite this, awareness regarding quality and health-related issues has been increasing in recent years.

Animal welfare and animal health

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 studies[63] 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.

According to the interviews performed with private veterinarians, processing industries, experts and recently studies[64], several small farmers tend not to comply with requirements even when they are aware of them. Most farmers know that they should not use/or sell meat produced by animals treated with antibiotics (during treatment period and several days after the treatment) for human consumption or animal feed, but they still use or sell the meat anyway. In addition, there are cases when mycotoxins were found in animal feed[65].

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 animal feed testing

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).

Waste and byproduct management; environment protection

Manure and primary production slurry

Manure is classified in international regulations as category 2 animal by product of (having high risk, but that can be treated to obtain different by-products). It can be treated to be used as a fertilizer (one of the few fertilizers allowed in organic farming) but should be matured before distributing on the ground.

Manure management in most Albanian farms is poor, especially in small ones.

[63]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.
[64]Mavromati (2018)
[65]Mavromati and Shaqiri (2019)

Large integrated pig and poultry farms are particularly impacting in terms of pollution caused by the manure and some of them have invested in treatment management measures. One poultry large farm in Durres also received IPARD III support for a manure drying line.

Manure management in primary production is a major issue in terms of norms compliance gap as it poses a threat both to environment and to public health. Improving compliance in this area should be therefore considered a priority; for this purpose, bolder law enforcement should be accompanied by incentives for investments in this area, also because the availability of properly treated manure is a key factor for organic production development.

Slaughterhouses and meat processing plants liquid waste and wastewater

Slaughterhouses, meat processing plants and Animal by product (ABP) processing plants all produce wastewater, which should be treated or put in a septic tank. The modernized slaughterhouses (municipal, belonging to other integrated meat businesses or independent) have septic tanks, but their efficiency is often questionable. Slaughtering points and elder slaughterhouses still dump wastewater into the environment.

Large meat processing plants have septic tanks and some of them even small treatment plants, but they make limited use of them and in general show little interest to improve the situation.

Also, in this case bolder law enforcement should be accompanied by incentives for investments should be considered a priority.

ABP and blood

The management of slaughter and meat processing by-products (ABP) and blood is a complex and extremely costly problem to solve. Each type of waste needs different treatment methods, in order to be transformed into a product to distribute on the market or to be properly disposed.

ABPs are animal carcasses, parts of animals, or other materials which come from animals but are not meant for humans to eat. They can either be destroyed or can be used to make compost, biogas, or other valuable products. ABPs are divided into 3 categories, based on the risks they pose: i) Category 1 ABPs are classed as high risk and can be only incinerated, used as fuel, or disposed at certain conditions; ii) Category 2 ABPs are also at high risk, but can be treated to obtain different by-products iii) category 3 ABPs are classed as low risk, include, among other products, offals and casings, and are object of a vast international trade.

Blood is not considered an ABP but can be processed to split solid (30%) and liquid (70%) part. The liquid part is to be treated as a liquid waste (see above), while the solid part can be treated as ABP. In Albania, blood is not treated at all. In those slaughterhouses and meat processing plants where an agreement with ABP processing plants is in place, blood is retired together with ABP and after “disposed” by them (so the slaughterhouse or the meat processing industry is formally compliant); however, there is not a single blood treatment line in the whole country. Smaller processing plants and slaughterhouses and slaughtering points simply dump the blood jointly with wastewater.

The ABP industry is growing in outreach capacity, as the industry sub-sector dealing with ABP is growing and consolidating; as a consequence, there is also an increasing formal compliance of slaughterhouses and meat processing plants in dealing with ABP, as contracts are stipulated to have ABP retired by the ABP processing companies.

A different and separate issue is the capacity of companies which are retiring ABPs to process them in a proper way (i.e., without creating hazards for public health and environment). This capacity is improving, and it is possible to conclude that a good share of Category 3 ABP are collected and processed. This is proved by the increasing ABP export flow and by the fact that three ABP processing companies have a CE number, which implies compliance with EU requirements.

In fact, level of compliance in ABP industry depends also on the quality of ABP provided by slaughterhouses and meat processing industries: if ABP are pre-treated, ABP processing industries can transform them in valuable or more valuable by products; if ABP are delivered without pre-treatment, they cannot be processed, but only disposed, at a cost.

Compliance with ABP management norms can be improved through bolder law enforcement, but also through market mechanisms, providing financial incentives to slaughterhouses and meat processing plants to pre-treat the ABP they provide to ABP industry.

Box 6: A case of market-based mechanism to improve ABP management.

The "pay for dumping, get for delivery" scheme.

AZ Group, one of the leading ABP processing companies is proposing to its clients a contractual scheme based on two options:

1. If they provide ABP without pre-treatment and adequate packaging, they must pay a fee for ABP collection.
2. If they provide pre-treated and properly packaged ABP, they are paid for the product they deliver.

The company also envisages to make an agreement with the slaughterhouse finalised to optimize ABP delivery: according to this scheme, equipment and facilities in the offal room present in all modern slaughterhouses ABP would be improved and the ABP company would directly operate the ABP pre-treatment in the offal room.

Degraded ABP become organic waste and their disposal should occur in accordance to relevant norms. Also, there are few plants in Albania for treatment of Category 2 (risky, but possible to process) ABPs and no plants for treatment of Category 1 (products that can be only incinerated or used as fuel) ABPs.

There are no specific data on controls performed by NFA on ABP processing companies, but it can be expected that ABP industry provides a better level of compliance for ABPs that can be usefully processed than to dispose what cannot be processed.

As a conclusion, the level of compliance with national and EU norms in ABP management is conditioned by three factors:

1. *Organisational and law enforcement aspects*. The ABP collection network is expanding, but does not cover many small slaughtering points, slaughterhouses and small meat processing industry, not to mention the numerous semi-formal and informal processing plants, which have no interest to pay for ABP disposal. Expanding this network would increase compliance in the commodity chain, but this would require bolder law enforcement (closing informal slaughtering points and meat processing plants, ensuring that all plants have contracts for ABP management and, tracing ABP, to ensure they are properly treated by ABP industry) and improved organization from ABP industry.
2. *Processing capacity and knowhow improvement in ABP industry.* The ABP industry made important investments and recorded major improvements in the last decade; however, the range of produced by products is still limited and the number of Category 2 ABP processing plants is still small (five to seven); a particularly serious issue is the absence of blood processing units. Finally, ABP plants should also operate particularly sophisticated wastewater processing plants, which is not always the case. More investments in facilities, equipment and human resources should be supported to improve these aspects.
3. *Lack of Category 1 ABP processing plants.* Category 1 ABPs are the most hazardous and can be only incinerated or used as fuel. The sustainability of these plants is linked to:i) the level of enforcement of public health, food safety and environment protection norms (the subjects generating category 1 ABPs must pay for the withdrawal of the product and, in some cases, are compensated by the State) and, ii) the economies of scale.
4. The establishment of a Category 1 rendering plant in Albania or at least at regional level has been the object of repeated feasibility assessments, but the enabling conditions are not in place; as a result, the whole country is non-compliant with respect to the disposal of Category 1 ABP.

Skins, furs, and animal hair are considered a category 3 (less harmful) ABP, and they are almost totally collected (except poultry skins) and processed by specialized companies, which in Albania are not part of the ABP processing industry and which are not considered in this study. However, skin first treatment and trade are a well-established business and represent an important Albanian international agri-food trade surplus item.

7. PAST TRENDS AND FUTURE DEVELOPMENTS IN TERMS OF INVESTMENTS

7.1 PAST TRENDS

7.1.1Primary production

Types of investments

A large share of the investments made in the primary sector in the last two programming periods, especially those ones in small farms, are related to improvements/modernisation in farm mechanisation and cannot be referred to a specific commodity chain, as most farms are not specialised ones; these investments have anyhow contributed also to increase performance in animal feed production and eventually contributed to the growth of meat primary production.

Even in more specialised livestock farms, meat production from cattle and small ruminants is in most cases not a separate activity from milk production; the investments in these farms have been mainly addressed to improve housing (i.e., stables, especially cattle stables) and feed preparation. However, in recent times, there have been a few cases of large-scale investments in meat-oriented cattle breeding.

In the case of small ruminants' farms, the few large-scale investments made in the last two programming periods are addressed to establish/modernize specialized, very large, goat and sheep dairy farms; however, even these highly specialised farms, produce a sizable output of lambs and goat kid for meat production.

Investments in small breeding farms, have been quite limited, due to the small scale of farms (especially in the case of cattle and pig farms), limited internal resources of farmers, production practices (calves are kept for fattening for few months and after slaughtered, while lamb and kids are sold 3-6 months old), and difficult access to credit.

Investments in pig breeding have been mostly focused on housing improvement.

Poultry breeding is an articulated system, in which large "broiler factories" are highly integrated businesses whose activity spans from the hatchery (which generate chicks from own needs and for sale) to the post-slaughtering meat processing and to the production of by-products; the investments made by these enterprises covered most of the whole supply chain and included hatcheries, animal feed production, breeding, slaughterhouses and further processing.

Part of the large farms broiler breeding activity is sub-contracted to external farms which receive chicks and feed and sell back broilers ready for slaughtering. The type of investments required by these specialised, but smaller farms, was basically limited to housing facilities; finally, there are smaller independent poultry breeders, whose investments include housing, farm machinery and equipment for animal feed production, storage, and administration.

Important investments in all kinds of primary production, including meat-oriented livestock farming, have been concentrated in Fier.

Fier is characterized by productive agriculture land which provides better condition for animal feed production. Several farms are specialized in meat production (cattle, pig and broiler) willing to continue their farm businesses in the long term invested in this region. They have built modern barns (cattle, pigs' broiler), improved the feeding systems and using modern equipment in all the chain of fodder and meat production. Also, the establishment of some new cattle, pigs and broilers farms with modern equipment and a considerable number of animals per farm has been observed in recent years. These farms have much higher productivity when compared to the majority of very small meat production farms with few animals.

As a whole, most of the investments invested in their businesses to improve the animal housing, feed preparation, production and storage technology.

Sources of financing

Investments have been mostly made using own financial sources, a limited number has benefited from support schemes (mainly IPARD and, limited to small ruminants' small farms, SARED). In addition, in recent years, investments have continued in improving the production and breeding technology of the animals. Beef breeds are

mostly used for inseminating cows as the farmers are more interested in meat rather than milk production. The same trend is seen in small ruminants' farms where a handful has shifted from milk to meat production.

Investments' impact

Cattle and small ruminants fodder production and feed preparation improved as well as animal feed rationing.

The impact of support to large cattle farms (mainly IPARD support) has been positive in terms of animal welfare, due to construction of new stables; the quality of animal feed is also improved, thanks to the use of new machinery for preparing hay and silage. Also, meat production is increased from the imported sows and broilers with high production potential, as well as the using feed rations according to the physiological condition of sows and broilers.

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

Significant improvements have occurred in broiler and pig housing, and more farmers are convinced to change their housing, investing for sows farrowing crate, piglets' nursery, and post-weaning.

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 meat products which would be not possible without improvement along the whole upstream value (quality controls processing, packaging, continuous monitoring system of the whole process). Larger enterprises also invested in increasing storage capacity and implementation of GHP-Good Hygiene Practices (food safety standards). In small-sized plants, there were few investments, so that the situation and challenges did not change.

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.

Table 7.1 below shows the evolution of investments in meat processing industry (including by-products) as compared with investments in all agro-industry sectors. It is important to underline that investments have been sensibly higher in those years in which IPARD-like and IPARD II support was available, i.e., in the years when the calls for grant applications were opened.

Table 7.1: Investment in meat processing 2014-2019 (thousand Euro)

Activity	2014	2015	2016	2017	2018	2019
Meat and poultry offal's product	711	722	217	197	366	244
Meat products	443	450	354	373	684	7,383
Agro- industry (all sectors)	**9,852**	**9,998**	**10,424**	**10,905**	**8,828**	**16,921**
Share meat industry	*11.7%*	*11.7%*	*5.5%*	*5.2%*	*11.9%*	*45.1%*

Source: EU - Albania 11th subcommittee meeting agriculture and fisheries, 2016 and 2020.

As the table shows, a small, but steady flow of investments has been consistently addressed to increase and improve by-products processing.

The Investments in new production lines and the improvement of production technology have made it possible for some of these factories to be ready to export, including category 3 (edible products) by-products.

Despite the difficult environment and constrains, support to meat producers and processors has proved to be effective, if companies with the 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 were done with own financial means, as they were not eligible for support from IPARD, NSS or other bilateral facilities.

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.

7.1.4 IPARD uptake

Meat and meat processing was considered as priority sector since the first IPARD programming period (2007-2014) 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 meat primary production, distinguishing it from milk primary production.

IPARD-like financed four projects specifically dealing with livestock production, for a total value of about 0.47 M Euro, as detailed in Table 7.2 below.

The majority of investments in primary production (Measure 1) supported by IPARD-like consisted in farm machinery (50 projects financed out of a total of 63 projects supported by Measure 1). As already remarked, part of these investments went to mixed farms, thus contributing to increase/improve animal feed production.

In meat processing 3 projects were financed, for a total amount of approximately 1.4 M Euro.

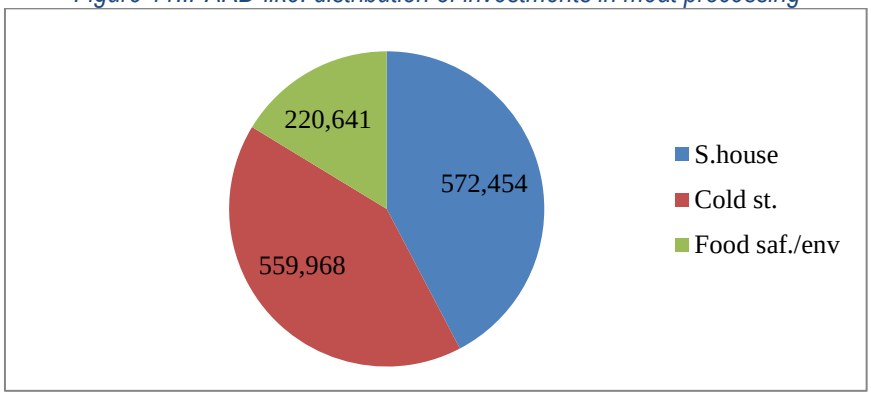
Table 7.2: IPARD-like financed projects to meat processing units (Measure 3[66])

Description	Applications	Awarded applications	Total amount 000 Euro[67]
Farms breeding cattle	32	3	374
Farms breeding SR[68]	15	1	91
Farms breeding pigs	1	0	0
Farms breeding poultry	4	0	0
Meat processing	10	3	1,353

Source: ARDA (2020)

The three investments in meat processing went to three different sub-categories, namely: i) slaughterhouses, ii) cold storage facilities and, iii) food safety and waste management.

Figure 11:IPARD-like: distribution of investments in meat processing



Source: author elaboration on ARDA data

It worthy to consider that one of the three investments went to the larger enterprise involved in the "Halal" cluster of Kavaja.

IPARD II

In the first two IPARD II calls (programming period 2014-2020) a total of 5 projects were financed under Measure 1, for a total of 2.02 M Euro and 13 projects were financed under Measure 3, for a total of 12.52 M Euro.

The main investment in primary production include building new and/or improvement of stables of cattle and pigs (both establishment and expansion) with complete technology, agricultural machinery, special machinery, and

[66] Defined as "Masa 2" in ARDA records
[67] ALL/Euro- 140.11 authors calculation based on Bank of Albania data.
[68] SR denotes Small Ruminants

equipment for fodder production, and for livestock such as specialized equipment's for animal transport. The average supported investment in farms was 0.43 M Euro, for building stables for fattening calves and pigs. One project for poultry manure management was also financed.

Meat processing subsector (including slaughterhouses) was the largest beneficiary of any primary production or food processing subsector and the one with the largest average investments (0.96 M Euro). The main investments were in machinery and equipment, complete line for processing and packaging of meat, to increase capacity, competitiveness and achieve EU standards.

The impact of meat processing plants is evident, especially in recent years, as has improved the quality of products, also are introduced new products such as crudo ham and salami packed in various sizes.

Table 7.3: Meat sector supported by IPARD-II (first two calls)

Description	Companies supported	Amount per business (000 Euro)	Total amount (Euro)
Beef breeding	3	403- 490	1,356,025
Pig breeding	1	430	430,323
Poultry slaughterhouses	2	127-1,993	2,119,806
Slaughterhouses	4	44,140-1,720	3,685,058
Meat Processors	6	469-1,9340	6,481,335
Waste treatment	1	238	237,863
Total	17		14,310,410

Source: ARDA, 2020

The structure of IPARD II financed investments in the meat sector under Measure 3 reinforced the spontaneous trend of sector polarisation. At processing level (including slaughterhouses), 31% of the beneficiaries (4 out of 13) received 57% of the funds. Each of the 5 largest financed projects scored around 1.78 M Euro.

Important resources (5.8 M Euro) were invested under IPARD II for slaughterhouses; those specialised for poultry slaughtering are part of integrated "broiler factories", so the investment was dimensioned in function of an actual and prospect need of the investor itself. The investments in other slaughterhouses (for cattle, small ruminants', and pigs) so far did not result profitable, as legal enforcement to reduce irregular slaughtering did not yet bear sufficient results in terms of increased workload for slaughterhouses compliant with all rules and norms, which are also more expensive to run.

7.2 THE INVESTMENT CLIMATE

The overall sentiment about the meat sector is positive, with some important exceptions referred to specific investments, namely: i) slaughterhouses for general customers' use (i.e., not part of an integrated business) and, ii) medium-small meat processing units, offering a small range of basic products.

The overall outlook is positive, but the competitive environment is challenging, especially in relation to imported products. Competitiveness gap of domestic producers vs. imports is still wide and difficult to bridge.

The difficulty witnessed by the milk primary production is leading several cattle and small ruminants' farms to adapt their activity towards meat-oriented breeding; also, a few large-scale investments are being made in specialised cattle meat farms, larger pig farms and broiler factories,

Notwithstanding the investments and improvements, meat production from domestically bred livestock did not increase much in the last decade (+13% between 2010 and 2019); domestic production was re-organised and improved in efficiency, but failed to get increasing shares of domestic demand, as competitiveness gap with internationally traded product is wide and difficult to bridge.

This situation is particularly clear in the case of broiler meat: Albanian producers became more competitive, investing to increase vertical integration (hatchery, parental stocks, slaughterhouses, equipment for manure processing), increasing output and refining the business model (wider introduction of contract breeding, made possible from hatchery availability); notwithstanding this progress, domestic output increased by 3,000 Tons in a decade (+15%), while imports increased by 8,500 Tons (+44%).

A similar situation is recorded in meat processing industry: domestic production is grown and improved: at the beginning of the programming period there were two stronger actors at national level and some regionally strong competitors; now there are at least four-six competitors at national level, the overall quality of products sold in the market is better and the range of products is wider; notwithstanding this progress, the imports of processed meat are the same they were a decade ago.

Considering the above, Albanian meat primary production is facing a positive market outlook, but a very challenging competitiveness environment and must continue to invest and grow or recede.

In the ruminants' meat sub-sector increased efficiency and decreasing interest in milk production brought some effects: the import of frozen meat is following a declining trend, replaced by increasing numbers of imported live animals, which are finished (i.e., fattened up to the weight for slaughtering) and then sold for slaughtering. In this way, at least a share of added value of the breeding process is has been transferred in the country.

A similar progress is recorded in pig breeding: an increasing number of live animals are imported for finishing, while meat import is decreasing, in spite of very high competitiveness in international trades of pork meat.

A different situation is recorded for broiler meat: in this case the outlook is particularly positive, as demand is sensibly growing, but domestic and world production is focused on a single product (the 2.0 kg live weight broiler) and a very standardised business model (a highly integrated production system based on 60 days production cycles). In this production segment international competition is extreme and economies of scale play a major role. Also, in this case, Albanian producers must continue to invest to widen their range of products, reduce animal feed costs (improving production of animal feed components) and increasing efficiency, while reducing the environmental impact of their activities.

In meat by-products outlook and investment climate are positive: it is now proved that working with meat by-products require important investments, access to scarce (in Albania) highly qualified human resources and is challenging in terms of compliance with complex rules, but pays off in terms of profitability, access to international markets and positive impact in terms of reduction of public health and environmental hazards.

The sector development process poses important public health and environmental threats both at production (manure and slurry management) and processing (slaughtering and meat processing waste not processed into by-products) level, not to mention wider environmental threats related to EU Green Deal alignment (greenhouse gas emissions, not efficient use of scarce natural resources). The investment climate in this field is not positive: there is a growing awareness of the threats, but also the consciousness that, without bold enforcement of existing norms, those who invest and sustain running costs to comply with environmental norms are exposed to unfair competition from those ones who do not comply and are only occasionally sanctioned.

In particular, those investments in slaughterhouses made by public (municipal) and private investors, which are not part of vertically integrated businesses (as it happens for poultry slaughterhouses and some pig slaughterhouses) are heavily under-used and proved not profitable because of scarce enforcement of rules (i.e. butchers and meat mediators are not forced to use proper slaughterhouses); this situation creates a negative sentiment vs. further investments in slaughterhouses (except those ones part of integrated businesses), as this is the second time that investments are made trusting on the willingness of public authorities to enforce the law[69] and expectations are deluded.

The efficiency that NFA and the newly established NAVPP will show in enforcing compliance with veterinary, public health and environmental rules will strongly influence the investment climate in relation.

7.3 EXPECTED FUTURE TRENDS

The meat sector faces various challenges:

[69] The first one was linked to the investments made in the period 2005-2009 to establish municipal slaughterhouses, with support of multilateral cooperation (FAO and WB) and national funds. Now all these municipal slaughterhouses are closed or working at a fraction of their potential

1. Competitiveness in meat primary production and processing must be further increased, focusing on sector consolidation and acquisition of economies of scale; conditions are in place to step up broiler production and poultry meat processed products.
2. Food safety, public health and environmental standards need to be improved and respected.
3. Consolidate and expand the group of enterprises dealing with meat by products, extending the ambition to a wider range of by-products requiring more complex safety management and/or higher value added.
4. Widen the range of processed products, to stem the growth of processed meat imports.

7.3.1 Trends in primary production

The meat producers are in need and willing to continue in the same direction 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 the structural change toward fewer farms but much larger farms will continue. Families that own larger farms combine the labour used on farms with that labour provided by hired workers (farms with more than 100 cattle, 150 small ruminants, 40 sows or 20,000 broilers). Most cattle and small ruminants grow crops for animal feed, but also buy part of the feed ration, especially concentrate feed; pig small and medium farms produce part of cereals (corn and barley) and buy the protein feed.

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

In the last five years, the large cattle, pig and broiler farms have invested in new barns, fodder production, feeding system that reach several hundred Euro per farm. The small ruminants and small cattle and pig 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 in stable construction, stable renovation, agricultural/livestock machines/equipment, waste treatment and energy efficiency (self-production of energy through solar panels).

7.3.2 Trends in meat processing

Meat processing industry (including slaughterhouses) 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 meat processing units increased by 9.1%[70], and the segment of large and medium sized enterprises is stronger, as the meat 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 cured sausages, salami and ham, technology to improve quality and adapt to international standards), storage, innovation, ITC and marketing outreach. Six of the leading companies (EHW, KMY, HAKO, ERDA, TONA, FIX) are clear market leaders and own the largest share of the market. The 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 wastewater in the large and medium sized units. These transformations, the experience acquired, and the results obtained encourage to continue on the same path.

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

[70] 88 meat processing plants in 2014 and 96 in 2019 (MARD)

8. VALUE CHAIN ORGANISATION AND ENABLING ENVIRONMENT

8.1 VALUE CHAIN MAP

8.1.1 Farmers

Profile of main actors in the distribution chain[71]

Cattle Breeders Profile

The large farms (e.g., 100 or more fattening calves) belong to cattle importers. Most of the farms are relatively small, breeding 25-30 calves per shift (usually 2-3 shifts per year). A large share of the calves is imported (mainly Romania and Bulgaria). The calves are imported at the live weight 160-200 kg and fat up to a weight of 300-350 kg. The price of live weight is about 350 ALL/kg. The waste management is the most crucial issue, and most of the slurry is not collected.

Small ruminants' breeders' profile

Most 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 those regions. Some of the small ruminants' farmer have shifted the herd profile from milk to meat which is the new trend. Several farmers with the support of the veterinarians are using ewe's hormonal and feeding treatment for oestrus out of season (usually in Albania sheep are mating in July-August) and there are cases of herds that have lambing all the year around. Prices of lamb and kids is 300-350 ALL/kg.

Pig farms Profile

Small farms are more numerous and breeding 2-10 sows. Most of them are very extensive. The housing conditions in most of them are poor and the same is with sows that are not pure breeds. Most of them are facing feeding issues and often challenge with pig diseases. They sell the pigs to the live animal markets and/or to the butchers.

Medium farms are breeding 20-40 sows. Most of them started to improve the sows and piglets housing. Several of them have their shops (where they sell pork) aside the national roads, however they sell the pigs to butchers, restaurants, or individuals. The price of pork is 550-600 ALL/kg.

Large farms. Only a handful of farms are breeding 100+ sows. They have their slaughterhouse, however time to time they sell the pigs to butchers or restaurants. The pigs are slaughtered at 100-110 kg. The price of pork is 550-600 ALL/kg.

Broiler farms Profile:

The small farms *with 10,000-20,000 broiler per cycle usually are contractor of the large farms. They have a secure market, as they buy chicks and feed from one of the large farms and at the end sells the broilers to the same large farm which has the slaughterhouse.*

Large farms. Few farms are breeding 200,000 broiler per cycle. *These companies have the slaughterhouse package and storage, where they are slaughtering / packaging the broilers of their farm and the contracting ones, Two of the invested in slaughterhouse waste treatment (Erogert and Driza). At least one farm has its own hatchery and keeps parent stocks.*

8.1.2 Mediators, wholesalers, and processors

Traders who rely on local meat supply: This category of operators is buying animals from breeders and selling them, alive, to a range of customers, including retail butchers. They often also offer the transport of the live animal to the final customer – usually they possess small trailers. These operators are active/present also in live animals' market, but these last do not represent their main outlet. They travel from one region of Albania to other based on a season and demand-supply pattern. The mediators check animal health based on intrinsic features and provide feeding for the days of transaction.

[71] Detailed profile and categorization is provided in Chapter 2 (prime production) and Chapter 3 (processors).

Importers*:* There two different profile of importers: i) Frozen meat importers that supply the meat processors and, ii) live animal importers (typically pigs) that slaughter the animals in their slaughterhouse and supply the meat shops and the processors; these operators are larger and more specialised as compared with mediators working on the domestic market.

Slaughterhouses

The main destination of all types of meat is fresh consumption – only a small share is sold to processors; the processing industry itself, largely relies on imported (frozen) meat. Some meat processing companies are equipped with their own slaughtering facilities, such as KMY.

The slaughterhouses can operate as standalone service providers as well as integrated with other activities such as processing and trade. More specifically, slaughterhouses can be categorized in four types:

The broiler slaughterhouses that have also the packaging and storage and belongs to the large broilers' enterprises. They sell the meat to the supermarkets and retail shops.

The slaughterhouses of pig importers. Several of them started and/or have plans to process meat in salami. They sell the pork to meat processors; restaurants and they sell as the carcass or meat cuts.

The mix slaughterhouses slaughtering mainly cattle and sheep however in many cases and pigs. They supply the domestic market of fresh meat. Few of them are owned by the pig and/or cattle importers.

The slaughterhouses of meat processors. They use the slaughterhouses for their own needs, although also they can provide services to others. The fresh meat is sold in their salami retail shops or supplied to restaurants.

Meat Processors

The meat processing plants can be categorized in small, medium, and large ones. In addition, there is a growing sub-sector specialised in by-products.

Large and medium scale processing plants apply written contract with frozen meat importers as well as they have direct contracts with suppliers from other countries. The largest processors have invested in their own distribution and retail networks.

The small plants/unit are in small urban areas. Their customers are small shops in urban and remote areas but not in the main regions. They typically operate in the interface of formal and informal channels and ways of doing business.

On-farm processing. It is common for many farmers to process small ruminant meat (eg. goat meat) and pork meat into dry meat. Usually that is done in small scale, for self-consumption but also for selling directly to buyers (or via traders) (for more details see also the following subsection). In some agritourism operators these products have been successful, and demand has been increasing, in parallel with increase of demand and supply of agri-tourism services.

By-product's processing companies

Animal by-products (ABP) are classified on the base of three categories of risk, with Category 1 being the riskiest. Only some of the Category 3 products are suitable for human consumption.

The range of processing activities varies in terms of complexity and capital intensiveness; however, all ABP industry is based on relatively complex logistics, requires agreements with slaughterhouses and must respond to stringent food safety and environmental (wastewater and waste treatment) criteria.

In Albania there are 24 processing plants dealing with ABP, of which 3 with CE number (i.e., compliant with EU standards and entitled to export ABP to EU Member States) and 3-4 ABP processing plants dealing with Category 2 ABP; there is also one plant under construction that will produce a specific kind of Category 3 ABP for pharmaceutical industry.

A particular category of ABP plants are all the processing units/facilities treating manure; these facilities are more numerous and are not included in ABP statistics (so they are not included in the 24 ABP processing plants recorded in official statistics)

There are not yet ABP processing plants suitable to treat the blood of slaughtered animals or category 1 ABP processing plants, dealing with treatment of the riskiest ABP.

In the last years, there have been sizable investments in ABP sub-sector, which led to a reduction in their number (there were 47 ABP processing plants in 2012), but to a substantial improvement in their compliance with standards, range, and quality of products.

8.1.3 Retailers and restaurants[72]

Retail chains

Supermarket chains: Supermarket chains in Albania are expanding fast, and as such also the sales of fresh meat and especially processed meat. The weight or share that they possess in the fresh meat value chain is not dominant yet, their importance for the sale of processed meat products has increased substantially.

Specialized meat chains linked to processors: In addition to the largest supermarket chains operating in Albania there have emerged also specialized retail chains focused on meat products. One of the first chain of shops specialised in fresh meat has been KMY Company, which offers a variety of fresh meat in Tirana, also serving customers in other large urban areas, as Durres and Elbasan. A similar business model has been followed first by EHW company (offering both fresh meat and processed meat products) and after by other meat processing industries.

The Halal retail segment: The halal market is very developed and growing, although it is not certified, except for one actor. Many of the large meat butchers/retailers but also some wholesalers brand themselves as "Halal". In 2016 was certified the first halal provider of meat, Kazazi Company. The certification was carried by ALBINSPECT in cooperation with the Albanian League of Imams. Considering that many consumers prefer meat to Halal shop, the formalisation of the certificate will bring changes in the distribution of this product in the market.

Traditional meat/butcher shops

While the role of supermarket chains for channeling processed meat products is crucial and growing, regarding fresh meat, traditional butcher shops a very more important role. Traditional butchers' shops are still the backbone of meat retailing in Albania and the butcher is the reference person for the trust of consumer in meat quality and safety, for majority of consumers. Traditional butcher shops are generally small and much more specialised.

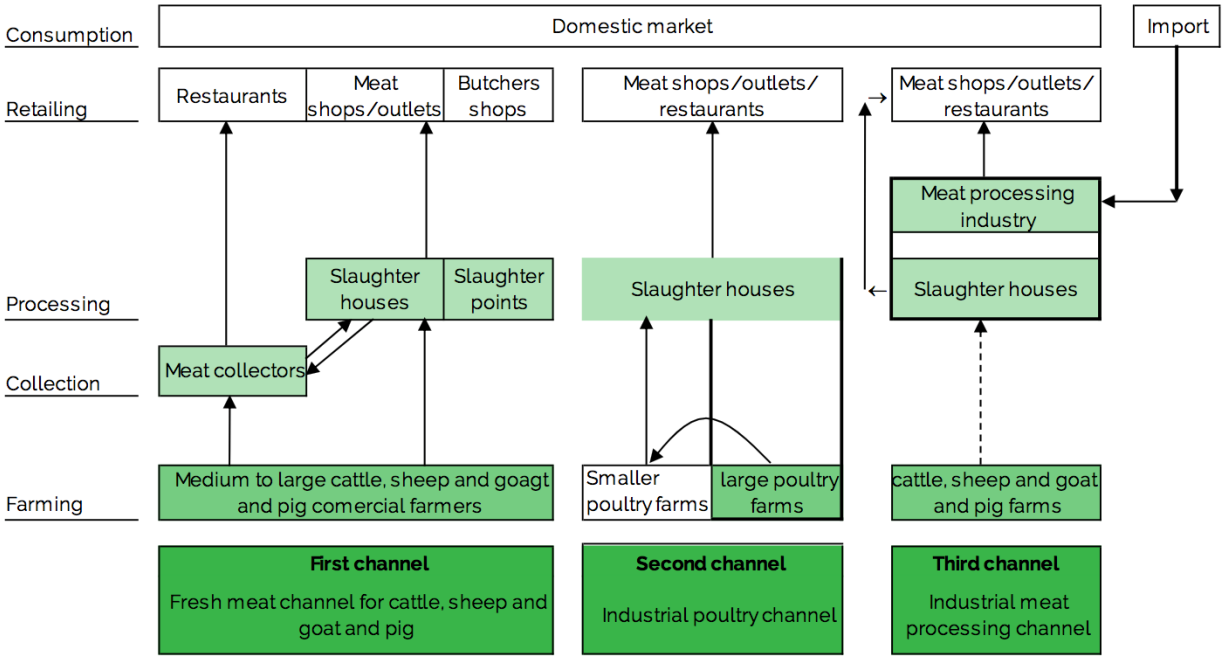
Restaurants

1. **Large restaurants specialised in meat.** They are diffused all over Albania – some of the most popular ones are located on the way to Elbasan, to the Mount Dajti and to Kruja. While some restaurants offer a wide range of meat products. They prefer to buy entire carcasses and few of them even prefer to slaughter the goat kid themselves, although that is becoming less frequent, especially close to major cities where the control of NFA and other authorities in charge of veterinary and food safety is more visible.
2. **Small restaurants specialised in lamb and goat meat.** They have a tradition and a name for supplying high quality lamb and goat kid meat and they all associate their image to Southern regions or Northern regions.
3. **Restaurants specialised in traditional dishes.** There are several restaurants specialised in traditional Albanian dishes, which obviously include many preparations based on lamb and goat meat, such as stews (Tave) and grilled chops.

There are three distinct channels in meat value chain, namely fresh meat channel for cattle, sheep and goat and pig (first channel in the figure 12), industrial poultry channel (second channel in the figure 12), and industrial meat processing channel (third channel in Figure 12). In more details, relations between actors in each channel are described in the following subsection.

[72]Zhllima, E. (2018) Local products in the region of Kukes. Technical report prepared for ADAD and Wageningen University

Figure 12: Meat value chain map



Source: Imami and Skreli (2019)[73]

8.2 VALUE CHAIN COORDINATION

Below we describe the main features of value chain coordination by typology and market segments.

Restaurants order meat from trusted butchers with whom they establish long term relations, or in the case of restaurants that are specialized in meat, especially small ruminants, and consume large volumes, also purchase of live animals from traders or farmers takes place, which are transported to slaughterhouses. The collection is made either by meat collectors who are equipped with transportation means or by restaurants themselves.

Butchers acquire the animals from farmers or traders who transport them to slaughterhouses. Payment for fresh (cattle, sheep and goat and pig) meat sold to retailers is typically cash based, on the spot.

Large broiler integrated businesses ("broiler factories") process their own production in their own modern slaughterhouses and supply the chicken meat to meat shops, restaurants, and large outlets. Some kind of contract farming has started to take place in poultry sector. Large broiler factories with modern and large capacity slaughterhouses have established contractual relationships with smaller poultry farms. They provide them with chicks (and potentially the feed) and buy back the finished product (grown broiler). These relationships proved durable with a limited number of farmers. This kind of chain organization is expected to be the future of poultry sector. As the poultry sector grows, there is need for specialization - many operators (including farmers) deal with farming and a small number of processors (slaughterhouses) deal with upstream activities (import of chicks or management of hatcheries, animal feed production, meat processing and marketing). That said, distributing poultry farming by a larger number of smaller operators is motivated also by animal health concerns and product quality.

Large modern meat processors process mainly frozen meat and rarely fresh meat. Large and medium scale processing plants typically apply written contract with frozen meat importers as well as they have direct contracts with suppliers from other countries. Some processors also buy local meat (although that represents a very small share compared to the imported one) - relationship between meat producers and processors and traders are

[73]Skreli, E. and Imami, D. (2019). Meat Sector Study- https://aasf.com.al/wp-content/uploads/2019/08/Meat-EN.pdf

usually informal, which means that there are generally no written contracts between them, or there are no contracts governing the business relationship. The reason is that processors rely mainly on imported meat, but farmers also do not have the opportunity to continuously provide meat as raw material for processors, due to the small number of animals on their farms[74].

Some of them have also their own slaughterhouses. They process meat in their slaughterhouses and supply the meat shops and large outlets/supermarkets. The main actors also have a network of shops (EHW and KMY being the main ones). Processed meat is traded in their own retail chains, in other retail or supermarket chains or in traditional meat and general food shops.

In case of sale to trading agreements between large outlets (e.g., supermarkets) and large broiler factories or meat processors, delayed payments (i.e., within a given term after delivery) are rather common. More in general, meat processors often accept delayed payment from the retail units that they supply.

Farmers retain ownership up to the final transaction. Farmers can choose either to slaughter the animal or sell the carcass or sell the animal as live weight. In fact, the majority of discussants opted for the latter approach.

Although intermediaries are present in many market transactions, there exists room for farmers to bypass these operators from the value chain through direct sales in urban and/or within the local markets. For instance, farm visits, fairs, daily markets or even business-to-business relations could serve as good options. The best option would, nevertheless, be to bring together the supply and negotiate one price. This option is feasible given the existence of an association of Has Goat breeders (for more details see the following subsection), who have already developed the Geographic Indication (GI) for Has Goat.

There is increasing interest for short value chains (i.e., consumers grouping to buy meat directly from breeders).

8.3 COLLECTIVE ACTIONS

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 livestock 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 cooperate[75] - 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 8.1:Cattle farmers' willingness to cooperate (answer the following statements)

Statement	Indicator	Fully disagree	Disagree	Neither agree nor disagree	Agree	Fully agree	Total
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)

[74]Mehmeti, G. (2016). Vlerësimi i performancës së fermave blegtorale në zinxhirin e ofertës së mishit në Shqipëri.Dissertation (Evaluating the performance of livestock farms in the meat supply chain in Albania. Agriculture University of Tirana – PhD thesis).

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

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 cooperatives[76]. In addition, cooperatives benefit its members through enabling better market access (and better prices) as well as better services at lower cost.

Role of sector associations

There are several associations active in the sector: i) The Albanian Meat Processors' Association (AMPA),ii) The Albanian Dairy and Meat Association (ADAMA),iii) The Livestock Entrepreneurs Association of Albania (LEAA),iv) Has Goat breeders' associations.

While AMPA has mainly an advocacy/lobby role, ADAMA and LEAA main activity is provision of services and direct support to members, at processing and primary level of the value chain respectively, whereas Has Goat breeders' association has a specific focus to promote territorial (local) products (namely goat meat and dairy products).

Box 7: Albanian Meat Processors' Association

Albanian Meat Processors' Association (AMPA) is lobby association. AMPA members can be producers, companies, and machinery suppliers operating in the meat sector. It protects the interests of the meat industry in conformity with government laws that regulate industry policies and national legislation affecting this industry with strong emphasis on food safety. AMPA advocates for the entrepreneurs of meat industry aiming at contributing to the drafting and improving laws and governmental policies, which regulate the activity of this industry.

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 8: The Livestock Entrepreneurs Association of Albania

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 most 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. LEAA 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.

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 Malesia e Madhe area.

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

Box 9: Albanian Dairy and Meat Association (ADAMA)

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. Similar to LEAA, also ADAMA has a strong service provision orientation. Services are also

[76]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).

provided to non-members if they can 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.

Box 10: Has Goat breeders (Shoqata e blegtorve te dhise se Hasit)

Has Goat breeders' association has a specific focus to promote territorial (local) products (namely goat meat – Dhia e Kuqe e Hasit / Read Goat of Hasi). There are more than 60 members – in addition to fresh meat, also dried meat is a tradition. They have already developed the Geographic Indication (GI) for Has Goat – one of the first GIs to be registered in Albania. The association, in partnership with other organizations, especially RASP and development projects have carried out many activities to promote the Read Goat of Hasi meat products also including marketing. They have a joint vacuum packaging equipment and joint labelling and carry out joint activities related to marketing. Since the product is not known yet to many households, the main buyers are people from Has who still live Has and those who have migrated to other areas (e.g., Tirana), relying mainly on direct sales.

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.

Meat Production - SWOT farm level

Strengths	Weaknesses
Long traditions with breeding small ruminants and livestock production in general.	Low yields in fodder production.
Crossbred cows with beef breed are increased (up to 50%) providing calves with high daily gain.	Low daily body gain in fattening calves and small ruminants.
Small ruminants' local breeds are well adapted to local conditions and products are appreciated by consumers	Low quality of hay and silage in small/medium farms
Investments in large and modern pig and broiler farms.	Limited amount of compound feed used for fattening calves and small ruminants.
Technological changes in large pig and broiler farms have a positive impact on meat production.	Small scale farms for fattening calves.
Good operational slaughterhouses in large farms of pigs ensuring quality product.	High cost of meat production.
Largest integrated poultry farms are equipped with hatchery, feed mill, and slaughterhouse	Limited attention paid to animal welfare and environmental cleanliness. Improper storage of manure.
Increasing activity of animal fattening/finishing (ruminants and pigs) to replace import of live animals ready for slaughtering and meat	The heterogeneity among pig farms (small and large) is pronounced. Small pig farms do not exploit sufficiently their production possibilities.
	High age of farmers, no successor. Labour and quality of labour is a problem. Working in rural areas is not seen as attractive.
	National Minimum Standards are not recognized by most farmers.
	The live weight of slaughtered calves and small ruminants is often too low (less than 300 kg for calves and 20 kg for SR) and therefore, low profitability.
Opportunities	**Threats**
The establishment of NAVPP is expected to improve commodity chain governance.	Socio-demographic trends and depopulation in mountain areas create negative outlook for small ruminants' sub-sector
NSS and IPARD III supports meat production.	Still unresolved issues of property rights management affect investments in livestock breeding.
High natural potential for meat and fodder production	Farm and technological waste environmental pollution
Increase of meat consumption in large urban areas	The import of live animals and frozen meat from other countries
Access to a wider set of tools, increased flexibility in IPARD III structure and alignment to EU Green Deal could allow to create a more suitable environment for the small-ruminants sub-sector	Inadequate monitoring of plant protection products, additives, and antibiotics residues in meat
Increasing meat- production orientation of ruminants' breeding activities, due to dairy sector weakness	Animal Feed price increases
Some improvement recorded in RUDA system	Very high competitiveness of imported frozen meat for processing, broilers, and broiler meat cuts for fresh consumption; import of broiler meat is rapidly increasing
	Network of live animal markets in need of major improvement

Meat production proposed development actions and strategies

Exploitation *(strengths-opportunities)*	**Improvement** *(weaknesses-opportunities)*

Support the fattening calves' farms to improve stables and technology	Improve the monitoring of animal health and welfare
Support the small ruminants' farms to improve stables and technology	Improve feed production at farm level through new equipment and technology
Support for the expansion of artificial insemination with beef breeds that help in increasing meat production	Support investment with the objective of improving fodder and meat production (machineries and equipment)
	Support investment for stable improvement and building new ones
	Support the investments for farm waste management (especially pig and broiler farms)
	Effective trainings to improve breeding and management at cattle, pigs, and small ruminants' farms
	Improve the marketing actions
	Awareness and Improve the knowledge of farmers and livestock experts on National Minimum Standards and animal welfare etc.
Adjustment *(Strengths-Threats)*	**Protection** *(weaknesses-threats)*
The system of registration of land and livestock facilities should be speeded up.	Improve the feeding technology
Improve the monitoring system through AKVMB and NFA	Support the farm waste treatment
	Incentives to improve slaughtered weight for bulls and small ruminants (premium system).
	Incentives for farmers slaughtering the animals in slaughterhouse (premium system).
	Incentives to produce bio meat from small ruminants (premium system).
	Support marketing campaign to promote meat domestic production
	Support the fodder and cereal production

9.1.1 Meat processing SWOT analysis and proposed development actions

Meat processing SWOT analysis

Strengths	Weaknesses
Presence of good examples of efficient, highly modernised processing plants with promising specialisation and market strategies	Food safety management systems, equipment, laboratories, and as well as knowledge and skills of the labour force and management
Technological changes in large meat processing plants have a positive impact on meat products	Poor technological expertise and hygiene in small processing units
Most of the large and medium processing units applied the food safety system (HACCP) and majority applied ISO 22000 as well - the EU requirement focused on meat processing plant management comprising a prerequisite for export.	Underutilization of plants capacity, especially slaughterhouses providing slaughtering services for a fee.
Sustainable business: Several of processing plants have 2-3 experienced owners/managers, and the young generation (family members) are involved in the business.	Poor waste disposal and treatment practices/facilities and technologies and low by-product utilization.
Some companies have their own chain of stores. Distribution with its own means all over the country	High cost of meat products
Good operational slaughterhouses in live animal importers facilities- the trend to close the production/processing cycle by processing salami	Little progress in developing a wider range of meat processed products
Increasingly consolidated ABP sub-sector, also starting to export and to re-export	
Opportunities	**Threats**
Increase meat products consumption in large urban areas	Increasing competition from other regional producers of meat products
Favourable government policy for the sector	Commodity chain governance and law enforcement still insufficient (traceability)
Development of different products to niche markets	Inadequate monitoring of plant protection products, additives, and antibiotics residues
The appreciation of Albanian meat products from the current consumers	Extreme competitiveness of imported standard broilers and main broiler cuts.
Meat products export potential exist with neighbouring countries	Price volatility of imported meat
Legal framework for food safety largely aligned with EU standard.	Seasonal price fluctuations for the raw material (the imported frozen meat or live animals)
Increasing demand for a wider range of meat products (meat preparations ready for cooking, a range of meat cuts, premium products etc.),	Range of products and quality makes very competitive some imported processed meat: imports are growing
NFA reform could bring to a more flexible and effective system of risk controls and law enforcement	
Good opportunities from ABP export and re-export	

Meat processing proposed development actions and strategies

Exploitation*(strengths-opportunities)*	**Improvement**(weaknesses-opportunities)
Support investment for medium and small meat processing to improve the technology.	Improve the voluntary control/laboratories of meat processing plants
Support medium and small meat processors for traditional products.	Support the waste treatment. Improve the waste management in medium and small processing plants
Support investment for meat processing to improve the distribution system (cooling chain form the factory up to shops/supermarkets).	Improve the marketing actions
Increasing consumer awareness on the food quality and safety issue.	Effective use of energy, new sources of energy (solar panels)
Optimize the network of ABP collection to reduce waste and environmental impact and increase added value in the commodity chain	The harmonization of legislation with the *Acquis*, upgrading the professional and educational level of producers and the services in agriculture.
	Improve the RUDA system for the meat and meat products traceability.
	Improve meat and meat products monitoring system
Adjustment *(Strengths-Threats)*	**Protection** *(weaknesses-threats)*
Bring in the checked the Albanian product brand	Support marketing campaign to promote domestic meat products
Creation of consumer awareness and strengthening of health consciousness, to which community marketing tools should be invoked	Search for new export markets
Complete the reform of MARD and agencies	Improve the controlling and monitoring system of residues of chemicals and antibiotics in meat

9.1.2 Meat sector SWOT analysis and proposed development actions

Meat sector SWOT analysis

Strengths	Weaknesses
Favourable climatic conditions and tradition in livestock breeding	Low yields in fodder production.
Considerable number of small ruminants' local breeds that are well adapted to local conditions and products are appreciated by consumers (possibilities to increase domestic meat production)	Low daily body gain in fattening calves and small ruminants
Modern investments in large pig and broiler farms	High cost of meat production.
Presence of a considerable number of meat processing plants in the country	Limited attention paid to animal welfare and environmental cleanliness. Improper storage of manure.
Technological changes in large meat processing plants have a positive impact on meat products	National Minimum Standards are not known by most farmers.
Meat chain actors interested in growing their business in the coming years.	The live weight of slaughtered calves and small ruminants is often too low (less than 300 kg for calves and 20 kg for SR) causing low profitability;
Good operational slaughterhouses	National Minimum Standards are not recognized by most farmers.
Dynamic and consolidating meat processing sector;	Underutilization of processing plants capacity
Most of the large and medium processing units applied the food safety system (HACCP) and majority applied ISO 22000 as well - the EU requirement focused on dairy plant management comprising a prerequisite for export.	Seasonal price fluctuations for the raw material (the imported frozen meat or live animals)
Presence of agro-input dealers (seeds, fertilizers, animal feed) and veterinary pharmacies for supporting meat production	Lack of enforcement and compliance with standards on slaughtering (hygiene, animal welfare and waste treatment/poor management of municipal slaughterhouses
ABP sub-sector consolidating and growing in importance and added value	Food safety management systems, equipment, laboratories, and as well as knowledge and skills of the labour force and management
ATTC (Korçe and F/Kruje) specialized in cattle, small ruminants and pigs are operational	Poor waste disposal and treatment practices/facilities and technologies and low by-product utilization.
Extension Service is reformed	Industry work mainly with imported meat
Big processors are well trained and clear focus on meat products	Weak enforcement of the food safety and environmental legislation
Several well-known brands	Little progress in developing a wider range of meat processed products
	Repeated failures in establishing quality schemes linked to origin.
	Lack of a systematic effort to develop product segments related to organic production and traditional/artisanal productions.
	ATTC (F.Kruje and Korçe) suffers from shortage of qualified staff and insufficient budget

Opportunities	Threats
Favourable government policy (including IPARD) for the meat sector	Commodity chain governance and law enforcement still insufficient (traceability, public health, food safety and environment protection enforcement)
The Veterinary and NFA laws are amended, is established the NAVPP	Inadequate monitoring of plant protection products, additives, and antibiotics residues affecting animal feed quality and safety
Development of different products to niche markets	Consumer preferences and consumption patterns lead to slaughter very young and light animals
Export potentials exist	High turnover in institutional counterparts at policy and technical level (MARD and AKU)
Legal framework for food safety largely aligned with EU standard.	Need for live animals' market improvement, as in present situation represent a weak link in the commodity chain (food safety, public health, traceability, animal welfare, environment protection)
NFA reform	

Meat sector proposed development actions and strategies

Exploitation *(Strengths-Opportunities)*	**Improvement** (*Weaknesses-Opportunities*)
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, conduct applied research both at farm and processing in these regions	Improve feed production at farm level through investments with objective to increase meat production (machineries etc.)
Support the NFA-Committees to conduct necessary scientific studies for risk assessment in the field of food safety and animal feed	Removal of livestock tools and equipment VAT; and bull semen VAT
Support investment for meat processing to improve the distribution system (cooling chain form the factory up to shops/supermarkets).	Improve the situation with Extension Agencies and ATTCs. Incentives for the employs, training of them)
Increasing consumer awareness on the food quality and safety issue	Effective use of energy, new sources of energy (solar panels)
	Improve waste management in farms and processing plants
	Collaborate on applied research & partnerships with industry to strengthen relevance of research and enhance the transfer of new knowledge to end users
	The strengthening of institutional support to the meat sector
	Improve the marketing actions
	the harmonization of legislation with the Community acquis, upgrading the professional and educational level of producers and the services in agriculture.
	Improve the RUDA system for the meat and meat products traceability.
	Improve meat and meat products monitoring system
	Train farmers for the National Minimum Standards and the small processors for quality products
Adjustment *(Strengths-Threats)*	**Protection** *(Weaknesses-Threats)*
Bring in the checked the Albanian product brand	Enhanced on-farm productivity due to improved management, Support marketing campaign to promote domestic meat products
Inspire the research projects about the meat sector (foreign and Albanian contribution)	Improve the controlling and monitoring system of residues of chemicals and antibiotics in meat
Incentives to motivate MARD staff and Agencies and complete the reforms	Develop sector policies and programmes that provide an enabling environment for sector development
Improve the legislation	
Renovate/reconstruct live animal markets	

9.2 ASSESSMENT OF INVESTMENTS NEEDS AND POTENTIAL

9.2.1 Primary production

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

Apart from IPARD, there have been no programs to support upgrading of meat producers, conversion from milk to meat production or to increase the viability of meat-oriented breeding's.

The most required investments in material assets are expected to include: i) investments to improve animal housing and welfare (construction of new stables and barns, improved facilities and equipment for animal feed storage and administration, TMR[77] equipment), ii) investments to improve quality of silage, hay and other animal feed, using new farm machinery and equipment and, iii) wastewater and manure treatment.

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.

Investments needs and potential in cattle farms

Large cattle farms (51 LSU 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), 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 0.4 M Euro each.

Medium-sized cattle farms (11-50 LSU) have the potential to absorb some million Euro to invest in improving animal housing conditions and treatment of the animal waste by biogas production. In addition, they could invest in improving animal husbandry practices and farm productivity, including: i) the improvement of fodder production purchasing hay binder machines; ii) improving feeding system with Cattle Feed Mixer Machine; iii) to improve animal health and welfare within the framework of "One Health" approach[78].

Investments needs and potential in small ruminants' farms

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.

In small ruminants the most needed investments include: i) new stable construction and renovation; ii) improving production by establishing new large-scale meat-oriented farms (Ruda, improved Tsigaia, Il de France or other sheep meat breed, such as Texel, Tunis Barbari, Turcana, Charollais etc.).

Investments needs and potential in pig farms

In pig farms the most needed investments include: i) new stable construction and renovation; ii) improving production by establishing new large-scale farms; iii) feed improvement and equipment; iv) waste and manure treatment investment.

Investments needs and potential in broiler farms

In broiler farms the most needed investments include: i) new stable construction and renovation; ii) improving production by establishing new large-scale farms; iii) feed improvement and equipment; iv) waste and manure treatment investment; v) investment for production of photovoltaic energy, primarily for self-consumption needs; vi) support investment using contract farming.

[77] Total Mixed Ration

[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

Reorganizing and renovating the live animals' markets

Live animal markets are key infrastructures in the meat commodity chain, especially when the commodity chain is highly fragmented, the network of slaughtering facilities is still in need of improvement and the overall farm to fork traceability and ABP management system is weak, as it is the case in Albania.

A network of efficient, clean, safe and controlled live animal markets is an essential link of the commodity chain, also because the main ones are closely linked to slaughtering facilities, as it happens in Tirana.

Some live animal markets have been renovated, like the key Tirana market, but most of the other lag acceptable infrastructural and management standards.

The majority of live animals' markets are public infrastructures.

Investing in renovating the live animal market, while increasing also controls and using them as an important tool to implement traceability would give an important contribution to commodity chain strengthening and should be considered a strategic investment category.

These investments are not eligible for IPARD support and should be made using other budget or international cooperation resources.

9.2.2 Meat Processing, slaughterhouses and ABP processing

Slaughterhouses

Considering the four slaughterhouses' categories, needs and potential can be resumes as follows:

- *Large broilers integrated businesses*. Most of the existing large businesses already have established their own facilities; there is large room for expansion of domestic production, as demand is growing faster than domestic supply; part of the expected expansion of domestic supply will consist in contract broiler breeding (i.e. contractual relations between large integrated broiler businesses and small-medium poultry growers) and will be absorbed by already existing slaughterhouses, but it can be expected that additional slaughterhouses will be needed.
- *Pig breeders' slaughterhouses.* Large pig breeders already have their slaughterhouses; the process of transferring in the country part of the breeding process (importing piglets for finishing rather than pigs ready for slaughtering or pork meat) is expected to continue, so that the workload of the existing specialized slaughterhouses is expected to increase. The increase in domestic production of pig meat (and therefore slaughtering needs) is expected to be slower than that one of broilers, so that it is difficult to foresee whether there will be an additional need for new slaughterhouses; however, it is possible and would be necessary to rationalize the slaughtering of pigs in Lezha and Shkoder, where small pig breeders are presently using semi-formal or informal slaughtering points. Some investments to improve existing facilities would be needed and would occur in case of bolder public health and food safety law enforcement.
- *Slaughterhouses owned by large meat processing plants*. Meat industry made important investments in the last programming period; further investments are needed to widen the production range, to improve wastewater management and to increase production efficiency, as detailed below. Investments in this slaughterhouse category are possible, but not likely in the next programming period.
- *Private and public slaughterhouses acting as service providers*. There is a trend in reduction, enlargement and renovation of private slaughterhouses working as service providers (i.e., slaughtering for a fee animal brought by breeders and traders) and important investments have been made for this in the last two programming periods. However, the larger private slaughterhouses are heavily under-used, and the public (municipal) ones are in many cases closed or almost not active, as weak law enforcement does not push operators to use proper slaughterhouses, as they are more expensive and in most cases farer than basic or semi-informal slaughtering points. As a result, these slaughterhouses are not profitable. Considering the situation, there is an important need to continue this investments trend (i.e., fewer, but larger and new or substantially improved slaughterhouses), but the existing operational environment discourage to continue the trend.

A different and more promising investment area is related to the improvement of the facilities for the extraction and first treatment of slaughtering by-products ABP and skins *inside the existing slaughterhouses* and slaughtering points. All the slaughterhouses built in the last two decades have equipment to facilitate the separation of skins

and a room equipped for extraction and first treatment of offal. Some elder slaughterhouses, like one in Korce, also are equipped for first treatment of skins.

Recovery and processing of animal by products (ABP) from offal's and other parts of the animal not fit for human consumption is becoming a conspicuous business (see section below on ABP) which is also generating an export and re-export flow trades. A more systematic organisation of ABP collection and processing would require agreements between ABP plants and slaughterhouses to optimise the extraction and ABP first processing and the improvement of equipment and facilities inside the slaughterhouses' ABP rooms. A quick extraction, proper first processing, conservation, and packaging of ABP to be taken to ABP processing plants for further processing would minimize losses and increase ABP added value.

ABPs companies are anyhow already contracted to retire and process ABP from slaughterhouses, disposing what cannot be processed.

Improving equipment and facilities for ABP in slaughterhouses would contribute to dent the environmental and public health problem of slaughterhouse waste, increase added value in value chain and increase exports of ABP.

It is calculated that the investment to improve each BMP room would cost 20,000 to 30,000 Euro. Some slaughterhouses' BMP rooms are already properly equipped It is estimated that there is a need/opportunity to improve at least 20 to 30 BMP rooms all around the country.

Meat processing

There are real opportunities to support investment for medium processors such as: (i) increasing and improving meat 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) use of solar energy.

Interventions to improve food safety standards at meat enterprises (mainly at medium cattle, small ruminants; pig, broiler farms and meat processing) 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 meat 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.

In medium and small-sized meat plants and 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, cooling, storage), packaging, marketing, and labelling of the meat products.

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 meat processing lines especially for producing local/typical/new products. It is the sector with high 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 meat processing plants, needs are high, but actual potential is limited, and they will not survive in the future the competition of the medium and large companies.

ABP processing

ABP processing business is in phase of consolidation (the number of plats decreased from 30 to 24 in the last programming period) and growth (the size of each ongoing plant is grown, and sizable investments have been made; three plants have now a CE number). This process is expected to continue.

There is a relatively wide range of category 1 and category 2 ABPs processing lines that can be established/upgraded; every plant can manage one or more processing lines; the investments required for each line range from 100,000 Euro to over 1 M Euro.

Increasing investments in ABP plants would provide multiple benefits, reducing environmental impact of meat sector, reducing risks for public health of poor ABP management and increasing the overall added value of the commodity chain. Some ABP processing also absorbs a sizable workforce.

Finally, ABP processing is an energy intensive sub-sector, as it needs large quantities of heat and energy. There is therefore an important need and scope to improve efficiency in energy use and energy self-production.

Finally, there is a major need for a Category 1 (high risk ABP[79]) ABP plant, i.e. a "rendering plant", but this kind of plants are large-scale strategic investments requiring a long-term commitment of the public sector to implement veterinary, public health and food safety laws, willingness and capacity to compensate farmers for animals to be disposed or incinerated in these plants and actual enforcement of the obligation for the owner to pay for the disposal of the hazardous ABP (in some cases owners will be compensated by the State).

The need for a Category 1 ABP plant in Albanian is widely recognized, but the feasibility of this type of plant is doubtful; since similar problems are recorded in nearby small Western Balkans countries, such as Kosovo, the possibility to establish a regional rendering plant has been considered as well.

In present conditions there is little or no possibility that a private would build such a plant, so that it is not realistic to include it among the investments that could be supported by IPARD in the programming period 2021-27. However, it is and remain a kind of investment for which there is a major need, but not yet the conditions for its implementation.

9.2.3 Typologies of needed investments with higher potential

There are real opportunities to support investment for small and medium meat production farms and meat 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 compliance with environmental norms. If the trend is towards consolidation of primary production (i.e., fewer, larger meat 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 15 cattle, 100 small ruminants, 5 sows, 8,000 broilers) 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).
  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*. 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, meat yield and quality, farm and waste management. This will be possible through a combination of tools: i) improvement of public extension services, and ii) flexible use of IPARD Measure 10.

Meat processing (including slaughterhouses)

- Increasing and improving meat processing capacity: construction of new lines and renovation of the existing ones
- Investments for the quality control equipment, including laboratories.
- Investments for the purification of water used in the process of processing meat and meat-based products.

[79] Category 1 ABP can be only used to produce fuel or incinerated; they include animals dead or culled because affected by quarantine zoonoses or diseases that can be transmitted to humans and other very hazardous waste.

- Investments for refurbishment, renovation and upgrading of existing slaughterhouses. In particular, investments for establishing, upgrading and equipping ABP processing units inside slaughterhouses.
- Investments for establishment of poultry and pig specialized slaughterhouses in integrated poultry and pig meat breeding/processing activities.
- Investments for ABP and wastewater processing equipment and facilities at the large and medium sized plants and septic installations/system in the small sized ones. These investments should be mandatory to comply with national standards and forcing smaller semi-informal operators to comply with norms or terminate their operations.
- Investments for establishment, refurbishment, renovation and upgrading of Category 2 and 3 ABP processing plants.
- Investments in energy efficiency and production of renewable energy for self-consumption.

10. IDENTIFICATION OF TRAINING AND ADVISORY NEEDS FOR THE SECTOR

10.1 TRAINING 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 cattle, small ruminants, pigs and poultry breeds, animal feeding, nutrition, feed nutrients content etc., in order to get the highest production.

Some specific issues highlighted as particularly important by consulted stakeholders can be summarized as follows:

- The majority of the small size livestock farmers has not enough information about inputs and has difficulty in finding information. Advice about input use is still dominated by input traders and public extension services do not have the resources to reach out to all small farmers.
- Meat farmer and especially cattle and poultry farmers need specific and independent advice before taking action on his/her farm management activities (housing, feeding, and health issue) for the production of good quality cattle meat.
- The introduction of breeds 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.

According to the interviews conducted with the stakeholders of the meat value chain training topics at primary production level are described in **Error! Reference source not found.**, and Table 10.3 below. Main training topics at meat processing level are described in **Error! Reference source not found.**.

Table 10.1: Farmers needs for training and advice and the service providers (cattle, small ruminants and pigs)

Farmers training needs	Possible service providers
1. *Feeding management*, including: 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 animal disorders; feed ration preparation according to animals' physiological stages of production; adequate amount of compound feeding, according to the breed, yield and production stage; feed ration for the lambs, goat kids and piglets.	• ATTC of Fushe-Kruja and Korça • RAAE extension staff • Private consultants and input suppliers' staff
2. *Animal welfare and the hygiene of stables, animals, and environment*, including stable construction, animals, feeding and watering space; stable ventilation, temperature and humidity control; national minimum standards; manure and slurry storage and treatment and environmental aspects; manure and slurry storage and treatment and environmental aspects.	• ATTC of Fushe-Kruja and Korça • RAAE extension staff • Private veterinarians • NGOs and development projects
3. *Reproduction of small ruminants and pigs*, including indicators of infertility; methods of heat detection; artificial insemination and its role.	• ATTC of Fushe-Kruja and Korça • RAAE extension staff • Private veterinarians • NGOs and development projects
4. *Animal health,* including 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.	• ATTC of Fushe-Kruja and Korça • RAAE extension staff • Private veterinarians • NGOs and development projects
5. *Other topics,* including breed selection according to the farm condition and objectives; importance of record keeping; business and finance plans; calculation and	• RAAE extension staff • Private consultants • NGOs and development projects

Farmers training needs	Possible service providers
analysis of basic economic and financial indicators; contracts and sales with buyers; how to apply for IPARD supported investments in agriculture holdings, standards.	

Source: Authors interviewed with farmers and expert assessment 2020.

Table 10.2: Broiler farmers needs for training and advice and the service providers

Farmer's training needs	Possible service providers
1. *Feed ration according to the stage of broiler*.	• Faculty of Agriculture and Environment- AUT • ATTC of Fushe-Kruja and Korça • RAAE extension staff
2. *Animal welfare and the hygiene of stables, animals, and environment*, including stable construction, animals, feeding and watering space; stable ventilation, temperature and humidity control; national minimum standards; manure and slurry storage and treatment and environmental aspects; manure and slurry storage and treatment and environmental aspects.	• Faculty of Agriculture and Environment- AUT • ATTC of Fushe-Kruja and Korça • RAAE extension staff
3. *Broiler disease control*.	• Faculty of Veterinary- AUT • FSVI
4. *Vaccinations and vaccination schemes*.	• Faculty of Veterinary- AUT • FSVI
5. *Identification, management, and control of main diseases*.	• Faculty of Veterinary- AUT • FSVI
6. *Other topics,* including breed selection according to the farm condition and objectives; 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.	• RAAE extension staff • Private consultants • NGOs and development projects

Table 10.3: Slaughterhouse and Meat processing workers/managers needs for training and advice and the service providers

Meat processing workers/managers training needs	Possible service providers
1. Hygiene standards, GMP, ISO, HACCP- advantages.	• Faculty of Biotechnology and Food –AUT • Faculty of Veterinary- AUT • Private consultants
2. Quality of production, storage, logistics and shelf control.	• Faculty of Biotechnology and Food –AUT • Faculty of Veterinary- AUT • Private consultants
3. The importance of self-controlling laboratory	• Faculty of Biotechnology and Food –AUT • Private consultants • Projects
4. On marketing and sales	• Faculty of Economy and Agro-business- AUT • Private consultants • Projects.
5. Wastewater treatment	• Faculty of Agriculture and Environment- AUT • Private consultants
6. ABP and waste management	• 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

10.2.1 Present situation and prospects

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 (Durres, Elbasan, Fier, Gjirokaster, Korçe, Shkoder, Tirana and Vlore)[80].These centers are offering vocational skills training to people who are unemployed or looking for retraining to quickly enter the labour market[81].

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 by MARD extensions service must be also analysed, 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.

10.2.2 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 Law[82] was adopted by repeal of the Law of 2002 and all its subsequent 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 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.

[80]National Agency for Vocational Education and Training and Qualifications- http://shkp.gov.al/trajnime-4/
[81]Review of Albania's Vocational Education and Training System, May 2020
[82]15/2017 date 16.02.2017

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)[83], but only two of them offer veterinary and animal production know-how (Shkoder, Fier), and one is offering food technology know-how (Durres). The number of students graduating from agricultural vocational high schools is much smaller compared to two decades ago. The number of graduates from agricultural vocational education and training schools is now several hundred per year[84].

A new project (PEMA – Project of Emilia-Romagna for Albania)[85] 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 the Fier Region in Albania, 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 Science[86] at Agricultural University of Tirana (AUT) offers two years professional study program in Zoo-Veterinary (including meat production)

In addition, the department of Animal Science offers both bachelor and master's degree programs in Animal Production (including meat production).

10.3 IMPROVING 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 is limited, while the private advisory services are the main source of advice for most of the modernized medium and large farms[87].

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 2018[88] 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.

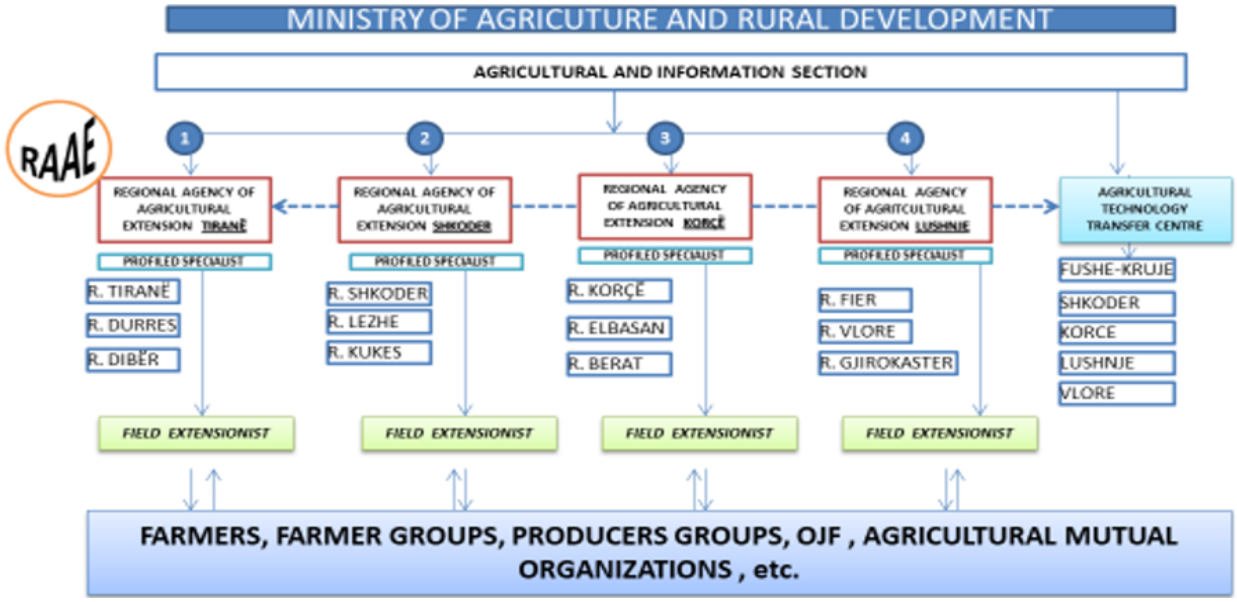
[83]http://www.vet.al/ofruesit_arsimit_profesional/publike/teknike
[84]Strategjisa Ndërsektoriale për Zhvillimin Rural dhe Bujqësor 2014-2020
[85]https://www.ifoa.it/en/servizi/institutions-schools-and-international-activities/international-projects/support-to-vocational-education-and-training-through-innovation-in-albania
[86]The department is part of the Faculty of Agriculture and Environment.
[87]Skreli et al. (2014)
[88]DCM no. 147, dated 13.3.2018 "On the establishment, organization and functioning of Regional Agricultural Extension Agencies

At present, the Albania National Extension Service (ANES) is funded 100% by the MARD. Its structure is shown in *Figure 13* below.

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)[89] 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.

Figure 13: The organization of ANES



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 Kukes
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 14: Structure of RAAEs

Director
1. Sector of finance and services
Head of sector
Specialists

[89]The 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).

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	
Statistical expert	
3. Advisory Service Sector (each region)	
Head of sector	
Agriculture Specialist	
Statistical Specialist	

Total RAEEs staff	
Director	**4**
Sector of finance and services	**16**
Subject-matter specialists Sector	**28**
Advisory Service Sector	**213**
Of which:	
Head of sector	*12*
Specialist/extensionist	*189*
Statistical specialist	*12*
Total	**261**

According to the DCM, the mission assigned to regional agencies of agricultural extension is to become key factors in the development of a competitive and sustainable agricultural sector, 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 (meat 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 10.4: Extension service training needs and possible service providers

Extensionists training needs	Possible training service providers
1. *Basic advisory skills training, including:* 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	• Faculty of Agricultural and Environment-AUT • Faculty of Economy and Agro-business – AUT • Projects and NGOs
2. *Farm Management, including*: i) support to farmers in facilitating access to finance; ii) marketing, including purchasing marketing (dealing with suppliers); iii) farm management	• Faculty of Economy and Agro-business – AUT • Faculty of Economy- University of Korça • Projects and NGOs
3. *Technical knowledge transfer, including*: 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;	• Faculty of Agricultural and Environment-AUT • Faculty of Agriculture- University of Korça • Projects and NGOs
4. *Other topics including*: 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;	• 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 Lushnja (2020).

11. ALIGNING TO THE GREEN DEAL

11.1 GENERAL ASPECTS

The Meat and meat processing sector has the highest environmental impact and the one which is raising the most challenging environmental issues; environmental impacts include: i) high contribution to agricultural greenhouses gases emission, ii) high consumption of natural resources per output unit[90], iii) need of sizable investments for manure management, v) high environmental impact of meat processing industry, requiring specific, complex and expensive processing units for recovery of by-products iv) relatively energivore processing cycles.

Intensive pig and poultry breeding are among the most polluting agricultural activities, while drive to production efficiency induce increasingly intensive ruminants breeding systems, with consequent problems of pollution hotspots, animal welfare, gradual agro-biodiversity 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) management of slaughtering and meat processing waste, iv) partial self-production of the increasing needs for energy v) agro-biodiversity preservation.

With reference to the contribution of the sector to the alignment to the EU Green Deal in Albania, meat and meat processing 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
Bovine meat primary production		
Reducing autochthon breeds population	-	**Biodiversity**
Inadequate manure management in larger breeding farms	-	**Farm to Fork**
	-	**EU Climate Ambition**
Prevalence of dry pastures	+	**Farm to Fork**
Small ruminants' meat 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**
Pig breeding		
Development of semi-intensive breeding and inadequate manure management	-	**Farm to Fork**
Increasing energy intensiveness	-	**Clean affordable energy**
Poultry breeding		
Very intensive and standardized breeding systems, based on intensive use of inputs; market segmentation could sensibly increase the optimisation in feed use	-	**Farm to Fork**
Meat processing		
Growing, but largely insufficient and incomplete industry for recovery and use of slaughtering and meat processing waste to produce by-products	-[91]	Farm to Fork
	-	Circular economy

[90]The most quoted ratio water consumption/meat production is 1500 l per 1 kg of meat, including animal feed production. Empirical research shows high variability according to farming regime: water consumption is much higher in irrigated farms.

[91] The trend is classified as negative, as the presence of an increasing sub-sector processing category I and II slaughtering and meat processing by products contributes to reduce the quantity of waste, but since all industries are dealing with the same by-products there are categories of waste, including the most dangerous ones (those to be treated in Category III plants, which are not recovered/processed at all.

Ongoing trends by commodity chain segments	Green Deal relevant components	
	Impact	Component
Growing pressure and controls for meat processing wastewater (present situation is quite negative, but pressure to improve is increasing)	+[92]	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*

The two issues that generate the largest impact on environment and create even public health hazards are: i) inadequate management or lack of primary production manure and effluents and, ii) slaughtering and meat processing waste.

Both these issues are primarily relevant to the Farm to Fork EU GD component

A proper management of slaughtering and meat processing residues needs large quantities of energy, in the form of heat. Self-production of energy in these plants is part of their financial and economic sustainability.

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.

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 farming and decline of semi-commercial farming) also leads to increasing number of some popular breeds much diffused at international level, such as Holstein, Tarentaise, 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 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 breeds could be made eligible in Measure 4, while not endangered autochthon breeds (such as the Hasi 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 products[93] (such as the case of Hasi goat products[94], 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 obtained within the framework of quality schemes (Geographic Indication, collective marks, origin marks, etc.) which also include biodiversity-based products.

[92] The trend is classified as positive because the situation is quite critical, but increased controls and pressure to comply with already existing norms will force slaughterhouses and meat processing industries to start to invest, with or without IPARD support.

[93] A 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)

[94] The support to development of biodiversity products through Geographic Indications was the core concept of the FFEM BiodivBalkans project.

There are no particular issues related to pig or poultry autochthon breeds.

Issue: Reduction in numbers of autochthon ruminants' breeds	EU GD relevant topics: Biodiversity
Proposed actions: 1. *Measure 1*: Preference criterion for investments in which the production base is made *exclusively* by non-endangered autochthon breeds. 2. *Measure 4*: Eligibility for endangered autochthon breeds *3.* *Measure 10*: Preference 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 breeding activities are being established in pig and poultry breeding, 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 meat primary production in particular.

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. *Measure 1*: Eligibility and preference criterion for equipment, machinery and improved facilities for manure and waste management, including improved design of stables and other storage facilities. *2.* *Measure 10*: Preference 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 meat 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 optimise 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 by-products 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 optimise the use of inputs are also increasing production efficiency, it has been considered that there is no need for an additional 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 control, regardless from investments in equipment, farm machinery and fixed assets. The provision of these specialised advisory services which are focused on improving sustainability of meat production is considered to be worth of preferential criterion for Measure 10.

Issue: Optimisation of meat production cycle, to increase sustainability and efficiency; supporting transition to organic farming	EU GD relevant topics: Farm to Fork
Proposed actions: 1. *Measure 4*: Support to transition to organic production regime	

2. *Measure 10*: Preference criterion for counselling and advisory services aimed at optimising the meat production cycle, optimising 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 meat supply chain and establishment of larger and more competitive farms is requiring increasing quantities of energy, especially in primary production (farm machinery, different in-stable equipment); The overall energy balance in meat processing industry is to be considered quasi-neutral, as a larger and more complex processing plant require much more energy than a small plant (which do need only some heat and do no treat the effluents), but a single modern meat plant replaces several informal or semi-formal meat units 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 meat production and meat 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. *Measure 1*: 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. *Measure 3*: 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 preference 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 other 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 (meat and milk), wild MAPs and NTFP collection.

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 7 (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' breeding	**EU GD relevant topics**: EU climate change ambitions; Biodiversity (which includes eco- systems preservation)
Proposed actions: 1. *Measure 4*: Eligibility of pastures restoration and improved management system 2. *Measure 7*: Foresee inclusion of common areas (pastures, NTFP, productive forests) in Local Action Plan design guidelines.	

3. *Measure 10*: Eligibility and preference 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

12. OUTCOME

12.1KEY FINDINGS AND CONCLUSIONS FROM THE SECTOR ANALYSIS RELATED TO IPARD III PROGRAM

12.1.1 Sector overview

The meat sector of Albania shows potential for development, particularly related to the growth of the domestic market. The growth is expected to happen especially for white meat (chicken and pork) that is cheaper than beef and mutton. Poultry seems more promising than pork.

Contract farming investments seem to be an interesting investment in poultry, large poultry integrated businesses (example DRIZA) supply farmers with birds and buy back the finished product. Some of these farmers have invested sometimes in small but rather modern poultry houses.

The same experience could be duplicated with pig farms.

Meat processing industry is relatively well developed and improved much its safety and quality standards; a new industry sub-sector is also emerging, i.e., that one of slaughtering and meat processing by-products which is undergoing a process of consolidation (few, larger enterprises) and growth, starting also to export, even in EU member states.

The weakest points of the commodity chains are:

1. too little and expensive production of animal feed; while natural conditions limit the possibility to become competitive at World or even at regional level in this area, there is plenty of room for improvement, through better use and maintenance of pasture resources and improved fodder and forage crops production.
2. the weak connection between primary producers and processing and between fresh and processed meat market segments; this is reflected in the poor performance of slaughterhouses which are not part of integrated businesses.
3. the infrastructural gaps in the commodity chain functionality, such as the standards of most live animal markets and the lack of an ABP category 1 rendering plant; these gaps create problems in terms of public health, environmental impact of the sector and traceability.
4. the small attention and investments devoted to the environmental impact of the sector at primary level (manure, slurry) and processing (proper ABP management).

Improvements are needed in primary production and processing levels. Many meat production farms have good opportunities to increase their production, but the imported frozen meat and live animals (pigs) at cheap price hinders the growth of the production sector and limit the domestic sector's ability to seize existing opportunities. In addition, the meat processors are working with the imported meat. They are well connected with the importers of frozen meat and live pigs but not connected with the meat producers who from other side are lacking marketing skills.

The main findings and conclusion relevant to each main segment of the commodity chain are described below.

12.1.2 Main features and challenges of meat production in Albania

Outlook

The poor performance of the livestock sector (except poultry) in the country is a result of various factors. Major factors include inadequate input supply (particularly feed) and service provision (veterinary service, extension service, natural mating and/or breed). 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. Zoonosis control in some cases is deficient.

Albanian meat production farmers face strong competition from EU and non-EU countries in the region, e.g., Serbia, which is more competitive in animal feed production (which is a key determinant of meat production costs). The average cost of meat produced in Albania is 20-40% higher than in other countries. The reasons for this situation are the lower daily body gain (most animals are crossbreeds), insufficient nutrition and high cost of animal feed production.

The main challenge faced by the Albanian meat sector – such as low average yields and high price of animal feed – is linked to the small scale of farming operations. Investments in animal and poultry stables, improvements in feed and forage practices, and advanced techniques for animal husbandry are essential in facing this challenge. However, such investments and improvements are not likely, or even impossible on the small-scale meat farms that dominate the Albanian meat sector.

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

The process of animal and farm registration that is planned to be completed during 2021, the amendments to the law "On veterinary service" made possible the reform in veterinary service (establishment of National Authority of Veterinary and Plant Protection (AKVMB), aims to strengthen measures for the prevention and control of animal diseases through the strengthening of control and service structures.

In Albania, sheep and goat farming takes place mainly in less favoured areas, where such farming is very often the only agricultural option, and therefore it makes a crucial contribution to the rural economy. The predominant system in hills and mountain regions of Albania is the extensive one, and the management is very traditional. 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 the farm; d) natural pasture within walking distance, with the return of small ruminants in the evening to the farm. The new technologies are of a little known by the farmers. The small farmers continue to manage the cattle and small ruminants for meat production as they were managing local breed with much lower daily body gain potential. Lack of management and animal feed ration knowledge are the most important gaps to be covered.

In very few cases cooperation does exists between farmers. Several large farms cooperate with small farms (based on friendship among neighbours) by assisting or instructing them about timing of vaccination, feeding information, and breeding techniques., etc.

All agricultural inputs (farm inputs, animal feed, machineries/equipment, etc.) are available in the market, but many small-scale meat production farms cannot afford to buy them due to lack of financial means.

Critical points and options for development in meat primary production

Interventions to improve meat standards in meat production farms (small and medium cattle farm, small ruminants farm and small pig farms) include increasing awareness and knowhow especially in small farmers and, targeted investments, using all the range of available resources (IPARD, NSS, other budget EU and international development banks resources).

Many of the meat production farm owners want to change the management of their farm and if the support exists, they will make changes.

To improve the production and management of the cattle, small ruminant, and pig farms (specially the small size) the following areas should be considered as a priority for improvement: i) animal nutrition and, ii) housing conditions, including shelters, in need of radical improvements regarding surface for each animal, stable height (as they are very low in small ruminant case), ventilation and lighting.

Investments can be supported through IPARD, while NSS could be used to introduce some kind of support for improvement of pastures and introduction of permanent fodder crops.

More emphasis should be placed on measures to improve the hay quality production and storage, for the small and medium scale cattle and small ruminant farms. Most of the farmers lack sufficient knowledge on fodder crops post-harvest systems, as the value of losses during harvest, storage, and feeding of alfalfa are considerable. It is estimated that such losses could be as high as 20%.

To reduce the effect of genetic erosion, which is caused by the uncontrolled process of crossbreeding, it is necessary to develop and implement specific mechanisms and policies to support and stimulate the protection of animal race biodiversity and have in place the appropriate institutions that should monitor it.

The environmental impact of manure and slurry is increasing in parallel with the growth in size of cattle, pig and poultry breeding and their intensification. Stronger enforcement of existing norms, in parallel with provision of incentives to investments should contribute to address this issue.

Support to improve and expand contract breeding arrangements between integrated poultry farms and independent breeders should be provided, as well as to extend the practices developed in the poultry sector to pig breeding.

The organization of farmers in meat production associations and their support to develop capacity for marketing of the products is also an important issue. Partially linked to this aspect, there is the issue of quality schemes, which have been piloted several times, with deluding results. In this area the key issues are related to the scarce willingness of operators from different commodity chain segments to cooperate and from the lack of independent and reliable control bodies, certifying the respect of the rules from quality scheme participants.

Finally, a strategic investment should be made in re-organising and renovating the network of live animal markets, which in many cases fail to comply even with basic standards, thus creating a gap in terms of traceability in the supply chain and a threat for public and animal health and for food safety. The investments to make some new markets, as in Tirana, do not change the overall picture.

Investments in live animal markets cannot be supported by IPARD but could be supported by a mix of national budget, EU IPA resources development banks resources.

12.1.3 Main features and challenges in meat processing

Meat processing industry is made out of three sub-sectors: i) *slaughterhouses*, which primarily supply the fresh meat market segment, ii) *meat processing industries*, mostly based on imported frozen meat and, iii) *Animal by-products* (ABP) processing industry, mostly dealing with offals, but also with other categories of products.

The slaughterhouses and the link to fresh meat market

There are four categories of slaughterhouses: i) those which are part of integrated poultry breeding businesses, ii) those owned by large pig farms, iii) those owned by large processing plants and, iv) private and public (municipal) independent slaughterhouses and slaughtering points providing the slaughtering service for a fee. This last category is the main processing link between meat primary production and trade.

The butchers acquire the animals from farmers or middleman or in live animal markets for the need of their meat shops and pay a fee to slaughterhouses for slaughtering service. Some larger meat shops (especially those specialised in small ruminants' meat) also operate their own slaughtering points; the same are doing some middle-sized pig farms in Lezha and Shkoder which also have a retail outlet. Large meat processing companies supply supermarkets and meat shops; some of them have also their own shops' network; in order to satisfy these needs, they use their own slaughterhouses. A growing sector is made by "Halal" meat shops and fast food, which need specialised slaughterhouses and rely on specialised mediators, which are in most cases also shop owners.

The restaurants order live animals to farmers; Meat traders who are equipped with transportation means or the restaurants themselves take the animal to the slaughterhouse, pay the slaughtering fee and bring back the meat.

The poultry meat is distributed by large poultry integrated breeding companies which process their own production in their own modern slaughterhouses (including packaging and storing) and supply the chicken meat to meat shops, restaurants and large outlets.

The management of wastewater and Animal By-products (ABP) is the most critical point of this segment of the industry. The larger and more formalised slaughterhouses are all equipped for the first treatment of ABPs, but in many cases they just pay ABP processing plants to collect the raw ABP (of which only part is later processed, while the rest is dumped in landfills). Wastewater is also an issue, as larger plants have septic tanks (no wastewater treatment units), but slaughtering points are in many cases just dumping the wastewater.

Meat processing industry

The meat processing industry already had a clearly defined structure since the first decade of 2000, when most of the key features of the present situation were already defined. Its main actors have a long term and clear development vision.

The industry structure is based on few nation-wide market leaders and a certain number of second-tier processors strong at regional level. Meat processing industry is concentrated mainly in two regions, namely Tirane and Korçe, where the 6 largest processors are located, and they make up close to ¾ of the processed meat (sausage, ham etc.).

Meat processing is based on frozen meat. A reliable supply chain is in place provided by food importers (all types of food) with appropriate deep freezing and cold storage facilities. The larger processing units made substantial investments, increasing processing capacity and improving quality, which were not mirrored by investment flows in smaller plants.

In the last programming period, the largest meat processors invested to increase in-house technical capacity, 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.

These developments did not act as a pull factor for small processors, which remain very basic in terms of types of products, technologies, and management/marketing aspects (typically, they produce few types of sausage/salami, most of them not packed or labelled).

Larger processors have established their distribution systems and supply directly to their shops, supermarket chains and other retail chain shops, while small processors supply traditional shops directly or via middlemen.

Larger meat processing enterprises managed to widen and improve the supply of meat products. Large companies are competing for market shares of the most common products (basically, different kinds of raw and scalded sausages, but also cooked ham and other cured meat)for which consumers' preferences are increasingly articulated and complex (origin is more important than packaging, traditional brands enjoy preference, and the perception of products safety is positive).At the same time, there is a consumers' segment which is looking for a wider and more diverse range of products, with consequent increase in sausage/salami imports.

Demand is clearly oriented towards a limited range of sausages and cold cuts based on beef and pork meat.

Also, in meat processing there is segment specialised in "Halal" products, which also include a relatively large, specialised company.

All the large meat processing plants comply with national standards and many of them hold different ISO certifications.

Slaughtering and meat processing waste is transferred (if raw) or sold (if pre-processed) to Animal By-Product (ABP) processing plants (see below), while wastewater is drained in septic tanks; in a few cases there are also water treatment plants; however, the management of wastewater and ABPs is one of the most critical points of the industry, especially in small processing plants.

Animal By-Products (ABP) processing plants. ABPs are animal carcasses, parts of animals, or other materials which come from animals but are not meant for humans to eat. They can either be destroyed or can be used to make compost, biogas, or other valuable products. ABPs are divided into 3 categories, based on the risks they pose. Category 3 ABPs are classed as low risk, include, among other products, offals and casings, and are object of a vast international trade.

The Albanian ABP industry is undergoing a process of consolidation and improvement supported by sizable investments. The number of ABP industries (classified as "offal processing") is decreased in the last programming period (from 47 in 2012 to 24 in 2018), but the industry is now much stronger and able to process a wider range of category 2 and 3 ABPs and to provide much more qualitative products. As a result, three ABP plants have a CE number (so they comply with EU standards and can export in EU member states) and an increasing flow of exports and re-exports (importing raw ABPs processing them in the country and exporting the finished product) is recorded.

An increasing number of plants are able to produce a particularly wide range of category 3 ABPs, such as pet food. One ABP processing plant is completing a processing line for heparine, used in pharmaceutical industry.

The level of investments required to further consolidate ABP processing industry processing is sizable (each processing line cost from 100,000 to over 1 M Euro and larger plants have several processing lines), but they can give a substantial contribution to reduce the environmental impact and public health hazard generated by meat industry, while generating good added value and providing a sizable occupational impact.

In the country there are no ABP plants for category 1 (highest risk) ABP, which means that the most hazardous waste (carcasses of sick animals, parts of animals that are contaminated due to illegal treatments etc.) are not properly disposed in Albania. This investment is feasible only where a well-functioning system of controls, animal traceability and compensations (for culling sick animals) are in force; the economies of scale of these plants are also important for sustainability, so that the financial sustainability of this type of processing plant has been the object of repeated assessments.

In fact, the need and feasibility for a national-level or even regional-level (i.e., serving more than one Western Balkan country) rendering plant, able to incinerate a range of products considered particularly dangerous (including carcasses or part of carcasses of animals affected by some diseases, international catering waste etc.) has been raised since many years and has been the object of different feasibility assessments and discussions about sustainability. However, the availability or the possibility to access at least to one Category 1 ABPs processing is a requisite for animal production (not only meat) commodity chain compliant with international environmental and public health standards.

Critical points and options for development in meat processing

The main critical areas for meat processing industry, where improvement and investments are needed are the following:

1. *There is need to proceed in the process of building up a network of modern slaughterhouses compliant with standards, but investments are hampered by unfavorable enabling environment*. This situation creates public health risks, generates heavy environmental impact and eventually hampers the commodity chain development. The main enterprises which need a slaughterhouse for their own needs (large integrated broiler and pig breeders, large meat processing companies) have already invested in such facilities and/or are going to invest; however, the majority of slaughtering is performed as a service activity or by butcher themselves in inadequate facilities. Using the slaughterhouses compliant or near to compliance with norms is more expensive; the distance of these facilities from the individual meat shops is higher as compared to the numerous semi-formal slaughtering points, which are also cheaper. Without a bolder enforcement of existing norms, the new, compliant slaughterhouses will be heavily under-used and will be eventually not sustainable, while non-compliant slaughtering points will thrive.
2. *The range of products offered by meat processing industry should be extended to the higher-end segment.* Processed meat quality improvement in the last decade was substantial and the range of products was widened, too. However, almost all products consist in different types of cooked and scalded sausages which satisfy the cheaper segment of the market. The segment of more expensive products based on cured meat is expanding, as demonstrated by increasing imports. Introducing these kinds of products require the use of more qualitative meat, specialized processing lines and maturation rooms and specialized knowhow.
3. *Further increase investments in quality control and to reduce environmental impact of meat processing industry*. The larger meat processing plants made impressive progress in compliance with safety and quality standards and many of them hold different quality certifications. This trend should continue and further supported. Investments for processing plants' internal quality control laboratories should also be scaled up.
   The need to increase investments in meat processing plants wastewater treatment facilities has been repeatedly pointed out in IPARD sector analyses[95]. Some progress and investments have been made, but the

[95]See Meat Sector Study (2010) and Meat Sector Study (2013)

size of the industry is also grown, so that the issue remains insufficiently addressed. Also, in this case, bolder law enforcement would contribute to stimulate the transfer of these needs into actual investments.

4. *The supply network to ABP processing plants must be widened and ABP sector should be further consolidated and strengthened.* ABP processing industry plays a key role in reducing the public health hazards posed by non-processed slaughtering and meat industry waste and the environmental impact of the commodity chain. Important improvements and investments have been recorded in Albania in the last programming period; However, there is still much room for further consolidation and improvement in the following areas: i) extending the network of ABP collection and improving pre-treatment at slaughterhouse level; at present, only a part of slaughterhouse and slaughtering points ABPs are collected and a good share of them can be only disposed, as they are not pre-treated and by the time they arrive to ABP plants are too degraded to be transformed in valuable by-products; ii) increasing the number of Category 3 ABP plants compliant with EU standards, as certified by the attribution of CE numbers, which implies investments in safety and quality control in the existing plants; iii) increase the number and range of products provided by Category 2 and 3 ABP processing plants, including blood, which at present is not processed. These improvements will require additional sizable investments.

5. Infrastructural investments are still insufficient. In particular, the network of independent accredited quality control laboratories should be improved and enlarged. In fact, not all meat processing plants have their own quality control laboratories; hence the need to improve the access to services typically object of accreditation focused such as professional sampling, transport of samples to laboratories, laboratory analysis and reporting of the results to processors.

A separate issue is the need for a Category 1 ABP processing plant, which is badly needed, but not feasible without major improvements in the enabling environment and/or with an agreement with small neighbouring countries for a single, regional processing plant.

A key aspect to address all the above issues is the improvement of the enabling environment, which is a pre-condition to translate needs into actual investments and to ensure that the resources allocated to support the sector (IPARD, NSS, development cooperation etc.) will be absorbed and effectively used. Bolder law enforcement is necessary to improve control and traceability in the commodity chain, to drastically reduce the use of non-compliant slaughtering facilities and to control that slaughtering ABP and wastewater are properly processed, treated or disposed.

The control for the application of the new food labelling norms should be also strengthened.

Resources and/or support schemes should be found for the infrastructural investments that cannot be supported by IPARD (those described in point 5 above). In particular, the enabling environment (compensation schemes, reinforced traceability system, improved veterinary control) for the establishment of a Category 1 rendering plant must be completed and implemented.

International trade

Albania has an important trade deficit in meat and processed meat products amounting. The trade deficit has been rather stable for the period 2015 through 2019 except for 2015 and particularly 2019 when deficit was sensibly higher. A closer look at the data suggests a growing trend in imports starting from 2016 on. Exports are negligible and without significant changes for the whole period 2010 through 2019. The trade deficit in meat and processed meat products is increasingly generated by the trade deficit in poultry meat, live animals and processed meat.

Albania has a certain potential for beef meat import substitution, which is limited by the scarce performance in animal feed production. Potential for import substitution is higher for pig meat and poultry meat, where the self-sufficiency ratio is particularly low 43% for swine meat and 33% for poultry meat).

The meat consumption is relatively low, as compared with EU27 average; In 2018, the meat per capita consumption in Albania was only half of meat per capita consumption in EU. While, Albania has higher per capita mutton meat consumption than EU and similar cattle meat conception to EU, there is quite important unmet demand in pork and particularly poultry meat, the assumption being as income per capital increases the consumption patterns will change.

Importers are either general frozen food importers or live animals' traders. The wholesale function is scarcely developed, with large processing plants directly supplying retail shops, supermarket chains using their own trading/logistic platforms and meat shops and restaurants directly dealing with farmers or with local mediators/meat traders.

The origin of production tends to be quite an important factor for most Albanian consumers. Thus, investments which result in improved marketable standards and territorial certification represent a potential considering the market demand/preferences.

12.2PRIORITY INVESTMENTS IN PRIMARY PRODUCTION

12.2.1Typesof investments

The investments having highest priority in meat primary production are relevant to the following topics: i) improvement of barns and stables ii) manure and waste management, especially in medium sized and larger cattle farms, in pig and poultry farms, iii) improvement of animal feed production storage and administration.

The range of eligible investments (with different degrees of strategic priority) is larger and is different among the breeding groups (cattle, small ruminants', pigs, and poultry). Among the most common needs recorded among meat industry actors the following topics were more often mentioned: i) modernisation of stables and barns to fulfil the EU standards for animal health and welfare (especially for broiler and pig farms), ii) mechanisation of feed administration and monitoring of animal health and performance (pig and broilers intensive breeding), iii) transportation equipment compatible with Community animal welfare standards.

A list of proposed eligible investments is provided is listed in Table 12.9 below.

12.2.2 Proposed eligibility criteria

Minimum production size at the end of investment

Not applicable

Cattle meat production farms

Minimum size at the end of investment – cattle breeding

The farm to be supported must have a clear perspective on its business for the coming years. Based on farmers and experts' interview, farms that are breeding at least 15 calves for beef (15 heads per cycle x 2 cycles per year) are considered as a representative for farm sustainability.

Table 12.1: Cattle meat production Gross margin

No	Description	Value (ALL)
1	Income	3,864,000
1.1	Calves 30 * 320 kg* 395 ALL/kg	3,792,000
1.2	Manure 30*3,000kg*1,5	72,000
2	Expenses (feed + veterinary cost +energy + water)	3,084,000
3	Gross margin (for 30 calves) (1-2)	780,000
4	Labour cost	270,000
5	Fixed cost	60,000
	Profit (3-4-5)	440,000

Source: Author calculations based on farmers and experts' interviews

In order to support changes towards to economic viable farms, it is recommended to support farms with minimum of 15 head of cattle per cycle of production (table 39).

Table 12.2: Viable cattle meat production size

Indicators	Thresholds
Minimum wage	30,000 ALL
Livelihood of 2 persons: (12 months*2 persons*minimum wage)	720,000 ALL
Gross margin per 30 calves (Table 12.1)	780,000 ALL
Viable (eligible) cattle meat production	32heads

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

- Investments including a minimum manure management component.
- Farmers having contractual breeding agreements with vertically integrated breeding businesses which also operate formalized and registered slaughterhouses.

Small ruminant farms

Minimum size at the end of investment – small ruminants' breeding

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 100 sheep or goats are considered as a representative for farm sustainability.

Table 12.3: Small ruminant Gross margin

No	Description	Value (ALL)
1	Income	1,270,800
1.1	80 lamb x 23 kg x 370 ALL/kg	680,800
1.2	100 Sheep x 60 litre milk x 85ALL/litre	510,000
1.3	Manure 50 tonnes x 1,600 ALL/ton	80,000
2	Expenses (feed +veterinary cost +energy. etc)	727,500
3	Gross margin (1-2)	543,300
4	Labour cost	270,000
5	Fix cost	20,000
	Profit (3-4-5)	253,300

Source: Author calculations based on farmers and experts' interviews

In order to support changes towards to economic viable farms, it is recommended to support farms with minimum of 130 small ruminants for meat production at the end of the investments.

Table 12.4: Viable small ruminant production size

Indicators	Thresholds
Minimum wage (month)	30,000 ALL
Livelihood of 2 persons: (12 months*2 persons*minimum wage)	720,000 ALL
Gross margin per 100 small ruminants (Table 12.3)	543,300 ALL
Viable (eligible) small ruminant meat production	130 small ruminants

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

- Investments including a pasture improvement component.

Pig farms

Minimum size at the end of investment – pig breeding

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 20 sows are considered as a representative for farm sustainability.

Table 12.5: Pig farm Gross margin

No	Description	Value (ALL)
1	Income	12,000,000
	20 sows 2 farrow x 10 piglets x 100 kg/piglet x 300 ALL/kg	12,000,000
2	Expenses (feed +veterinary cost +energy etc.)	9,368,700
3	Gross margin (1-2)	2,631,300
4	Labour cost	720,000
4	Fix cost	1,18560
	Profit (3-4-5)	1,900,740

Source: Author calculations based on farmers and experts' interviews

In order to support changes towards to economic viable farms, it is recommended to support farms with minimum 15-20 sows by the end of the investment.

Table 12.6: Viable pig farm production size

Indicators	Thresholds
Minimum wage (month)	30,000 ALL
Livelihood of 2 persons: (12 months*2 persons*minimum wage)	720,000 ALL
Gross margin per 20 sows (Table 12.5)	2,631,300 ALL
Viable (eligible) pig meat production	6 sows

Source: Author calculations based on farmers and experts' interviews

Size of projects

- Minimum € 20,000
- Maximum € 500,000

Preferential criteria

- Investments including a manure management component.
- Farmers having contractual breeding agreements with vertically integrated breeding businesses which also operate formalized and registered slaughterhouses.

Broiler farms

Minimum size at the end of investment – poultry breeding

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 20,000 broilers per cycle (5 cycles per year) are considered as a representative for farm sustainability, and as contracting farm of the large poultry farms.

Table 12.7: Broiler Gross margin (per cycle)

No	Description	Value (ALL)
1	Income	6,809,400
	19,400 broilers X 1,8 kg/broiler 195 ALL/kg	6,809,400
2	Expenses (feed + veterinary cost + energy, etc.)	6,194,500
3	Gross margin (1-2)	614,900
4	Labour cost	360,000
5	Fix cost	117,000
	Profit (3-4-5)	137,900 (per cycle)

Source: Author calculations based on farmers and experts' interviews

In order to support changes towards to economic viable farms, it is recommended to support farms with minimum 20,000 broilers at the end of investment.

Table 12.8: Viable broiler production size

Indicators	Thresholds
Minimum wage (month)	30,000 ALL
Livelihood of 2 persons: (12 months*2 persons*minimum wage)	720,000 ALL
Gross margin per 20,000 broilers * 5 cycles (Table 12.7)	3,074,500 ALL
Viable (eligible) broiler meat production	5,000 broilers

Source: Author calculations based on farmers and experts' interviews

Expert opinion is divided, so some think that even farms with 5,000 heads should be supported, while others think that farms with less than 20,000 heads cannot be profitable.

Size of projects

- Minimum € 20,000
- Maximum € 500,000

Preferential criteria

- Investments including a manure management component.
- Farmers having sustainable relationships with large broiler farms to secure the chicks and animal feed and also to slaughter the broilers at the slaughterhouse of the large farm as contract farm (supported by documentation from large broiler producer).

Estimate absorption level

The structure, organization, profitability, and prospects of meat breeding activities is different in each sub-sector:

- *Meat-oriented cattle breeding* is expected to grow, mainly due to the weakness of the dairy cattle sub-sector, which will encourage small producers to focus on valves finishing (i.e., buying calves and bringing them to the weight required by butchers) and larger enterprises to establish specialized meat-oriented farms. While the first group of enterprises already have what they need to keep 1-2 calves and is expected to perform small investments, the second group implement much larger investments in equipment and premises, which in IPARD II programming period scored in average 0.4 M Euro each.
- *Small ruminants' breeders* are increasingly relying on income from sales of lambs and goat kids, as traditional breeding methods makes milk-oriented production scarcely profitable. However, the sizable investments made in the last programming period in this sub-sector were performed only by newly established breeders specialized in milk-oriented goat and sheep breeding; smaller investments were supported by bilateral cooperation (SARED). As a consequence, several small investments in barns, farm machinery and pasture improvement/management are expected, while large, specialized meat-production oriented investments are possible, but no major investments are expected.

- *Pig breeders* are divided in two groups: i) medium-large pig breeding farms and, ii) small-medium sized pork meat producers, which sell pigs, but also pork meat in their shops. The first category of breeders is the one which witnessed a faster growth in the last programming period, but both categories are in need of making further investments, with the first focused on expanding their business (which also includes in some cases specialized slaughterhouses) and improving environmental management (pig manure and slurry create a major environmental threat) and the second more focused to better integrate their businesses, improving their small (and presently not compliant with rules) slaughtering facilities. Since the flow of imported live pigs and piglets is growing, all pig breeders must invest in improved barns and animal feed production. It is also possible to expect that large farms will start piglets fattening sub-contracting, with modalities similar to those ones used in broiler breeding. For this purpose, the larger pig farms would need to invest in oversized facilities for piglets and slaughterhouses.
- *Poultry breeders.* Demand for chicken meat is growing fast and domestic producers managed to intercept only a part of this growth (some 25%), as imported broiler meat is extremely competitive. Potential for growth is clear, as well as need for investments, but the absorption capacity of the sub-sector is limited. It is possible to expect some investments from large broiler integrated breeders to complete-upgrade their business and from new and existing sub-contractors to expand and improve their premises. Important investments are also needed for manure management.

Considering the above, it is possible to expect a growth in absorption capacity in primary meat production, as compared with IPARD II programming period (2 M Euro in the first two calls; in the same period the absorption from milk primary production was 3.8 M Euro); total absorption capacity could range between 3 to 6 M Euro over the whole programming period; however, it is also possible that integrated pig and poultry breeding activities will directly submit a single application to improve different aspects of the business, all under Measure 3, thus increasing absorption in Measure 3 and decreasing absorption in Measure 1.

12.3 PRIORITY INVESTMENTS IN PROCESSING

12.3.1 Types of investments

Priority needs for the meat industry are: i) to improve waste and ABP management at all levels of the commodity chain, ii) increase competitiveness especially in broiler and pig integrated breeding/processing activities, iii) meat processing maturation room capacity iv) investments to increase meat products traceability and, v) quality and safety control laboratories.

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 meat industry actors the following topics were more often mentioned: i) additional investments in new technologies, ii) improvement of infrastructures and iii) further improve of quality standards.

The first priority involves the improvement of ABP commodity chain, which can be considered a full-fledged value chain, parallel to that one of meat processing.

The improvement of waste and ABP processing will occur first at slaughterhouse level: preliminary treating and proper packaging of ABP will make them valuable raw material for good by-products; in absence of such treatment, it will be necessary to dispose a large share of these ABP, loosing added value and impacting the environment; in meat processing industries, wastewater treatment units should be built to replace septic tanks and properly operated when already available; in addition, meat industries also produce ABM, which need to be pre-processed and packaged before being transferred as input for ABP processing industry. Finally, the range of products produced by ABP industry must be widened and improved: there are already three ABP processing plants with a CE number (the only ones in the meat sector); conditions are set to increase this number.

In order to have the first priority achieved it will be also necessary to strengthen law enforcement, as the need for investment is clear to all actors, but actual investments will not occur until rules are strictly enforced, as waste management requires resources for sizable investments and generates additional running costs.

12.3.2 Proposed eligibility criteria and size thresholds

The potential eligible beneficiaries are:

- Registered meat producers and processors, including slaughterhouses and ABP processors (classified as offal processing plants)
- All physical and juridical persons meeting stated criteria, profitability and viability criteria.

Project's 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

- Pig and poultry integrated businesses having a contractual agreement with other farms for decentralized breeding (sales of pigs/chicks and animal feed and purchase of finished animals ready for slaughtering).
- 50% or more of the investment devoted to one of the following investments: i) waste management and/or animal by-products (ABP) recovery and/or processing; ii) investments creating the conditions, by the end of investment, to apply for a CE number.
- Meat processing plants, slaughterhouses (supported through Measure 3) and in-farm meat processing equipment and facilities (supported through 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 of the meat processing sub-sector in the first two IPARD II calls scored 12.3 M Euro (Measure 3 only), the second largest sector for fund absorption after Fruit and Vegetables.

More than 50% of the amount was devoted to investments in slaughterhouse facilities, including poultry slaughterhouses. Other three large investments, each ranging between 1 and 2 M Euro were made for meat processing lines.

At present, the main investments in the larger meat processing plants have been performed and the largest meat processing plants have processing overcapacity.

As for slaughterhouses, independent slaughterhouses (i.e., those which are not part of vertically integrated businesses) are also heavily under-used.

It is therefore expected that investments in these two components (i.e., slaughterhouses and meat processing lines) will decrease.

At the same time, the need for to investments in wastewater treatment and ABP processing is becoming more compelling; the consolidation of ABP processing is also proving the profitability of these products, thus attracting more investments. Investments for production of renewable energy for self-consumption also started and are expected to grow.

In the next programming period smaller meat processing plants, pig and poultry integrated businesses, already existing slaughterhouses and ABP processing enterprises could make smaller, but more numerous investments, in order to match the need for increased efficiency and compliance with standards.

However, some investments could be quite sizable, as slaughterhouse quick chill tunnels (worth around 1 M euro each), which could be particularly useful in pig slaughterhouses.

Considering the above, it could be possible to expect in the next programming period a reduction of the meat processing sub-sector overall investment absorption capacity, which could range between7 and 10 M Euro.

12.4 SYNOPSIS OF PROPOSED INVESTMENTS AND SUPPORT MEASURES

12.4.1 Priority investments and compatibility with IPARD III Measures

Table 12.9 below summarizes the proposed eligible investments for IPARD support. This list includes only those priority investment needs which are compatible with IPARD rules and whose successful implementation can be verified with ordinary on-the-spot verification means. Additionally, the table proposes specific initiatives in other measures that are recommended to secure the best benefit from the proposed investments.

Table 12.9: Proposed measures and eligible investments

Sub-sector	Type of investment	IPARD III compatibility
Meat primary production Measure 1	• Equipment, tools, machines and works to improve irrigation and optimise use of water resources, as further specified (see below), but excluding opening of new or additional wells. • Purchase of specialised machinery and equipment tools and equipment for fodder and animal feeding crops, as further specified (see below). • Construction, refurbishment or reconstruction of on-farm animal feed storage facilities • Dryers, cutters, feed milling equipment and other equipment for in-farm animal feed production • Construction, refurbishment or reconstruction of farm machinery recovery and other support structures. • Construction and refurbishment of stables and barns • Equipment and machinery for animal feed handling and administration, stables and barns cleaning, • On-farm manure and other by-products composting facilities for production of organic fertilizers and compost, limited to the self-consumption needs of the farm. • Live animals specialized transport facilities compatible with EU animal welfare standards • 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. • Production of renewable energy, including biogas, wind and photovoltaic energy for self-consumption needs. • ICT facilities and systems for animal health and performance monitoring ***Specific to cattle breeding*** • Precision feeding systems. • Mechanized systems for in-stable manure handling and management and refurbishment of stable and barns with improved design for manure and slurry management. ***Specific to small ruminants' breeding*** • Covered manure storages. ***Specific to pig breeding*** • Covered manure storages. ***Specific to poultry breeding*** • Hatcheries. • Automatised feed administration systems • Integrated monitoring systems for animal health monitoring • Establishment of additional breeding lines and feeding systems in function of final product (light, standard and heavy broilers) • ICT systems to monitor breeding process in external farms under breeding contract.	

Sub-sector	Type of investment	IPARD III compatibility
	• 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 4 (agro-environment)
	• Advisory and knowledge transfer on animal husbandry • Advisory and knowledge transfer on animal health, food safety and quality standards • Advisory and knowledge transfer on manure and slurry management • Advisory and knowledge transfer on contractual breeding agreements	• Measure 10 (advisory services)
	• Investments for establishment and recovery of watering points in highland pastures and forested areas (included in sub-measure 11.2 - agroforestry)	• Measure 11 (forestry)
Meat processing	• Specialized vehicles and trailers for live animal transport (to processing plants). • Refurbishment and renovation of cattle and small ruminants' slaughtering facilities, subject to further specifications detailed below. • Slaughtering equipment and processing lines, including deboning, and meat separation equipment, ABP first treatment, de-skinning equipment and machinery. • Meat processing equipment and processing lines, including packaging lines. • Meat and processed storage facilities in meat processing plants, slaughterhouses and ABP plants, including cold and deep-freezing storages, containers and equipment such as quick chill tunnels. • Equipment for internal handling and loading, unloading and loads moving. • Self-control laboratory and quality control devices. • Slaughtering, meat processing and ABP equipment and facilities. • Wastewater treatment and septic tanks in slaughtering, meat processing and ADP processing units. • Refurbishment, renovation and construction of pig and poultry slaughtering facilities, subject to further specifications detailed below. • Construction, refurbishment, and renovation of ABP processing plants • Equipment and processing lines for ABP processing • 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 3
	• In-farm equipment and facilities for meat processing, with a capacity up to 100 kg. • Meat products conditioned facilities, including in-farm cured meat maturation cells. • Septic tanks, equipment and facilities for ABP collection and storage (for transfer to ABP processing plants) • Equipment and installations for renewable energy for self-consumption only, from solar (thermal and photovoltaic) source.	• Measure 7
	• Advisory and knowledge transfer on hygiene, food safety, quality standards and certifications, organic certification. • Advisory and knowledge transfer on meat, meat processing and ABP technical aspects • Advisory and consulting services for improvement of energy management,	• Measure 10

Sub-sector	Type of investment	IPARD III compatibility
	environmental and waste management, and occupational safety. • Management advisory and consulting services.	

Source: Authors' elaborations (2021)

The following investment categories are further specified as follows:

- *Farm mechanization and irrigation*: Purchase of specialized farm machinery for forage and fodder production machinery and equipment for planting, harvesting, pest control, distribution of fertilisers and transport of products, including hand-operated and machine-operated equipment such as specialised tractors and cultivators, sprayers, harrows, trailers, harvesters or other specialised equipment.
- *Irrigation*; purchase of new or upgrading of existing on-farm irrigation systems, including construction of tertiary irrigation facilities.
- Renovation and equipment for cattle and small ruminants' slaughtering points are eligible only in areas where there are no municipal or private slaughterhouses build after 2005. In those areas, only renovation and improvement of existing slaughterhouses is eligible for support.
- *On-farm renewable energy production* for self-consumption, including solar, wind and biomass energy production, including biogas. *Solar* energy installations and equipment must not utilise agricultural land.

12.4.2 Green Deal Preferential treatments

In addition to preferential treatment factors (gender-related, young farmers/entrepreneurs) and to preferential treatment described under chapter 12.1.2 and 12.2.2 above, preference should also be given to investments supporting the alignment to EU Green Deal. Such preferential treatments should be reflected in the scoring system.

Should more than 50% of the proposed investment fall within one or more categories contributing to alignment to EU Green deal, the entire investment should get a preferential treatment in the scoring system: the scoring system should therefore assign some points to the category "alignment to EU Green Deal." In the meat and meat processing sector, the following investments should be considered eligible for preferential treatment.

Table 12.10: Investments eligible for EU Green Deal preferential treatment

Sub-sector	Type of investment
Meat primary production	• Breeding systems with use of permanent forage crops and pastures maximizing carbon sequestration. • Pasture (owned or long-term renting) and watering points maintenance methods ensuring ecosystems preservations. • 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. • Equipment, machinery and improved facilities for manure and waste management, including improved design of stables and other storage facilities. • Organic production established or converted in a protected area
Meat processing, including slaughtering and ABP processing	• Equipment and installations for solar (thermal and photovoltaic), biomass and biogas energy self-production. • Equipment and installations for heat recovery

13. ANNEXES

ANNEX 1: BIBLIOGRAPHY

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ANNEX 2: LIST OF INTERVIEWED STAKEHOLDERS

Nr	Date	Place of interview	Person	Business/organization	Position	Telephone
1.	4.11.2020	Tirane	Tana Kika	MARD	Advisor of Minister	0684030604
2.	5.11.2020	Tirane	Artan Belegu	Food quality and safety	Freelancer	0686838337
3.	6. 11. 2020	Tirane	Engjell Jazexhi	Agro-input dealer (Seeds, fertilizer, pesticide)	Owner	0682026643
4.	9.11.2020	Tirane	Sabah Sena	Animal feed and livestock expert	Freelancer	0692072210
5.	12.11.2020	Tirane	Festim Shytaj	MARD	Head of extension service	O676898050
6.	12.11.2020	Kavaje	Kadri Malaj	Agro input (fertilizers, animal feed, seeds)	MBM co-owner	0682024308
7.	13.11.2020	FusheKruje	Lolu (Luli) Papajani	Animal Feed expert	Director of AGROTEK	0692027408
8.	13.11.2020	Tirane	Luigj Turmalaj	Veterinarian and AI	Private veterinarian and AI expert	0689002599
9.	18.11.2020	Fier	Hiqmet Driza	Driza broiler farm	Owner	0692031538
10.	18.11.2020	Lushnje	Qemal Petriti	Animal feed dealer	Owner	0674059653
11.	19.11.2020	Berat (Samatice)	Andrea Çela	Calves Farm	Co-owner	0683607378
12.	20.11.2020	Tirane	Valbona Ylli	LEAA (semen importation and distribution)	Executive director	0682054905
13.	23.11.2020	Tirane	Petrit Dobi Roland Bardhi	Small Ruminants	RASP	0692067991
14.	23.11.2020	Tirane	Genc Juka	NFA expert	Former NFA director	0682033171
15.	27.11.2020	Tirane	Thanas Piu	Poultry and animal feed expert	Freelancer	0692121760
16.	27.11.2020	Tirame	Altin Telo	Veterinarian	Freelancer	0684037737
17.	30.11.2020	Korçe	Arqile Kapurani	Boboshtice-Broiler	Owner	0692088564
18.	1.12.2020	Korçe	Roland Meçaj	QTTB -Korçe	Director	
19.	1.12.2020	Korçe	Sotiraq Jankull, Romeo Prifti, Lazart Suraj	StacBagtImta-QTTB	Director + veterinarians	0682630700 0698493091
20.	1.12. 2020	Korçe	Nesti Tarusha	FIX- Meat Processor	Owner	0682050777
21.	2.12.2020	Bilisht	Ardian Xama Fatmir Kutrolli	AREB-Korce	Extensionist Bilisht	0692562412 0684680333
22.	2.12.2020	Pilur/Bilisht	Ferdinand Shkembi	Farmer (250 goats)	Owner	0692145646
23.	3.12.2020	Elbasan	Hysen Moli	Veterinarian/Inseminator		0682079704
24.	3.12.2020	Elbasan	Mimoza Bevap	Pharmacies for Livestock	Owner	
25.	3.12.2020	Elbasan	Luftar Moli	Farmer (cows 15)	Owner	0682393000
26.	3.12.2020	Elbasan	Kujtim Gjoni	AREB- Korçe/Elbasan	Extensionist	0682354258
27.	3.12.2020	Elbasan	Veli Starja	AKU Elbasan	Inspector	0692596059
28.	7.12.2020	Tirane	Arben Kipi	FAO-Albania		

29.	12.12.2020	Fier	Myrteris Alliau	Allidagu- pig farm	owner	0682056307
30.	12.12.2020	Fier	Arjan Kanini	Levan municipality	veterinarian	06822182233
31.	12.12.2020	Fier	Agron Kusta	Importer-Veterinary drugs	Veterinarian	0692073873
32.	12.12.2020	Fier	Endri Sauli	Agency of Veterinary- Fier	veterinarian	
33.	12.12.2020	Fier	Aleks (Krenar) Brataj	Broiler	owner	
34.	14.12.2020	Tirane	Ali Lulo	MARD	Head of Epidemiology-Identification and Registration	0683445278
35.	18.12.2020	Tirane	Luljeta Çuko	MARD	Director	0684681827
36.	22.12.2020	Mamurras	Tonin Kotica	Beef Farm	Owner	0674005088
37.	26.12.2020	Tapize	Tregu Kafsheve	Qereke		
38.	27.12.2020	Milot	Tregu i kafsheve	Milot		
39.	28.12.2020	Tirane	Rexhep Shima	Pig	expert	06 92250518
40.	5.01.2021	Tirane	AfrimVokshiqi	Calves' importer, slaughterhouse, animal market	Owner	0689013333
41.	12.01.2021	Tirane	Nesti Nestori	Import of pigs, slaughterhouse, meat processing, slaughter waste treatment (BALLKAN ZOO FARM 2014)	Owner	0689070400
42.	13.01.2021	Tirane	Dervi Kanina Xhulia Bakiasi	Goat Farm+ Gout milk Processing (BONUM)	General Manager Dairy technologist	0693943948 0685915630
43.	13.01.2021	Tirane		Bonum shop	Shopkeeper	
44.	13.01.2021	Tirane	Keti Margariti	MARD	Head of Veterinary	
45.	22.01.2021	Tirane	Luljeta Cuko	MARD	Director	0684681827
46.	26.01.2021	Fushekruje (Luz)	Kastriot Paloka	Pig farm 20 sows	Owner	0682419481
47.	26.01.2021	Lac	Simon Gjeta	Pig farm 20 sows	Owner	0692202873
48.	28.01.2021	Sheqishte/Fier	Arben Semanjaku	Importer of pigs and calves, calves fattening	Owner	0684695420
49.	28.01.2021	Fier	Piro Rapushi	Former AZHBR	Livestock expert	0684073732
50.	28.01.2021	Fier		I&R – RUDA System	Expert	
51.	29.01.2021	Kallmishte		Fier Animal Market		
52.	29.01.2021	Fier	Andon Cuko		Chief Veterinarian Fier	0692296993

				Veterinary and Plant Protection Agency		
53.	30.01.2021	Fier	Ervin Resuli	Private veterinarian	Veterinarian	0692946222
54.	5. 02.2021	Tirane	Irfan Tarelli	General Directorate of Agriculture Policies, Food Safety and Rural Development	Director	0682078716
55.	10.02.2021	Lezhe	Alban Zusi	Casings, render unit.	Owner	0692032453
56.	12.02.2021	Tirane	Lauresha Grezda	Directorate of Agriculture and Rural Development Policies and Programs	Director	
57.	15.02.2021	Tirane	Tana Kika	National Authority of Veterinary and Plant Protection	General director	0684030604

ANNEX 3: INTERNATIONAL TRADE OF MEAT PRODUCTS

Table 13.1: Live animal imports by type and year

Year		2010	2014	2015	2016	2017	2018	2019
Live horses 0101	000 €	2	7	4	23	14	11	17
	Ton	1	5	2	4	4	1	6
	Price	2	1.4	2	5.75	3.5	11	2.83
Live bovine 0102	000 €	12,904	7,892	7,053	2,727	10,311	8,940	11,823
	Ton	8,736	5,062	3,792	1,414	4,662	4,793	6,253
	Price	1.48	1.56	1.86	1.93	2.21	1.87	1.89
Live swine 0103	000 €	7,255	10,767	12,806	13,338	14,254	11,876	14,618
	Ton	5,988	8,550	9,525	9,764	10,406	8,760	10,772
	Price	1.21	1.26	1.34	1.37	1.37	1.36	1.36
Total live sheep and goats 0104	000 €	135	68	182	:	264	1,579	3,795
	Ton	70	30	26	:	121	712	1,778
	Price	1.93	2.27	7.00	:	2.18	2.22	2.13
Live poultry 0105	000 €	3,446	5,431	4,760	4,984	3,889	4,777	5,349
	Ton	3,509	3,194	2,673	2,403	1,417	1,809	2,030
	Price	0.98	1.7	1.78	2.07	2.75	2.64	2.63
Other live animals 0106	000 €	0,4	287	58	63	90	92	69
	Ton	0,3	66	11	3	12	11	4
	Price	1.53	4.34	5.26	19.37	7.79	8.71	16.24

Source: EUROSTAT (2021)

Table 13.2: Exports and imports of live animals by year

	Exports		Imports		Export/Import	
Year	000€	Ton	000€	Ton	Value	Weight
2010	248	47	23,743	18,304	1.0%	0.3%
2014	350	49	24,452	16,907	1.4%	0.3%
2015	399	58	24,862	16,028	1.6%	0.4%
2016	268	33	21,134	13,588	1.3%	0.2%
2017	247	31	28,823	16,621	0.9%	0.2%
2018	105	18	27,274	16,085	0.4%	0.1%
2019	182	26	35,670	20,844	0.5%	0.1%

Source: EUROSTAT (2020)

Table 13.3: Albanian international trade of meat

Year	Exports 000€	Exports Ton	Imports 000€	Imports (ton)	Export/ Import (Value)	Export/ Import (Weight)
2010	134	11	44,944	39,169	0.3%	0.03%
2014	232	21	46,545	37,750	0.5%	0.06%
2015	265	21	51,041	36,908	0.5%	0.06%
2016	116	38	39,103	38,520	0.3%	0.10%
2017	180	69	40,550	38,382	0.4%	0.18%
2018	184	96	42,219	39,073	0.4%	0.25%
2019	228	62	47,113	41,068	0.5%	0.15%

Source: EUROSTAT (2020)

Table 13.4: Import of main types of meat

	Beef total		Pork total		Chicken total		SR total	
Year	Imports 000€	Imports MT	Imports 000€	Imports MT	Imports 000€	Imports MT	Imports 000€	Imports MT
2010	4,066	2,558	14,582	10,390	20,488	19,960	776	450
2014	2,309	1,325	12,872	8,711	26,220	23,961	86	51
2015	2,649	1,347	15,141	8,926	27,306	22,587	48	25
2016	3,073	1,715	11,548	7,725	21,511	25,960	172	59
2017	2,643	1,437	13,927	9,600	21,343	24,837	62	15
2018	3,092	1,307	15,203	10,051	20,287	24,639	9	3

2019	5,450	1,943	11,825	7,481	25,558	28,643	336	132

Source: EUROSTAT (2020)

Table 13.5: Export and imports by partner countries of meat (by type)

Imports 2019			Imports 2010		
Country	**Import amount (tons)**	**% Share in import amount**	**Country**	**Import amount (tons)**	**% Share in import amount**
		Meat Total			
United States	10,007	24%	**Brazil**	13,446	34%
Brazil	7,291	18%	**United States**	10,265	26%
Greece	7,026	17%	**Italy**	7,561	19%
Total	41,068	100%	**Total**	39,169	100%
		Bovine meat			
Netherlands	491	25%	**Brazil**	807	32%
Italy	484	25%	**Paraguay**	719	28%
Poland	330	17%	**Italy**	515	20%
Total	1,943	100%	**Total**	2,558	100%
		Swine meat			
Brazil	3,373	45%	**Brazil**	4,859	47%
United States	2,115	28%	**Canada**	2,062	20%
Canada	670	9%	**Italy**	1,164	11%
Total	7,481	100%	**Total**	10,390	100%
		Poultry Meat			
United States	7,750	27%	**United States**	9,013	45%
Greece	6,748	24%	**Brazil**	7,398	37%
Brazil	3,685	13%	**Greece**	1,392	7%
Total	28,643	100%	**Total**	19,960	100%
		Sheep and goats meat			
Greece	126	96%	**New Zeeland**	425	94%
Other	6	4%	**Other**	25	6%
Total	132	100%	**Total**	450	100%

Source: EUROSTAT (2020)

Table 13.6: Imports of live animals (total) 2019

Live animals	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Value(000Euro)	1,255	1,453	1,808	1,975	1,601	1,341	1,764	2,504	1,721	1,779	1,570	2,073
Quantity (MT)	2,098	2,487	3,123	3,344	3,064	2,370	2,844	4,257	3,106	2,972	2,629	3,376
Price (Euro/kg)	0.60	0.58	0.58	0.59	0.52	0.57	0.62	0.59	0.55	0.60	0.60	0.61
Import structure by countries												
Greece	57%	58%	64%	54%	48%	49%	61%	52%	55%	55%	66%	63%
Bulgaria	12%	14%	16%	20%	11%	12%	15%	12%	19%	16%	17%	9%
North Macedonia	11%	7%	6%	5%	6%	6%	5%	4%	5%	5%	5%	7%
Romania	10%	14%	8%	16%	19%	25%	17%	26%	19%	16%	9%	6%

Source: EUROSTAT (2020)

Table 13.7: Imports of live bovine animals 2019

Live bovine	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Quantity (MT)	444	547	580	614	455	433	432	640	604	506	444	553
Value(000Euro)	857	1027	1108	1147	906	819	809	1202	1133	933	832	1050
Price (Euro/kg)	1.93	1.88	1.91	1.87	1.99	1.89	1.87	1.88	1.88	1.84	1.87	1.90
Import structure by countries												
Bulgaria	34%	37%	51%	41%	35%	38%	53%	49%	54%	55%	60%	34%
Romania	22%	34%	22%	39%	26%	37%	28%	33%	25%	26%	20%	18%
N. Macedonia	32%	19%	20%	16%	22%	17%	19%	17%	13%	16%	16%	25%

Source: EUROSTAT (2020)

Table 13.8: Imports of meat of bovine, frozen 2019

Category	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Quantity (MT)	87	66	132	117	69	133	114	192	95	142	74	119
Value(000Euro)	190	148	229	200	175	376	250	509	171	320	130	302
Price (Euro/kg)	2.17	2.26	1.74	1.71	2.52	2.82	2.20	2.65	1.80	2.25	1.75	2.54
Import structure by countries												

Italy	86%	69%	31%	24%	57%	6%	55%	19%	27%	40%	65%	9%
Poland	14%	31%	32%	53%		31%	19%	12%	44%	2%	28%	18%
Brazil			18%	22%	38%	19%		55%				22%

Source: EUROSTAT (2020)

Table 13.9: Imports of poultry meat 2019

Poultry meat	**Jan.**	**Feb.**	**Mar.**	**Apr.**	**May.**	**Jun.**	**Jul.**	**Aug.**	**Sep.**	**Oct.**	**Nov.**	**Dec.**
Quantity (MT)	2,534	1,749	2,386	2,648	2,457	2,103	2,499	1,946	1,994	2,424	2,385	3,518
Value(000Euro)	2,152	1,516	2,082	2,713	2,037	1,721	2,512	1,853	1,745	1,888	1,976	3,362
Price (Euro/kg)	0.85	0.87	0.87	1.02	0.83	0.82	1.00	0.95	0.88	0.78	0.83	0.96
Import structure by countries												
USA	28%	26%	30%	17%	26%	30%	24%	13%	24%	27%	32%	39%
Greece	18%	26%	24%	19%	24%	24%	20%	28%	30%	26%	28%	21%
Brazil	22%	23%	14%	26%	5%	8%	18%	15%	5%	4%	7%	8%

Source: EUROSTAT (2020)

Table 13.10: Imports of swine meat 2019

Swine meat	**Jan.**	**Feb.**	**Mar**	**Apr.**	**May**	**Jun.**	**Jul.**	**Aug.**	**Sep.**	**Oct.**	**Nov.**	**Dec.**
Quantity (MT)	1,074	618	505	643	578	538	909	812	316	280	227	980
Value(000Euro)	1,847	886	744	990	805	830	1,460	1,418	533	437	362	1,513
Price (Euro/kg)	1.72	1.43	1.47	1.54	1.39	1.54	1.61	1.75	1.68	1.56	1.59	1.54
Import structure by countries												
USA	12%	33%	36%	39%	73%	47%	25%	30%				20%
Brazil	75%	47%	37%	43%	14%	30%	71%	55%	61%	58%	22%	8%

Source: EUROSTAT (2020)