



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

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**Olives and Olive Oil Sector Study Report
Final**



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Contents

1.	INTRODUCTION.....	6
1.1.	Introduction	6
1.2.	Methodology.....	6
2.	FARMERS/ GROWERS.....	8
2.1.	Growers/farmers	8
2.2.	Products.....	9
2.3.	Access to markets, inputs and services	15
2.4.	Key features and challenges in olive production	19
3.	PROCESSING INDUSTRY	20
3.1.	Structure of the industry.....	20
3.2.	Main products and product types /characteristics	21
3.3.	Access to markets, inputs and services	22
3.4.	Key features and challenges of olive oil processing	23
4.	GOVERNMENT POLICY FOR THE SECTOR.....	24
4.1.	Strategic documents.....	24
4.2.	Relevant fiscal and trade policies.....	24
4.3.	Mard support programmes	24
4.4.	Other agriculture direct and indirect support measures and facilities	26
5.	MARKET AND TRADE	26
5.1.	International trade flows and evolution over time	26
5.2.	Domestic market.....	30
5.3.	Profile of main actors in the distribution chain	32
5.4.	Infrastructures and logistics.....	33
5.5.	Key features and challenges	33
6.	LEVEL OF ATTAINMENT OF RELEVANT NATIONAL &EU STANDARDS.....	35
6.1.	Food safety	35
6.2.	Use of inputs, PPP	36
6.3.	Occupational safety.....	38
6.4.	Environmental aspects	39
7.	INVESTMENTS TRENDS	40
7.1.	Primary production	40
7.2.	Processing	41
7.3.	The investment climate.....	42
8.	VALUE CHAIN ORGANISATION AND ENABLING ENVIRONMENT.....	43
8.1.	Value chain map	43
8.2.	Value chain coordination.....	45
8.3.	Collective actions	46
9.	IDENTIFICATION OF POTENTIALS AND NEEDS OF THE SECTOR.....	47
9.1.	key sector trends.....	47
9.2.	Investment expectations	47

9.3.	Swot analysis and potential needs of the sector	48
9.4.	Investment needs and prospects	54
10.	IDENTIFICATION OF TRAINING AND ADVISORY NEEDS FOR THE SECTOR	57
10.1.	Main training and advisory needs in primary production	57
10.2.	Main training and advisory needs in olive processing.....	58
10.3.	Provision of technical and vocational training.....	59
11.	ALIGNING TO THE GREEN DEAL	60
11.1.	Climate changes effect on olive and olive oil.....	60
11.2.	General aspects of EU Green deal.....	61
11.3.	Actions and investments contributing to alignment to EU Green Deal	63
12.	OUTCOMES.....	67
12.1.	Key findings and conclusions from the sector analysis related to IPARD III program.....	67
12.2.	Priority investments in primary production.....	67
12.3.	Priority investments in olive processing	69
12.4.	Synopsis of proposed investments.....	70
12.5.	Recommendations for complementary interventions.....	73
	ANNEX 1: Bibliography.....	75
	ANNEX 2: Olive varieties by population size and origin.....	76
	ANNEX 3: List of interviewed stakeholders	Error! Bookmark not defined.

LIST OF TABLES

Table 2.1:	Evolution of olive cultivation and production in Albania 2010, 2014 - 2019.....	9
Table 2.2:	World production trends of olives (000 tons).....	10
Table 2.3:	Olive production regionalization dynamics by region (qark) in 2006 and 2019	10
Table 2.4:	Regional distribution of the production of olive by municipality(tons)	11
Table 2.5:	Regional distribution of the production of olive for olive oil (2019)	12
Table 2.6:	Regional distribution of the production of table olives (2019).....	12
Table 2.7:	Olive variety structure in the region of Berat	13
Table 2.8:	Olive variety structure in the region of Elbasan	14
Table 2.9:	The calendar of the main olive production processes	15
Table 2.10:	Advisory services provided by public and private subject	16
Table 4.1:	Support for olive and olive oil (Million ALL)	25
Table 4.2:	Support for olive and olive oil - Criteria of support measures for the sector of Olives & Olive Oil by year	25
Table 5.1:	Olive oil international trade by year (Mt).....	26
Table 5.2:	Olive oil exports by country (2019).....	27
Table 5.3:	Olive international trade by year	27
Table 5.4:	Olive imports by country (2019)	27
Table 5.5:	Olive exports by country 2018.....	28
Table 5.6:	Balance of Olive Oil Production (MT).....	30
Table 9.1:	Olive farm: SWOT analysis strategy	49
Table 9.2:	Olive processing: SWOT analysis strategy	51
Table 11.1:	Sector trends and impact on EU green Deal components	62
Table 12.1:	Viable olive size	68
Table 12.2:	Proposed eligible investments and compatibility with different IPARD III measures	71
Table 12.3:	Investments eligible for EU Green Deal preferential treatment	72

LIST OF FIGURES

Figure 1: Observed trend of number of farms during 2014-2020	8
Figure 2: Olive oil production trends (ton)	22
Figure 3: EU olive oil per capita consumption forecast (kg)	29
Figure 4: Extra virgin olive oil in Italy - € National (by week).....	29
Figure 5: Extra virgin olive oil in Greece - € National (by week).....	30
Figure 6: The main preferred regions of origin for olive oil.....	31
Figure 7: Olive oil sale in a traditional local shop	33
Figure 8: Investments in olive plantation (number of trees each year, in thousands)	40
Figure 9: Investment trends during 2014-2020	40
Figure 10: Investment trends during 2014-2020	41
Figure 11: Expected investment trends in the next 7 years	42
Figure 12: Olive oil value chain map	44
Figure 13: Expected trend of number of farms during the next 7 years	47
Figure 14: Expected investment trends in the next 7 years (2021 – 2027)	48
Figure 15: Expected trend of no. of processors during next 7 years.....	48
Figure 16: The perceived level of climate changes impact on olives sector (%)	60
Figure 17: The perceived nature of climate changes impact on olives sector.....	60

LIST OF ABBREVIATIONS AND ACRONYMS

AICS	The Italian Development Cooperation
ALL	Albanian Lek
AOOA	Albanian Olive Oil Associations
ARDA	Albanian Rural Development Agency
ASDO	A project financed by the Italian Government focused only on IPARD-like grants
ASIG	State Authority of Geo-space Information
ATTC	Agricultural Technology Transfer Center
AUT	Agricultural University of Tirana
BRC	British Retail Consortium
CAP	Common Agricultural Policy
CBI	Centre for the Promotion of Imports from developing countries
CEFTA	Central European Free Trade Agreement
DCM	Decision of Council of Ministers
DSA	Development Solutions Associates
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EU	European Union
FADN	Farm Accountability Data Network
FAO	Food and Agriculture Organization
GAP	Good Agricultural Practice
GDIP	General Directorate of Industrial Property
GFSI	Global Food Safety Initiative
GI	Geographical Indication
GMP	Good Manufacturing Practices
HACCP	Hazard Analysis and Critical Control Points
IFS	International Featured Standard
INSTAT	Albanian Institute of Statistics
IPARD	Instrument of Pre-Accession in Rural Development
ISARD	Inter Sectoral Agricultural and Rural Development Strategy
MARD	Ministry of Agriculture and Rural Development
NFA	National Food Authority
NGO	Non-Government Organization
NPEI	National Plan for European Integration
PDO	Protected Designation of Origin
SARDF	Strategy for Agriculture and Rural Development
SHBB/AAC	Association of Agricultural Collaboration (Shoqëri e Bashkëpunimit Bujqësor)
USAID	United States Agency for International Development
VAT	Value Added Tax
VC	Value Chain

1. INTRODUCTION

1.1. INTRODUCTION

Albania is preparing the IPARD III Programme for the period 2021-2027. This study provides the analytical background for the design of the Measure 1 (Investment in physical assets of agriculture holdings) and Measure 3 (Investments in physical assets of processing and marketing of agricultural products) as well as can serve as a background for other Measures. In addition, this study serves as a background for the preparation of the Strategy for Agriculture and Rural Development (SARDF) 2021 – 2027.

The objective of the 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 program the study also aims to provide other recommendations for the development of the sector and also for SARDF preparation.

1.2. METHODOLOGY

1.2.1. Primary data collection

The primary data collection consisted of 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). In addition, there were carried interviews with input suppliers and retailers.
 - b. Interviews with sector experts. For semi-structured in-depth interviews, there were prepared interview guidelines, which were tested and fine-tuned before implementation.

Overall, more than 30 semi-structured interviews were carried out.

- (ii) Structured survey with extension surveys. In this questionnaire, the first section collects information about the respondent's profile. The second section has detailed questions related to farm structure, trends of the number of farms by size, and also past trends and expected trends of investments, which is crucial information related to IPARD III program. Another similar section is designed for agri-processing, differentiating by size. 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.

Furthermore, information was gathered also from Albanian Rural Development Agency (ARDA).

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, and to incorporate quantitative assessment.

1.2.2. Secondary data collection

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

There are various gaps in the availability and quality of secondary data. The main gaps lie 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 MARD. 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 (EC) before accession to the European Union (EU) 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.

Several inconsistencies in production data were observed. Most classical, the olive oil production levels for some years (e.g. 2018) does not correspond or cannot be justified by the statistics of olive production levels. Thereby one or both types of statistics can be considered inaccurate to a certain margin. Such inconsistencies are both a consequence of the general informality that dominates the Albanian economy (industries do not declare all their output for fear that data will be transferred to the tax administration), and of the inadequacy of the agriculture statistical system.

When the quality of international trade data was questionable (such as in the case of olive oil imports declared / reported by Albania for 2018), we used statistics reported by countries exporting olive oil to Albania, namely EU countries (in the case of olive oil is simple, since we import olive oil almost exclusively from EU).

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 on telephone, although most were done face to face.

1.2.5. Information retrieved from the Context Analysis

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

2. FARMERS/ GROWERS

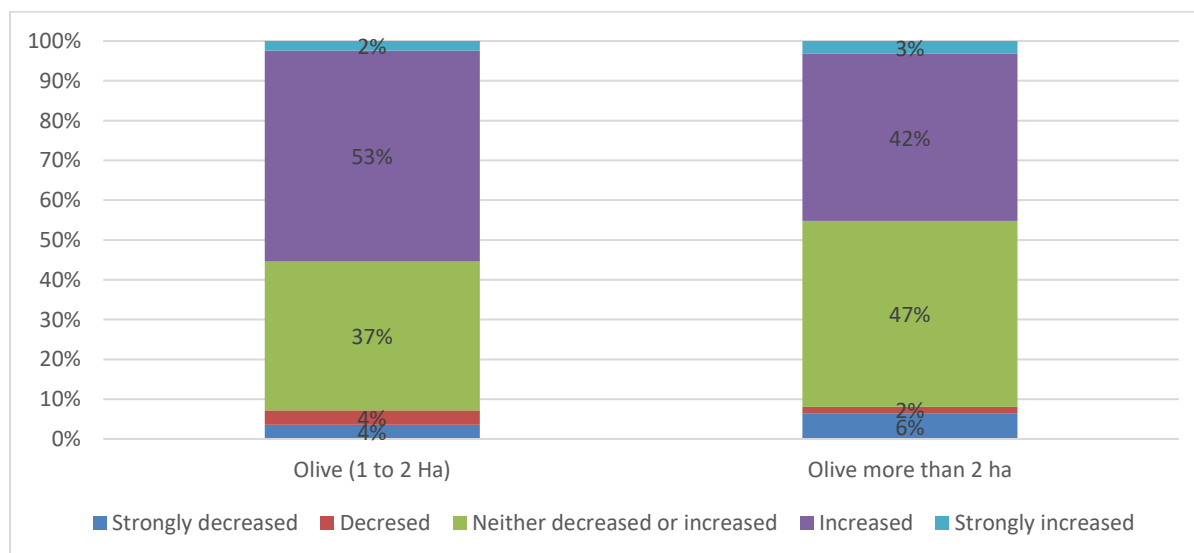
2.1. GROWERS/FARMERS

It is estimated that about 70,000 - 100,000 farmers are involved in olive growing^{1,2}. However, most farms have a small number of olive trees and thereby even the statistical reporting of the number of farms that have olives can vary in that context.

According to latest statistics collected through extension surveys, there are about 9,000 farmers that have 1.00-2.00 Ha, and 2,500 farmers that have above 2.00Ha – thus, only a small share of farmers engaging in olive production (10%-15% of the total) can consider it as an important activity.

While it is not possible to assess the dynamics of the number of farms by size category based on available statistics, findings from the survey with extension survey confirm an increase in the number of all categories of farms, as shown below.

Figure 1: Observed trend of number of farms during 2014-2020



Source: Structured MARD extension services survey

Many farms have inherited old olive trees, during the land reform, which were not intensive model, and which are often not taken care of. During 2000ies and 2010ies, also due to the support provided by governmental subsidy

¹DSA (2021). Structured survey with extension survey

²Skreli, E., & Imami, D. (2019). Olive and olive oil sector study. Technical report prepared for EBRD AASF project.

schemes, the number of olives groves has increased, and the intensive groves have become more common – the number of farmers engaging in the olive sector has increased too. However, even among the new plantations, it is common to observe olive groves which are not taken care of – planting olives has often been motivated by subsidy support or has been seen by many as a way to utilize land with low risk and limited engagement. For example, many rural residents who have migrated to urban areas have planted olives in their land as olives is considered a low-investment productive activity which can persist even in case of lack of services.

“Some farmers simply plant olives because it is cheap and the easiest way to utilize land, especially hilly land... buying a seedling costs 200-250 ALL³”, stated one interviewee.

“Planting olives is a strategy to legitimize stolen land”, responded one interviewee. While another highlighted that: “Planting olives is used to fix borders with other farmers’ plots, especially in the case of farmers who go emigrate, who cannot look regularly after their land”.

Because often olives are not planted as business activity but also for other purposes, as highlighted above, there is often lack of services and the level of yields are usually low.

2.2. PRODUCTS

Cultivation of olives has grown in Albania, especially in the late 2000ies and early 2010ies (as highlighted above largely triggered by governmental subsidy schemes) - olive primary production has been the beneficiary of the largest governmental (national) support scheme in all sectors. However, the chronic weaknesses of the sector, i.e. low productivity, high price of raw material have persisted.

In terms of evolution of total quantities of olives produced, it can be observed that since 2010 production has been increasing steadily but in 2019 a decrease in production has been observed, even though the number of trees has been increasing from year to year, while 2020 has been reported to be a highly productive year based on interviews (official statistics for 2020 production were not available during the time the report was drafted).

Oscillations in production levels are common: bad weather in the spring or lack of rainfall at key moments in olive development combined with lack of or poor agronomic practices cause drops. Drops in production don’t always follow the same pattern nationwide – for example patterns (e.g. drops in yields) can be sharper in some parts (such as central regions which experience high temperature in summer) than other (such as South-West Coast characterized by milder temperatures). For example, 2019 was considered a bad year, especially for some areas, most notably Berat (for more details see below in the report, under regionalization). Also, diffusion of diseases and climate changes appear to affect the sector with different regional patterns (these issues are discussed in more details in the following sections).

Table 2.1: Evolution of olive cultivation and production in Albania 2010, 2014 - 2019

Olive trees	2010	2014	2015	2016	2017	2018	2019
Total (000 trees)	6,255	8,994	9,225	9,608	9,786	10,008	10,288
In production (000 trees)	4,298	5,803	6,332	6,643	7,442	7,798	8,226
Yield (kg/tree)	16.3	16.9	12.1	14.9	14.5	15.1	12.0
Production (000 ton)	70	98	96	99	108	118	98

Source: INSTAT (2020)

The Albanian production of olives has been increasing faster than the world production trends. Production in Albania has increased by almost half when compared to 2010. For the same period, the world levels production

³ALL denotes Albanian lek.

has marked only a modest increase. In the case of EU, after decline marked in the early 2010ies, modest growth was achieved by the end of the last decade.

Table 2.2: World production trends of olives (000 tons)

Country	2010	2015	2016	2017	2018	2019
Albania	70	96	99	108	118	98
EU	13,460	12,389	12,414	12,930	13,590	10,467
Europe	13,527	12,485	12,516	13,031	13,701	10,553
World	20,418	20,149	19,651	20,295	21,066	19,464

Source: FAOSTAT (2021)

There are partial data available on plantation area or production by variety. In the past years, production data have been reported separately for table olives from olives used for olive oil. However, the classification is not strict in the context of Albania – it is a tradition that many households use small fruit olives (from varieties typical for producing olive oil) as table olives. Also, in the case of some table olives varieties which cannot be sold, there are reported cases of processing into olive oil. Furthermore, some varieties have suitable attributes for both purposes.

For some regions, as shown below, there are data reported by variety, thanks to Olive Cadastre, which is work in progress.

Regionalization

The production trends as well as structure has changed a lot since the sector started to experience substantial growth which converged with the introduction of massive (support) subsidy schemes. As shown the comparison between 2006 situation (before the massive governmental subsidies were introduced) and the latest available data in the table below, in some regions, such as Fier, the increase in olive production has been remarkable – more than 4 times, while in the case of Tirana, there is a decline (for more details on the specific patterns description for the main regions, see below).

Table 2.3: Olive production regionalization dynamics by region (qark) in 2006 and 2019

Region	2006			2019			2019/ 2006
	Production	Share	Cumulative	Production	Share	Cumulative	
Fier	7,600	19%	61%	31,362	32%	32%	413%
Vlore	9,313	23%	23%	18,364	19%	51%	197%
Elbasan	5,562	14%	90%	17,562	18%	68%	316%
Berat	7,724	19%	42%	13,637	14%	82%	177%
Durres	1,933	5%	95%	6,112	6%	89%	316%
Tirane	5,857	15%	76%	5,364	5%	94%	92%
Gjirokaster	657	2%	100%	2,571	3%	97%	391%
Lezhe	687	2%	98%	2,259	2%	99%	329%
Shkoder	862	2%	97%	1,083	1%	100%	126%
Total	40,195			98,314	100%		245%

Source: INSTAT (2020) and DSA⁴ (2009)

⁴ Development Solutions Associates (DSA)

Table 2.4 below shows the production distribution by municipality⁵. It provides insight into the strong oscillations of production from year to year, namely from 2018 to 2019. According to interviews, 2019 was a dry season in some parts, while some olives were damaged from previous cold winters, which forced many farmers, to carry out heavy pruning for the damaged plants – this phenomenon/combination affected mostly table olives in Berat. As a result, 2019 was characterized by very low levels of production. Statistics for 2020 had not been reported at the time this report was drafted, however, according to the interviews, the production of both table olives and olives for olive oil was considered very good also in the case of Berat.

Table 2.4: Regional distribution of the production of olive by municipality (tons)

Municipality	2018	2019
Berat	15,455	3,827
Lushnjë	13,139	13,930
UraVajgurore	9,910	2,503
Kuçovë	9,295	6,579
Elbasan	8,001	8,049
Fier	7,421	5,814
Vlorë	3,743	5,000
Mallakastër	3,724	3,691
Himarë	3,410	3,531
Cërrik	3,124	2,859
Divjakë	3,036	3,120
Belsh	2,823	2,893
Durrës	2,768	3,095
Poliçan	2,625	664
Selenicë	2,533	3,500
Finiq	2,494	2,926
Roskovec	2,288	3,036
Tiranë	2,279	1,929
Patos	1,888	1,773
Memaliaj	1,882	1,920
Peqin	1,700	2,600
Kurbın	1,691	880
Shijak	1,549	1,678
Delvinë	1,430	1,650
Kavajë	1,252	1,357
Konispol	1,173	1,500
Rrogozhinë	1,063	1,260
Krujë	1,062	1,339
Gramsh	1,048	1,133
Vorë	1,011	758
Other	2,756	3,519
Total	117,573	98,313

Source: INSTAT (2020)

Production of olives for olive oil processing is highly concentrated in the regions of Fier, Vlore, Elbasan and Berat, which together make up for more than 80% of the total production. In these regions there is also a high concentration of olive oil mills/processors.

⁵Since 2015, in Albania there was introduced a territorial reform, reducing the number of local government units from several hundreds to just 61. Since 2018, INSTAT has been reporting statistics also at municipal level, while in the past, they were reported at Qark and District level.

Table 2.5: Regional distribution of the production of olive for olive oil (2019)

Region	MT	Share	Cumulative
Fier	29,324	33.5%	
Vlore	17,866	20.4%	54.0%
Elbasan	15,924	18.2%	72.2%
Berat	8,307	9.5%	81.7%
Durres	5,918	6.8%	88.5%
Tirane	4,818	5.5%	94.0%
Gjirokaster	2,186	2.5%	96.5%
Lezhe	1,985	2.3%	98.8%
Shkoder	1,083	1.2%	100.0%
Total	87,411	100.0%	

Source: INSTAT (2020)

Production of table olives is strongly concentrated in the region of Berat, Fier and Elbasan which together produce more than 80% of the total domestic production. Even through 2019 was characterized by low production of table olives in Berat, compared to the previous year (highlighted above), its production levels still dominate the national production levels. In Berat, there are also several enterprises which are engaged in processing of table olives (e.g. preserved table olives).

Table 2.6: Regional distribution of the production of table olives (2019)

Region	Ton	Share
Berat	5,330	49%
Fier	2,038	19%
Elbasan	1,638	15%
Tirane	546	5%
Vlore	498	5%
Gjirokaster	385	4%
Lezhe	274	3%
Durres	194	2%
Total	10,903	100%

Source: INSTAT (2020)

Fier

Fier (including Lushnje) is the leading agri-food producing cluster in Albania for most subsectors, including livestock (e.g. dairy), vegetable (especially greenhouse vegetable) and is emerging as a leading region also for olive and olive oil production, while for table olive production, Berat has the leadership (as further elaborated below). Relatively large farm size, good infrastructure, access to markets have been key to such expansion. Furthermore, incomes generated from more productive agrifood sectors (such as livestock and vegetables, especially greenhouse vegetable) has enabled farmers to invest in other activities including olives.

Berat

The area is specialized for table olives – there is a tradition of table olive production dating back long time ago. Almost ½ of the table olives production in Albania takes place in this region (as shown in the above table).

The production pattern and producers' profile of growers in this district is different from those ones in other regions. Production of table olives has been profitable and trade relations with processors more consolidated, so larger farmers can accumulate resources to invest. Because of tradition and importance (e.g. in terms of income), the trees tend to be well served, but the main factor of success is the availability of irrigation, smoothing the cyclic oscillation of production, boosting total output in best years and giving a larger share of high-quality olives.

Despite the strong tradition in table olives production, there is a growing trend in production of olives for olive oil too.

The two main varieties are Frantoio (Frantoio which is an important variety originally from Italy, which is the dominant for olive oil production for some Italian regions such as Tuscany) and “Kokërr Madhi Beratit”, which is a local variety used for table consumption. Kokërr Madhi Beratit is a well-known table variety among Albanian consumers. Kokërr Madhi Beratit is sold at good prices by farmers to processors, 100 ALL/kg even during “good”/ high production years such as the latest one (2020).

The cadastre⁶ registration has been concluded for Berat and Elbasan. Below are provided the data for Berat.

Table 2.7: Olive variety structure in the region of Berat

No. of units/ farms	Area (ha)	No. Of trees
15,318	5,099.90	1,264,118
Variety structure	Share (area %)	
Frantoio	52.0	
Kokërr Madhi Beratit	38.5	
Koroneiki	6.5	
Other	3.0	

Source: Olive cadastre, provided upon request by QTTB, Fushe-Kruje

Berat hosts also leading table olive processors such as Sidnej and Cuodari (who have been interviewed in the context of this sector study). Processing aspects are covered in the following section/chapter.

Central Albania: Elbasan, Tirane, Durres

Elbasan is the third most important region in terms of olive production. Olive production is dominated by olives used for olive oil processing.

Distribution of olive trees in Elbasan generated a kind of dualism between very small groves and relatively large ones, these last being mainly attributed to more numerous families and to the recovery of previous property rights.

One emerging cluster of production is Dumrea and especially Belsh. This area has several advantages. First, abundant land. When land reform was carried out, the average per capita was 3.5 – 4 dynym (0.35-0.4 Ha) per capita, which is among the highest in Albania. Thus, farms tend to be comparatively larger. Second, Dumrea is rich in water – in it there are located 85 lakes. Thus, many farmers have access to water. Third, there are many returning migrants from Greece or many who work on seasonal basis in Greece (this feature it is common for other parts of Albania). The returning migrants brought back not only cash, but also know-how. Indeed, not only many farmers, but also some olive oil processors and seedling producers started their business after gaining sector specific experience in Greece. All these factors combined has resulted into the fact that this area has experienced a huge increase in new plantations and production.

According to the interviews, during the last production season (2020-21), this area marked a boom, and prices of olive oil went down to 350-400 ALL/litter. While also other areas in Albania experienced growth during the last production season, this area appears to have had the strongest growth. Furthermore, different from farmers in the south, the farmers in Belsh and Dumrea are poorer, lack alternative income opportunities and thereby are more vulnerable and more likely to accept lower prices, according to interviewees.

Below are provided the data of olive cadastre for Elbasan. Similar to Berat, also in Elbasan there are two local (renown) local table olive varieties, named “Mixan” and “Kokërr madhi Elbasanit”. Mixan is used for both purposes.

⁶While in the case of the vineyard cadastre there is a legal framework, in for olives there is no legal framework. Data are collected/produced yearly. Registration/information refers to ortophoto identification (done in cooperation with State Authority of Geo-space Information (ASIG) and field data collection. Ortophotos are produced by periodically, during 2007, 2015, and 2018 in some areas. So far, the funding has been covered by the state budget.

The weight of table olives is far less important when compared to Kokërr Madhi Beratit. In the region of Elbasan there have been also introduced Greek table varieties.

The reported data are sourced from the Olive Cadastre which has been completed for the region of. Frantoio is the dominant variety, making up more than ½ of the cultivated area. The absence among the main varieties in use of a well-reputed autochthon variety (“white olive” – Ulliri i Bardhe) could indicate either that the use of this variety is substantially declined or that it is mostly used in very small units (under 0.1 ha), which are not subject to cadastre registration.

Table 2.8: Olive variety structure in the region of Elbasan

No. of units/ farms	Area (ha)	No. Of trees
19,598	9,763.216	2,370,999
Variety structure	Share (area %)	
Frantoio	50.5	
Mixan	24.0	
Leccino	10.1	
Kokërrmadhi Elbasanit	7.4	
Other	8.0	

Source: Olive cadastre, provided upon request by QTTB Fushe-Kruje

Property rights and competition for land use are major issues around Tirana. The value of land has been rising over the years, as the need of land for the continuing expansion of Tirana urban area. As a result of the above, olive groves are often not properly tendered and in general the remarkable potential of Tirana hills for olive growing is largely under-used. Therefore, Tirana is the only region that has marked decrease in olive production over the past decade.

Also Durres there has experienced a remarkable growth in new olive plantations and production (by 3 times when compared to 2006). In Durres, olives represent a potential to be better linked to tourism. On the other hand, urbanization in some parts of Durres represents a threat to olive groves, similar to the case of Tirana.

Vlora– Novosele

This area, has been traditionally specialized in olives for double purpose (of Kalinjot cultivar) and olive oil production (mainly Frontino cultivar), appears one of the most dynamic in the country. Trees are also comparatively better serviced, even if pruning, fertilization and collection practices are regularly carried out, especially for olive olives.

One advantage of this area was the relatively large farm size. According to a previous study⁷, the majority of farmers that were part of that study/survey in Novosele had more than 1.5 ha (and 20% more than 2.5 ha).

South West coast

The South West olive production area is made by the coastal hills between Dhermi and Borsh and includes part of the districts of Vlora and Saranda. This area is largely dominated by old olives. Overall, there is lack of proper services. Property rights problems combined with massive emigration, stand behind the lack of investments and care for olives in these areas; remittances are a major source of income.

Not only most trees are not taken care of, but often they are “badly treated”. Since they are harvested from people who are not residents or owners, in agreement with owners or often even stolen, there are reported cases that during harvesting, olive branches are broken. Nevertheless, smooth climate conditions enables smoother cycles when compared to some other parts in Albania, which are characterized by more drastic cycles as shown above in the report. Due to the above described conditions, yields are more stable, but still chronically low.

Prices continue to remain exceptionally high – even in 2020-21 production season, where in other parts of Albania (as highlighted above) there was price drop, prices of olives remained high in this area, exceeding 100 ALL/kg and reportedly even 120 ALL/kg. High prices are caused by two factors, according to interviews. On one hand, high demand for olive oil produced from olives on this area. There are many consumers willing to pay high prices for olive oil from this area. There are several high-quality producers who buy olives from this area, not only those ones

⁷ DSA (2009). The Olive and Olive Oil Value Chain in Albania, technical report prepared for FAO.

located in the area but also others such as Shkalla (located in Tirana). On the other hand, the harvesting cost appears high. It is common for employees to come from other areas, who in some cases are paid in kind (percentage of the production).

2.3. ACCESS TO MARKETS, INPUTS AND SERVICES

2.3.1. Access to market

Access to market is affected by a number of factors. The greatest challenge is observed during “good” production year, when overproduction makes it difficult to sell the excessive quantities of olives and olive oil. While the table olive value chain tends to be some-how organized, in the case of olives for processing, only a small fraction is sold by factories – majority is processed by farmers (at olive oil mills) for self-consumption and for selling directly. Thus, farmers are faced with problems related to olive oil market access (which are addressed also in the following section). Market trends are analysed in more details in Chapter 5.

In the case of table olives, for market-oriented farmers that achieve good quality, access to market does not appear to be a problem. As highlighted above, farmers producing table olives varieties demanded by the market, such as in Berat, achieve good prices also during high production years.

2.3.2. Services and access to services

Basic services that are carried out by traditional farmers include ploughing, pruning and fertilization. Fertilization is done usually with manure and/or DAP. Ploughing is usually carried out after manure fertilization. That is not carried out every year, while many olives groves have not been subject to such services at all or for a very long time. Spraying of olives varies by farms and also by the needs (e.g. presence of certain plant diseases). However, for new groves, more market and active farmers tend to carry out services regularly. Harvesting is the most regular service. There is an increased trend of using equipment for harvesting – for example, according to the interviews, in Belsh most farmers use such equipment.

Below is the calendar of the main olive production processes.

Table 2.9: The calendar of the main olive production processes

Main type of expenditures	Jan	Feb	Mar	Apr	May	Oct	Nov	Dec
Winter pruning								
Basic & complement fertilizer								
Harvest								

Source: Skreli and Imami (2019) and expert assessment

Harvesting starts in October and lasts up to December, and eventually until January in some parts. That varies by regions and varieties. Most table olives in Berat are collected during October and November.

Harvesting time also depends on the planned next steps in processing or sales: processors producing extra virgin olive oil require supplying farmers to harvest/deliver olives early, as acidity is lower. Furthermore, according to interviews, it appears that there is a growing awareness among farmers about the timing of the harvest. While back 1-2 decades ago, lack of awareness about the effect of early timing of harvesting among farmers was common, nowadays it appears that more and more farmers tend to harvest / process olives earlier. Another factor contributing to timing of harvesting is labour availability. There are reported cases of farmers, who are not sure if they can find labour during the peak harvesting season, therefore they prefer to harvest earlier to be on the safe side.

Labour cost is an important cost item, mostly related to harvesting/collection. Hiring is more common for commercial or semi-commercial groves and for those who have migrated. The methods of harvesting (manually vs. equipment) varies by areas, type of olives and farmers.

Farmers increasingly use nets during the harvesting. While in the past, there was a concern that farmers would use second hand sacks (which could spoil olives quality) to transport olives, nowadays it is common for farmers to use new plastic sacks. In some areas, as a result of technical assistance received by development projects, farmers are aware of the opportunity of using plastic boxes, but few of them are actually using them. The use of plastic boxes is more common in the case of table olives (especially when sold to exporters).

For the transportation of olives to the processor farmers use their own vehicles. In some areas, processors can provide transport but they can differentiate the price for service in that case. For example, in case they would charge for olive milling 800 ALL/kv (or 100 kg) olives (note that such prices vary by areas - in some areas can be as high as 1,000 or 1,200 ALL) when farmers bring their olives to the factory, they may add a margin of 200 ALL/kv for the transport (making it 1,000 ALL/kv).

More specialized services to primary production are provided by few, small and scarcely professional nurseries and by individual service providers with limited skills. The provision of public extension services from MARD and Agricultural Technology Transfer Center (ATTC) Vlora is quite limited due to limited staff numbers, although the survey with extension survey shows that more than ½ of the farmers have been contacted and been informed indirectly by the extension services.

Table 2.10: Advisory services provided by public and private subject

	Mean
Share of olive farmers contacted by extension services (%)	57.6%
Share of olive farmers informed indirectly by extension services (%)	53.0%
Share of olive farmers that have been trained (%)	37.7%

Source: Structured MARD extension services survey

Like most small-holders the majority of olive growers have no willingness to pay for advisory services, being accustomed to receive some advice for free (in the framework of development projects or from public extension services) or to get them from input suppliers, embedded in the price of inputs (i.e. when an input is purchased, the cost of the advice as non-explicit part of the inputs cost). Since also the use of inputs in the olive sector is limited, this source of advisory services is scarcely used.

In the past, some professional advisory and extension activities were provided by development projects, as the public extension service had not the resources (technical, human and financial) to provide field training to farmers, except if in the framework of development initiatives. The provision of advisory services to the olive sector is quite limited, due to the shortage of resources devoted to this purpose by the different subjects (value chain actors, public extension services, development projects) and also to the scarcity of skilled extension service providers in this field.

Scarce or no provision of agronomic services has been identified as one of the main factors affecting productivity in olive production, especially in the smallest olive producing farms, which own the majority of olive groves; in particular, the lack of skilled pruning services providers and also the scarce demand for their services was considered a particularly important constraint.

2.3.3. Inputs and access to inputs⁸

One of the greatest challenges faced in the sector is the quality of seedlings. It has been reported frequently that olive seedlings have not entered production because the quality of the seedlings was weak or they did not fit the local conditions. About half of the seedlings (for olives and similarly also for fruit trees), is estimated to be informal. For example, according to available statistics, the **number of certified olive tree seedlings produced in Albania during 2019 – 2020 was** 193,400, while the number of new olive trees for 2019 alone was reported to be over 280,000.

There can be distinguished three types of nurseries, through which the production and marketing of fruit and olive seedlings is realized:

a) Nursery family production, with low cost and quality, but competing in specific segments of the seedling market. This work practice is owned and applied by qualified employees, who have worked for a long time in the production nurseries of centralized economies, but also others who have benefited this profession from work in emigration.

b) Semi organized and organized nurseries for the production of seedlings, which work with partial optimal and optimal parameters and they exercise their activity within the known formal certification scheme. Such nurseries can be specialized only for the production of seedlings of fruit trees, olives, citrus, but can also be mixed nurseries. These production units are registered in the National Business Registration Center and licensed by the structures of Regional Agency of Veterinary and Plant Protection Service (RAVPPS) and State Entity of Seeds and Seedlings (SESS). In their annual practice, the State Entity of Seeds & Seedlings and the inspectors in charge of implementing the legislation for seedling production, do some annual tests, fill in a series of 'type' forms and at the end of each agricultural year, provide the units with a certificate for seedling production. This presupposes that the plant propagating material, seeds, seedlings, etc., are ready to be traded and planted in new orchards, or to be used as plant material reproduction (propagation).

c) Nurseries of industrial production are considered those ones operating mist propagation units and/or in-vitro micro propagation laboratories. There are 6 such units. These units specialized in performing delicate production operations and use contemporary high-quality techniques. As production units they are capable of competing in the domestic and foreign market. Here we can mention the mist propagation units (greenhouses for mass-production of self-radicated seedlings) and the in-vitro micropropagation laboratories (buds and meristems), both intended for mass-production of seedlings. In special species with commercial values and high economic importance, seedling production techniques have advanced a lot, creating a separate industry sector.

One of the leading producers of olive seedlings is ATTC Vlore. It keeps the olive mother blocks of the country⁹ utilises a mist propagation unit¹⁰ for large scale. At present they produce only olive seedlings. They produce mainly autochthone, especially Kalonjot, "I Bardhi i Tiranës", "Kripsi i Krujes", upon request of seedling producers who buy small seedlings from them. In addition, they produce also other varieties upon request. In the past they used to produce 100,000, now about 50,000 per year. More than ½ of the seedlings are sold to nurseries, and the rest, as grown seedlings to farmers. They have a stock of unsold seedlings.

Other nurseries are smaller. Only one in Delvina produces, 10,000 -20,000, the other produce lower numbers.

"There is a lack of control. There are many informal producers and traders of seedlings. Most seedlings are of low quality and sold informally", stated one seedling producer.¹¹

⁸This subsection is largely based on the Context Analysis, including a chapter on inputs drafted by Prof. Dr. Shpend Shahini.

⁹ There is a 2.00 ha mother block of Kalinjot and 0.50 ha of Frantoio cultivar, which are used to source the cutting used to produce self-radicated seedlings in the mist propagation unit. There is also a collection variety, also used to source cuttings for self-radicated seedlings.

Both the mother blocks and the variety collection have exceeded the period in which the cutting could be used to produce certified propagation material. However, the quality of the propagation material sourced from these plantations is much better than anything else could be sourced in Albania.

Mother block plants and collection variety plants are not used to produce olive seeds.

¹⁰ The first one established in the country.

¹¹ As matter of comparison, in Italy a Frantoio certified seedling in phytocell is sold to retail at 9 Euro per piece, while it is possible to buy olive seedlings in Albania for 250-300 ALL (2.1 - 2.5 Euro)

“There is unfair competition. Registered olive seedling producers face higher costs when compared to the informal ones. Therefore, we have to come up with higher prices. I sell my seedlings at 250 ALL/seedling, while informal ones can afford to sell at 200 ALL. This price gap is sufficient for some farmers to buy the cheaper ones”, stated on interviewed seedling producers.

According to one interviewed expert, State Entity of Seeds & Seedlings controls seedling producers based on (self)declaration but the origin is not verified. For example, most seedlings which are sold as Kalinjot are not Kalinjot. Consequently, these plants often do not perform well, while this tendency is also damaging the image of the Kalinor variety. Having functional structures in place to guarantee seedlings quality is therefore a major issue. So far, all is based on personal trust.

Local varieties have proven to fit better to climate changes than some imported varieties. In the case of imported / foreign varieties.

As for other inputs, the greatest concern is not lack of access but rather lack or limited use (as shown above).

Plant protection is becoming a serious concern – climate changes can be contributing to plant diseases (for more details on climate changes, see the section on EU Green Deal). Pests not only cause quantitative losses, but also affect the quality. Tackling emerging disease requires both right inputs and know-how.

The main issue is related to the contrast to the olive fly (*Bactrocera oleae*) which can heavily affect quality¹² and also influence yields. Contrast to olive fly is feasible only working in areas and blocks, which is an issue, considering the fragmented structure of olive primary production. In the past there have been NSS to support the implementation of contrast to olive fly using organic agriculture methods¹³ or conventional production regime (i.e. using PPP)¹⁴. In most cases it is not possible to reach an agreement among farmers and properly apply the olive fly control method on adequate scale. When there contrast to the olive fly is not subsidized, it is almost totally neglected.

Other important olive pests and diseases include:

- Syri i palloit (*Spilocaea oleagina*)
- Ndrçimi i argjendë (*Mycocentrospora cladosporioides*)
- Antraknoza (*Colletotrichum gloeosporioides*)
- Kanceribakterial (*Pseudomonas syringaepv. Savastanoi*)
- Tenja e ullirit (*Prays oleae*)
- Miza e ullirit (*Bactrocera (=Dacus) oleae*)
- Breshkëza e ullirit (*Saissetia oleae*)
- Tenja e gjelbër (*Palpita unionalis*)

There are no recorded cases of *Xylella* in Albania – it is not clear if that because this disease is not diffused or because of lack of (research and lab) capacities to identify it.

¹²In some cases, heavily affected plants make it unfeasible to harvest the olives, since if mixed to good olives when processing, they would spoil the whole processing lot.

¹³ Methods for organic control of fly olives were introduced in Albania since late nineties, with USAID support. These methods are quite expensive, as the basic component (pheromones) must be imported.

Some other original organic control methods have been experimented in ATTC, but never applied on a full-scale.

¹⁴The NSS was not specifically intended to introduce integrated pest management methods

2.4. KEY FEATURES AND CHALLENGES IN OLIVE PRODUCTION

The main **features** at farm level may be summarized as follows:

- Increased demand for olive and olive oil in the local market.
- While some imported varieties have not suited well to local conditions, local/autochthon olive cultivars are well adapted to local conditions.
- There are different motivations behind investments in olives. Most farmers in the sector have not clear market orientation. Therefore, many olive groves are not taken care of. On the other hand, only a small proportion of farmers are financial literate and very few have know-how on business plan preparation but there is a category of farmers interested in cost calculation and financial literacy.

Some of the key **challenges** characterized at primary level are summarized below:

Production. Planting material may be in the origin of production risk. Many *olive seedlings* have not entered production because the quality of the seedlings was weak or they did not fit the conditions. Local varieties – on the other hand - have proven to fit better to climate changes than some imported varieties. Furthermore, in many areas' olives have been planted in plain areas instead of hills (which is the tradition). So, olives face excessive humidity during raining seasons, risking decay, and dry conditions during summer. On the other hand, small and poor farmers are tempted to buy *low quality inputs* (first of all, seedlings) to reduce costs, but eventually they may end up with high losses due to weak production performance. Also, climate changes effect olives production yield and quality.

Marketing and price. Low productivity, lack of services and high fragmentation effect both quality and cost of production. On the other hand, most olives that are destined for olive oil processing are retained by farmers. Thus, in the case of olives and olive oil value chain the short value chain is typically dominated by direct sales from producers to households. However, as production of olives has increased over the past years, farmers have faced growing difficulties to sell excessive olive oil quantities. Furthermore, in the longer run, the loss of social ties among urban consumers and producers, along with the further professionalization and formalization of production and sales, will pose a threat to short value chains. Farmers, who rely on direct sales, might find themselves gradually squeezed out of the market. Cooperation can facilitate market access (as well as access to services), but unfortunately cooperation remains limited (for more details see also Section 9).

Legal and environment. The degree of informality in the olive sector is also high. The formalization will pose a legal risk for oil mills which will be transferred to farmers. Furthermore, lack of proper land titles represents a risk and a limitation (often making farmers ineligible for grant schemes including IPARD).

Human resource and management. Often farmers lack technology knowledge and skills as well; this may lead to production or/and post-harvest loss. On the other hand, lack of cost analysis is a widespread shortage leading to 'blur' financial situation and low financial predictability. Though sector stakeholders perceive a low risk for human resource and management risk, labour resources for the olive sector are scarce – there are several services which are labour intensive such as pruning and harvesting. Therefore, financial institutions should very carefully consider labour availability when financing olive plantations projects.

Policy (political) risk. Frequently changing government support policies results into unpredictable economic environment or uncertainty, which may discourage or mislead private sector actors decisions/investments.

3. PROCESSING INDUSTRY

3.1. STRUCTURE OF THE INDUSTRY

Olive oil processing

According to the official statistics, the number of processors producing vegetable (mainly olive) oil is 193. But the number is far larger, considering also that there are many informal operators. Estimates about the number of olive oil processors that are operational range between 300 and 450¹⁵. While each year there are reported new investments in new processing lines or new factories, there are also cases of olive oil factories phasing out activities, and stopping operation - there are hardly statistical updates for both categories.

Service provision-oriented processors

They can be further categorized by size of the processing capacity.

Medium sized processors have a higher production capacity, above 1.5 MT/hour – there are about 50 factories with processing capacity– the rest are *Small processors*, below 1.5 MT/hour.

Facilities, processing technology and knowhow of these processors are heterogeneous: many processing units are made of inadequate premises with out-dated equipment, but there are also units operating good second-hand processing lines or new ones – some obtained with the support of development projects. According to interviews, about 2/3 of the factories are old, and do not meet the EC standards in terms of waste standards, and need to be renovated. On the other hand, old factories are less efficient – they generate lower levels of olive oil from processing, estimated ca 2 litres less per 100 kg when compared to modern factories. Few old factories have invested in decanters while one factory has destoner, according to the interviews.

Most olives processed by the above processor categories are done as service to third party (e.g. farmers processing their own olives and retaining oil, against a fee). Most of the above categories of olive oil processors have no proper storage capacities (do not have stainless storing tanks, which are indispensable to preserve olive oil quality). Only few have (basic) packaging and bottle filling equipment – the others do such operations manually.

Although cold pressing is superior, still many farmers lack awareness.

“Many prefer “hot processing” because it resembles warm feet pressing of olives in the old time”, according to one interviewee.

While some of these operators do not sell or store at all olive oil, others do so. In the case they sell olive oil the relation tends to be simple – for example, during the processing, farmers may opt to sell some olive oil directly to the processor (during the last production season (2020-21), typical price has been 400 ALL/litter), which in turn is kept and sold by the processor for a higher price (typically 500 – 600 ALL/litter) often in large plastic packaging (eg.5-10 litters) to households or other categories of buyers. Thus, olive oil processors act more like a middleman rather as agents that increase real value to the product.

Some of these operators, especially of the category of more than 1.5 MT/hour, do supply also industrial processors/bottlers (this category is described below). They can store and sell certain quantity to bottlers or can act as agents – serve as middlemen (in addition to the role of the service provider by processing olives) between larger farmers and bottlers.

Market oriented processors

Small modern market-oriented processors (around a dozen) have invested in complete technology (processing, storing and marketing) and produce high quality olive oil. They too use their processing lines to provide processing services to farmers but they also produce “their own” olive oil, which they sell usually directly to households, and in some cases, supply retailers and export (modest quantities) (however, that is very modest when compared to the part of the olive oil retained by farmers). Processors in this category tend to produce high quality olive oil including extra virgin olive oil and even organic.

¹⁵ DSA (2021). Structured survey with MARD extension surveys and Skreli, E., & Imami, D. (2019). Olive and olive oil sector study. Technical report prepared for EBRD AASF project

Industrial processors/bottlers typically produce and sell high quantities of olive oil. The main business of these companies is bottling and selling olive oil. Some of the largest companies have also their own processing lines. Some of these processors buy olive oil in bulk from other oil mills or local producers (in some cases low-quality olive oil, stored for several years) and/or import (often cheap low-quality) olive oil, however they tend to sell olive oil as local olive oil, in some cases using local/territorial names, misleading consumers about the real origin of olive oil.

According to interviews, it has happened that during low/poor production years, some processors have bought olives from Greece to process into olive oil. Interestingly, in addition to formal import of olive oil, also informal import has been reported. It is common for Albanian seasonal workers in Greece to work/harvest olives against a fee in kind, such as 50% of the production. Some of them, bring olive oil through different means to Albania, including also busses, which are sold to different types of buyers including also bottlers.

On the other hand, also informal export of olive oil has been reported. In addition to the significant quantities brought back to their residence country by visitors and emigrants who visit Albania regularly (e.g. they buy olive oil for the whole year and also for others some time, given that many travel with their own cars), there have been reported also cases of regular informal export/transport of olive oil to Italy by Albanian middlemen (using navies / via Adriatic sea). When arriving in Italy, that is sold informally to Albanian communities through (informal) networks.

Overall, it can be concluded that notwithstanding increase in primary production there is large processing overcapacity (most processing units are not utilized at full capacity).

Table olives

The business of professional table olives processing is mainly concentrated in Berat. As shown in the previous section, the main type of table olive cultivated in Berat's "Kokerrmadhi Beratit" which is cultivated and processed to be used as a table olive. Thus, the quantities of other types of table olives which are processed are relatively small.

The main factors for clustering into categories table olive processors are the quantity of table olives processed and the type of packaging used. Companies can be therefore divided in two groups, namely: i) small and medium enterprises specialised in retail packaging; and ii) small and medium enterprises specialised in bulk packaging.

Albanian table olives sold in retail packages are typically produced by licensed companies, while part of table olives sold by weight comes from informal processing activities. Olives in bulk packaging generally proved easier to sell in the domestic market, thus giving lower margins, but quicker turn over as compared with retail packaged table olives.

Leading table olive producers, do export, sell in the local market and during "bad years" also import table olives for the local market. There are at least two processors that export to foreign markets, including also USA.

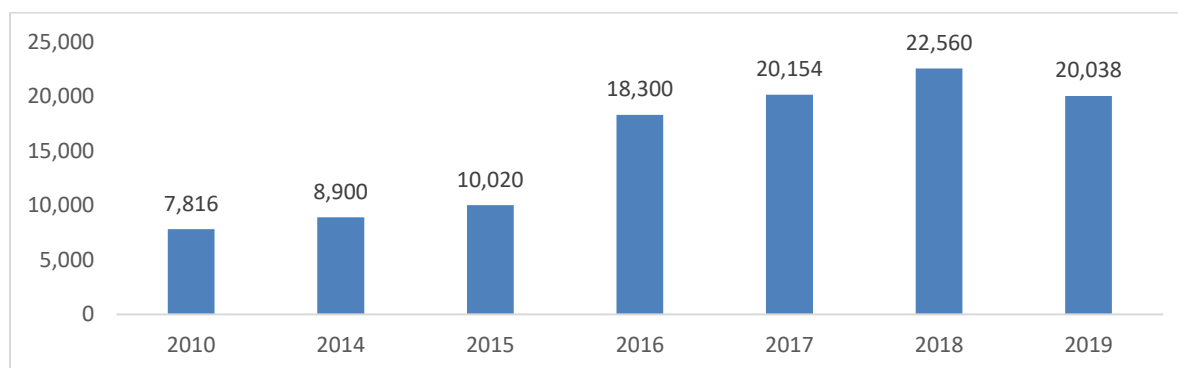
3.2. MAIN PRODUCTS AND PRODUCT TYPES /CHARACTERISTICS

Olive oil

Olive oil production has increased significantly, exceeding 20,000 tons since 2017, while in 2018 it was almost triple the level of production when compared to 2010 – since most olives are used for olive oil, olive oil production increase is triggered by increase in production of raw olives.

As noted in the Introduction section, there is a discrepancy between the data related to olive production (shown in the previous section) and those related to olive oil (shown below). That gap can indicate that the quantity of olive oil produced can be 20% or so lower or the real quantity of olive production may be similarly higher¹⁶ - that implies the need to review the statistics (e.g. data collection and processing).

¹⁶ The gap is assessed by calculating the equivalent amount of production - in this case by dividing olive production by 5 or multiplying olive oil production by 5, after deducing the part of olives going for table consumption and assuming that on average, one litter of olive oil is produced from 5 Kg of olives

Figure 2: Olive oil production trends (ton)

Source: INSTAT and MARD

Despite the recent increase, the production of olive oil in Albania is negligible when compared to European production (which is dominated by Italy, Greece (neighbouring countries to Albania) and Spain).

Table olives

The production of table olives has grown similar to olives used for processing. As shown in the previous section, the production of table olives amounts to about 10 thousand tons, of which about half is produced in Berat.

3.3. ACCESS TO MARKETS, INPUTS AND SERVICES

Access to market

As mentioned above, access to market becomes an obvious concern during over-production years. As one interviewed farmer stated: “We cannot easily work around home as it is full of olive oil”. In some parts of Albania, the over-production made farmers sell olive oil at 350-400 ALL/litter during the latest production season (2020-21), which has been hardly recorded in the past.

Olive oil processors have to face on one hand, competition from “informally” sold olive oil from farmers and on the other hand, the import of cheap olive oil. In addition to the fact that olive oil prices have declined even for extra-virgin olive oil, there is a concern that part of the olive oil that comes to Albania is cheap, not extra-virgin (e.g. lampante) but still bottled and sold as local olive oil. Albanian high-quality processors rely largely on direct households’ sales, having typically “faithful” households’ clients. Exports are low and sporadic. While many, if not most olive oil processors do not sell any olive oil - they simply serve as service providers.

More information related to markets (including access to market) is provided in Section 5.

Access to inputs and services

There is a lack technical advisor able to get the best from available olive oil processing equipment - the technicians dealing with equipment maintenance are able to provide some advice. The situation is somehow better in services for quality and organic certification and for marketing. However, supply chain operators are in general still reluctant to spend for services and are accustomed to get some occasional support for free from development projects.

One emerging issue is the treatment of waste. The vegetation water is usually dumped in the open space. It appears that not only most olive oil processors are not taking measures to do something about it, but some interviewees show that they are not even aware that vegetation waste water can be damaging.

3.4. KEY FEATURES AND CHALLENGES OF OLIVE OIL PROCESSING

The main **features** at the processing level may be summarised as follows:

- Growing number of operators in the olive oil processing industry
- Strengthening of modern and experienced olive oil processors
- Some olive oil processors are informal – several cases of emigrants who own olive factories in Albania and return to Albania only on seasonal basis
- There are several consolidated table olives processors, who also export

Some of the main limitations and **challenges** of the olive oil processors are summarized below:

- Fragmentation of olive production base resulting in excessive farm-gate price of olives
- Low quality of olives (at least part of olives production), due to poor agronomic, harvesting and post-harvesting practices
- Low level of capacity utilization
- Low/limited cooperation with farmers
- Growing number of out-dated factories – more than 2/3
- Lack of oil storing capacities affecting olive oil quality
- Lack of olive oil refinery (pomace oil)
- Lack of investment in olive oil waste processing
- Olive cadastre not complete

Regarding olive cake, there is a growing demand for utilization. Not only that is used by the processing plants themselves (for heating) but also for other purposes – a market is emerging. For example, one interviewed olive oil processor sold the olive cake to one the largest dairy processors. Others sell it to greenhouse operators (who use it for heating). Because most lines are old, there is high content of oil in the cake, according to one interview can be 5 liters per 100 kg of cake. Thus, that has high calorific capacity. There is reported also the existence of an operator in Lushnje that buys olive cake and makes palets which are exported to Italy.

4. GOVERNMENT POLICY FOR THE SECTOR

4.1. STRATEGIC DOCUMENTS

The main policy document for agriculture and rural development has been the Inter-sectoral Strategy for Agriculture and Rural Development (ISARD) 2014-2020. The strategy was elaborated in line with the EU strategic planning approach for the Common Agricultural Policy (CAP) 2014–2020 while maintaining focus on specific needs for the development of agriculture, agro-processing and rural areas in Albania. ISARD 2014-2020 highlights interventions in three policy areas: i) rural development policy; ii) national support schemes for farmers, development of rural infrastructure, and ensuring equal opportunities; and iii) institutional development, implementation and enforcement of EU regulatory requirements. Olive and olive oil were considered a priority sector under ISARD 2014-2020 – the strategy emphasised the need for support to improve harvesting and post-harvesting at farm level (for both types of olives) and related to quality and organic production, olive groves rehabilitation, cultivation and protection (from olive fly) of olive groves, and support for marketing, packaging and labelling especially for export channels. At present, a new Strategy for Agriculture and Rural Development (for the period 2021-2027) is being drafted.

The main legal framework regulating the programming of the agriculture policy is defined in the Law on Agriculture and Rural Development adopted in 2007. ISARD 2014–2020 has been transposed in the National Plan for European Integration (NPEI) 2016–2020, which highlights the medium-term objectives for the development of agriculture and rural areas in Albania. The implementation of the medium-term priorities of ISARD 2014–2020 are detailed in the annual action plans, which are reported by MARD to the Council of Ministers. The annual action plan, in line with ISARD 2014–2020, provides the legal basis for setting up national support schemes by highlighting specific measures available to the agricultural sector for each year. The typology and budget levels for each type of national support schemes for the latest years are provided in Section 4.3 below.

4.2. RELEVANT FISCAL AND TRADE POLICIES

Two fiscal horizontal policies, namely Value Added Tax (VAT) exemption of agricultural inputs and VAT exemption of imported machineries and equipment for investment purposes, benefit olive and olive oil sector. Thereby, olive farmers benefit from VAT exemption of agricultural inputs. Agricultural input (such as fertilisers, plant protection products, seeds and seedlings) provision is exempted from VAT since January 2019¹⁷. This was intended to reduce the price and therefore the cost of agricultural production including olive production. Additionally, starting from 2013, all machineries and equipment used for investments are exempted from VAT. This has been very important for reducing investment costs and incentivizing new investments.

Local olive and olive oil have limited protection from international competition. Custom duty tariff for olive and olive oil is 10% for all trading partners except for Central European Free Trade Agreement (CEFTA) countries which enjoy duty free access (General Directorate of Customs: <http://www.dogana.gov.al/preferencat/>).

As highlighted in the previous sections, vast majority of olives and olive oil are sold informally (typically directly from farmers / factories to households). As such, the few local operators who channel their sales through the formal outlets (e.g. supermarket chains) face “unfair” competition.

4.3. MARD SUPPORT PROGRAMMES

Olive and olive oil were not supported under IPARD II. However, they were subject to major support from national schemes, especially during the late 2000ies, with massive new plantations enabled through support of national schemes, which resulted in drastic increase of production (as shown above).

1. In the period 2007-2013 a large/scale support scheme to expand the primary production base, i.e. for new olive plantations was financed by the Albanian Government with budget resources. This effort was made in pursuance of the broad government target of a '20 million olive trees' production base, which led to the preparation of the 2008 sector development plan, which was the base for establishing the largest National support scheme (i.e. implemented with national funds) provided to any agri-food sector in the years 2008-2012.

¹⁷Law “On Value added Tax in the Republic of Albania” and implementation dispositions, starting from

As a result of these investments, the national distribution and the size of the production base has changed drastically (as shown in Section 2 of this report).

Some of the main primary production constraints (low productivity, difficulty to restructure the production base in the areas most suitable for oliviculture, lack of commercial farms, scarce and not competitive national production of qualitative propagation material) were not (properly) tackled in this period of rapid expansion of plantations.

- From 2013 on, the Government policy shifted towards increasing sector competitiveness through improved quality and increased productivity of the existing production base, rather than continuing to expand the cultivated surface. For example, there was provided support for plant protection and for high quality (extra-virgin) olive oil production coupled with production. But this scheme was not properly implemented, policies have not been consistent over the years and the scheme failed. Overall, support to the sector was substantially cut and the level of investments decreased.

Table 4.1: Support for olive and olive oil (Million ALL)

Planting olive trees	Planting olive trees, 250,000 ALL/ha for intensive cultivations: 180,000 ALL / ha for traditional cultivation	218.99	-	-	-	-	18.56	67.79
Plant protection	Defence of olive groves from Bactroceraoleae (olive fruit fly)- 20,000 ALL/ha	-	73.69	107.43	-	201.59	-	-
Opening wells for on-farm irrigation	Establishment of wells for irrigation-50% of the project cost, but up to 100 000 ALL per well.	-	-	-	-	-	-	-
Total		224.46	73.69	107.43		201.59	18.56	67.79

Source: Elaborations on ARDA data (2020)

Table below shows the criteria for the support of olive and olive oil sector through the national schemes.

Table 4.2: Support for olive and olive oil - Criteria of support measures for the sector of Olives & Olive Oil by year

Measure	Specific req.	2013	2014	2015	2016	2017	2018	2019
Planting olive groves/improving planting technology	Min. planted area (ha)	0.2					0.5-indiv. farmers; 1-farmers group; 5- AAC	0.2-indiv. farmers; 1-farmers group; 3- AAC
	Max. (ha)	NRS					20	10
Rehabilitation of existing blocks of old and/or degraded olive groves	Min. surface area in ha		0.5-indiv. farmers; 1-farmers group; 5- AAC				0.5-indiv. farmers; 1-farmers group; 5- AAC	
	Max. (ha)		300 (country level)					
Production of extra virgin oil	Min. required quantity	15(ton/yr)						
Protection from olive fly			Block cultivation in priority areas					
Drip irrigation	Min. (ha)	0.5	0.5	0.5	0.5	0.5	0.5	0.2
	Max. (ha)	NRS	10	10	10	5	5	NRS

Source: Respective Decision of Council of Ministers (DCM) for support measures. Notes: AAC denote Association of Agricultural Collaboration (Shoqëri e Bashkëpunimit Bujqësor (SHBB)). NRS denotes "No Requirement Specified"; Gray box means no such scheme was provided.

4.4. OTHER AGRICULTURE DIRECT AND INDIRECT SUPPORT MEASURES AND FACILITIES

In the last 2 decades important investments have been made to support the Albanian olive supply chain. These investments, together with a rapidly changing market environment at national and international level have affected the sector developments.

In the period up to 2005-2007, the Government of Japan provided a major facility to finance the purchasing of equipment and fertilizers through the '2KR' project (74 m USD, plus counterpart funds). A part of this fund was used to co-finance the renovation of olive oil processing lines. The backbone of the olive processing industry is still made by Italian processing lines, purchased in that period and with the support of this facility. At the end of the support facility, the olive oil processing industry had been largely modernized, but its profitability was affected, among other factors, by overcapacity which is still an issue.

USAID has been the development agency that has more consistently invested in the olive sector. The influence of the ideas supported by USAID projects and USAID supported operators has been always high. Four projects (SBCA, EDEM, AAC and SAVS) provided limited, but constant support to the sector over xx years.

UNIDO is implementing two technical cooperation projects in Albania to ensure compliance with the Montreal Protocol on Substances that Deplete the Ozone Layer by phasing out the use of hydro chlorofluorocarbons and reducing their negative impacts on human health and the environment. Another UNIDO project aims to transform the market for using organic waste from olive oil production and other industries for energy generation.

The sector has also received support through an IPARD-like component of ASDO project, financed by AICS¹⁸.

The EBRD AASF program provides loan guarantee to financial institutions, aiming at lowering risk and cost of serving the agri-food sector, including olive and olive oil.

5. MARKET AND TRADE

5.1. INTERNATIONAL TRADE FLOWS AND EVOLUTION OVER TIME

Albanian export of olive oil remains very low when compared to both olive oil production as well as imports of olive oil on the other hand, despite the increasing trends. On the other hand, imports remain high (almost 1million litres) and fluctuate from year to year, also in conjunction to local production cycles.

In the last years, according to UNSTAT statistics, less than half of the value of import consisted of virgin or extra virgin olive oil - thus the other half consisted of other (lower quality, cheaper) type of olive oil. For example, in 2017, there were reported import of 138 ton of virgin and extra virgin olive oil (HS 150910) at an average price of 5.19 USD/litter, while the import of other olive oil (not virgin - HS 150990) was 665 tons at average price of 4.29 USD/litter.

Table 5.1: Olive oil international trade by year (Mt)

Year	Export	Import	Balance
2010	15	1,201	1%
2014	18	806	2%
2015	18	1,277	1%
2016	50	1,379	4%

¹⁸ With an initial portfolio of 3-million-euro loans, the project aims at improving the whole olive and olive oil supply chain, from production of certified propagation material (i.e. olive trees) to the introduction of norms and best practices for the agronomic management and use of by-products and waste, with the ultimate goal to improve production quality and productivity as well as economic and environmental sustainability of the sector.

The project included a 1.4 M Euro allocation for an IPARD-like facility. During implementation, the allocation to the IPARD-like facility was reduced to 1 M Euro, of which 0.7 M Euro allocated to support primary production and 0.3 M Euro or 30% of total funds to olive processing. A total of 337 enterprises (334 in primary production and 3 in olive processing) were supported. The average size of financed project is quite different in primary production and processing: primary producers obtained in average 254,000 ALL (some 2,000 Euro) each, while olive oil processing beneficiaries obtained an average grant of 13.3 M ALL (about 108,000 Euro) each.

2017	114	803	14%
2018*	132	1,061.6*	12%
2019	131	1,170	11%

Source: EUROSTAT(2020)(Albania as export reporter); UNSTAT and FAOSTAT (2019)for imports

* Estimates based on declared exports of EU countries to Albania¹⁹

In 2019 most imports of olive oil were sourced from Italy (first /largest partner country for olive oil import for Albania) and Greece (second one) –more than 90% together. Italy is one of the leading producing and exporting countries for olive oil, and has strong trade ties with Albania.

In terms of exports, main partners are regional and neighbouring countries. Albania exported olive oil mainly to Kosovo (31%), North Macedonia (29%) but also in USA (19% of total exported quantities of olive oil) in 2019.

Table 5.2: Olive oil exports by country (2019)

Country	000 EUR	MT	Share (MT)	EUR/kg
Kosovo	134	41	31%	3.3
North Macedonia	115	38	29%	3.0
United States	84	25	19%	3.4
Total	474	131	100%	3.6

Source: EUROSTAT (2020)

Albanian export of olives has been increasing over the years however export quantities/values are considered modest when compared both to local production and to import too. Meanwhile, imports are unstable.

Table 5.3: Olive international trade by year

Year	Export		Import		Balance	
	Ton	000 EUR	Ton	000 EUR	Quantity	Value
2010	-	-	-	-	-	-
2014	92	111	300	196	31%	57%
2015	33	38	92	63	36%	60%
2016	45	55	3	2	1450%	2523%
2017	41	49	413	280	10%	17%
2018	206	160	16	11	1312%	1424%
2019	Not reported ²⁰		636	455	NA	NA

Source: EUROSTAT (2020)

In 2019 most imports of olives were sourced from Greece - almost 95% of the total. Greece is one of the leading producing and exporting countries for olives, and has strong trade ties with Albania.

Table 5.4: Olive imports by country (2019)

Country	000 EUR	MT	Share (MT)	EUR/kg
Greece	412.5	599.6	94.3%	0.7
Italy	42.4	36.3	5.7%	1.2
Total	455	636	100%	0.7

Source: EUROSTAT (2020)

In terms of exports, main partner (same as for imports) is Greece (96% of total exported quantities of olives) in 2019.

¹⁹Since the quality of international trade data was questionable for 2018 (e.g. in the case of olive oil imports declared / reported by Albania), we used statistics reported by countries exporting olive oil to Albania, namely EU countries (in the case of olive oil is simple, since we import olive oil almost exclusively from EU).

²⁰ FAOSTAT neither does not report export data for 2019. Import data are significantly different: 1,126 tons and 719,000 USD.

Table 5.5: Olive exports by country 2018

Country	000 EUR	MT	Share (MT)	EUR/kg
Greece	153	197	96%	0.8
Montenegro	5	8	4%	0.6
Total	160	206	100%	0.8

Source: EUROSTAT (2020)

International market with focus on EU ²¹

The world production of olive oil is dominated by EU, which accounts for about 2/3 of the world olive oil production and is the main supplier of global exports. The EU production is dominated by four main countries: Spain, Italy, Greece and Portugal – two of the four EU (and world) leading producers are neighbouring countries of Albania, exposing Albania to direct strong competition.

After decline marked in the early 2010ies, modest growth was achieved by the end of the last decade in EU. There is foreseen that EU olive oil sector will experience improvement and increase in the coming years. By 2030, the EU olive oil production is expected to grow by 1.3% per year, mainly caused by increasing yields (+0.5% per year).

Europe is the largest importing region of olive oil in the world, accounting for more than a half of the world's total imports. Only 12% of Europe's imports of olive oil come from other countries - imports from outside of Europe come mainly from developing countries. Extra virgin olive oil made up 75% of all imported volumes in 2019.²² The biggest share of intra-European trade consists of bulk olive oil blended by the largest olive oil companies before bottling.²³

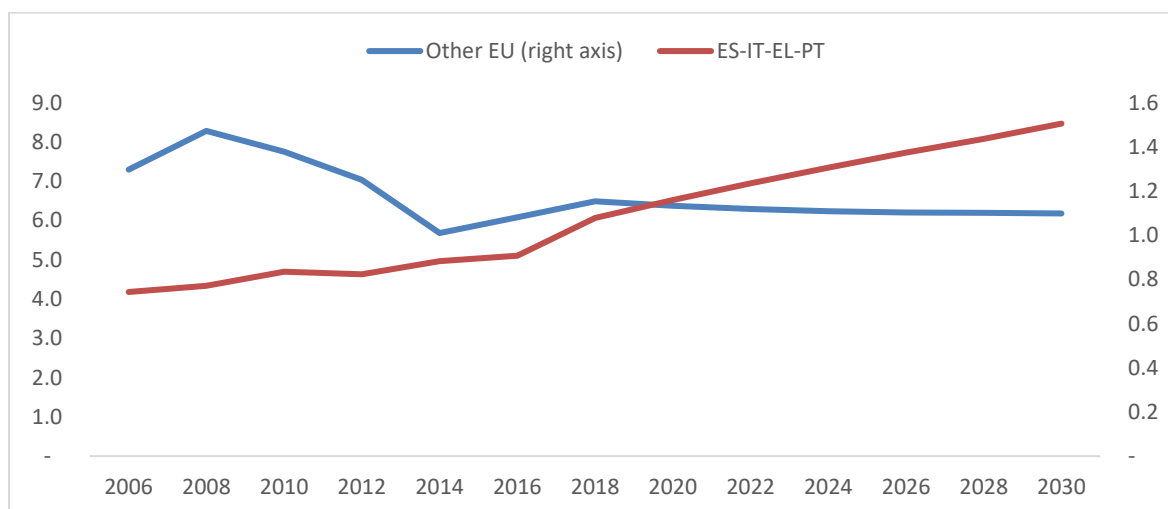
The further development of irrigated and intensive olive plantations is expected to reduce production variability. However, the economic viability of traditional groves will struggle in good production years, when prices will drop. This is due to traditional groves' lower productivity and higher production costs. Therefore, strategies aiming at increasing value, particularly by using quality labels such as geographical indication (GI) and organic certification will become more prevalent – this development is highly relevant for Albanian farmers, which is largely extensive and cannot be competitive cost-wise with mass EU intensive olive groves production. The optimization in the use of olive processing waste and by-products will be also an issue/concern, as the disposal costs are increasing, in parallel with the introduction and enforcement of stricter rules for environment protection. This is relevant also for Albania, in the context of EU integration. In addition, the potential of olive processing by-products and waste as livestock feed or natural fertilizer can be a viable option to address this topic.

²¹ This section is partially based on EC (2017). EU Agricultural Outlook for the Agricultural Markets and Income 2017-2030 and EC (2020) EU Agricultural Outlook for markets, income and environment 2020 – 2030, Centre for the Promotion of Imports from developing countries (CBI) (2021) and Skreli and Imami (2019)

²² CBI (2021). The European market potential for olive oil, <https://www.cbi.eu/market-information/processed-fruit-vegetables-edible-nuts/olive-oil/market-potential>

²³ CBI (2021). The European market potential for olive oil, <https://www.cbi.eu/market-information/processed-fruit-vegetables-edible-nuts/olive-oil/market-potential>

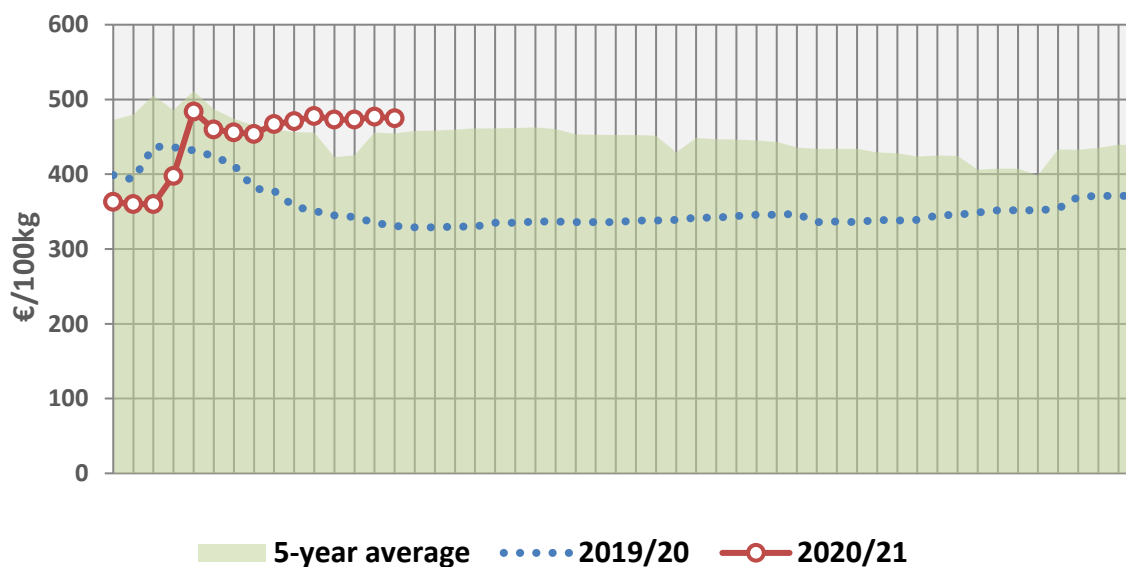
Figure 3: EU olive oil per capita consumption forecast (kg)



Source: EC (2020)

Following the increasing production trends, the prices of extra virgin olive oil have been declining overall including also the leading producing countries. Average prices have declined below 3 EUR/litter (and in some years close to almost 3 EUR/litter) in the case of Greece.

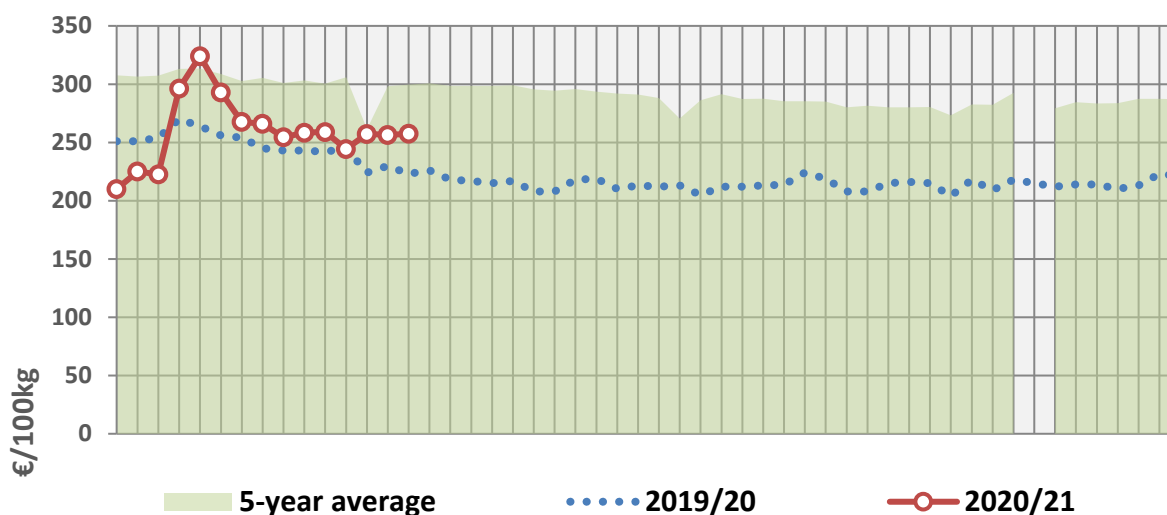
Figure 4: Extra virgin olive oil in Italy - € National (by week)



Source: EC (2020)²⁴

²⁴ Available online at https://ec.europa.eu/info/food-farming-fisheries/farming/facts-and-figures/markets/prices/price-monitoring-sector/plant-products/olive-oil_en

Figure 5: Extra virgin olive oil in Greece - € National (by week)



Source: EC (2020)²⁵

To conclude, Albania has limited competitive advantages to export olive oil, due to high cost of production, low volumes compared to leading olive oil producing countries, and questionable quality standards. However, a handful of companies have managed to find their own market niches and export high quality olive oil. Albanian principal olive oil industry actors should target the domestic market where there are important opportunities to satisfy the growing demand.

5.2. DOMESTIC MARKET

Local market is dominated by the local production of olives and olive oil. More specifically, the share of imports tends to be at around 5% of the domestic market, although it may fluctuate based on local production dynamics. On the other hand, the domestic production is destined mainly for the local market – share of exports are very low.

Table 5.6: Balance of Olive Oil Production (MT)

Category	2010	2014	2015	2016	2017	2018	2019
Production	7,816	8,900	10,020	18,300	20,154	22,560	20,038
Exports	15.3	18.3	17.7	50.3	113.9	132.3	131
Imports	1201	806	1,277	1,379	803	1,162	1,170
Total domestic supply	9,002	9,688	11,279	19,629	20,843	23,598	21,077
Import/supply Ratio	13.3%	8.3%	11.3%	7.0%	3.9%	4.96%	5.55%

Source: INSTAT and MARD (Production), EUROSTAT(Exports), UNSTAT/FAOSTAT (Imports)

Olive oil consumption in Albania strongly declined during early transition. One reason is the decrease in the domestic production (of olive and olive oil) as a large proportion of olive plantations/groves were heavily damaged during the transition. Apparent consumption of olive oil in Albania - which according to FAOSTAT statistics is less than 1 litre/capita – is higher than the global average consumption per capita although much lower when compared to southern Europe, implying great potential for increasing consumption. However, one factor behind this gap may be under-reporting of informally produced olive oil, which is the main form of olive oil processing. Considering that the annual olive oil production can be around 20,000 MT, and when considering the population, consumption of olive oil per capita could be approximately 5-10 litres/year. According to these estimates, consumption per capita would be higher compared to FAOSTAT statistics, but still lower when compared to some EU countries. Thus,

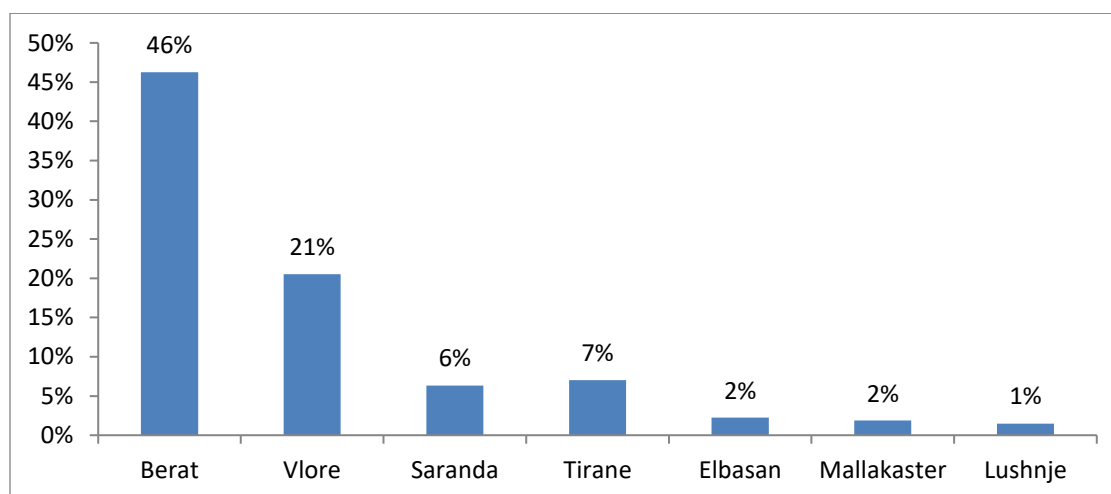
²⁵ Available online at https://ec.europa.eu/info/food-farming-fisheries/farming/facts-and-figures/markets/prices/price-monitoring-sector/plant-products/olive-oil_en

there is a potential that the domestic consumption (demand) may increase in the coming years, as a result of increase in families' income and improved consumer awareness about health benefit of olive oil consumption.

The origin of production tends to be an important factor for most Albanian consumers. According to various studies, most consumers choose their products based on origin (domestic versus imports). Generally, there is a strong consumer preference for domestic food products. Also, within the domestic product group, there are significant differences in perceptions based on the region of production within Albania. Most consumers view the region/area of origin as either important or very important when deciding to buy Albanian products. Natural conditions and genetic material (plants or varieties) can be perceived as being related to the origin of preferred regional products²⁶.

Previous studies²⁷ have found a strong preference of Albanian consumers for domestic olive oil in Albania and willingness to pay a premium for local olive oil. High prices are considered one of the few reliable proxies for quality. Further studies show that most consumers prefer olive oil from the regions of Berat and Vlore. Berat is the leading producer of table olive in Albania.

Figure 6: The main preferred regions of origin for olive oil



Source: Imami and Skreli (2013)

As such, olive oil and table olives from Berat and Vlore represent potential for market development. Production of olive and olive oil has strong tradition and long history in these regions, thus there is a potential to develop regional brands, including Geographical Indication (GI) or Protected Designation of Origin (PDO). According to the results of interviews with consumers in Tirana buying directly from producers is very important, to ensure quality as well as origin. As a specific case, the image of Berat for table olives, is dominant and can implicitly influence the perception of consumers for olive oil too, particularly of those consumers who do not have a strong preference for olive oil from a specific territory²⁸.

²⁶Imami, D., Skreli, E., Zhllima, E., Cela, A., & Sokoli, O. (2015). Consumer preferences for typical local products in Albania. *Economia agro-alimentare*.

²⁷Imami, 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).

²⁸Imami, D., Skreli, E., Zhllima, E., Cela, A., & Sokoli, O. (2015). Consumer preferences for typical local products in Albania. *Economia Agro-alimentare*.

Imami, D., Zhllima, E., Canavari, M., & Merkaj, E. (2013). Segmenting Albanian consumers according to olive oil quality perception and purchasing habits. *Agricultural Economics Review*, 14(389-2016-23484), 97-112.

Most Albanian consumers view organic products as safer and healthier compared to other (conventional) products. However, most consumers are not familiar with organic certification and its requirements. There is a general lack of understanding about what constitutes organic food among Albanian consumers²⁹. For example, according to a previous study, almost ¾ of (interviewed) consumers are unaware of the bio certification³⁰. The market for organic food in Albania is still small, but the consumers' preference for organic food represents a potential for market development in general, and for olive oil specifically, which can be developed in the future with the increase in income and awareness about good organic olive oil.

5.3. PROFILE OF MAIN ACTORS IN THE DISTRIBUTION CHAIN

Retailers

The retail sector includes a wide range of outlets, including public retail markets, spontaneous markets, formal and informal shops, and supermarkets. In addition, there is a large informal trade. Street-selling activities count for a large proportion of food trade. This phenomenon represents a potential threat to consumers' safety as well as to the operation of public markets – to tackle this concern, there have been efforts from local police forces in major cities (e.g. Tirana) to reduce informal sales.

Supermarkets are part of a radical change brought about by private enterprises in their efforts to better serve consumers. In recent years, the number of supermarkets has been growing, especially in bigger towns. Despite their fast growth – primarily driven by the leading chains, Conad, Spar (formerly Carrefour) and Big Market–supermarkets' share in the retail sector is still quite small when it comes to some foods, especially fresh fruits and vegetables, including table olives, as well as olive oil.

Green markets remain the main channel for fresh vegetable and fruit sales including table olives. It is common also to find unlabeled olive oil (e.g. in plastic bottles) in such markets.

Groceries and traditional retailers are widespread throughout the cities, and they usually sell a broad range of food and non-food products, including fruit, vegetable and processed food products. These retail points have higher coverage, as they are located in every neighborhood. They are more flexible and can change the range of products. It is common to find both labelled olive oil that is imported, also that which is produced from the larger producers as well as unlabeled local olive oil (e.g. sourced directly from small producers). Some shops tend to be specialized for local food products from special territories (such as in the case illustrated in the figure below).

²⁹Imami, D., Skreli, E., Zhllima, E., & Chan, C. (2017). Consumer attitudes towards organic food in the Western Balkans-the case of Albania. *Economia Agro-alimentare*.

Leonetti, L., Imami, D., Stafanllari, A., & Zhllima, E. (2009). The olive and olive oil value chain in Albania. Development Solutions Associates.

³⁰Imami, D., & Skreli, E., (2013). Consumer awareness and preferences for organic products in Albania. Technical report. GCP/ALB/014/EC IPA 2009.

Figure 7: Olive oil sale in a traditional local shop

Source: Photo done by the author of the study

HORECA. Restaurants also are important actors in the agrifood value chain. While in the past, they could source olive oil from different sources, increasing formalization will imply that they will be less likely to buy from farmers. HORECA are an important channel also for table olive processors. Indeed, one of the main consequences of the COVID19 on the sector was due to the reduction of demand from this category of buyers.

5.4. INFRASTRUCTURES AND LOGISTICS

As highlighted above, most olive oil is sold directly from producers (farmers or factories) to households. Other channels include groceries (usually directly supplied from producers) and green markets (where farmers can sell directly their olive oil, or via traditional retailers) – these are the main channels also for table olives. The logistics involved in these markets or related to these channels is really simple and basic. As for supermarket chains, such as Spar and CONAD, which play a smaller role for the local production compared to the above channels for olive and olive oil, they have expanded the network and have built modern logistic platforms.

5.5. KEY FEATURES AND CHALLENGES

Albania has a trade balance deficit regarding olive oil while the trade balance for table olives varies significantly from year to year. Local market is dominated by the local production of olives and olive oil. The share of imports tends to be at around 5% of the domestic market, although it may fluctuate based on local production dynamics. However, the flows of informal imports are not reflected in these statistics. On the other hand, the domestic production is destined mainly for the local market – share of exports are very low. Parts of imports are low quality olive oil, which often is packed and labelled as local olive oil.

The Albanian consumers prefer to buy olive oil directly from producers. This buying preference represent a chance to combine tourism with olive oil marketing. Similar to the wine sector, olive oil processors can invest in tourism facilities (guest rooms, restaurants, etc.) and benefit from growing direct sales also to tourists.

The organic sector is weakly developed in Albania, including the case of olive and olive oil. The share of organic olive and olive oil produced and sold in Albania is negligible. According to available statistics, 7.6 Ha olives were certified organic and 9.7 Ha were in the process of conversion in 2019³¹. However, there is a great market potential. There is a strong preference for organic olive oil. For example, during field observations and interviews we have observed cases very expensive olive oil sold as organic or quasi-organic, such as the olive oil from “wild olives” shown in the photo above, sold as high as 1,800 ALL/litter. However, consumers lack awareness or proper

³¹ Data provided by MARD in the context of EU-Albania Sub-Committee on Agriculture and Fisheries.

understanding about organic or bio certification. Improved awareness can result in higher demand for certified organic olive oil.

Olive oil and table olives from specific regions represent potential to develop regional brands, including Geographical Indication (GI) or Protected Designation of Origin (PDO) reflecting consumer preferences. General Directorate of Industrial Property (GDIP), which is in charge approving GIs/Dos, was transformed from a budgetary public institution into a public non-budgetary institution and operates as an autonomous agency under the supervision of the Ministry of Finance and Economy. So far, 17 GIs/DOs have been registered 24 application requests filed in GDIP, of which 2 are olive oil producers, namely BORSH Y. HAJDINI (olive oil) SARANDA (olive oil). Nevertheless, there are gaps in the system of territorial certification and promotion, and on the other hand, most local consumers lack understanding about PDOs/GIs, despite the preference for specific territories.

6. LEVEL OF ATTAINMENT OF RELEVANT NATIONAL & EU STANDARDS

6.1. FOOD SAFETY

The Law No 87/2013 “On categorization of production, labelling and trading of olive oil and olive pomace oil” was approved - it partly approximates the Regulation (EU) No 1308/2013 of the European Parliament and of the Council of 17 December 2013 establishing a common organisation of the markets in agricultural products and repealing Council Regulations (EEC) No 922/72, (EEC) No 234/79, (EC) No 1037/2001 and (EC) No 1234/2007.

Two legal acts have been adopted in the olive oil sector, related to common market organisation, which partially align the relevant national legislation with the *Acquis*. The Law No 87/2013 provides definitions about different categories of olive oil (in line with EC legislation as highlighted above) and also about what can be consumable (made available to consumers):

- a) Extra virgin olive oil is virgin olive oil, which has free acidity, expressed as oleic acid, not more than 0.8 grams per 100 grams;
- b) virgin olive oil is virgin olive oil, which has free acidity, expressed as oleic acid, not more than 2 grams per 100 grams;
- c) ordinary virgin olive oil is olive oil, which has free acidity, expressed as oleic acid, not more than 3.3 grams per 100 grams.

Olive oil which is improper/unsuitable for human consumption, defined as lampante virgin olive oil, is olive oil, which has free acidity, expressed as oleic acid, more than 3.3 grams per 100 grams and / or organ-sensory characteristics. This oil is allowed to be used for technical purposes and must be refined if used for human consumption

The Law No 87/2013 makes specific references also to refined olive oil and crude olive oil.

The food hygiene package of the EU introduces the full direct responsibilities of the Food Business Operators for the safety of their food outputs. This responsibility is based on the adoption of HACCP principles, the implementation of Good Manufacturing Practices and the hygiene of the food facilities. HACCP is now mandatory in Albania for food processors.

The Law No 87/2013 (Clause 11) highlights that the National Food Authority (NFA) exercises control, according to the provisions of law no. 9863, dated 28.1.2008 "On food", as amended, as well as in accordance with the legislation on inspection, for business operators, who exercise activity in the field of processing, trade and transport of olive oil and olive oil olive, for meeting all technical norms and quality indicators defined in this law. Thus, NFA is in charge of controlling standards related to olive oil at processor and retail level.

Private food safety standards are available for certification in Albania, at different levels. Whilst BRC, IFS and other processing-level GFSI standards focus exclusively on food safety (HACCP, PRP, GMP), GlobalGAP covers occupational health and environmental issues at the farmer level³².

According to the interviews and observations, there are gaps in the implementation of standards. Especially olive oil retained by farmers is not stored in the right vessels and conditions to preserve the quality and characteristics (e.g. low acidity). It is common that they store and sell olive oil in used plastic bottles and exposed to high temperature and sun shine (although, according to interviews, there are improvement compared to the past – more and more farmers tend to store and sell olive oil in new plastic bottles).

As highlighted in section 2, it appears that there is a growing awareness among farmers about the timing of the harvest. While back 1-2 decades ago, lack of awareness about effect of early timing of harvesting among farmers was common, nowadays it appears that more and more farmers tend to harvest / process olives earlier. However,

³²Elaborating on the EU set of rules, the EU private sector has developed voluntary food safety standards at both primary (farmers) and processing levels. These standards mainly include Global GAP at the primary production level and BRC, IFS at processing level, all standards recognised by the Global Food Safety Initiative (GFSI), a private-sector initiative developed by the food industry players to homogenise standardisation in food safety. The ISO22000:2018 is an international food safety standard that can be adopted by each organisation in the food chain at all levels and stages and requested worldwide. Additionally, supermarket chains are setting additional own rules to limit the number of active ingredients with residues on a certain crop, reduce the official MRL, limit the use of hormones.

there were cases of farmers bringing olives for processing even late January and early February (as reported during the field interviews), although that makes up a small share of the farmers.

There are concerns also about dilution of olive oil. For example, one interviewed olive oil processor was asked by a bottler to mix peanuts oil with olive oil at his premises. Another case was reported of a farmer, collecting waste vegetation water to mix it with other vegetable or peanuts oil, to give the flavour and colour (although such case was reported as an exception).

Another interviewee mentioned that there have been cases when processors request/buy olives (Kalinjot) as early as September, thus premature, with the sole purpose of mixing that olive oil with old olive oil and to sell that before or as soon as others start production of olive oil.

6.2. USE OF INPUTS, PPP

In the area of sustainable production, Directive 2009/128/EC was a milestone to achieve a sustainable use of pesticides in the EU by reducing the risks and impacts of pesticide use on human health and the environment and promoting the use of Integrated Pest Management (IPM) and of alternative approaches or techniques, such as non-chemical alternatives to pesticides. The directive implementation, delegated at each member state, is based on National Action Plans to implement the actions set out in the Directive³³.

At a member state level, the Harmonised Risk Indicators established under Directive 2009/128/EC show the evolution in the risks to human health and the environment from pesticide use.

According to Law no. 10416, dated 07.04.2011, Article 14 point 1, "SESS" is the body responsible for carrying out the official certification of planting and plant propagating material".

"Certification" as an important official procedure which consists in obtaining of an official certificate on quantitative and qualitative indicators of planting and plant propagating material, delivered by State Entity of Seeds and Seedlings.

This procedure should respect a given "Protocol", which means special technical standards determined for each species, which apply related to viruses list, as well as to some other organisms, similar to them and their diagnostic way in the certification of propagating material.

In certification procedure could be included "Protected Cultivars" and "Unprotected Cultivars" of public and private breeders of primary sources in Albania and abroad, after they have been previously registered in the Official Catalogue of seeds and seedlings.

The certification is based on some general concepts and rules, defined by the "OECD" (Organization for Economic Development and Cooperation), as well as in accordance with the directives of the Council of Europe. Pursuant to Law no. 10416, are the legal regulations (DCM, Instructions, etc.) "On the organization and procedures for certification of planting and propagating material" and necessary legal procedure and documentation for certification, are certificate for activity developing National Licensing Center (NLC), request for application, report on determination of the block, certificate of origin, control act for the control of seed or seedling plots, approval act for the production plots of planting and plant propagating material, confirmation statement, report on the verification of technical specifications, laboratory analysis document, phytosanitary certificate, equipping with official label and issuance of official certificate.

Regarding the above, all the relevant procedure and documentation, required for official certification, is reflected in the relevant DCMs, approved for each species or group of specific species.

Legislation on which the Official Certification Sector carries out its activity,

1. Law no. 10416, dated 07.04.2011, "On planting and plant propagating material", as amended.
2. Law no. 8880, dated 15.04.2002, "On the rights of plant breeders".

³³ Training of users, advisors and distributors of pesticides; Inspection of pesticide application equipment; Prohibition of aerial spraying and limitation of pesticide use in sensitive areas; Information and awareness raising about pesticide risks.

3. Law 10.5/2015, "On some additions and amendments to Law no. 10416, dated 07.04.2011 "On planting and plant propagation material".

DCM Nr. 447, dated 03.09.1993, "On the establishment of the State Entity of Seeds and Seedlings".

DCM Nr. 240, dated 27.03.2013, "On determining the criteria for marketing and certification of propagating materials and seedlings of fruit tree plants".

DCM Nr. 204, dated 04.03.2015, "On the organization and functioning of the State Entity of Seeds and Seedlings".

To carry out the activity, the entire official certification procedure is followed in the field, in cooperation with the relevant specialists of RAVPPS for the planting and propagating material that is required to be produced.

According to the bylaws (DCMs), two official controls are performed for each producer (supplier), regarding the implementation of requirements and legal criteria, technology and methodologies approved for each species and variety required to be produced and certified.

For each species, variety, lot according to the categories required to be certified, during the vegetation, field approval (approval) is made, which is one of the legal criteria, by official certification specialists, as well as the issuance of internal certificate by the phytosanitary service, for each species, variety, lot and quantity required to be certified.

For locally produced seeds, for each supplier, the seed sample is taken from the official certification specialists and sent to the Laboratory of the State Entity of Seed and Seedlings for laboratory analysis.

At the end of completing the certification practice, according to the models defined in the relevant DCMs, an "Official Certificate" is issued for each producer, which records all the necessary data for the certified seedling or seed.

Also, attached to this certificate, are given the official labels, and completed with all the necessary indicators. This label has the dimensions and color in accordance with the **OECD** seed schemes, as well as in accordance with the Council of Europe (**EC**) Directives, for fruit tree seedlings. We emphasize that the labels which are placed on the planting and plant propagating material, serve as a passport of the plant. We periodically publish the "Certification Bulletin", which contains all the data on certified seedlings and seeds and distributes it to all appropriate institutions.

Based on the Bulletin of certification of seeds and seedlings, received from the State Entity of Seeds and Seedlings (Official Certification Sector) for 2019 - 2020, it results that in our country, perform the activity of production of certified seedlings.

Regarding the plant protection products, the legal basis governing plant protection products and the applicable EU legislation is - Law No. 105 / 2016, "On Plant Protection" and bylaws in its implementation.

1. All PPPs that are traded or used in the territory of the Republic of Albania, are subject to the registration procedure.
2. In the Republic of Albania are registered only PPPs, which are registered in one of the countries of the EU.
3. All procedures related to the registration of PPPs, active ingredients, as well as additives and interactive ingredients, are performed in the ministry, at the RPPS, as the responsible authority.
4. The approval of the active ingredient, of other components in the content of PPPs, as well as their updating in accordance with the EU legislation, are done by order of the Minister.

The plant protection service at the RAVPPS has the task of monitoring the phytosanitary condition of plants, plant products and other objects within the territory in their administration.

Laboratory of qualitative analysis of PPPs, as well as that of their residues in plants and products of plant origin, at IFSV, which has the task:

- a) evaluation of the documentation of PPPs during the procedure of their registration;
- b) quality control of PPPs registered and placed on the market;
- c) analysis of PPP residues in plants and products of plant origin, locally produced and / or imported, in compliance with food safety legislation.

Regarding fertilization products, the structures responsible for the implementation of FP are as follows:

1. Structure responsible for fertilizer products (SRFP) in MARD; The SRPP has the following tasks:

- a) develops the procedures related to the registration of fertilizer products, in accordance with the requirements of the legislation in force;
- b) attends and monitors the activity of fertilizer products at central and regional level, in implementation of the legislation in force.

2. Institution responsible for the supervision and control of the production, import, export, storage, trade and use of fertilizer products.

The institution responsible for the supervision and control of the production, import, export, storage, trade and use of fertilizer products is determined by a decision of the Council of Ministers.

3. Fertilizer Products Registration Commission (FPRC) in MARD.

The Commission is a collegial, technical, permanent and decision-making body. The Commission, in its meetings, reviews:

- I. the final label of the fertilizer product, based on the label submitted by the applicant;
- II. registration of fertilizer products in the registration procedure;
- III. re-registration of fertilizer products;
- IV. deregistration of fertilizer products;
- V. modification of the registration document of the fertilizer product.

NFA is the inspection body, which has the task of controlling the implementation the relevant legislation (highlighted above) and the bylaws deriving from it, as well as other legal acts in the field of inspections. NFA covers the import, trade and storage of inputs and PPPs in the Republic of Albania.

6.3. OCCUPATIONAL SAFETY

Legal framework

The basic legal framework for occupational safety and relevant control system is based on the following norms:

- Law 10237/10 “On Security and Health at Work”, as amended
- Law 9634/06 “On Work Inspection”, as amended
- Law 7703/93 “On Social Insurance in the Republic of Albania”, as amended

The control system

The State Labour Inspectorate (SLI) was established in 1995 as a public institution under the Ministry of Labour and Social Affairs. SLI operates as an autonomous institution since 2006.

Concerning the responsibilities of the SLI for occupational safety and health, there is a certain duplication of responsibilities between SLI and State Sanitary Inspection (SSI) which depends from the Ministry of Health³⁴.

All companies liable to be monitored by the SSI need to make a self-declaration on the fulfillment of health and hygiene regulations on their premises. The SSI is also responsible for the monitoring and control of exposure to toxic substances, extreme temperatures, and of occupational accidents and diseases.

As to social security legislation, both SLI and the National Fiscal Administration monitor the payment of contributions for social and health insurances: the SLI is responsible for the collection of these contributions from

³⁴ Source: ILO

urban workers, whereas the Social Insurance Institute manages and supervises the collection of social contributions from rural workers.

Inspections are carried out in accordance to a monitoring programme and also at the request of individuals. Labour inspections are carried out in a planned. Most of the visits are planned and programmed and only around 5% are motivated by complaints³⁵.

Level of compliance

There are several issues related to occupational safety in primary production; the main one is linked to the application of PPP, which is relatively limited in the olive sector.

Most farmers apply pesticides with manual pumps, often without adequate protection. In cases of wider scale treatments, such as tractor spraying, it is more frequent to see operators adequately protected.

Most processing industries do not take much care of labour safety and public health measures for safety of workers. In general, factories have a minimal first aid kit, but usually there are no first aid trained staff.

Workers are not regularly checked for health. Toilets and warm water are usually available, but in most cases do not comply with HACCP standards. Larger enterprises are more controlled and generally keep better standards. Actually, as compared to a decade ago, the conditions of workers have improved considerably in many large processing facilities.

6.4. ENVIRONMENTAL ASPECTS

In respect to environment protection, the EU has developed a set of rules related to cultivation areas that comprise:

- nitrates directive (Council Directive 91/676/EEC)
- directive on the conservation of wild birds (Directive 2009/147/EC)
- directive on the conservation of natural habitats and of wild fauna and flora (Council Directive 92/43/EEC).

The Law No 87/2013 (mentioned above) does not refer to issues related to waste treatment and does not offer a basis for secondary legislation on this issue. Thus, the law does not touch on environmental issue.

On the other hand, Law No. 10463/2011 On integrated waste management makes specific reference on livestock waste management (Clause 36), but this law does not make any reference to waste from olive and olive oil (or even other horticulture products).

³⁵ Source: ILO

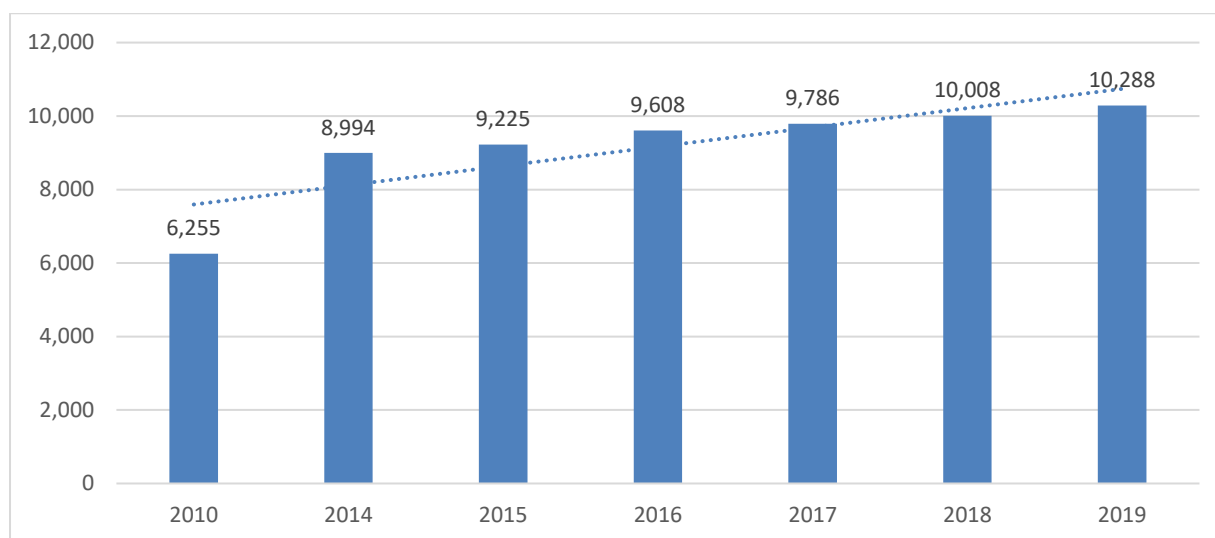
7. INVESTMENTS TRENDS

7.1. PRIMARY PRODUCTION

At primary level, the main type investment has been plantation of olive trees. At farm level, there has been a strong trend of establishing new olive plantations and increasing the area under olives. The growth trend has been observed since the governmental subsidies for new plantation were introduction - however, even at present, farmers continue to plant despite the decline of the support for new olive plantations.

Overall, the number of olive trees has exceeded 10 million during the end of 200ies, which corresponds to an increase by almost 2/3 when compared to 2010.

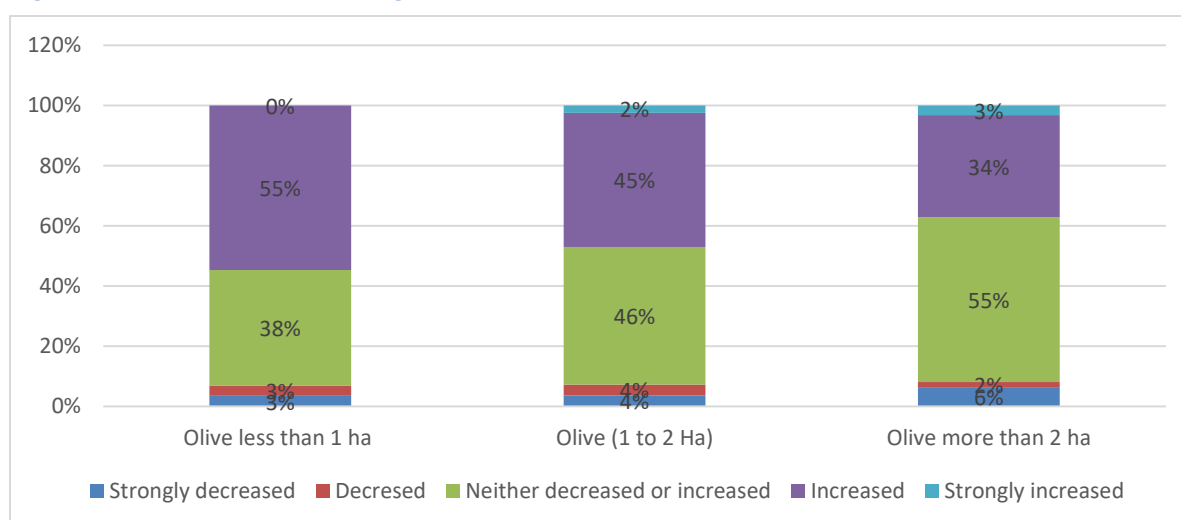
Figure 8: Investments in olive plantation (number of trees each year, in thousands)



Source: INSTAT (2021)

The survey with extension survey confirms that there was a growth in investments over the previous 7 years, especially in smaller groves (< 2 ha).

Figure 9: Investment trends during 2014-2020



Source: Survey with extension services (2021)

As highlighted in the section 2, most seedlings are bought informally and many do not meet standards. Varieties of new plantation depend on the area. Some farmers prefer traditional varieties, also because of the fact that many

farmers failed with new imported varieties as they did not fit well the conditions. However, many farmers are showing a growing interest in foreign varieties that fitted to the local conditions. For example, ATTC Vlora seedlings production was largely dominated by local varieties in the past, such Kalinjot, but over the last year, there has been growing share of production for foreign varieties such as Frantoio, Leccino, Koroneiki etc. An issue is lack of proper understanding among farmers about varieties – for example, many farmers name Koroneiki “Greek Frantoio”, which in fact is a misleading concept, as the two cultivars are suitable for different types of cultivation and different pedoclimatic conditions.

The structure of varieties for Elbasan and Berat is described in more details in section 2.

As shown earlier in the report, planting olives has often been motivated by subsidy support but for some it has been seen as a way to utilize land with low risk and limited engagement. For example, many rural residents who have migrated to urban areas have planted olives in their land as olive is considered a productive activity which can persist even in case of lack of services.

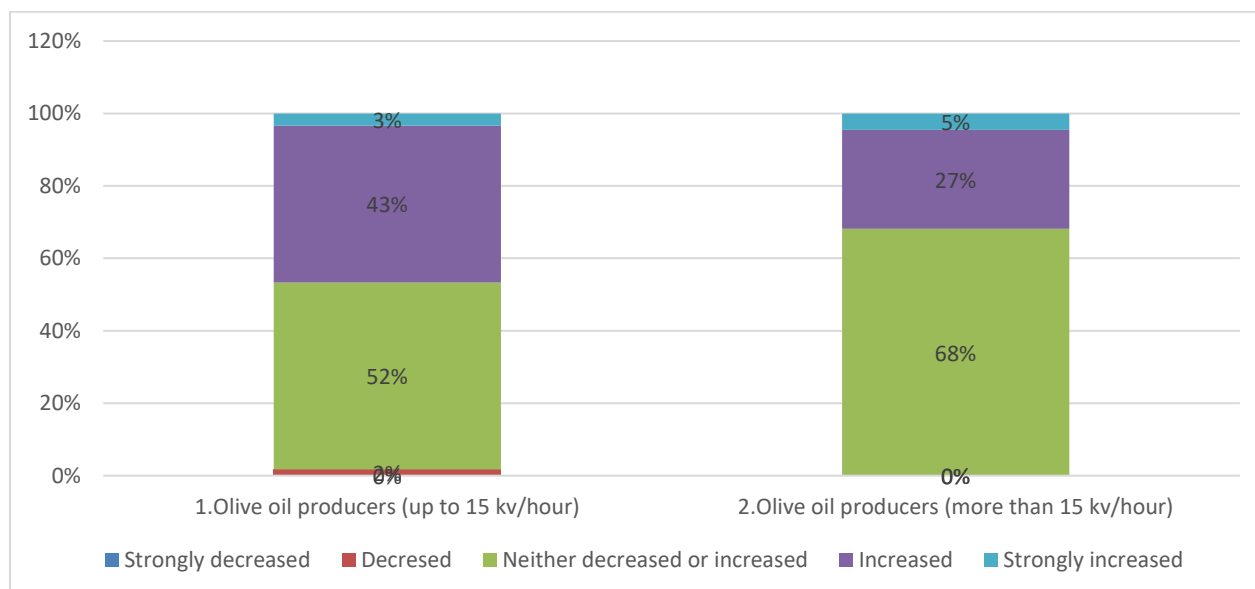
Another objective can be to increase land value: “in case you sell the land, you can sell it at higher price if it is planted (with olives) than if not planted”, mentioned one interviewed farmer from the region of Elbasan.

7.2. PROCESSING

Investments in olive oil plants have increased during 2000ies following the available support schemes. During the past decade there have been observed investments both in new olives processing units and in modernization of few, quality-oriented olive oil producing companies.

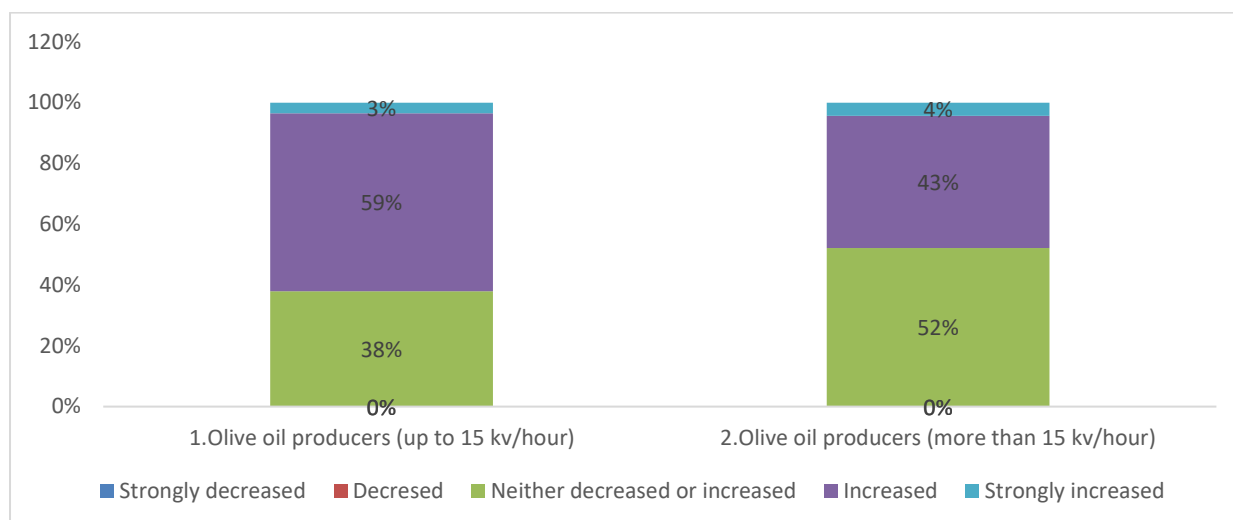
The survey with MARD extension survey confirms that there was a flow of investments in olive processing over the previous 7 years, especially in smaller olive oil mills. Also, in the future, there is expected a positive trend in investments. Differences in views may reflect different regional patterns (since MARD extension staff cover various specific areas).

Figure 10: Investment trends during 2014-2020



Source: Structured MARD extension services survey

Also, in the future, there is expected a positive trend in investments. Differences in views may reflect different regional patterns (similar to above).

Figure 11: Expected investment trends in the next 7 years

Source: Structured MARD extension services survey

Italian processing lines, notably Peralisi, are sold through a representative in Albania, which also takes care of related services. While most lines imported from Italy are new, it is common to import second hand lines from Greece.

They have brought 6 factory lines in 2020, and 8 per 12, which saves 2 liters / 100kg olives (3 phases).

The last years, there has been a growing request for larger lines. For example, one processor in Vlore and one in Lezhe recently bought large lines, 5 ton/ hour each.

7.3. THE INVESTMENT CLIMATE

Farmers continue to invest in new plantation, but the choice of seedlings and varieties is chaotic and the purposes of investments are also different as highlighted in section 2. Despite the drops in prices during the last season which has demotivated some farmers to continue to invest, others still see the production and sales of olive and olive oil as less demanding and less risky compared to other sectors.

COVID19 presented a shock to the sector. The most hit segment was HoRe.Ca. However, in the long run, the continues tourism growth is expected to contribute to growth in demand and thereby also in investments.

Investments at processor level will be conditioned also by EC legislation approximation and implementation. If EC legislation related to olive oil was to be enforced in Albania, most operators had either to go out of business or to make investments to comply. Possible investments related to waste treatment investments depend also on the legislation and its enforcement.

A more detailed analysis of investment needs and stakeholders' new investments' expectations is provided in chapter 9 below.

8. VALUE CHAIN ORGANISATION AND ENABLING ENVIRONMENT

8.1. VALUE CHAIN MAP³⁶

In most cases, olive oil processors mainly act as service providers for farmers - they process the suppliers' olives into olive oil against cash payments (mostly in the range of 800-1,000 ALL/100 kg) or in-kind fee (an agreed quantity of olive oil is retained by the processor). Some of these processors sell olive oil – for example they buy from farmers at 400 ALL/litter and sell it for 500 or 600 ALL/litre. These processors have no direct links to retailers or supermarkets and sell their own olive oil mostly directly to households/consumers visiting their villages but also to bottling companies, small shops or restaurants.

The main business for large olive oil processors/bottlers, consists in supplying formal trade channels (shops and supermarket chains) with branded olive oil. However, these processors also provide oil milling services to farmers.

Larger olive oil processors/bottlers procure the olive oil from small, localized olive oil processors and medium size processors but also directly by farmers. The bottlers also import large quantities of olive oil. They have organized sales forces and distribute directly to tens or hundreds retail outlets, wholesale markets and restaurants all over the country. Each of them has an estimated several delivery vans with a driver and a salesperson. The marketing costs of this category of processors are therefore quite high.

High quality olive oil processors tend to avoid in-kind payment to preserve the quality of their own olive oil (by not mixing it). In this channel, the largest part of sales is made directly to households, so that their marketing costs are very low (in touristic areas, such as South-West Coast, local and foreign tourists buy large quantities of olive oil).

The flow of information among actors in the chain is limited. Only in few cases, particularly in small modern processors' channels, farmers are advised from processors, especially regarding harvesting and post-harvesting activities. This is especially the case for organic olive oil processors. Generally, market information is scarce.

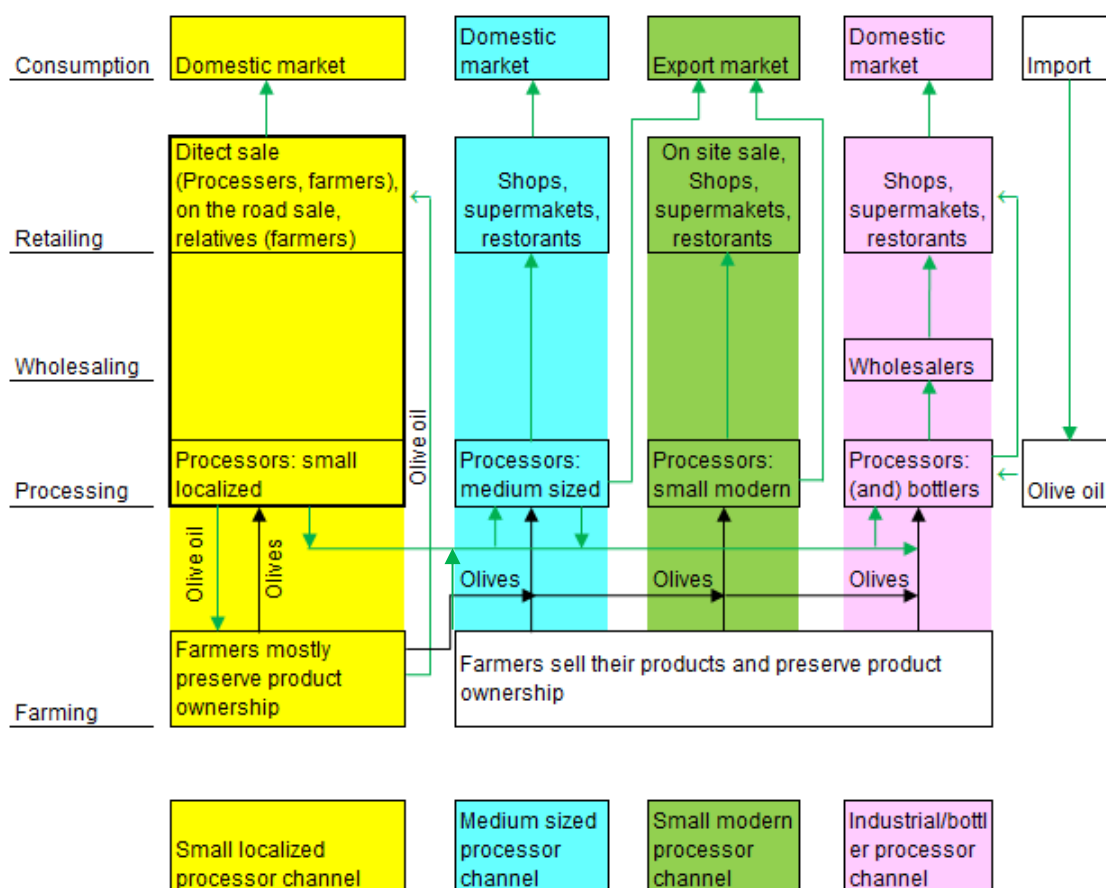
The financial relationship between farmer and olive oil processors is simple – farmers pay a fee which may be in kind (olive oil) or cash for the service offered by processors. In case when processors buy olive from farmers, they usually pay farmers with very short time payment delays, often asking bank loans to cover these financial needs.

Given that the olive oil processing industry is designed as a service-based activity, in which processors offer olive oil processing to farmers, and financial transactions are overwhelmingly on spot payments, the chain governance (organization) is rather missing or weak. Having said that, some leaders in the chain have established durable relationships with olive farmers, especially for high quality olive oil production, while others have invested in their olive groves.

Figure 12 below maps the olive oil value chain actors and the main channels through which olives flow from farmers to end use consumer.

³⁶ As in Albania, the term “value chain” is commonly adopted to describe the structure of a sector and the relations between actors (which, by the way is the same definition used by FAO), in our studies we use the term *value chain* as synonymous of *commodity chain*.

Figure 12: Olive oil value chain map



Source: Skreli and Imami (2019)

The main distribution channels of olive oil

Most *urban dwellers* buy olive oil directly from producers (farmers or factories) or in mini-markets and traditional retail outlets. Imported olive oil is mainly sold through supermarkets.

Restaurants and other catering outlets often buy the cheapest qualities of olive oil, limited purchasing of higher quality olive oil is made by high-end restaurants. In the past Ho.Re.Ca. could source olive oil from different sources; increasing formalization will imply that they will be less likely to buy from farmers. Restaurants that are not interested in high quality olive oil, may buy cheap imported olive oil (which can be purchased at relatively low price and in a formal way).

Retail shops and green markets are the main market channels in rural areas where there is no olive oil production.

Over the years have emerged also two interesting trends with implications for the supply chain:

- Some households or groups of households, coming together, and buying olives and bringing them to the factory the same day, to meet their needs olive oil needs for whole year.
- There are cases of farmers harvesting olives in Southern Albania or in Greece who are paid in kind (e.g. ½ of the olive oil produced from the processed olives); the quantity of olive oil received as a payment is often more than they need for their families, so they sell part of the products to different types of buyers.

Table Olives

In general, trade links in Berat are more stabilized and formal than in other parts of the country, with prices which are agreed for the whole season and long-term trade relations between farmers, collectors and processing plants.

Most table olives in Berat are directly sold for processing. A few farmers having larger olive groves and higher production, harvest and process the olives as table olives in brine and preserve them in drums, selling the processed olives to wholesalers in the next months.

Processors of table olives are supplied both by local collectors and individual farmers. During good production years, local production meets well the domestic demand and the trade balance is positive. But during bad production years, the same operators who work with local production engage in importing (e.g. from Greece).

Table olives are mostly purchased by the weight (i.e. not in retail packaging) in traditional retail outlets and, in lower quantities, in green markets. Restaurants and other catering outlets remain a major channel for table olive retailing.

8.2. VALUE CHAIN COORDINATION

The main channels of collecting raw olives for processing are direct purchasing from farmers and procurement through (local) collectors or agents. Some larger companies located far from the raw production areas, use consolidators which serve as agents or middlemen, facilitating the contacts.

Relations along the chain are important. Direct links may strengthen trust and assure the quality of the output. Relations, as perceived by farmers are more stable when dealing with processors than with traders – most farmers who sale olive to processors, sell mainly to the same processors, as compared to other channels where spot market prevails. This finding indicates that processors have shortened the linkage with the farmers (Zhllima et al, 2015).

Vertical integration is increasingly common in the olive oil sector. Some processors have invested in planting their own olive groves. Such vertical integration may be useful in decreasing raw olive costs (by producing olives instead of buying them), as well as transaction costs.

It is common for consumers to buy olive oil directly from producers (farmers or factories) in Albania. In consumers' perception, directly buying from producers is a way to get better quality and "genuine" products as compared with bottled olive oil perceived as "industrial"; building long-term relationships with producers and suppliers maybe important for consumers. For most consumers (more than two-thirds of respondents in the study), the main indicator of a guarantee of quality is personal, direct interaction and familiarity with the producer³⁷. There is also a pattern of "consumer cooperativism" – groups of households get together to buy/order olives from farmers, bring the olives to the factory for processing and taking the olive oil, after paying the processing fee. They typically keep olive oil in 5 or 10 litres plastic containers.

As for the olive sold from factories or farmers to families, it is common to have them sold by quantity (with the container brought by the customer) or in 5-10 litres) plastic or tin containers; smaller packaging (e.g. 1 or 1.5 litres glass bottles or tins) are also found and common for high quality olive oil processors. As mentioned, nowadays there is awareness for the quality of packaging not only factories, but also farmers are increasingly using new plastic bottles for the olive oil.

Thus, in the case of olives and olive oil value chain the short value chain is typically dominated by direct sales from producers to households, thus leaving contract farming unattractive for the largest part of these sectors.

There are several implications of this. First, the short value chain is and will remain an important channel of sales for small farms in the near future for certain agrifood products, such as those mentioned above. However, in the

³⁷ FAO (2020). Smallholders and family farms in Albania - Country study report. <http://www.fao.org/family-farming/detail/en/c/1296753/>

Imami, D., Zhllima, E., Canavari, M., & Merkaj, E. (2013). Segmenting Albanian consumers according to olive oil quality perception and purchasing habits. *Agricultural Economics Review*, 14(389-2016-23484), 97-112.

longer run, the loss of social ties among urban consumers and producers, along with the further professionalization and formalization of production and sales, will pose a threat to short value chains. Farmers, who rely on direct sales, might find themselves gradually marginalised and eventually cut off from consumers' market. On the other hand, the current pattern of direct sales, combined with consumer preference for products from special territories, represents a potential for agri-tourism that should be capitalized on.

8.3. COLLECTIVE ACTIONS

Cooperation is still a limited feature among Albanian farmers. Horizontal cooperation or cooperation among actors at olive sector is rather limited.

Since there is no pest management in the majority of olives groves, the most common form of coordinated action or cooperation between olive growers does not occur in Albania. The few existing forms of cooperation are not based on joint use of agricultural machinery.

Donor projects such as USAID, Italian Cooperation or Food and Agriculture Organisation (FAO) supported the joint acquisition of knowledge and skills and in few cases the olive oil processing in groups, but still there are no successful and lasting collective action initiatives in this sector.

One cooperative in the olive oil sector (registered as Agricultural Cooperation Association (SHBB) is the "Federation of Elbasan Farmers". The cooperative enables olive collection and olive oil production, joint input provision and product marketing, agricultural machinery services. The establishment and functioning of this cooperative has relied substantially on donor support.

Another form of collective action is "Nucleus Albania" which is a non-governmental organisation (NGO), founded in 2014 by five Albanian private business associations within the framework of a GIZ project aimed at applying the "Nucleus" approach³⁸ in Albania. The NGO supports the establishment of "nuclei" or groups of operators implementing joint actions with the support of a counsellor.

One of the most successful "nuclei" was established in the olive and olive oil sector, involving 10 olive growers and 15 olive oil producers and the sector association (AOA-Albanian Olive oil Association) for joint marketing actions.

Overall, the growth in production and the market changes has affected positively farmers' willingness to cooperate within themselves and with buyers. More than half of the interviewees of a previous survey stated that there is increased need for horizontal and vertical cooperation³⁹. Thus, in the future, we may expect cooperation initiatives if proper support will be provided.

³⁸The MSME Nucleus approach aims to support MSMEs by strengthening their cooperation and improving MSME business services via a national network and information sharing platform.

³⁹Zhllima, E., Imami, D., Leonetti, L., & Skreli, E. (2015). Small farm access to market. The case of the olive sector in Albania. In AGRIMBA Network Congress "Smart agribusiness for the society of tomorrow" Porec, Croatia, 17 and 18 June 2015 (p. 153).

9. IDENTIFICATION OF POTENTIALS AND NEEDS OF THE SECTOR

9.1. KEY SECTOR TRENDS

The key trends of the sector can be summarised as it follows:

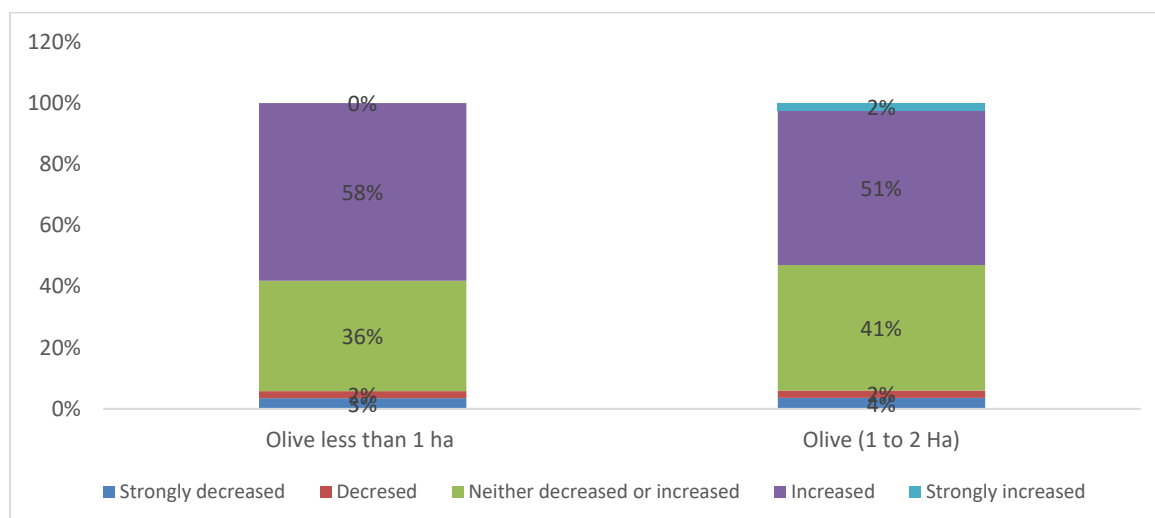
- Increased production trends (both olives and olive oil)
- Increased consumption trends
- Decreased imports - they cover ca5% of the local demand.
- Increased exports, still remaining at modest level.
- Growing awareness and preferences for high quality olive oil, implying greater market opportunity for high quality local production (including organic olive oil and products with GI or guaranteed by other quality or origin scheme).
- Improving conditions and know-how among leading high-quality olive oil producers, whose output quality can be considered very high.

While each year there reported new investments in new processing lines or new factories, there are also cases of olive oil factories going out of function, and stopping operation. For example, one of the high-quality olive oil processors located in Tirana, that was interviewed, stopped operations. The factory became too old, and new investments were needed to function properly, but that was not deemed feasible or profitable enough. As the number of factories has been increasing, margins are falling. Although the production of olives increased substantially, the increase in the processing capacities was even higher, resulting in huge over-capacity. According to some estimates, most olive oil factories operate fully only few days per year. Many have loans to repay, and the increased competition makes their situation even more difficult.

9.2. INVESTMENT EXPECTATIONS

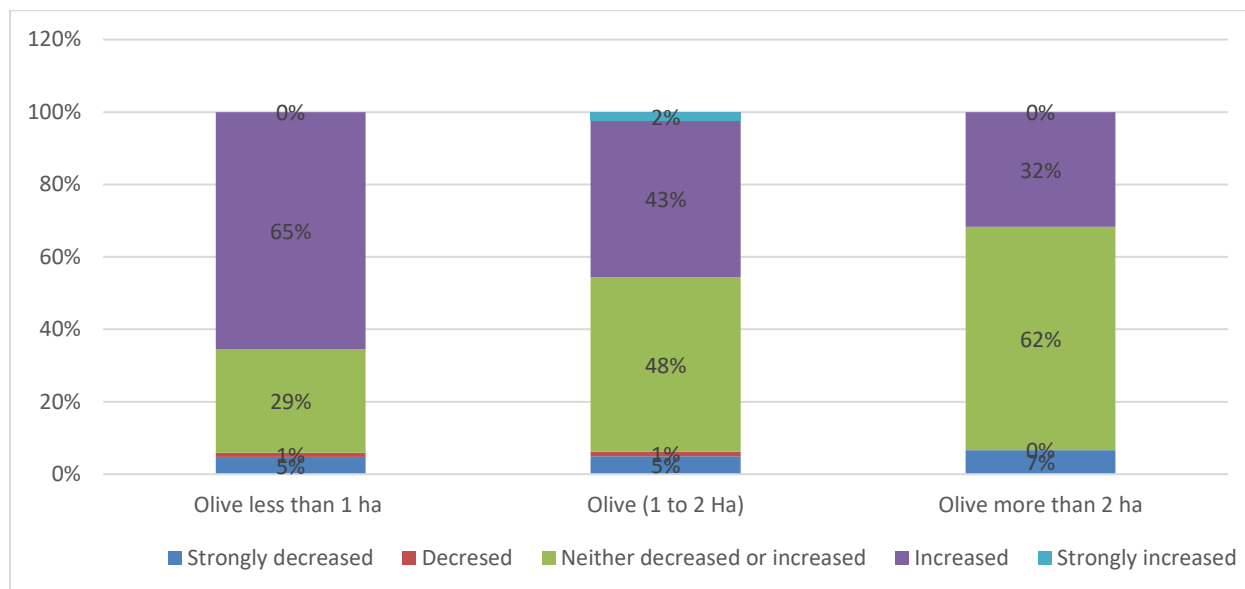
Surveyed extension specialists foresee that the number of farms engaging with olive production will increase in next programming period. The strongest increase is foreseen for farms up to 1 Ha, followed by those 1-2 Ha. Limited availability of land does not enable many farmers to invest in large groves.

Figure 13: Expected trend of number of farms during the next 7 years



Source: Structured MARD extension services survey

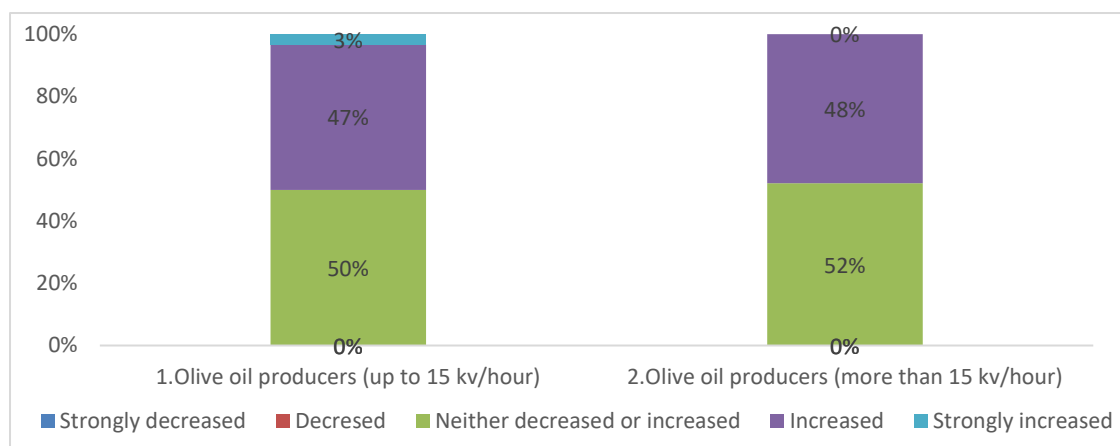
Figure 14: Expected investment trends in the next 7 years (2021 – 2027)



Source: Structured MARD extension services survey

Also, the number of olive oil processors is expected to increase in the coming years, based on extension survey.

Figure 15: Expected trend of no. of processors during next 7 years



Source: Structured MARD extension services survey

9.3. SWOT ANALYSIS AND POTENTIAL NEEDS OF THE SECTOR

The following SWOT analysis strategy is conducted with the objective of identifying financing opportunity in the olive oil sector at farm level. Note, that in the case of SWOT analysis at primary/farm level, we have included also aspects related to olive oil retained and sold by farmers, since, in this specific value chain, it is impossible to have a clear cut between both activities.

Table 9.1: Olive farm: SWOT analysis strategy

	OPPORTUNITIES (+)	THREATS (-)
	High and increasing domestic demand for olive oil	High production risk related to climate change effects
	Growing tourism, including growing rural and agri-tourism, implies growing market potential	Accumulation of olive oil reserves at farm level (e.g., 2020 – 21 season)
	Growing demand for high quality and organic olive oil.	Improving efficiency in distribution increases the chances of importing olive oil with a better price/quality ratio, thereby making it more difficult for farmers to sell both their olives to olive oil processors and also olive oil.
	Favourable government policy for the sector	Pressure for formalization will make it more difficult for farmers to sell olive oil (e.g., to HoReCaetc).
	Favourable agro-climatic conditions for olive oil production, with good soil and climate conditions, and existence of olive oil clusters in various parts of the Country.	Weakening social ties between rural and urban residents (e.g., family and other ties) which will make it more difficult to sell directly to households.
	Strong consumer preference for local olive oil and to buy olive oil directly from farmers / producers.	Degeneration of some local varieties such as Kalinjot.
	Available processing capacity and presence of olive oil mills in all olive producing areas, which makes it easy for farmers to process their olives	
	Olive oil production has	
	Improving provision of services from private sector	
	Olive production has limited environmental impact.	
STRENGTHS (+)	<i>Exploitation</i>	<i>Adjustment</i>
Tradition and consolidated knowhow in olive production both for table and olive oil processing	Support planting/replanting of local olive varieties.	Support planting/replanting olive groves for relatively large farmers also as a (production) risk mitigation mechanism
Cultivation of local varieties with a very good commercial potential both for table and processing	Support and stimulate local varieties, traditional image of domestic olive cultivation and GI.	
Sizable added value per production unit related to short value chains		Support planting (completing) in existing olive groves.
Existence of olive producers' clusters in Berat and Elbasan.		Investment in modern irrigation systems also as a (production) risk mitigation mechanism
High and increasing domestic demand for olive oil, keeping high the raw olive price		
Growing tourism, including growing rural and agritourism, increases market potential for short value chains		
Increasing demand for qualitative and branded olive oil and table olives.		

Favourable government policy for the sector		
Favourable agro-climatic conditions for olive oil production, with good soil and climate conditions		
Strong consumer preference for local olive oil and to buy olive oil directly from farmers / producers.		
Available processing capacity and presence of olive oil mills in all olive producing areas, which makes it easy for farmers to process their olives		
Olive production need limited adjustments to comply with stricter environmental standards		
Consumers consolidated practice to buy olive oil directly from olive growers		
Increasing demand for agri-tourism provides opportunities for olive farms with old olive groves in suitable areas		
WEAKNESSES (-)	<i>Improvement</i>	<i>Protection</i>
Fragmentation of olive production base	Support new plantations using local cultivars for large farmers in the first place; irrigation systems	
Low production yields		
Low quality of olives, due to poor agronomic, harvesting and post-harvesting practices.	Support improvement of the quality (production technology and especially post-harvest)	
Lack of equipment (e.g. related to harvesting)		
Insufficient farmers knowhow or inappropriate practices related to pruning, fertilization, protection, harvesting techniques and lack of efficient tools	Increase farmers' know-how to improve quality of production and organic cultivation.	Stimulate farmers to adopt sustainable production practices (IPM, GAP) in line with modern distribution demand.
Part of olives are planted in locations which are not suitable		
Some varieties that have been planted are not suitable to local conditions.	Support the substitution of current with more appropriate varieties.	
New plantations are not established on the base of proper technical advice (location, varieties, etc.)		
Farms hardly carry out any lab analysis (e.g. soil analysis)	Support access of farmers to accredited laboratory analyses.	
Lack of stable relations with olive oil processors (to sell olives)		Stimulate horizontal cooperation among farmers and development of value chain relationships between farmers and processors.
Lack of producer organizations		
Inadequate coordination of logistics in harvesting period, affecting performance and quality of product.		
Lack of storage capacity affects quality of olive oil directly sold to consumers		

High production risk related to climate change effects		
Accumulation of olive oil reserves at farm level (e.g. 2020 – 21 season)		
Improving efficiency in distribution increases the chances of importing olive oil with a better price/quality ratio, making it more difficult for farmers to sell both their olives to olive oil processors and olive oil to final customers.		
Pressure for formalization will make it more difficult for farmers to directly sell olive oil (e.g. to HoReCa etc).		
Weakening social ties between rural and urban residents (e.g. family and other ties) which will make it more difficult to sell directly to households.		
Degeneration of some local varieties such as Kalinjot.		
Increasing scarcity and cost of agricultural workforce, especially in harvesting period		
Still inadequate availability of public and private services		
Planting olives is sometimes perceived as a cheap tool to reassert property rights in planted areas rather than a productive investment		
Inadequate plant protection practices when subsidies are not available, especially for olive-oil oriented productions		

Table 9.2: Olive processing: SWOT analysis strategy

OPPORTUNITIES (+)	THREATS (-)
Growing production trends of raw olives.	
High and increasing domestic demand for olive oil	Accumulation of olive oil reserves both at farm and processor level (e.g. 2020 season)
Some export demand for high quality olive oil	Strong competition from production from other Mediterranean countries (especially Italy, Greece, which are neighbouring countries)
Favourable government policy for the sector	Pressure for formalization increases processing and distribution costs.
Potential support to introduce GIs.	Growing pressure to comply with national and EU standards - lack of compliance with certain standards.
Strong consumer preference for local olive oil and to buy olive oil directly from farmers / producers.	Fragmentation of olive production base results in excessive farm-gate price of olives.
Growing production trends of raw olives and cultivation of local varieties with a very good commercial potential	Low quality of olives, due to poor agronomic, harvesting and post-harvesting practices at farm level.
Olive oil production has positive carbon balance.	GIs not yet functional
Climate change impact will make	Lack of pomace oil refinery increase

	perennial Mediterranean crops more viable than annual crops in areas affected by scarcity of water	complexity of virgin olive cake management
	Cultivation of local varieties with a very good commercial potential	Unstable relations with farmers (the yearly demand for oil milling services and the willingness of farmers to sell raw olives and olive oil is scarcely predictable)
	Strong consumer preference for local olive oil	GI introduction will segment the market, generating a downward price pressure on processing companies which have not a brand
	Growing interest and favourable market structure in introducing GI.	
	Possibility to import qualitative olive oil and table olives in bulk when raw olive price grows too much	
	Processing capacity oil mills can absorb larger production without additional investments.	
STRENGTHS (+)	<i>Exploitation</i>	<i>Adjustment</i>
Tradition in olive oil and table olives processing		
Consolidation of several olive oil processor and table olive processor.		
Improving know-how base in processing and in some technical services.		
Processing capacity oil mills can absorb larger production without additional investments.		Support renovation on olive oil processing lines
Some small oil mills have reached high quality standards, gaining national and international awards.	Support marketing and branding of quality olive oil.	Support investment in storing capacity
	Develop eco-label declarations, including based on the use of the carbon footprint calculations.	Support bottling and labelling equipment
		Support refinery projects
		Support waste processing projects
Service & mediation business model is financially efficient (low financial immobilisation)		
WEAKNESSES (-)	<i>Improvement</i>	<i>Protection</i>
Fragmentation of olive production base resulting in excessive farm-gate price of olives		
Low quality of olives, due to poor agronomic, harvesting and post-harvesting practices.		
	Support high quality (extra virgin, organic)	

		Generate added-value products from olive oil waste and by-products
High degree of informality at processing level.		
Low level of capacity utilization		
Low/limited cooperation with farmers		Stimulate collaboration among processors and development of value chain relationships between farmers and processors.
Growing number of outdated factories	Support renovation of old processing lines.	Support investments to modernise and rationalise olive milling to reduce production costs
Scarce oil storage capacity affect olive oil quality	Support investments in storage capacities.	
Lack of investment in bottling and labelling	Support investments in bottling and labelling.	
Lack of olive oil refinery (pomace oil)		Invest in environment-related initiatives.
Lack of investment in olive oil waste processing		
Climate change impact will require additional investments for irrigation in some areas and make cultivations not viable in some lowland areas.		
GI introduction could create downward pressure prices on olive-oil oriented productions in areas where the value chain is less organised	Support and stimulate adoption of GI and organic schemes.	
Strong consumer preference to buy olive oil directly from farmers / producers		
Processing overcapacity affecting fixed costs		

By-products are seen as waste and not as a complimentary source of revenue or of cost reduction. Use of by-products as alternative and cheap source of energy is limited to very few mills.

9.4. INVESTMENT NEEDS AND PROSPECTS

9.4.1. Investment at farm level

Based on interviews with value chain stakeholders, structured survey with extension survey and SWOT analysis and investment trends, investment financing needs at farm level are summarised here below.

- Investments in planting or replanting of olive groves, with priority of local /autochthon cultivars and in rehabilitation of old olive groves
- Support planting (completing) in existing olive groves
- Irrigation systems: equipment, tools and machines to improve irrigation and fertigation, drip irrigation and irrigation wells
- Support specialised machineries for olive groves, including harvesting tools, equipment and premises (shakers, grinders, etc.)
- In-farm storage capacities (inox steel tanks)

Investments needed for organic certification

Huge efforts are needed to improve farming technology (for new plantations and existing olive groves) for Albania to compete at low cost with olive oil imports from Mediterranean countries. Hence, there are opportunities to finance new plantations and reconstruction of existing olive groves plantations.

9.4.2. Investments at processor level

Based on interviews with value chain stakeholders, structured survey with extension survey and SWOT analysis and investment trends, investment financing needs at processor level for which there is a willingness to invest are summarised the following.

- Renovation, completing and retrofitting of existing processing lines
- Investments related to olive production agri-tourism (testing and exposition rooms)
- Support olive oil storage capacity
- Investment for introduction of quality-controlled production and schemes, such as organic production, quality certifications, GI etc.
- Bottling, labelling and packaging lines

After the major flow of investments and renovation of olive oil mills in the first decade of 2000, investments were mostly addressed to update/improve existing facilities and lines; there is now a need to support technology renovation for a significant part of processing plants that are getting older or out-dated. It is recommended that the investment in technology renovation for experienced companies should be supported with priority compared to new start-ups. Investments in building new olive oil factories should be considered with caution, considering the fact, that most olive oil processing units are operated far below their capacity.

Given that olive oil proper storage capacity is rather missing, processors report a need to simply develop the storage capacity for the whole olive oil industry (implying most olive oil processors). Investment in olive oil storage capacity is a major factor to improve of olive oil quality, together with fruit quality and processing technology and know-how; It will also increase traceability of product and reduce frauds. Investing in storage capacity does not necessarily mean a substantial change in the structure of the supply chain, with the gradual elimination of short value chains olive grower-final consumer, which now represent a large, if not a majority share of total olive oil trades. Storing in oil mills the olive growers' olive oil can be also a provided as a fee-based service; experiences in this sense (e.g. in Novosele) date back to over ten years. A scheme of renting smaller tanks to olive growers willing to keep in-farm their olive oil is also feasible, adapting the scheme which is currently adopted by several dairy industries, which organised an articulated scheme to provide dairy farmers with cooled or insulated tanks.

Bottling, labelling and packaging capacity in oil mills and industrial processors also represents an important opportunity for financial institutions and government support, given that only a handful of oil oils have such equipment.

As for the table olive processing, the types of investments considered of interest by larger operators include: i) olive pitting machines, petiole removers and, sorting/grading equipment, slicing equipment, oven/driers⁴⁰, additional storage capacity.

Destoner, cutting equipment (for pizza making); removal of tail; Selectionare that standardize by size; drying furnace - Furra per tharjen e ullirit; expand storage capacity.

9.4.3. Options for sector strategic investments

Some investments or categories of investments are linked to major opportunities or threats. There is a limited demand or not yet a manifest demand for these investments, but there is a clear need or scope for such investments, such as those ones to recover olive oil processing by-products from what is now a polluting waste.

In other cases, like the establishment of a pomace oil refinery, this is widely considered as an opportunity, but the implications for the whole commodity chain and the risks of such investments are often not completely clear or understood.

Finally, there are much desired developments, such as the establishment of quality schemes, including GI, which do not need much investments in fixed or material assets, while require for their sustainability important investments in intangible assets and improvements in value chain governance; as such, only part of the required investments can be supported through IPARD.

By-products recovery from olive oil processing activities

Managing oil mill waste, especially vegetation waters to produce valuable by-products is a key issue, as not managed oil mill waste is an important pollutant. There is a major need for investments in this area, which is a high-ranked priority; at the same time, such investments are not included among those ones for which there is high willingness/priority to invest.

At present, release in the environment of non-treated vegetation waters is the main environmental threat caused by the olive oil industry. According to existing legislation on waste management, vegetation waters should be treated before being released in the sewage system; as alternative, septic tanks or decantation pools should be used. In fact, no or sporadic controls are made and in most cases the vegetation waters are just dumped in the environment.

Secondary legislation on possible uses of vegetation waters has not yet produced, so the solutions most commonly adopted in other countries⁴¹ or alternatives solutions⁴² more recently applied are not applied in Albania and, at least according to legislation, would be legally disputable.

Virgin olive cake is somehow managed, being dried - in most case not properly- and sold as fuel. There is vast room for improvement (extracting more valuable by-products, drying better and in a less environmentally-impacting way the cake to be sold as fuel etc.), but the overall present environmental impact of virgin olive cake is limited, even if there are with some notable exceptions.

The feasibility of establishing a pomace oil refinery in Albania

The feasibility of establishing of a pomace oil refinery in Albania has been increasingly a matter of discussion among value chain actors in the last years.

Because of the size of the investment and the changes it would generates in the olive oil market as well as in the

⁴⁰ Used in some table olive preparations

⁴¹ E.g. spreading on agricultural soils as fertigation source or for regeneration of organic content in impoverished land, with maximum quantities per ha depending on soils and use. It is also common to have decantation pools in the oil mill and the use the water for irrigation, recovering deposits as fertilizer.

⁴² Among the most interesting, experimented solutions it is possible to include the use of vegetation water, mixed with ordinary water and molasses for small ruminants' drinking or the mixed agroforestry/phyto depuration solutions. Other technically feasible solutions that are not viable operational environment in Albania include production of biogas, use of ultrafiltration or reverse osmosis for purification of water and extraction of polyphenols etc.

business model of existing oil mills, this investment, if made, could represent a game-changer, even if the expected impacts on different commodity chain actors would be mixed.

Some of the main impacts of these infrastructures are worthy to be mentioned: i) it introduces a new product in the market, the refined olive oil, which, blended with virgin olive oil, allows the production of cheaper olive oil products (pomace olive oil and olive oil) as compared with virgin or extra-virgin olive oil; ii) it changes the management of olive cake produced by the oil mills: without the pomace oil refinery, every plant must manage the cake on its own, while a pomace oil refinery retires the virgin olive cake, extracts the olive oil content and produce as output exhausted olive cake, that can be uses only as fuel, as it is treated with hexane; iii) the cyclical changes in the price of virgin olive oil make in some years not economically profitable the extraction of pomace oil; as a consequence, the sustainability of the plant is linked, among other factors, also to the oscillations of virgin olive oil prices; another consequence is that the retirement of virgin olive cake is not always granted, so that back-up solutions must be in place in the different oil mills.

More in general, competition from other vegetable oils makes the feasibility assessment and the business planning of a pomace oil refinery a matter requiring a careful and prudent approach.

To be financially sustainable, a pomace oil refinery must be a relatively large business, requiring an investment of several million Euro. The plant should be located in a place that facilitates logistics with supply sources (i.e. oil mills providing virgin olive cake). In present Albanian conditions these conditions are satisfied only in the area encompassed by Lushnje, Berat and Novosele (North of Vlora).

Considering the above, should the investment result feasible and sustainable, in Albania there would be space only for one or maximum two of these plants.

Considering the size and the structure of olive oil industry in Albania, the feasibility and sustainability of this investment should be carefully studied. In fact, so far, no one of the subjects that showed interest to invest in this industrial infrastructure without subsidies.

Investing in quality schemes

A major opportunity related to value chain development comes from increasing demand and market opportunities for high quality and quality-controlled products, such as organic products, products with protected origin (GI), products with specific characteristics or guaranteed by collective marks.

The orientation towards quality mainly requires investments in intangible assets to improve quality along the whole value chain (services for quality control of production, disease control organic methods etc., appropriate containers and logistic for raw olive transports, services for traceability and quality certification), but would also require additional financial means for marketing and other intangible assets.

10. IDENTIFICATION OF TRAINING AND ADVISORY NEEDS FOR THE SECTOR

10.1. MAIN TRAINING AND ADVISORY NEEDS IN PRIMARY PRODUCTION

There are three main areas requiring training and advisory inputs:

1. *Seedling choice and quality.* The choice of varieties and seedlings is in most cases not based on an advised assessment of most appropriate options in function of pedoclimatic conditions and type of plantation (traditional, semi-intensive, intensive etc.).

As a principle, new plantations should be planned and made on the base of professional advice and, where appropriate, considering the results of soil analyses.

Also, certified seedlings should be used, selecting the variety and the type of seedling (self-radicated, grafted rootstock produced with seeds etc.) on the base of pedoclimatic conditions and structure of plantation.

The inappropriate choice of seedlings is a particularly complex issues, as it is not only a matter of training and advisory needs, but also of scarce controls on the traded propagation material; in absence of stronger law enforcement, the temptation of non-professional growers to go for the cheapest option (i.e. not certified propagation material) will be strong, especially when the subsidies for new plantations are generous; in this case the risk is having subsidy-oriented plantations rather than productivity/quality oriented ones.

2. *Plant protection practices and use of PPP.* Also, in this case, the effect of inadequate plant protection practices (or lack of) is the result of several causes, of which scarce awareness, knowhow and need for advisory and extension services is only one component.

In some cases (olive fly pest management) there is an underestimate of impact on quality of inadequate pest management and also a difficulty to organise coordinated actions; in this case advisory to individual farmers would be not enough. However, the success of subsidized olive fly contrast campaigns shows that there is a certain awareness of the issue, but that without subsidies the market pressure from qualitative products is not strong enough to induce farmers to cooperate and spend for olive fly control.

A different issue is related to inappropriate or excessive use of PPP in specialised plantations, especially in the case of table olives. Extension and advisory function for the use of PPP are mostly provided by input dealers, so that it would be necessary to get additional and unbiased training and advisory function.

With specific reference to organic olive growing, there is a divulgation need for the practices experimented in Vlora ATTC and different from those introduced in the late nineties with support from VirginiaTech⁴³, which are relatively widely known, but considered too expensive.

Training and advisory activities are also necessary on use of individual protection when applying PPP.

A separate and additional issue is related to growers' awareness of olive diseases or control of pests different from olive fly; in general, these diseases are scarcely known to farmers and their impact is underestimated⁴⁴.

3. *Adequate harvesting and post-harvesting practices.* Farmers should be trained in efficient and timely harvesting and storage techniques. From past experience there has been a substantial delay in the collection and storage of olives, which influenced negatively the quality of olive oil.

Previous experience shows the positive impact of these training: as a result of training provided by various donor projects (FAO, SASA, etc.), some olive processors have implemented specific requirements regarding the harvesting period, the timing of deliveries to the processing line, and the condition of the olives. These improved harvesting practices are typically promoted by the small, modern processors who produce high-quality extra-virgin olive oil. These processors ask their farmer suppliers to harvest and deliver olives just before complete ripening to get higher-quality oil.

⁴³ The Virginia Polytechnic Institute and State University introduced in Albanian in the late nineties an olive fly control system based on use of pheromones, within the framework of a USAID project. The method proved effective, but expensive, as pheromones are not produced in Albania. As a result, each trap cost about 1 USD, which is considered too expensive by most farmers.

⁴⁴ Even in ATTC Vlora, several plants which are part of the varietal collection or even those in the mother blocks are affected by bacterioses (e.g. *Pseudomonas Sevastanoi*) related to the frequent cutting for the extraction of wooden parts to produce propagation material.

4. *Importance of olive oil proper storage.* An important share, if not the majority of olive oil is channelled to final consumers through the olive growers, using oil mills as milling service providers. In-farm storage conditions are often quite poor, with consequent rapid loss in olive oil quality.
5. *Marketing training and advisory.* Most farmers are not market oriented and do not treat olive as real commercial activity. Their motivation and capacity to pay for private advisory services is therefore limited. Although some larger, market-oriented farmers may have an interest and financial capacity to pay for advice, the problem is that for plant protection, their situation depends also on that of fellow farmers. There is a wide range of training and advisory activities that can be provided on olive products.

FAO gender-responsive training

FAO implemented a project to support extension services in providing gender-responsive and innovative training that would link farmers with agricultural innovation. The training model, which pilots were delivered in Berat, Korça and Shkodra consisted of one-day theoretical training, one-day practical training, and half-a-day training on income diversification and economic opportunities in agriculture. For example, within the training in Berat on olive oil production and diversification, women were trained on the production and commercialization of soap with remaining oil no suitable for culinary use.

10.2. MAIN TRAINING AND ADVISORY NEEDS IN OLIVE PROCESSING

Olive oil processors are in general long-established activities and processing units' managers/owners are generally knowledgeable about their business. The olive oil processing lines are rather standardised and well known (a few models, mostly from the same supplier), while equipment for table olive processing is quite simple. The main needs for training and advisory inputs are described below

Olive oil processing technology. Olive oil processors are mostly satisfied from their old and reliable equipment. Improvements are mostly considered in terms of retrofitting, changing part of a line or adding a segment of it. Even when replacing a line, the most common choice consists in buying from Greece or Italy second-hand lines in good conditions.

However, many of the existing processing lines are ageing and becoming technically obsolete; some retrofit is still possible⁴⁵, but the limits of adapting/complementing older processing lines are emerging.

The leading supplier of olive oil processing lines has a permanent representative in Albania and is providing advice on new technologies and equipment; however, the dominant position of this supplier would suggest the opportunity to provide alternatives for awareness and training inputs.

Management of olive oil production waste; extraction of olive processing by-products

Olive processing wastewater (vegetation waters) management is a major issue primarily due to the lack of enforcement of existing law on integrated waste management: oil mills are not aware and have no knowhow about vegetation waters management also because they do not perceive the need for such knowhow (so there is a need, but not an actual demand for knowledge). Should actual demand for knowhow be induced by stricter law enforcement, the legal framework to make use of vegetation waters (instead of establishing a water treatment unit) and the capacity to provide training and advisory services would be not in place.

The most common techniques for vegetation waters management are well-known and simple, but require building up some competences and some pieces of secondary legislation (e.g. Ministry order on modalities and limits to the spreading of vegetation waters on agriculture soils).

⁴⁵ An example of widespread retrofit consisted in the introduction of boilers using olive cake to produce the warm water required by the processing lines themselves)

As a conclusion, this is an area where there is a major need for an organic knowhow-building effort, starting from training to the officers in charge of imposing the respect of environmental norms, to MARD technical staff, extension officers, agronomists and, finally, to olive oil processors. AOA could and should play a key role in this effort.

Other shortcomings are related to the appropriate management of virgin olive cake, whose processing knowhow is quite limited (for use and sale as fuel only) and generic (little knowledge and awareness of drying techniques, which are the characteristic of fuel-grade olive cake and how to control them etc.). In the recent past there have been EU and international development projects⁴⁶ that introduced experiences and some improved knowhow for the production of fuel-grade olive cake and its use as biomass fuel, but there is a vast scope to increase knowhow to widen the range of valuable by-products that can be sourced from virgin olive cake.

10.3. PROVISION OF TECHNICAL AND VOCATIONAL TRAINING

The Albanian Government has been undertaking a major reform in agricultural research starting in 2006. In 2006, national research reform gave the Agriculture University of Tirana (AUT) the leading position for scientific research. The MARD established five ATTC, which were charged with conducting applied research in various agricultural fields: ATTC Vlore in fruit trees, especially olives and citrus. ATTC Vlora has been running a mist propagation unit, the *in vitro* laboratory, cultivars collections and collection plots.

A bottom up approach is used to establish the ATTC annual research agenda, which involves farmers' representatives' extension agents, specialists, and other stakeholders. The typical problems that farmers have are identified through the extension network. These are then selected at the Ministry level for inclusion in the research agenda of the ATTCs. The ATTCs transfer the research agenda into on-farm-research projects. The results of these projects are diffused into field demonstration or through the cooperation of extension agents in the form of leaflets and brochures.

Farmers, who state that they were assisted by extension services, indicate that the main form of assistance was through direct on-farm advice (37 percent of respondents) and trainings (18.5 percent). Farmers who state that they had received (some form) of training in the past, confirmed that the main topics were: plant protection, farm management and production technology. Market aspects and cooperation are less frequent (Skreli and Imami, 2013 - Government Extension Service Impact Assessment).

As a result of the limited resources, the public extension services play a relatively small role in providing support and technical assistance to off-farm subsectors (i.e. processors, wholesalers and retailers). The limited supply for knowledge is important due to the need for more technological skills and reduced education levels in rural areas.

⁴⁶ Interreg ADRION, UNIDO

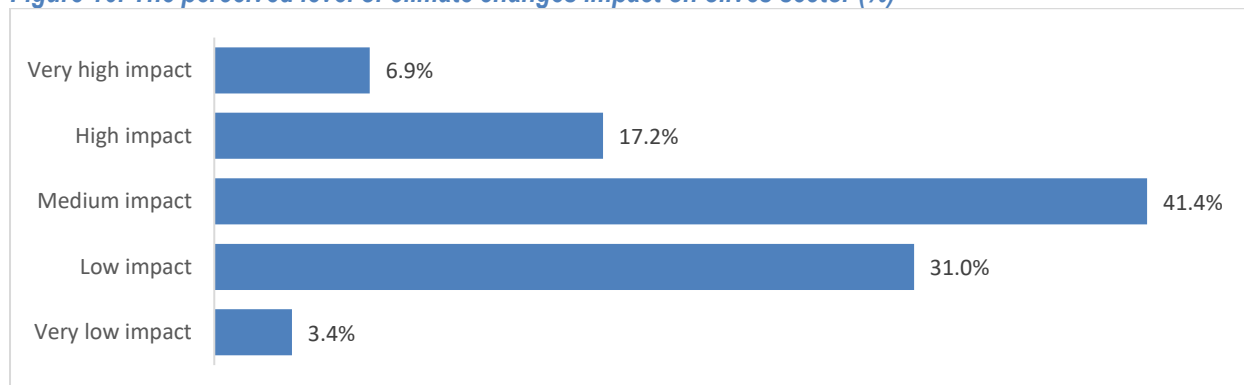
11. ALIGNING TO THE GREEN DEAL

11.1. CLIMATE CHANGES EFFECT ON OLIVE AND OLIVE OIL

One of the major challenges is represented by climate changes. Most olives produced in Albania are used for processing. Quality of raw olives strongly influences the quality of olive oil– for such products, competition in the local and international market is very strong, and high quality is indispensable to be able to sell, particularly to higher market segments. Thereby, these value chains are highly exposed to effects of climate changes, especially impact on quality.

There appears a “normal distribution” of the views on the impact of climate changes on production performance.

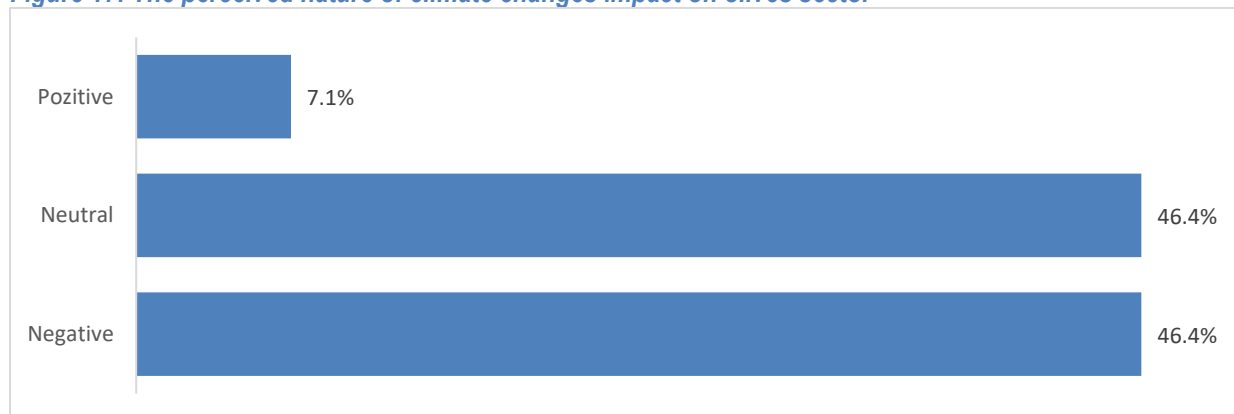
Figure 16: The perceived level of climate changes impact on olives sector (%)



Source: Imami and Skreli (2019)

About 46% of respondents view the impact as negative. Very few (7%) perceive a positive impact.

Figure 17: The perceived nature of climate changes impact on olives sector



Source: Imami and Skreli (2019)

The exposure of olives to climate conditions varies by region. Olives are particularly characterized by strong year-to-year changes in yields and also quality is largely affected by climate conditions, and such oscillations may get worse due to climate changes.

Heavy rains or hails during blossom period can affect yields and cause diseases, while in the case of draught, olives yield and size can be negatively affected, with particularly negative effects on table olives, where olive size matters more; in fact, support schemes for the establishment of drip irrigation systems have been very popular in Berat, the main area for table olive growing.

Also, variety plays a crucial role – old traditional varieties tend to resist better than some new imported varieties. It appears that autochthon old olives, are coping better with climate changes than some newly introduced varieties – although old groves need services (e.g. pruning).

Research showed that, globally, in the Mediterranean basin olive production is not going to undergo important changes⁴⁷. Locally, instead, there are going to be a few differences among North Africa, where the increased temperature does not dry up the land too much and may not be tolerated by parasites and there probably will be a profit rise of 40%, the Middle East, where a production loss of 7.2% is forecast, and Southern Europe, where olive production and profit will increase by 10%.

11.2. GENERAL ASPECTS OF EU GREEN DEAL

Olive and olive oil sector is not ranking high among those ones posing environmental threats, with the important exception of the oil milling effluents (vegetation waters and olive oil cake) which are important pollutants if not properly managed. However, there is a wide range of technologies and centuries old experiences on different management practices. In particular, about olive cake, there is a growing understanding that it could become a source of additional revenue, rather than a waste whose disposal cost is to be minimised.

It is worthy to underline that the establishment of an olive refinery serving the main production area would modify, but not solve the issue of olive cake management, as smaller quantities of virgin olive cake spread in several oil mills will be replaced a large stock of exhausted, fuel-grade olive cake. This would contribute to the establishment of a more structured market for biomass fuel, but at the same time will prevent using the virgin olive cake to produce by-products with higher added value (which anyhow now are not produced), thus limiting the great potential of olive cake to contribute to circular economy.

The issue of vegetation waters is more complex, as methods to get a real profit from their recycling are not suitable for the Albanian industry structure; however, there are relatively cheap and consolidated management methods, such as the spreading on agricultural soils, with maximum quantities depending from the nature of soils and the purpose of the spreading (fertigation or increase of organic matter in degraded soils). In these established practices costs are limited, but still exceed the financial benefits that the mill receives (farmers usually do not pay for the vegetation water spread in their land).

Other environmental issues to be considered are the following: i) agrobiodiversity problems: without interventions, there is a concrete threat of loss of autochthon germplasm (i.e. potential autochthon olive cultivars), ii) reducing waste and loss of nutritional qualities along the supply chain, i.e. a need for a sizable effort for overall adoption of the *Farm to Fork* approach.

Increased drive for quality could lead to a substantial increase in the use of PPP to contrast olive fly attacks. At present, pest management practices are scarcely applied and PPP are not much used, but consequences on losses and quality of products are sizable. The knowhow on biologic pest control is well established, as there is a consolidated protocol for the use of pheromones⁴⁸, but the method is considered too expensive and therefore scarcely applied when not subsidized. There have been also original experimentations for other methods of biological pest control, but were not followed by a practical large-scale application.

With reference to the contribution of the sector to the alignment to the EU Green Deal in Albania, Olive and olive oil sector is mainly relevant to the component “Farm to Fork”, with some important aspects also relevant to “Energy” (“Supplying clean, affordable and secure energy”) and “Biodiversity” (“Preserving and restoring ecosystems and biodiversity”)⁴⁹.

According to data of the International Olive Council (IOC)⁵⁰, the olive tree counteracts the greenhouse effect, sequestering more CO₂ (carbon dioxide) than the production of olive oil emits into the atmosphere. IOC’s data demonstrate unequivocally that a hectare of olive trees captures a person’s annual carbon footprint; that the

⁴⁷A study carried out by the Italian Agency for New Technologies (ENEA), led by Luigi Ponti of the Division of Sustainable Development and Innovation of Farming and Industrial Systems, analysed the evolution of olive cultivation in the next 50 years, considering a 1.8 ° C temperature increase (a little inferior to the 2 ° C forecast by climate models between 2030 and 2060). The model focuses mostly on the influence of global warming on plants and their relationship with parasites. Olive trees and fruit flies that infest them adapt differently to temperature increase and all areas of the Mediterranean basin respond to the parasite infestation in a diverse way.

⁴⁸ The use of pheromones for olive fly control method was first introduced in Albania USAID IPM CRSP project with experiments and protocols developed by ATTC Vlora with support from Virginia Tech since 1999

⁴⁹ Given the structure and operations of the sector, shift to sustainable and smart mobility is not a priority yet.

⁵⁰ Albania definitely accessed COI as from 06/03/2019.

production process from the field to the bottling of a litre of oil has a positive carbon footprint of 10.65 kg of CO₂. The IOC has developed an application for estimating the carbon balance of olive oil that can be used by IOC members to calculate the carbon footprint of olive oil production⁵¹.

In its study, the International Olive Council divided the olive growing areas into four homogeneous macro-regions: Western Mediterranean (which includes Albania and the other biggest producers: Italy, Spain and Greece), Eastern Mediterranean, South America and North America. Starting from a world average carbon balance with an absorption of 10.65 kg CO₂ per litre of oil, the analysis highlights significant differences between the various macro geographical areas. The average carbon sequestration level for the western Mediterranean is in line with the world one: 10.51 kg CO₂ per litre of oil. The highest level of absorption is found in the eastern Mediterranean, with 12.67 kg CO₂ per litre of oil and the lowest in North America, with 6.4 kg CO₂.

Among the factors that most impact on the environmental sustainability of the olive tree are irrigation but also the vigour of the individual olive varieties, thus demonstrating that biodiversity and environmental sustainability are closely connected.

Table 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
Olive production		
Limited and not systematic work for autochthon germplasm conservation, lack of certified propagation material for most autochthon potential cultivars, new plantations focused on international cultivars potentially hamper.	-	Biodiversity
Much limited agronomic practices cause some loss of soil nutrients but ensure higher soil carbon sequestration capacity.	+ -	EU climate neutrality Farm to Fork
Exploitation of water resources for irrigation and spread of irrigation in areas with sensitive water resources can impact the water balance.		Farm to Fork
Quality and quantity losses due to improper agronomic practices, pest management, olive harvesting and post-harvest logistics.	-	Farm to Fork
Olive oil processing		
Slow replacement of processing lines with state-of-the art equipment increases the quantity of oil which is not extracted and is wasted.	-	Farm to Fork
No management of pollutants vegetation waters	-	Farm to Fork
Widespread and increasing understanding of olive cake as a resource. Virgin olive cake and grinded olive seed (“nocciolino di sansa”) are already used as fuel, also inside olive oil mills.	+	Farm to Fork Circular Economy Clean affordable energy
Table olives processing		
No treatment of used brine causes some pollution.	-	Farm to Fork

⁵¹ According to IOC, published scientific studies document the positive environmental effects of olive growing – in terms of biodiversity, soil improvement, as a barrier against desertification, etc – and show how certain agricultural practices increase the capacity to fix atmospheric CO₂ in the soil and plants. In the presentation of the application, IOC explains that the regulatory frameworks developed so far for quantifying and reporting greenhouse gas emissions are based on a life cycle assessment approach. In these frameworks, the potential effect of CO₂ capture and storage by olive orchards is reported separately from global emissions. Hence, there is no single specific indicator to report the real positive effect of olive growing as an ecosystem that captures CO₂ from the atmosphere and stores it on a long-term basis in plants and the soil.

See <https://carbonbalance.internationaloliveoil.org/en>.

At present, with the exception of impact of vegetation waters (which should be treated, in accordance to existing legislation, but they are not), most of the above listed impacts (positive or negative) are relatively limited, as compared with the impact of other agri-food sectors.

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.

11.3. ACTIONS AND INVESTMENTS CONTRIBUTING TO ALIGNMENT TO EU GREEN DEAL

Providing incentives to maintain autochthon germplasm, re-starting the process leading to certification of autochthon cultivars propagation material.

There is a major scope for conservation of Albanian olive germplasm and for development of autochthon cultivars propagation material⁵². With existing system and infrastructures, a conservational approach should be pursued in most cases, including endangered germplasm/varieties within eligible crops under Measure 4.

Preferential treatment for autochthon cultivars under Measure 1 could be used only for the few cultivars for which certified propagation material could be obtained, the main ones being *Kaniniot* (commonly known as “Kaliniot”) and *Kryps Berati* (commonly known as “Kokermadh i Beratit”). Other local varieties which are not endangered (i.e. autochthon varieties whose population is classified as “average” or “large” in the catalogue of varieties⁵³), such as Mixan, Freng, various types of “white olive” (I Bardhi varieties) etc. could be considered for premiality under Measure 1.

Issue: Conservation threat to autochthon germplasm, decline in use of some autochthon varieties	EU GD relevant topics: Biodiversity
Proposed actions: <ol style="list-style-type: none"> 1. <i>Measure 1:</i> Preference criterion for new cultivations or rehabilitation of existing of autochthon varieties cultivations 2. <i>Measure 4:</i> Eligibility for cultivations and seedlings production of olive varieties classified as “small population” in catalogue of varieties 3. <i>Measure 10:</i> Preference criterion for counselling and advisory services for to increase cultivation of autochthon olive varieties 	

Improving performance and ensuring environmental sustainability in primary production

A major factor affecting the performance of the olive sector is the inadequacy of the production, harvesting and post-harvesting practices applied by the majority of primary producers, with low productivity, product loss and, unnecessary quality losses.

Improving performance, minimising waste, maintaining soil fertility, making optimal use of inputs and maintaining the productivity biologic potential of plants, without overexploiting them are all issues which are included into the Farm to Fork Green Deal component. However, not all these aspects and practices deserve a preferential treatment in the form of additional scoring, as most of them increase efficiency and eventually profitability, so should not need additional incentives.

A particular issue is related to the requalification of existing olive groves (rejuvenation through radical pruning, other agronomic practices exceeding ordinary activities). Past financing in this field have been not much successful in terms of absorption, especially as compared with demands for new plantations and farm machinery. Considering the above, existing olive groves rejuvenation could be considered for preferential treatment related to Farm to Fork

⁵² The process to go from germplasm to certified propagation material is lengthy and complex and includes the selection of pure germplasm, the clone selection, pre-multiplication and multiplication. Each stage requires facilities, knowhow and infrastructures that are only partially available in Albania and, when available, are often not properly operated and maintained or have been dismissed in different rounds of organizational restructuring.

⁵³ Ismaili (2013)

GD component, as it contributes to optimize the use of existing natural resources (making use of already existing plants, use of already planted areas).

As for organic farming, an issue in Albania is that several small qualitative plants are certified for organic olive oil production, but it is quite difficult to get certified organic raw olives for processing; most olive groves get minimal or no agronomic services, so that the analysis of residues in olive oil (made at oil mill level) does not show non-compliance with requirements; however, no agronomic services do not mean proper agronomic services under olive organic production regime. As a result, transition to a proper organic production regime in olive production should be supported and olive production should be included for support under Measure 4, which already in IPARD II foresaw this action

At *processing level*, all the actions leading to reduction of losses or maintenance of nutritional quality throughout the supply chain (primarily through better storage facilities) are relevant to Farm to Fork GD component. However, also in this case most of the interventions will eventually lead to increased competitiveness in terms of improved quality, lower losses and higher prices obtained in the market, so they have been not included as eligible for a specific preferential treatment related to the alignment to EU Green Deal.

A *different and specific issue is related to the management of oil mills effluents* (vegetation waters) and waste, to be used to produce by-products (olive cake). Environmental management of oil mills waste and effluents is not directly included in EU Green Deal, as it is or should be already an obligation under EU-harmonized legal framework on integrated waste management. In Albanian legislation the law on Integrated Waste management is already in force (Law 10463/11), but the inter-ministerial MoTE and MARD) secondary norm regulating agro-industry effluents and waste was not produced and anyhow is scarcely enforced.

Vegetation waters if not treated or managed according to appropriate practices are an important water pollutant and as such the effluent should be treated to comply with existing law, so it cannot be eligible for a preferential treatment. However, vegetation waters are rich in nutrients, so if the quantity of these nutrients is limited through different pre-processing steps these methods are in line with the Farm to Fork approach and if nutrients are recovered this is also in line with circular economy topics. Considering the above, *the way in which the vegetation waters are managed could be object of a preferential treatment* and it is recommended to follow this approach. All considered, it seems appropriate to attribute a preferential treatment under farm to fork component for uses of oil mills effluents and for olive cake that will suit to fertigation purposes (only in areas where this is appropriate).

As for the use of olive cake, most uses are more profitable than composting, so this solution is usually not preferred. However, this is a way to produce a good organic fertiliser, which can be useful in areas where organic farming is widespread and organic fertiliser scarce. This situation is not common in Albania, so that the cost of equipment and facilities to produce compost from olive cake will be considered as eligible expenditures, but not subject to preferential treatment.

The actions that could be supported through IPARD III are summarized below.

Issue: reducing losses, increasing quality throughout the primary production stage	EU GD relevant topics: Farm to Fork
<p>Proposed actions:</p> <ol style="list-style-type: none"> 1. <i>Measure 1:</i> Preferential treatment for rehabilitation of existing olive groves and adoption of sustainable irrigation systems (drip-irrigation). 2. <i>Measure 3:</i> Eligibility and preferential treatment for investments for implementation of traceability systems and improved control of residues; preferential treatment for introduction of vegetation waters management through phyto-depuration (cost for infrastructure) or spreading on soils suitable for fertigation (specialized farm machinery). 3. <i>Measure 4:</i> Eligibility of support to transition to organic farming (already foreseen in IPARD II) 4. <i>Measure 10:</i> Preferential treatment for counselling and advisory services for rehabilitation of existing olive groves and oil mills waste management 	

Making use of oil mills effluents and by-products for circular economy applications.

The processes that are used for the extraction of olive oil generate large amounts of by-products, such as a solid residue known as olive press cake (OPC) and large amounts of aqueous liquid known as olive-mill wastewater (OMW)⁵⁴. Vegetation water (OMW) and virgin olive cake (OPC) are rich in nutrients especially virgin olive cake, which keeps a good share of olive oil, which can be extracted in pomace oil refineries or used in a range of by-products.

Vegetation waters are now just dumped in water bodies without treatment, which poses an important environmental hazard. However, in Albanian situation, these waters can be used for fertigation or as an input for productive forestry (an application of phyto-depuration), while there are no conditions suitable for biogas production (very large oil mills are required for financial sustainability) or extraction of polyphenols and other components with various methods (ultrafiltration, reverse osmosis etc.). Evaporation methods could be applied, but relevant economics should be studied case by case.

Virgin olive cake has a number of possible uses, in addition to the simplest processing process into fuel-grade biomass, while exhausted olive cake (produced by pomace oil refineries, should these plants will be established in Albania) can be used only for biomass fuel.

Equipment for treatment of virgin olive cake to produce inputs for other productions different from biomass fuel, should be all considered for preferential treatment under Circular Economy Green Deal Component.

Issue: Extracting valuable by-products from vegetation waters and virgin olive cake	EU GD relevant topics: Circular economy, Farm to Fork
<p>Proposed actions:</p> <ol style="list-style-type: none"> 1. <i>Measure 3:</i> Eligibility and preferential treatment for investments (equipment, machinery, facilities) for treatment of virgin olive cake for the production of animal feed or biochar; preferential treatment for investments for spreading of vegetation waters for fertigation in suitable areas (specialised machinery) and as an input for productive forestry (facilities and equipment); preferential treatment for adoption of systems of reuse, return, recycle of packaging materials. 2. <i>Measure 10:</i> Preferential treatment for counselling and advisory services aimed at optimising use of olive oil production by-products as inputs for other productions 	

Drive to more energy intensive processing activities

Olive sector is not much energivore, at least as long as pomace oil refineries will be not established; however, increasingly complex processing lines require more energy; a good share of this energy consists in heat, used in the olive oil processing lines most commonly used in Albania. Some elder plants have been already retrofitted to use dried olive cake as biomass fuel to generate the necessary heat. The last generation decanters (multi-phase or DCM decanters) can be regulated in a way to produce olive cake in quantities only slightly exceeding the needs of the decanter itself to produce the hot water it needs.

Use of vegetation waters and olive cake to produce biogas is possible, but with the present industry structure and the existing system of incentives to the use of biogas it is not considered an economically viable solution in Albania.

Energy is also needed to dry virgin olive cake obtained from traditional oil mills and “three-ways” decanters. At present, olive cake is just dried in open air with or without using extremely basic solutions, such as asphalted surfaces. Dried olive cake is already commonly sold as fuel, but there is not a standard for fuel-grade olive cake (level of humidity, minimal caloric power per kg etc) and anyhow there is no measurement of the qualities of the dried product. Enhanced passive drying systems using solar and wind energy and/or driers using solar energy production (thermal and photovoltaic) would represent a needed improvement.

Energy can be also obtained in table olives processing units, using olive pits extracted from pitted olives.

⁵⁴ As an example, the three-phase process usually yields 20% olive oil, 30% OPC waste, and 50% OMW. This equates to 80% more waste being produced than actual product (data published by Bioenergy Consult, 2021).

Photovoltaic production for self-consumption is also an option. Considering sheds and other covered parts, oil mills have more than sufficient surfaces that can be used for this purpose.

The actions that could be supported through IPARD III are summarized below.

Issue: Optimising the use and sourcing of energy in olive processing, in view of expected increase of energy demand from olive processing	EU GD relevant topics: Clean and affordable energy; EU Climate Change Ambition (some actions); Circular Economy (some actions)
<p>Proposed actions:</p> <ol style="list-style-type: none"> 1. <i>Measure 3:</i> Preferential treatment for investments (equipment and installations) for self-production of energy from wind, solar (thermal and photovoltaic) and biomass (dried virgin olive cake, grinded olive seeds, exhausted olive cake) sources; installations, facilities and equipment for olive cake drying, including passive drying systems, building solutions based on air flow and renewable energy-based drying systems; processing systems and lines with higher energy efficiency, including equipment and systems for heat recovery and pre-heating; biomass energy production equipment and systems using extracted pits in table olives processing lines. ICT systems for control and optimisation of energy use. 2. <i>Measure 10:</i> Eligibility and preferential treatment for counselling and advisory services for energy saving and self-production of energy using renewable sources 	

12. OUTCOMES

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

Olive sector has been a priority sector for government and donor support. Olive and olive oil were not supported under IPARD-like and IPARD II. However, they were subject to major support from national schemes, especially during the late 2000ies, with massive new plantations enabled through support of national schemes, which resulted in drastic increase of production (as shown above).

Past support has been crucial to achieve growth, however, various needs for investments and technical assistance have not been tackled by previous interventions - some of them can be addressed by IPARD III.

One important lesson learned from past support schemes, is that, they can lead to negative externality. Right now, there is a sizable overcapacity of olive oil processing capacities – the introduction of new operators over the years have put the risk the sustainability of existing operators as well as the new ones too. Interviewees highlight that future support schemes, including IPARD III, should support existing operators. Namely replacement or improvement of current processing plants instead of new ones, to avoid further deterioration of the sector sustainability.

Regarding primary sector, again caution should be shown. The increased productions levels do meet the local demand and considering to further increase production to target export market is very challenging considering the fierce competition (as highlighted in Section 5). Therefore, the focus of interventions should be on improving quality and efficiency rather than further expanding production base.

12.2. PRIORITY INVESTMENTS IN PRIMARY PRODUCTION

12.2.1. Types of investments

The necessary investments refer to:

- Establishment of new olive groves in blocks (1 ha minimum), enlargement of existing olive groves
- Rehabilitation of existing olive orchards (preferential treatment for autochthonous varieties).
- On-farm post-harvest technologies for packing, storage and transport of olives.
- Drip-irrigation systems.
- On-farm storage, up to 1,000 kg.
- Transition to organic cultivation is already eligible under Measure 4 (agro-environmental). Eligibility should be confirmed.
- The adoption of IPM/GAP practices should receive consideration and granted preferential treatment status under the investments at farm level; however, the actual adoption of these methods is difficult to control and can be only indirectly supported by IPARD III in the form of counselling for adoption of these methods and farm machinery required equipment to apply the methods.
- Preferential treatment should be given to investments connected with environment-related solutions in line with EU Green Deal, cluster relations and connection with GI and branding schemes, initiatives that give evidence to strengthening of value chain relationships with processors.

12.2.2. Proposed eligibility criteria

Minimum olive grove size at the end of investment

In order to be economically viable an olive farm should be 2 Ha. thus, minimum size of investment in the end of investment should 2 Ha (if based on economic viability principle), however other considerations/options may be considered by policy-makers, for example minimum 1 Ha (conservative assessment, also in line with the typical farm size in Albania and the feedback received during validation workshop).

Table 12.1 below summarizes information on the way to calculate viable farm size at the end of investment.

Table 12.1: Viable olive size

Indicators	Thresholds
Minimum wage	30,000 ALL
Livelihood of 2 persons: (12 months*2 persons*minimum wage)	720,000 ALL
Gross margin per ha	356,600 ALL ⁵⁵
Viable (eligible) olive grove area (ha)	2

Source: Authors own elaboration

12.2.3. Complementary investments for olive primary production eligible for IPARD support

Complementary investments eligible for IPARD support are those ones having the purpose to enhance impact and absorption of measures primarily intended to develop material assets, such as Measure 1. Such investments include those that can be supported through Measures 4 (agro-environmental) and 10 (counselling). Reference to Measure 7 (leader) is indicated in a broader way, as integrated rural development (the LEADER approach) may include all sectors.

The main proposed complementary investments relevant to olive primary production can be summarized as follows:

- *Agro-environmental Measure* (Measure 4) should include: i) support to transition to organic production (already included in Measure 4 provisions), ii) support to cultivation of plots of endangered autochthon varieties and, iii) application/recovery of traditional intercropping practices in traditional orchards (100 to 150 trees per ha).
- *Counselling Measure* (Measure 10) should include: i) advisory services for optimization and application of pest control practices (organic, IPM etc.), ii) training and advisory services in optimization of agronomic practices in olive groves management, iii) financing counsellors for replication/continuation of Nucleus approach.
- *LEADER* (Measure 7). Within the framework of Local Development plans it is possible to perform the preparatory actions for the establishment of a GI and for development of tourism products focused on the olive culture (nature monuments, such as centuries-old olives, olive products etc.).

12.2.4. Expected absorption capacity

When NSS and IPARD-like facilities have been available, the olive primary production sector absorption capacity scored an average 2.5 M Euro per year (NSS in 2009-2013 period), or the capacity to absorb all available resources (0.7 M Euro) in one year (ASDO IPARD-like facility). However, all the resources or most of the resources were absorbed by investments in new small (<1.00 Ha) plantations.

When different options for investments in primary production were available (ASDO IPARD-like facility), the most demanded type of investment consisted of new plantations (79% of total).

The possibility to invest for rehabilitation/rejuvenation of old olive groves were introduced twice as trials and did not prove very successful, mostly because of lack of accompanying measures and ancillary investments, such as the possibility to combine investments in counselling to investments in fixed assets or to give a value to old olives (50 years and more) within the framework of farm tourism development. In the new programming period it is proposed to include again the rehabilitation of existing olive groves and to support this eligible investment through complementary investments, as detailed in chapter 12.2.3 above.

⁵⁵AASF (2019). Udhezues Praktik mbi Kartat Technologjike ne Bujqesi (Technical report prepared for EBRD AASF project)

The expectations for investments in primary production in the next programming period (see chapter 9 above) are mostly related to a further expansion of small olive groves (<1ha), while expectations for investment in medium-sized (up to 2 ha) and larger farms (>2 ha) are more cautious⁵⁶. At the same time, performance and trends in primary production leads to advice for increasing focus in consolidation and improvement of performance (quality, yields, reduction of yearly production oscillations), rather than on further expansion of the production base, thus focusing support on average-sized and larger specialised olive growing farms.

Considering the above, it is possible to expect that the absorption capacity for investments in primary production with the above-described conditions and range of eligible investments could score up to 1 M Euro per year.

12.3. PRIORITY INVESTMENTS IN OLIVE PROCESSING

12.3.1. Types of investments

As highlighted earlier in the report, most **olive oil** factories are outdated, and should be renovated to meet standards regarding olive oil content in cake and to improve efficiency. The cost of new lines can range 200,000 – 300,000 EUR, varying by size. Due to the need of enhancing the sector competitiveness, no small investments, such as micro-mills, should be included in the IPARD III; on the contrary stimulating modernisation and improvement of industrial processing (very small processing units may be considered under diversification).

There is a wide range of equipment and practices for olive cake processing, ranging from very simple (a centrifuge to be attached to an existing line or an insulated open-air drying space) to complex and sophisticated (lines processing olive cake to produce animal feed and biomass fuel), with costs ranging from 15,000 Euro to 100,000 Euro or more.

Investments for vegetation water management can also range from simple tractor trailers with water spreaders to decantation pools or hybrid systems for phyto-depuration/agroforestry production.

As for the **table olive** processing, below are the types of investments of interest for larger ones (based on interviews with leading table olive processors):

- Pitting machines: 25,000 EUR – 100,000 EUR (wide range depending on type and size).
- Cutting/slicing equipment: 5,000 EUR (for pizza making).
- Petiole cutter - currently is done manually. Such can cost ca 10,000 EUR.
- Sorting machine. Approximately 12,000 EUR.
- Drying furnace - Approximately 50,000 EUR.
- Storage capacity 50,000 EUR – 100,000 EUR.

12.3.2. Proposed eligibility criteria and size thresholds

Based on the interviews with stakeholders, the main eligibility criteria for **olive oil processing** is that support should target existing operators, to improve/rehabilitate the existing processing lines, and not to invest in expansion. Thus, one eligibility criteria can be that only existing factories/processors can be supported.

Preferential treatment should be given to investments connected with organic and sustainable production methods, environment-related solutions in line with EU Green Deal, cluster relations and connection with GI and branding schemes, initiatives that give evidence to strengthening of value chain relationships with farmers.

Indicatively, investments in olive oil processing are expected to range 50,000 EUR – 500,000 EUR for olive oil processors willing to modernise and improve the processing technologies, enhancing competitiveness and/or reducing environmental impact.

⁵⁶ According to the structured MARD extension services survey, 65% of respondents expect a growth of investments in farms smaller than 1 ha, vs. 43% of respondents expecting growing investments in farms sized between 1ha to ha and 32% of respondents expecting a growth of investments in farms larger than 2 ha.

12.3.3. Expected absorption capacity

Previous experiences in the use NSS and ASDO IPARD-like facility do not provide much indications on absorption capacity of the olive processing sub-sector. The ASDO IPARD-like facility allocated only 0.3 M Euro for olive processing, all absorbed in one year.

However, investments made in olive processing the last years were sizable and mostly made using processing enterprises' own resources.

According to the findings of MARD extension service survey, the quasi-totality of respondents expect that the number of olive processor will remain stable or will grow in the next years, in spite of the fact that the majority of the already existing olive oil processors have sizable over-capacity.

The main expected areas of investment include: i) renovation of olive oil and table olives processing lines, ii) equipment and facilities for waste management and by-products recovery and, iii) improvement of storage capacity.

Considering that there are 193 registered olive processing units⁵⁷ (however the real number may be much higher since there are also informal operators) and the size of average investments required for the previously mentioned categories, it is possible to estimate an absorption capacity ranging between 5 and 10 M Euro in the whole programming period.

Should a feasibility study for a pomace oil refinery be positively finalised, this would represent a large investment, in the order of several million Euro, exceeding the IPARD limits. As it happened in other cases (e.g. in meat by-products processing), in this case IPARD could support the completion of a section of the investment, once the funds for the main investments would have been already secured.

12.4. SYNOPSIS OF PROPOSED INVESTMENTS

12.4.1. Priority investments and compatibility with IPARD III Measures

Table below depicts the priority needs and the correspondent categories of investments required to address such needs.

⁵⁷ MARD (2019)

Table 12.2: Proposed eligible investments and compatibility with different IPARD III measures

Sub-sector	Type of investment	IPARD III compatibility
Olives cultivation	<ul style="list-style-type: none"> • New plantations: minimum 1 Ha (conservative assessment, also in line with the typical farm size) or 2 Ha (realistic assessment in line with economic viability principle), subject to conditionality (below) • Rehabilitation/rejuvenation of existing olive groves. • Improved mechanisation and irrigation: farm machinery, drip irrigation systems, including equipment for harvesting and post-harvesting logistics, but excluding transport vehicles and trailers. • Containers and tanks for in-farm olive oil storage, compliant with relevant standards 	<ul style="list-style-type: none"> • Measure 1
	<ul style="list-style-type: none"> • Plantation of autochthon varieties whose population is classified as “small”, limited to the areas of origin of such varieties⁵⁸. • Transition to organic production • Application of inter-cropping practices 	<ul style="list-style-type: none"> • Measure 4 (agro-environment)
	<ul style="list-style-type: none"> • Advisory and knowledge transfer on technical aspects 	<ul style="list-style-type: none"> • Measure 10 (advisory services)
Olive oil processing	<ul style="list-style-type: none"> • Equipment and processing lines for olive oil production, including reconstruction, retrofitting and addition of components to existing lines. • Pomace oil refinery – construction, processing line, equipment and accessory infrastructures (see detail), with additional specified limitation • Handling equipment functional to processing line • Olive oil storage tanks and facilities • Equipment and facilities for recovery of by-products from virgin olive cake, including centrifuges, dryers, pellet machines, presses. • Facilities, equipment and solutions for recovery and management of vegetation waters. • Packaging and bottling equipment and lines, including lines for wholesale and retail packaging • Equipment and installation for renewable energy production for self-consumption needs • ICT systems for process and environment control • Drying equipment and lines for processing 	<ul style="list-style-type: none"> • Measure 3
Table olives processing	<ul style="list-style-type: none"> • Equipment and facilities for table olive processing and conditioning • Equipment and machinery for table olives packaging • Equipment and facilities for table olives storage. • Equipment and installation for renewable energy production for self-consumption needs • Equipment and facilities for depuration of brine 	<ul style="list-style-type: none"> • Measure 3

Source: Authors' elaborations (2021).

⁵⁸As specified in the National Catalogue of Autochthon Varieties.

The following investment categories are further specified as follows:

- *New plantations: minimum 1 Ha (as highlighted above, conservative assessment, also in line with the typical farm size in Albania) or 2 Ha (realistic assessment in line with economic viability principle)⁵⁹, by the end of investment, with a density per Ha of 125 trees/ha or higher⁶⁰.*
- *Farm mechanisation and irrigation:* Purchase of specialised horticultural machinery and equipment (such as specialised tractors and cultivators, sprayers, harrows, trailers, harvesters or other specialised equipment); purchase of new or upgrading of existing on-farm drip-irrigation.
- *On-farm renewable energy production* for self-consumption, including solar and biomass energy production, but excluding biogas. Renewable energy installations and equipment must not utilise agricultural land (building rooftops and embedded equipment are eligible).
- *Equipment, facilities and integrated solutions for vegetation water management*, including spreading equipment, but excluding tank trucks; storage/decantation pools, phyto-depuration systems.
- *Pomace olive oil refinery.* Eligible accessory infrastructure includes accessory and administrative buildings, access roads, facilities for drying exhausted olive cake. **Additional limitation:** *no more than one unit in the programming period; eligible area limited to the regions of Fier and Vlora.*

12.4.2. Preferential treatments

In addition to general preferential treatment factors (gender-related, young farmers/entrepreneurs), preferential treatment should also be given concerning EU Green Deal Alignment. Such preferential treatments should be reflected in the scoring system.

Also, preferential treatment for investment in production clusters (Berat and Belsh) should be assigned.

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 olive and olive oil sector, the following investments should be considered eligible for preferential treatment.

Table 12.3: Investments eligible for EU Green Deal preferential treatment

Sub-sector	Type of investment
Olive cultivation	<ul style="list-style-type: none"> • At least 1 ha cultivations of autochthon varieties in the areas where they are endemic
Olive oil processing	<ul style="list-style-type: none"> • Equipment and installations to recover by-products from virgin olive cake, including passive systems for olive cake drying. • Facilities and equipment for compost production from olive cake • Equipment and installations for solar (thermal and photovoltaic) and biomass energy self-production
Tale olives processing	<ul style="list-style-type: none"> • Equipment and installations for solar (thermal and photovoltaic) and biomass energy self-production

⁵⁹ Final decisions can be taken by policy-makers based on these arguments and policy-priorities.

⁶⁰Very intensive olive groves (above 500 trees per Ha) are not yet feasible in the conditions of Albania, because it should be almost completely mechanized, requires very high-quality seedlings and irrigation system. Also according to the assessment, the number beyond 400 is not feasible or recommended. Thus, in the case of planned investments for super intensive olive groves, above 500 trees per ha, it is recommended that there should be clary explanation or demonstration in the application documents (e.g. business plan) that the applicants possesses the know-how and infrastructure to successfully manage super-intensive olive groves, which are more demanding.

12.5. RECOMMENDATIONS FOR COMPLEMENTARY INTERVENTIONS

The main interventions and investments that would be necessary to improve the sector enabling environment, thus improving the prospects programme impact are related to the topics described below.

Integration and completion of legal framework and enhanced enforcement of existing norms.

This topic includes the following actions:

- *Complete harmonization to EU Acquis of the Albanian olive oil sector regulatory framework.*
- *Integrate the legal framework for waste management with regulations for recovery and use of by-products.* There is a wide range and scope of regulatory actions in this field, including the rules for the possible use of vegetation waters (regulations on spreading in agricultural soils, rules for use in agroforestry activities, etc.) and the range and standards of by-products that can be sourced from virgin olive cake (what kinds of by-products are allowed, relevant standards, allowed by-products processing methods etc.).
- *Enhanced enforcement of existing rules.* This issue includes several aspects: i) increasing controls on the seedlings market, ii) controls on the trade of olive oil and, iii) environmental controls to step up pressure on olive processing companies, to induce them to invest in olive processing waste management and by-products recovery.
In particular, one of the main actions expected by the government/policy-makers is to regulate the trade of olive oil, especially in terms of quality and origin falsification. Such law enforcement action would boost local production of high-quality olive oil and would lead to more necessary and affordable new investments in the sector.

Improvement of infrastructures and management for the production of certified propagation material.

The whole certification system for the olive sector is in need of reorganisation, as most infrastructures should be renovated (because of age or functionality with respect to standards) or completed. In particular, there is a major work to be carried out to produce disease-free and genetically pure basic genetic material of autochthon varieties, to be properly preserved (screenhouse in gene bank), to renovate and expand to a larger number of varieties the pre-multiplication infrastructure (mother blocks) and, most important, increase and strengthen seedlings market control capacities. Actually, the widespread circulation of poor-quality propagation material is one of the main issues contributing to the poor performance/condition of several olive groves planted in the last decade.

Improve quality and access to public and private extension and advisory services; increase production and dissemination of practical extension material.

The areas where training, advisory and counselling services are more needed were detailed in chapter 10. The main areas where improvements in the **supply** of services and development of training and extension materials is needed are listed below.

- Advisory services for new olive groves planning and establishment, including, where appropriate, soil analyses. In this case, there is not a total scarcity of services, but supply of specialised services is scarce, also because demand for such services is limited; making obligatory appropriate planning and analyses for new olive groves which receive financial support (through NSS or IPARD) would help the easing of this constraint.
- Training courses on efficient application of sustainable and safe cultural practices on intensive, traditional and multifunctional olive orchards and to establishment of demonstration plots and pilot experiences in main olive producing regions.
- Promotion of the Good Agriculture Practices, including preparation and distribution of the information of GAP manuals/guidelines at farm level.
- Application of HACCP and Good Manufacturing Practices in olive processing plants
- Advisory and extension services and preparation of training and extension material on methods for proper management and correct by-product disposal/utilization and optimization in the use of energy in olive processing units.

The more general issue consists in the need to increase and improve the actual supply and accessibility of qualified training, advisory and counselling services.

The identified gaps should be filled/mitigated through appropriate initiatives to train public and private extension services providers and to improve/update the available pool of specialised human resources (consultants, counsellors, trainers etc.)

So far, the main resources to train trainers and counsellors came from international development projects; in the olive sector the last project which provided such support was USAID SAVS⁶¹. At present, there are some a few international development projects having within their scope of action the improvement of advisory services in agribusiness⁶², but no initiatives are including support to advisory services for the olive sector.

Promoting collective actions to increase and improve the application of plant protection practices.

One of the major challenged is plant protection. In the olive sector this is most cases (e.g. contrast he olive fly) difficult or even pointless to be done by individual farmers. In the situation where, collective action is not feasible, coordinated efforts are needed and should be supported or carried out by the government.

Increased awareness of Albanian consumers about qualitative and nutritional characteristics of olive oil.

A promotion campaign and other raising awareness initiatives (participations to fairs, meeting in schools, etc.) will raise awareness of Albanian consumer in order to inform about trade categories of olive oil, healthy benefits as well as gastronomic use of olive oil. It is worthy to underline that IOC (of which Albania is a member) could provide support for publicity and awareness in this field.

⁶¹ The AICS project ASDO provided support for institutional capacity building, but not in the field of technology transfer and extension; the UNIDO project on use of olive cake as biomass fuel was focused on pilot actions, not on knowhow and advisory capacity building.

⁶² Such as SDC “RISI-Albania” project and GIZ “Promotion of the rural areas in Albania as regions to live and do business”

ANNEX 1: BIBLIOGRAPHY

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ANNEX 2: OLIVE VARIETIES BY POPULATION SIZE AND ORIGIN

No.	Variety name (synonym)	Population size	Region
1	Boc (Boci)	Small	Tirane
2	Bahuta	Small	Brar, Tirane
3	Bllanic	Small	Vlore
4	Cerje (Verdhanik)	Small	Vlore
5	Freng	Medium	Kruje, Tirane
6	Ganjolla	Small	Vauidejes
7	Gjykatës	Small	Ndroq, PetreleTirane
8	Kaninjot (Kalinjot, ulli Kanine)	Very Large	Vlore, Sarande, Delvine, Mallakaster, Fier, Lushnje
9	Kaninjot oval	Small	Vlore
10	Kallmetkokerrvogel (Ullaster)	Small	Lezhe, Shkoder, Malesi e Madhe,
11	Kaninjot V (Vertikal)	Small	Vlore, Mallakaster and Tirane
12	Kallmet (Kryps)	Small	Lezhe, Shkoder
13	Karen	Medium	Tirane, Kavaje
14	Kotruvsi	Medium	Berat, Patos dhe Mallakaster
15	Kryps Berati (Kokerrmadh Vlonjat)	Moderately large	BeratLushnjePatos
16	Kryps Elbasani (KME)	Moderately large	Elbasan, PeqinandLibrazhd
17	Krypsi Krujes (Kripsi i Krujes)	Moderately large	KrujeTirane Lezhe
18	Krypsi Shkodres (Kryps Laci)	Small	Shkoder, Malesi e Madhe
19	Kuleks	Small	Gerblesh, Tirane
20	Kushan	Small	Tirane, Durres Kruje
21	Lashtrak	Medium	Malesi e Madhe
22	Managjel (Ulli Kalaje)	Small	KrujedheLezhe
23	Micka	Small	Dajt, Tirane
24	Marks	Small-medium	Berat Patos Mallakaster
25	Mixan (Mixa)	Large	Elbasan Peqin
26	Nisjot (Nisioti)	Large	Patos, Berat, Mallakaster
27	I bardhi i Krujes (UB Krujes)	Moderately large	Kruje
28	I bardhi i Tiranes (UB Tiranes)	Large	Tirane
29	I bardhi i Shkodres (UB Shkodres)	Small	Shkoder,Malesi e Madhe
30	I bardhi i Lezhes (UB Lezhes)	Small	Lezhe
31	I holli i Himares	Moderately large	Vlore (Himare, Vuno)
32	Perk	Small	Tirane, Kruje
33	Pulazeqin	Medium	Vlore, Himare, Delvine, SarandeandCakran
34	Perpër (qumushtor)	Extra small	Priske, Linze, Tujanand Brar (Tirane)
35	Ulliri i kalase	Small	Vlore
36	Ulliri i zi Shkodres	Extra small	Shkoder,Malesi e madhe
37	Ulliri i kuq	Medium	Durres, Tirane, Kruje
38	Ulliri i kuq i damsit	Small	Mallakaster, Tepelene
39	Ullii qçarrit	Small	Malesi e madhe
40	Ulliri i zi Tiranes	Large	Tirane, Durres Kruje
41	Ulliri i zi i Durresit	Small	Durres, Kavaje
42	Unafka	Small	Berat
43	Vajs Brari	Small	Brar, Tujan (Tirane)
44	Vajs Peqini	Small	Peqin

Source: *Ismaili, H. (2013). Germoplaza e Ullirit. Katalog i varieteteve autoktonet e ullirit. Botimet Flesh. Tirane, 2013.*