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GREENHOUSE VEGETABLES SECTOR STUDY

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

GREENHOUSE VEGETABLES SECTOR STUDY

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EXECUTIVE SUMMARY

Vegetable is one of the leading and fastest growing agriculture subsectors in Albania and represents more than 20% of the agrifood exports, with greenhouse tomato and cucumber being two key products in the production and export basket. The domestic consumption is by far dominated by local production, but, at the same time, there is also a structural trade surplus, (one of the few agrifood subsectors that Albania scores trade surplus). The greenhouse vegetables (tomato and cucumber) value chain is considered a priority sector considering its export potential.

Production of greenhouse vegetable has been marked by a remarkable growth trend. The surface of greenhouses vegetables has tripled between the years 2000 and 2016 and production, which amounted to 119 thousand MT on 2016 triple compared to 2000. The exports from greenhouse industry have increased substantially during recent years, from quasi-inexistent in early 2000s. It is interesting to highlight that Albania is a regional player for those two vegetable products. However, export of tomato and cucumber occurs under the rather stable international demand for these products. Albanian tomato and cucumber are usually exported at much lower prices when compared to other countries in Europe including EU – that is largely related to gaps in standards, traceability and value chain organization.

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

This study is developed from the technical expertise and the financing of the Albania Agribusiness Support Facility (AASF). AASF is a financing framework developed by EBRD in cooperation with and with support from the Government of Albania which started its activities in 2016.The objective of the facility is to motivate Albanian financial institutions to support the agrifood sector. AASF provides access to finance for the agribusiness sector through senior loans and/or portfolio risk-sharing to both MFIs and banks. The final beneficiaries of AASF are farmers and companies that are engaged in primary agriculture, agricultural equipment production and trade, logistics, agribusiness service providers, agricultural processing, wholesale as well as retail traders.

Both secondary and primary information/data sources have been used to meet the study objectives; semi-structured interviews with value chain actors and sector experts were used as primary source of data collection. Data were analysed using various techniques including descriptive analysis, trend analysis, text analysis, SWOT analysis strategy. The combination of qualitative and quantitative analysis has been crucial to identify/understand trends, gaps and needs for investments.

The current study informs financial institutions on investment opportunity for the greenhouse vegetables sector. Reaching high income and therefore remunerating markets, calls for supporting investment in marketing and quality infrastructure, including packaging houses. Cold storages are also needed to preserve the quality in case of exporting to high income EU countries/mar-

kets. Investments in storage capacity and mechanisation within collection point are also needed. At farm level, investments in greenhouse construction represent the main investment at farm level. Expert assessments stress that there are still huge opportunities to increase greenhouse area. In order for Albania to exploit its potential, greenhouse area could grow to 5,000 ha (and even more based on expert opinion), from a current low base of close to 1,500 ha. While simple greenhouse are proven to be more efficient that heated greenhouse particularly given the high cost of fuel (related to fiscal policies), there is a potential for exploring the option of installation of bio-mass heating systems in central-system heated greenhouses (which requires further assessment including feasibility studies). Installation of automatic heat control and/or climate control sensory systems in greenhouses to improve energy efficiency systems may also be considered (for heated greenhouses).

The financial institutions may also consider providing short-term capital to agricultural businesses and exploring the opportunity of value chain financing. There is a time lag between the moment that the expenditures occur and the sales at farm level. Thus, there is a time window for short-term loans for farmers that could be covered by banks. Additionally, there is a potential for value chain financing, particularly in case where buyers are also input suppliers. In order to 'control' cultivar suitable for export (especially higher price export market segments) and the seedling quality, the buyer-input supplier is interested to enter in a more durable (contract) relationship with the farmer by providing them seedlings, that farmers pay back at the time they supply the products.

Greenhouse value chain is considered a priority sector for Albanian government based in its export potential - the sector has been included in all public financial support schemes, including recent support schemes. The current partial grant policy has important implications for financial institutions - they have the opportunity to finance the investment for up to 100% of investment value out of which at least 50% short term loan (the part to be reimbursed by government) and 50% loan term loan for the part to be paid by the beneficiary.

1. INTRODUCTION

Background

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

The surface of greenhouses vegetables has tripled between years 2000 and 2016. Also, production which amounted to 119 thousand Mt on 2016 also tripled as compared to 2000. The export from greenhouse industry has increased substantially during recent years, from quasi-inexistent in early 2000. Exports of tomato and cucumber occur under a rather stable international demand for these products. It is interesting to highlight hat Albania is an international/regional player for those two vegetables products.

Access to finance is considered a key factor that can enable further growth and modernization of the sector (considering the limited level of access to finance and investments in the past). For that purpose, the Albania Agribusiness Support Facility (AASF) was established as a financing framework developed by EBRD in cooperation with and with support from the Government of Albania which started its activities in 2016. The objective of the facility is to assist (through financial support and technical assistance) Albanian financial institutions to support the agriculture sector. The target volume of the facility is EUR 180 million, EUR 100 million of which is provided or guaranteed by EBRD and the remaining by Partner Financial Institutions. Increased absorption/utilization of this financial resource, linked to increased investments (aiming at improving efficiency and competitiveness of the sector) remains a major concern and priority for the involved stakeholders (GoA, EBRD and FIs).

The study objectives

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

More specifically, the study

– provides an overview of the main production trends, international trade trends and market trends;

– provides a 'snapshot' of value chain structure, flows and value chain governances with special focus on 'leaders in the value chain';

– synthesizes the main points in a value chain through a SWOT analysis strategy, and;

– recommend on the main opportunities for (investment financing, working capital financing, and value chain financing) the financial institutions.

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

Methodology

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

The target group

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

What the study is and is not

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

The report structure

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

2.   METHODOLOGY

Sector selection

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

The greenhouse vegetables (tomato and cucumber) value chain is considered a priority sector considering its export potential.

Data collection

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

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

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

Data analysis

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

3. TRENDS AND PROSPECTS OF THE VALUE CHAIN

3.1. PRODUCTION TRENDS

There has been an improved performance of the vegetable sector, especially in the case of greenhouse vegetables. The surface of greenhouses has almost doubled since 2005 (Table 1). The increase of greenhouse area, coupled with improved production technologies, has resulted in significant increase of production enabling a surplus for the key vegetables produced under greenhouse (most notably tomatoes).

Table 1: Evolution of vegetables production

Category	2000	2005	2010	2015	2016
Cultivated surface with vegetable (000 ha)	33	33	31	37	39
- Protected/greenhouse crops surface (ha)	462	650	828	1,243	1,405
Production of vegetables (000 MT)	620	685	860	1,030	1,129
- Of which: greenhouse vegetables (MT)	39	59	66	108	119

Source: INSTAT (2017)

The greenhouse sector is dominated by unheated (solar) greenhouses, most of which are simple plastic greenhouses. Only about 5% of the total area of greenhouses is heated. There are two reasons for the dominance of non-heated greenhouses: climate, which enables ca 9 months per year production without heating (although during this time period there are 3 months which are characterized by very high temperatures which are not optimal for greenhouse production) and high cost of fuel. Since in Albania there are no fiscal incentives in terms of subsidies or reduced taxes for buying fuel for using in the agriculture sector including greenhouse. This makes running of heated greenhouse very costly and not competitive when compared to other countries in the region, which have much lower fuel costs for agriculture related use including heating. Further-more, most greenhouses are small, operated by small farmers with limited financial resources, who prefer opting for low cost investments (typically in this case, unheated plastic greenhouses).

Table 2: Dynamics greenhouse are (Ha) in Albania

Category	2005	2010	2014	2015	2016
Heating greenhouses	35	57	**55**	**70**	**71**
with glasses	11	16	14	15	19
with plastic	24	41	41	55	52
Solar greenhouses	615	771	**1030**	**1173**	**1334**
with glasses	81	80	60	46	47
with plastic	534	691	970	1127	1287
Total Greenhouses	**650**	**828**	**1085**	**1243**	**1405**

Source: INSTAT (2017)

The main greenhouse vegetable product is tomato, followed by cucumbers. Typically, green-house vegetables are planted and harvested twice a year, often following a rotation pattern. All the main greenhouse vegetables show a marked growth in production since 2010, particularly tomatoes. Most tomato and cucumber production takes place in greenhouses, while exports of such products are almost exclusively relying on greenhouse production.

Figure 1: Dynamics of the vegetable production by type in Albania (000 MTs)
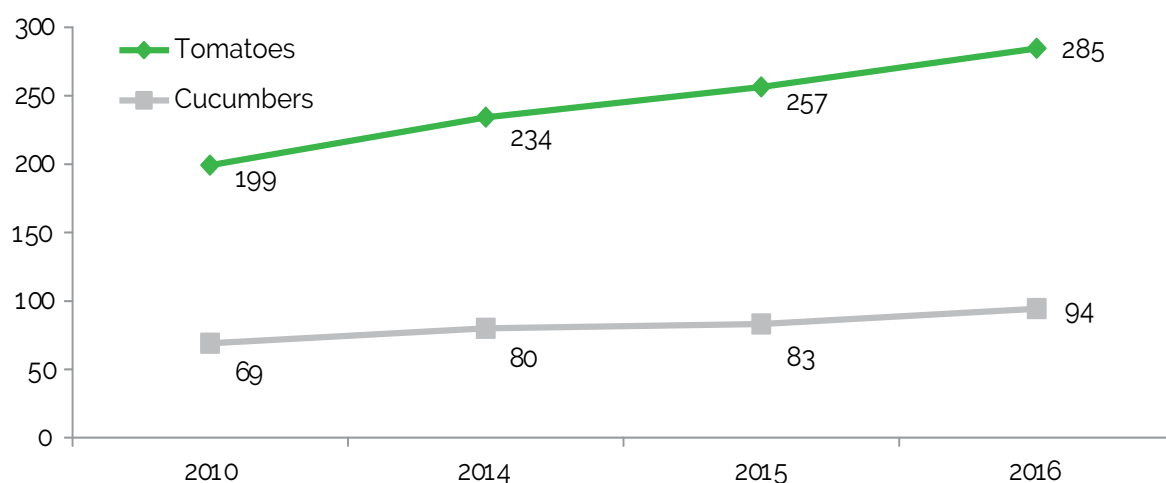
Source: EUROSTAT (2017)

In the case of tomatoes, production in Albania exceeds that of other countries in the region, ex-cept for Turkey, which is a strong regional player due to its market and production size.

Table 3: World Production Trends of Tomatoes (000 MT)

Country	2000	2005	2010	2014	2015	2016
Albania	162	152	199	234	257	285
Montenegro	:	:	8	2	4	4
Serbia	:	:	189	128	147	160
Macedonia	135	117	168	161	173	162
EU	17,876	18,426	16,889	16,797	18,256	17,916
World	109,260	128,332	153,240	172,499	174,122	177,042
Europe	21,250	22,579	21,768	22,630	24,350	24,170
Eastern Europe	4,521	5,275	5,861	7,055	7,271	7,421
Southern Europe	14,826	15,315	13,861	13,423	14,941	14,568
Western Europe	1,685	1,800	1,846	1,944	1,940	1,983

Source: FAOSTAT (2018)

Similar to the case of tomatoes, also cucumber production in Albania is higher compared to some other countries in the region.

Table 4: World Production Trends of Cucumber (000 MT)

Country	2000	2005	2010	2014	2015	2016
Albania	30	55	69	80	83	94
Serbia	:	:	70	53	53	55
Macedonia	27	36	47	48	67	53
EU	2,467	2,571	2,776	2,939	2,804	2,917
World	37,918	45,911	62,416	76,220	78,903	80,617
Europe	4,364	4,789	5,373	6,150	6,173	6,393
Eastern Europe	2,615	2,807	3,124	3,809	3,901	4,055
Southern Europe	722	915	1,131	1,213	1,201	1,264
Western Europe	821	864	895	903	854	854

Source: FAOSTAT (2018)

Regionalization

The core area for vegetable production in Albania is the coastal and hilly area of central Albania, including the region of Fier and Berat, where greenhouse production is concentrated. Most of the processing industry is also located in these areas. Other important production areas are Shkodër (open field vegetables), Korça (potatoes and open field vegetables).

Similar to the greenhouse production pattern, the highest regional share of total open vegetable production can also be found in Fier. In addition, the highest concentration of wholesale facilities can be found in Fier, with the wholesale market of Lushnje (the country's largest market), the private wholesale market in Fier and the wholesale market in Divjaka (wholesale traders are described in a specific section later in this report). Fier (including Lushnje) is also the region with the largest average farm size and the largest average parcel size.

The concentration of production in certain areas is the result of favourable natural conditions for vegetable production, but also to tradition and diffused know-how as well as a function of consumer preferences and perceptions. Consumers prefer products coming from regions with higher reputation for quality, which is analysed in more detail later in this study. This diffused consumer awareness for quality related to origin is a very positive aspect of the Albanian market, representing a major point of strength and giving a clear advantage and to domestic production in the domestic market.

Figure 2: Regional distribution of fresh vegetable production (2016)
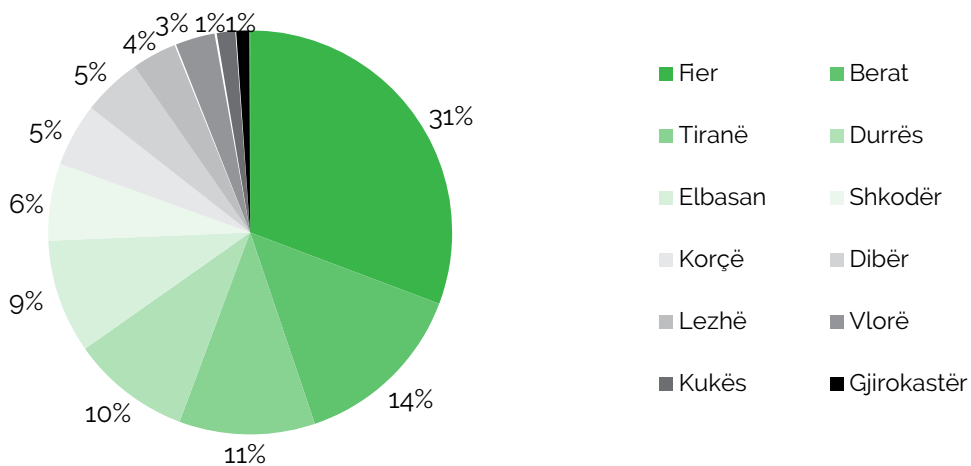
Source: INSTAT (2017)

Figure 3: Regional distribution of greenhouse cultivated area (2016)
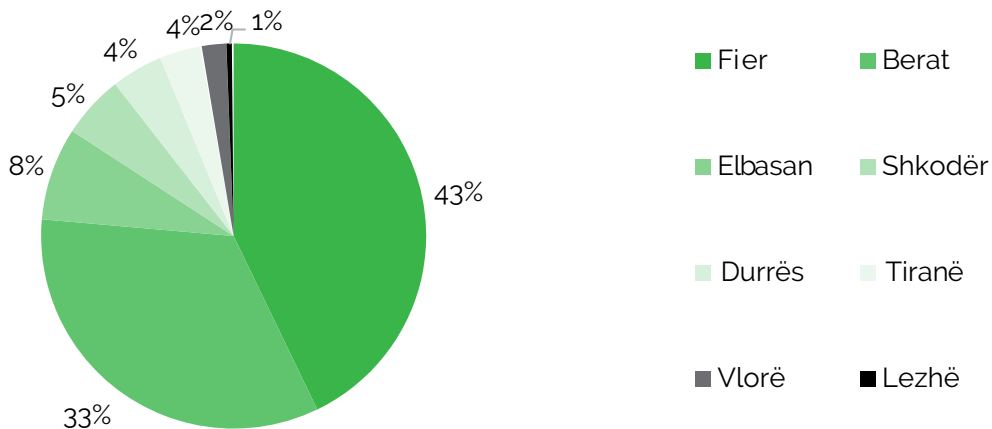
Source: INSTAT (2017)

Box 1: Lushnja production cluster

Lushnja (part of the region of Fier) is situated in a central strategic position. In the region/district of Lushnje there is a strong tradition in production of vegetables since the planned economy.

Conditions allow for at least two vegetable crops per year: In both the first and second season, the main greenhouse vegetables produced are tomatoes followed by cucumbers.

Greenhouse production was often initiated by returning immigrants (mainly from Greece), who returned in mid 1990s (as well as later on) with capital and specific know-how related to greenhouse production. These initiatives proved to be successful and profitable and were quickly adopted by other neighbouring farmers.

The input supply range and services improved (especially seeds, pesticides and fertilizers) and with time local production of qualitative seedlings also started and enhanced. The main input suppliers of the country, such as Agrokoni and Bruka seedlings have a strong presence in this area.

Source: Various field interviews

3.2 INTERNATIONAL TRADE TRENDS

Within the agrifood sectors, vegetable sector has the best performance in terms of trade. Vegetables exports have increased exponentially from a very low base in 2005 to the last years (Table 5).

Table 5: Albanian international trade of vegetable (000 USD)

Category	Export	Import	Export/import
2005	1,272	15,915	8%
2010	4,445	26,438	17%
2014	21,690	25,401	85%
2015	32,652	16,005	204%
2016	43,353	18,767	231%

Source: UNSTAT Trade (2018)

The increased levels of production and the extending of production calendar (e.g. through increased greenhouse production), in 2016, exports of vegetable mounted to almost 40 Million EUR (almost 4 times higher compared to 2013). Vegetable make up 21% of total agrifood exports, which marks a significant increase (success) when compared to just less than 3% in 2005.

Tomato is one of the main exported vegetables, followed by cucumber (see figure 4).

Figure 4: Structure of vegetable exports (value) (2016)

- Tomatoes
- Cucumber
- Other vegetables
- Cabbages etc.
- Other
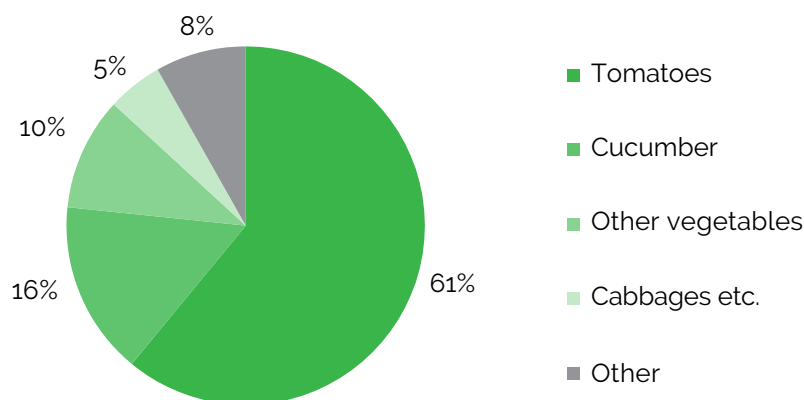
Source: UNSTAT (2018)

Export of tomatoes has increased significantly – almost 10 times since 2010. The backbone is greenhouse tomatoes (export of field tomatoes is very low if at all).

Figure 5: Dynamics of the Albanian exports of tomatoes
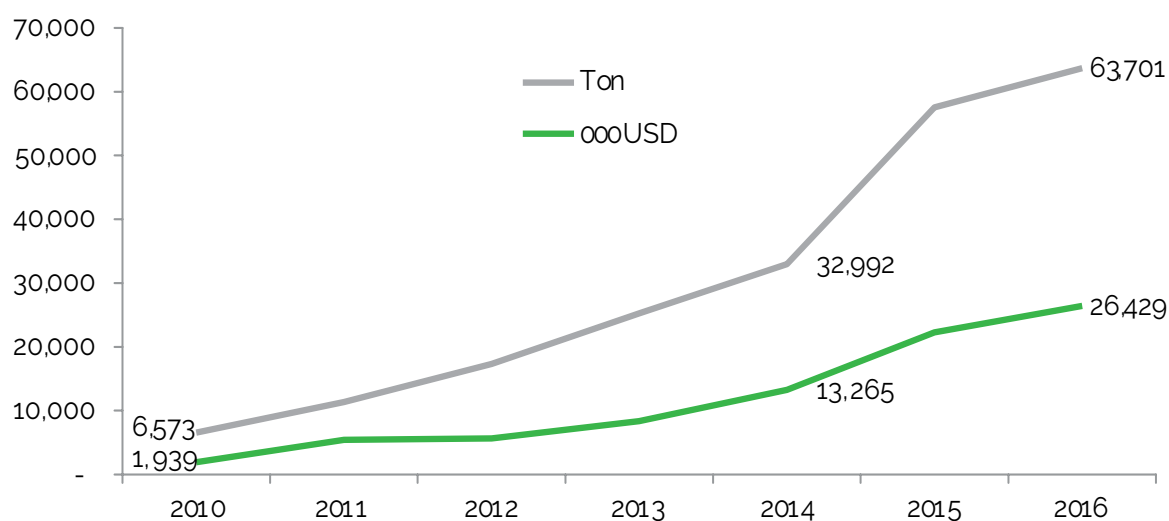
Source: UNSTAT (2018)

Import of tomatoes has increased during the 2000s because of increased demand (related to increased income). At the same time, it has experienced a decrease since late 2010s, because of increased domestic production (increased greenhouse area/production).

Figure 6: Dynamics of the Albanian import of tomatoes
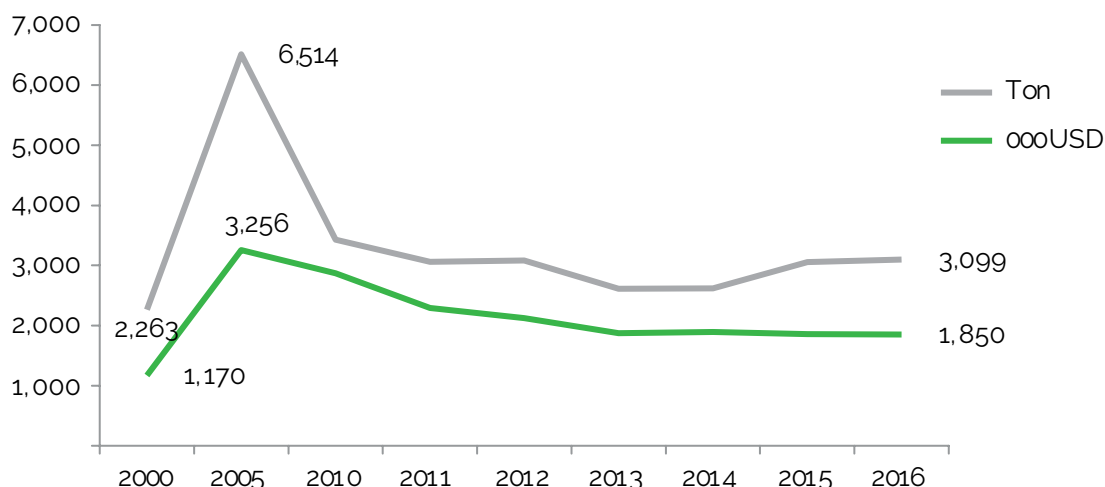
Source: UNSTAT (2018)

Import prices are substantially higher than export prices. Import prices are higher because Albania typically imports off-season vegetables from countries producing in heated greenhouses, which results in higher production costs compared to the Albanian unheated greenhouses. Export prices of tomato has been at the level of 0.3 to 0.4 $/kg, while import prices have fluctuated from 0.5 to 0.8 $/kg (Table 10). There are several reasons behind the low declared prices. On the one hand, Albanian production is not standardized and it is rarely certified (e.g. GlobalGAP). Also, the supply chain is not very well-organized, relying still largely on spot market. Therefore, most greenhouse vegetable are sold in the region (e.g. Western Balkan countries or new EU countries such as Romania and Bulgaria, with low purchasing power). On the other hand, there may be under-reporting (in the customs) considering the informality that characterizes Albania and several destination countries (mentioned above).

Table 6: Trade balance of tomatoes by year

Year	Exports			Imports			Export/ Import Value	Export/ Import Weight
	000$	MT	$/ kg	000$	MT	$/kg	Value	Weight
2000	8	24	0.35	1,170	2,263	0.52	70%	1%
2005	36	123	0.29	3,256	6,514	0.50	1%	2%
2010	1,939	6,573	0.30	2,870	3,429	0.84	68%	192%
2014	13,265	32,992	0.40	1,891	2,621	0.72	701%	1259%
2015	22,252	57,547	0.39	1,856	3,055	0.61	1199%	1884%
2016	26,429	63,701	0.41	1,850	3,099	0.60	1428%	2055%

Source: UNSTAT Trade (2018)

Similar to tomatoes, also the export of cucumber has increased significantly – almost 10 times since 2010.

Figure 7: Dynamics of the Albanian exports of cucumbers
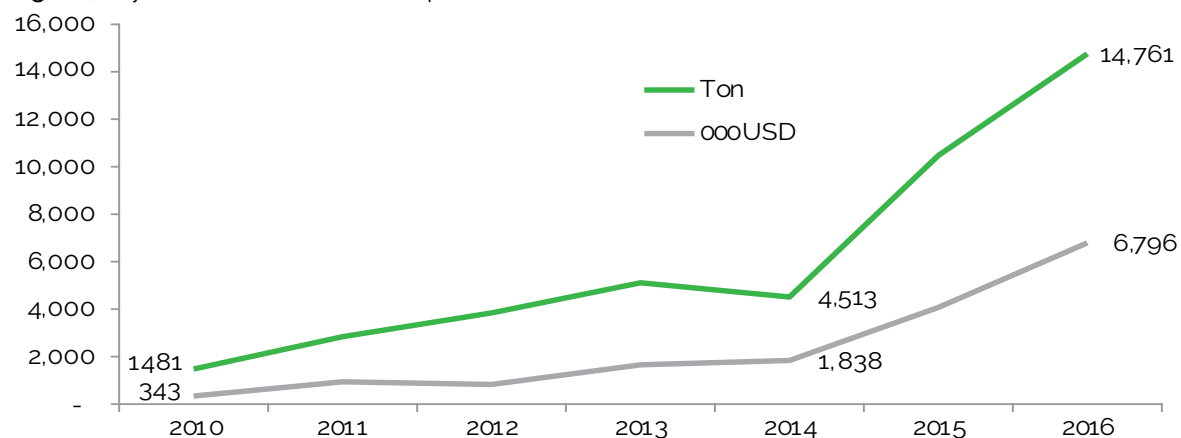
Source: UNSTAT (2018)

Similar to tomatoes, also the import of cucumber has increased during the 2000s as a result of increased demand (related to increased income). However, it experienced a decrease since late 2010s, as a result of increased domestic production (increased greenhouse area/production).

Figure 8: Dynamics of the Albanian import of cucumber
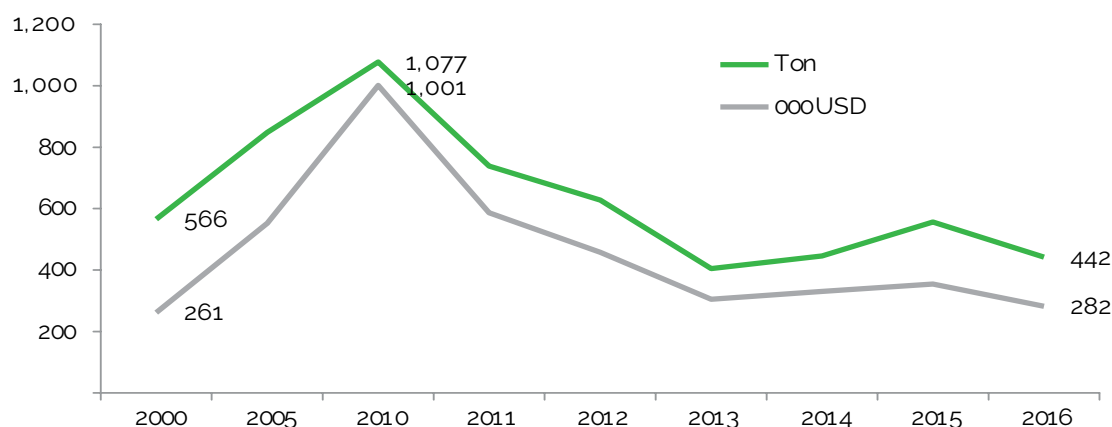
Source: UNSTAT (2018)

Like tomatoes, also cucumber import prices are higher than export prices, for the same reasons (Table 7).

Table 7: Trade balance of cucumbers by year

Year	Exports			Imports			Export/ Import Value	Export/ Import Weight
	000$	MT	$/ kg	000$	MT	$/kg		
2000	:	:	:	261	566	0.46	:	:
2005	2	16	0.12	553	848	0.65	0%	2%
2010	343	1,481	0.23	1,001	1,077	0.93	34%	137%
2014	1,838	4,513	0.41	331	445	0.74	556%	1013%
2015	4,077	10,483	0.39	354	557	0.64	1152%	1883%
2016	6,796	14,761	0.46	282	442	0.64	2408%	3340%

Source: UNSTAT Trade (2018)

Albania's main exporting partner is Kosovo, followed by Serbia, Bulgaria and Bosnia and Herzegovina. Regarding imports, Italy, Greece and Turkey are the main countries.

Table 8: Exports of tomatoes by partner country (2017)

Tomatoes	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Kosovo	52%	10%		26%	27%	44%	34%	26%	23%	12%	11%	18%
Serbia	3%	53%	2%	28%	32%	28%	3%		9%	6%	6%	12%
Bulgaria	27%		0%	7%	7%	5%	24%	17%	20%	18%	15%	11%
B&H	2%	17%	2%	16%	14%	13%	10%	11%	13%	5%	3%	4%
Total(MT)	467	29	35	5,234	24,358	8,158	523	275	3,113	13,231	11,668	5,426

Source: EUROSTAT (2018)

Table 9: Imports of tomatoes by partner country (2017)

Tomatoes	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Turkey	51%	51%	64%	28%								
Greece	28%	35%	22%	31%	2%	1%	9%	36%	3%	10%	13%	36%
Italy	17%	13%	15%	34%	8%	2%	32%	64%	15%	12%	8%	28%
Serbia				7%	91%	52%			79%	77%	42%	36%
Total (MT)	151	438	1,332	337	217	60	5	3	13	39	32	41

Source: EUROSTAT (2018)

Kosovo is the main exporting partner for cucumbers, followed by Macedonia and Bulgaria. Regarding imports Greece is the main supplier of cucumbers.

Table 10: Exports of cucumbers by partner country (2017)

Cucumbers	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Serbia	7%	17%	36%	27%	38%	24%				11%	10%	24%
Kosovo	56%	68%	24%	25%	9%	8%	56%	51%	6%	3%	3%	15%
FYROM			18%	19%	10%	9%			9%	6%	12%	18%
Bulgaria			3%	6%	11%	3%		27%	29%	24%	31%	9%
Total (MT)	12	17	3,340	7,096	3,388	262	53	68	104	1,370	3,984	1,981

Source: EUROSTAT (2018)

Table 11: Imports of cucumbers by partner country (2017)

Cucumbers	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Greece	64%	76%	92%	1%		100%		100%	100%	1%		100%
Turkey	26%	23%	8%									
Serbia				99%	100%						80%	
Total (MT)	115	120	20	9	31	0.03		0.1	0.0	3	8	4

Source: EUROSTAT (2018)

Most export of tomatoes takes place during April – June (corresponding to first greenhouse production season) and October – December (second first greenhouse production season). Highest prices are during March, April and October.

Table 12: Exports of tomatoes by month (2017)

Tomatoes	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Quantity (MT)	467	29	35	5,234	24,358	8,158	523	275	3,113	13,231	11,668	5,426
Value(000Euro)	149	10	18	3,275	9,993	2,665	142	88	1,056	6,048	5,172	2,866
Price (Euro/kg)	0.32	0.33	0.52	0.63	0.41	0.33	0.27	0.32	0.34	0.46	0.44	0.53

Source: EUROSTAT (2018)

Table 13: Imports of tomatoes by month (2017)

Tomatoes	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Quantity (MT)	151	438	1,332	337	217	60	5	3	13	39	32	41
Value(1000 Euro)	90	254	763	202	106	23	4	4	9	30	22	31
Price (Euro/kg)	0.60	0.58	0.57	0.60	0.49	0.38	0.82	1.48	0.66	0.76	0.69	0.77

Source: EUROSTAT (2018)

Most exports of cucumbers take place during March - May and October. Highest prices are during March, April (prices are even higher during January and February but export volumes are low during those months).

Table 14: Exports of cucumbers by month (2017)

Cucumbers	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Quantity (MT)	12	17	3,340	7,096	3,388	262	53	68	104	1,370	3,984	1,981
Value(000Euro)	6	11	1,553	2,991	956	82	12	16	37	542	1,607	1,001
Price (Euro/kg)	0.48	0.62	0.46	0.42	0.28	0.31	0.22	0.24	0.35	0.40	-0.40	0.51

Source: EUROSTAT (2018)

Most imports of cucumber take place during January – February (due to limited heated greenhouse production in Albania).

Table 15: Imports of cucumbers by month (2017)

Cucumbers	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Quantity (MT)	115	120	20	9	31	0.0		0.06	0.02	3	8	4
Value(000Euro)	70	73	12	4	6	0.0		0.1	0.1	2	3	2
Price (Euro/kg)	0.61	0.61	0.59	0.40	0.20	1.68		1.68	2.39	0.66	0.41	0.61

Source: EUROSTAT (2018)

3.2. MARKET

3.2.1. International market

While Albania has substantial trade deficit for most agricultural products, it has a positive trade balance for tomato and cucumber, which amounts to more than US$ 24.6 million and US$ 6.5 million for tomato and cucumbers, respectively. The export annual growth between 2012 and 2016 for tomato is 50% and for cucumber is 67% (Table 16).

Table 16: Greenhouse tomato and cucumber export performance

Product label	Value exported in Product label 2016 (USD thousand)	Trade balance 2016 (USD thousand)	Annual growth in value between 2012-16 (%)	Annual growth in value between 2015-16 (%)	Annual growth of world imports between 2012-16 (%)	Ranking in world exports
All products	1962117	-2707173	-2	2	-4	133
Agricultural products	196002	-478351				
Tomatoes	26429	24579	50	19	-1	24
Cucumbers & gherkins	6796	6514	67	67	1	29

Source: International Trade Centre (2018). https://www.trademap.org

Export of tomato and cucumber occurs under the rather stable international demand for these products. It is remarkable that Albania is 'visible' as international player for those two vegetables products - it ranks 24th in the export of tomato and 29th in the export of cucumbers.

3.2.2. Domestic market

Market supply structure

The domestic market is dominated by local production – the share of import to the domestic supply (which is a proxy to the consumption and is calculated by adding import and subtracting exports to domestic production) is very modest, namely ca 1-2 %. While the domestic market remains the main market for the local production, the share of production of tomatoes directed for export, has increased significantly.

Table 17: Supply balance of tomatoes in Albania (000 MT)

Category	2005	2010	2015	2016
Production	152.0	199.3	256.5	284.6
Import	6.5	3.4	3.1	3.1
Export	0.1	6.6	57.5	63.7
Supply	158.4	196.1	202.0	224.0
Import/supply	4.1%	1.7%	1.5%	1.4%
Export/production	0.06%	3.3%	22.4%	22.4%

Source: Author calculations based on data from INSTAT, EUROSTAT and UNSTAT (2017)

Also in the case of cucumbers, the ratio of import and domestic consumption has been low and was even further decreasing, while the share of export to total production has increased significantly.

Table 18: Supply balance of cucumber in Albania (000 MT)

Category	2005	2010	2015	2016
Production	55.0	69.0	83.0	94.3
Import	0.8	1.1	0.6	0.4
Export	0.02	1.5	10.5	14.8
Supply	55.8	68.6	73.1	80.0
Import/supply	1.4%	1.6%	0.8%	0.6%
Export/production	0.04%	2.1%	12.6%	15.7%

Source: Author calculations based on data from INSTAT, EUROSTAT and UNSTAT (2017)

Consumer demand and preferences

After the transition into market economy that began in early 1990s, the demand from Albanian consumers for vegetables increased significantly. As part of trade liberalization and combining expanded retail, production and postharvest/storage capacities, and with increase in income and standard of living for the Albanian population, consumption of vegetable has more than doubled by the late 2000s as compared to the pre-transition period. Indeed, the increase of the local production capacities and storage was instrumental to enabling increase of consumption, making fresh products available for consumer for longer periods of time, at lower costs[1].

As shown above, consumption is dominated by local production. The origin of production tends to be quite an important factor for most Albanian consumers. According to various study, most consumers choose their products based on origin (domestic versus imports). Generally, there is a strong consumer preference for domestic food products. In addition, within the domestic product group, there are significant differences in perceptions based on the region of production within Albania. Most consumers view the region/area of origin is either important or very important when deciding to buy Albanian products. Natural conditions and genetic material (plants) can be perceived as being related to the origin of preferred regional products[2]. 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. The market for organic food in Albania is still small, but the consumers' preference for organic food represents a potential for market development. The perceptions on a link between organic food and health-related issues represent an important advantage for the production of organic food, and can be capitalized in marketing promotions by producers/traders[3]. In the case of tomatoes, a recent study[4] found a strong preference and willingness to pay a high premium for organic tomatoes among Albanian consumers. In general, the development of organic certification is expected to trigger demand for new investments.

1   Zhllima, E., Imami, D., & Merkaj, E. (2012). Food consumer trends in post socialist countries: the case of Albania. *Economia agro-alimentare*.

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

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

4   Skreli, E., Imami, D., Chan, C., Canavari, M., Zhllima, E., & Pire, E. (2017). Assessing consumer preferences and willingness to pay for organic tomatoes in Albania: a conjoint choice experiment study. *Spanish Journal of Agricultural Research*, *15*(3).

Standards

There are gaps in food safety standards throughout the downstream food value chain. Albania faces serious problems with the national food safety control system in terms of legislation, infrastructure, institutional capacity, control and enforcement, which affect real and perceived safety risks for consumers. The problems in the Agricultural Health and Food Safety System have been identified by several studies[5]. Food safety standard is a major concern perceived by Albanian consumers. Several studies[6, 7] document/highlight the concerns of average consumers about food safety.

Despite legal and institutional changes, many farmers still lack information or awareness related to standards. Indeed, during field interviews there were reported cases of shipment with greenhouse vegetable being returned back from EU countries, due to high residuals, causing significant financial damage to the involved traders, respectively exporters.

A survey carried out early 2017 with greenhouse (and watermelon) farmers reveals that only about 25% of the farmers have carried out water or soil analysis. That is worrisome considering that investments, especially in the case of greenhouse are considerable, while soil salinization is a major concern in the areas where greenhouses are concentrated. As a result, many farms are characterized by low performance in terms of yield and quality of production, which have direct impact also on market performance.

Table 19: Farmers who carry out soil or water analysis

Category	Soil		Water	
	Frequency	Percent	Frequency	Percent
Yes	104	26%	107	27%
No	297	74%	291	73%
Total	401	100%	398	100%

Source: ISETN (2017)[8]

The growing pressure to produce high qualities for export markets and the high standards in light of the on-going EU approximation will imply growing demand significant investments along the value chain to meet the standards. Awareness campaigns, combined with stronger law enforcement and availability of financial incentives would highly influence likelihood to increase such investments at farm, trader and processor level.

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5   Verçuni, A., Zhllima, E., Imami, D., Bijo, B., Hamiti, Xh., & Bicoku, Y. (2016). "Analysis of Consumer Awareness and Perceptions about Food Safety in Tirana, Albania". *Albanian Journal of Agricultural Sciences, 15*(1).

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

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

8   ISETN (2017). National Economic Potentials of Contract Farming and Agriculture Cooperation in Albania, report prepared for GIZ.

4. VALUE CHAIN STRUCTURE AND KEY ACTORS

4.1. VALUE CHAIN STRUCTURE AND ACTORS' PROFILE

Figure 9 maps the greenhouse tomato and cucumber value chain actors and the main channels through which these products flow from farmers to end use consumer.

Figure 9: Greenhouse tomato and cucumber value chain map
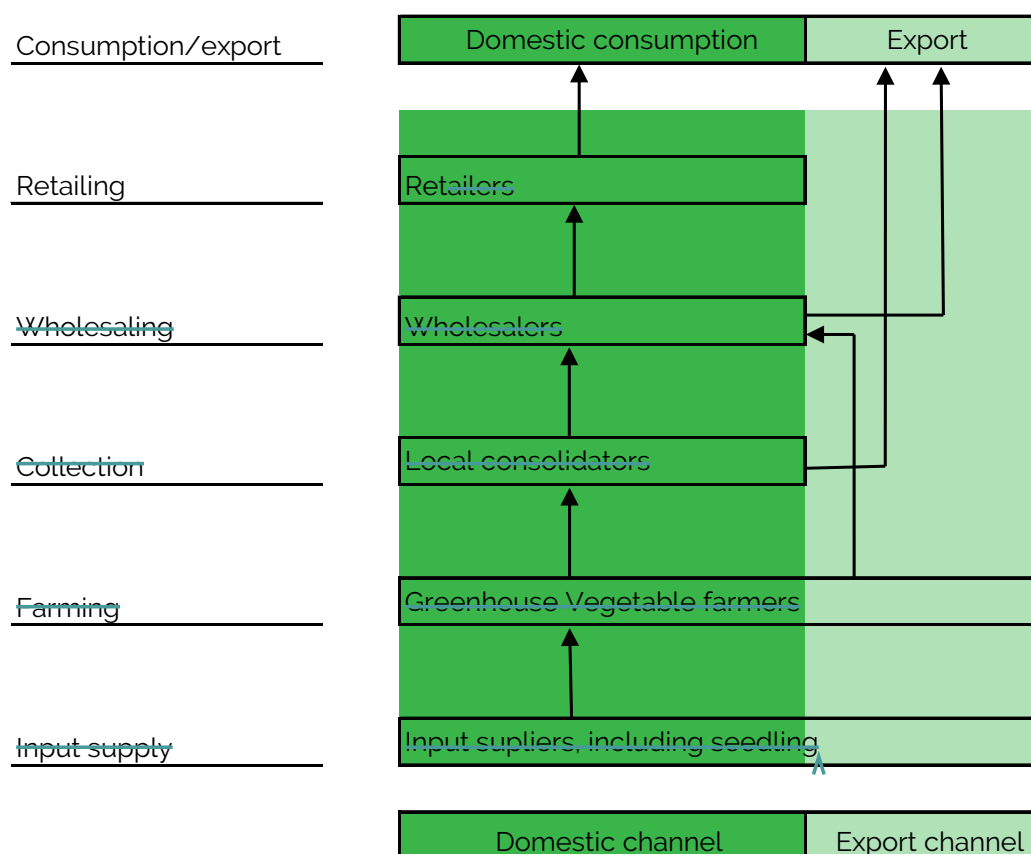
Source: Authors' own design

The four main categories of actors in the greenhouse vegetable value chain are input suppliers, greenhouse producing farmers, local consolidators and wholesalers. Below we describe actors' profile which is followed by value chain flows and governance.

Input suppliers

Input suppliers represent an important actor/node in the greenhouse vegetable sector. They supply the input to farmers (seeds, fertilizers and pesticides) but are also an important source of information and advice. There are input suppliers who conduct (field, demonstration) experiments on adaptation of deferent vegetables cultivars. Some input supplier (mainly seedling suppliers) are also exporters – in such case they tend to develop closer relations with farmers by providing seedlings and buying their products, taking an important coordinating role.

Farmers

While farmers are rather small in terms of area cultivated, farmers' turnover is quite high and almost all of them are market oriented. The number of greenhouse farmers in Albania has increased substantially during the last two decades, reaching a few thousands (no accurate statistics available). While there are many farms that have 1 or 2 dn (respectively 0.1 or 0.2 Ha), previous assessments and expert judgment show that greenhouse farms tend to be competitive above 0.2 Ha (below we provide an overview of this category of farms). More than half of the farms above 2 dn (namely 59%) cultivate between 2.1 and 5 dn of greenhouse and the rest cultivate greenhouse larger than 5.1 dn – there are 54 farms with above 2 Ha (which can be definitely be considered large farms by Albanian standards).

Table 20: Greenhouse tomato and cucumber commercial farms (above 2 dn or 0.2 Ha), for 2017

Farm category	Total	% to size
Between 2.1 and 5 dn	465	59%
Between 5.1 and 10 dn	180	23%
Between 10.1 and 20 dn	93	12%
over 20.1 dn	54	7%
Total	792	100%

Source: MARD data processed by authors

In terms of regional concentration, Berat and Fier are by far the most specialized regions for greenhouse production. Durres, Elbasan and Tirana have significant areas under cultivation of greenhouse tomato and cucumber, much less, though, than the two most specialized regions (refer to annex). The greenhouse industry in the rest of the regions is relatively small.

There is an interesting distribution of farmers by size when analysing the regions Fier and Berat - although the number of farms operating in each region is rather identical, larger farmers are found in in Fier than in Berat (Table 27).

Greenhouse farmers use both heated and unheated greenhouses types, but as mentioned above, the unheated greenhouses dominate (since heated greenhouse vegetable production is not profitable in Albania considering fiscal aspects). The larger farmers often overuse chemicals and sell their products either under contract or through spot market transactions via consolidators who usually pick the produce directly on the farm.

Local consolidators

According to the interviews with value chain actors (carried out by the authors of this report), there are 23 local consolidators that operate in the greenhouse production cluster area, namely Fier and Berat regions (municipalities of Berat, Kuçove, Ura Vajgurore, Lushnje, Divjake and Fier). They are mainly based on the production area, collect produce from farmers and export them (for all of them, greenhouse vegetables are the only or at least the main exported/sold products). The typical investment of local consolidators are storehouse and transportation means. Most lack cooling storages and sorting, cleaning and packaging lines, with any exception. Interviewed farmers complained that local consolidators impose farmers very low prices. Interviewed farmers suspect

that main consolidators coordinate to pressure down prices, while farmers - being small and not organized in cooperatives/groups - have no bargaining power. However, consolidators explain that they buy from farmers with low prices, because they sell in export markets with low prices – usually without pre-written contracts.

Wholesalers

Large wholesalers are becoming a key actor in the greenhouse vegetable value chain. While there is not a clear cut between vegetables local consolidators and wholesalers, one may distinguish a handful of large, quite consolidated operators that may be called wholesalers. Doni Fruits, Tomato Al, Goga Import-Export, Koni Shpk, Elkos, etc. fall under this category. These groups of operators tends to have invested in larger and modern assets (larger stores, cooling rooms, sorting, cleaning and packaging lines, mechanized loading and unloading equipment), tend to have more durable relations both with suppliers and international buyers and have plans for new investment. There are also cases where larger wholesalers are also input suppliers.

Box 2: Doni fruit - a wholesaler-exporter leader in fruit and vegetables sector

Background. Doni Fruit Albania, established in the Lushnja municipality 8 years ago, is daughter of the Doni company established in Ferizaj 60 years ago. This is the third generation of the family running the business. It is operating in Pristina, Ferizaj and Skopje as well. The company has a retail chain of fresh fruits and vegetables in Kosovo. Lushnja is the main centre for Albania, but have collection point in other fruits and production areas in Albania. They are run by Doni Fruits agents who are employed by the company - Doni pays the salary and also the rent for the storage.

Products: Doni Fruits deals all types of fruits and vegetables that are exported from Albania, but greenhouse vegetables are the main exports. The company has its own brand named 'Doni fruits'.

Resources:

Current assets: rented a store in Lushnja where the headquarters is of an area of around 2000 sq. m. The company has a cooling room of a 75 MT capacity. Collection points are established in several other production areas, such as   Devoll (Apple), Samatice (BR), Drenovice (BR), Krutje (LU), Mize (DV), Mursi (SR: citrus) and plan to open in Cerrik (both greenhouse and field vegetable). All storehouses in these areas are rented and storehouse owners are hired/contracted as employees. Other assets include: sorting and packing line for apple, plastic packing line for cucumber, mechanized loading and unloading machines, etc. They also have an integrated IT based system to monitor all details (quantities, prices, inventory). They have a system of traceability identifying farmers by products.

New investment: The company plans to invest in new large project. The first project phase includes cold storage, restaurant for the staff, etc. Has already obtained the necessary (e.g. construction) permits to proceed with the implementation. They may consider various sources of funding such as IPARD II.

Marketing channels: Doni Fruits sell almost entirely for export – left overs can be sold locally. The export geography is quite large. Foreign transport companies (mainly Macedonian ones) are hired transport the products to destination.

Partners

Farmers. They have contracts with more than 1,500 farmers – written contract of 3-years term serve as a basis to make bank transfers. Payments are done only per bank. Payments are done 2-3 days to 2 months later. The larger farms tend to wait for longer period – smaller ones usually need payment faster. The company uses short term loans to make the payment. They provide seeds to farmers and often farmers produce the seedlings themselves (no seedlings are distributed by the company), which are paid back when they bring the products. They also used to supply in this form fertilizers, but they had problem with payments – therefore now they provide only seeds. They don't have farmers with Global-GAP but they intend to engage such certified farmers in the future.

Buyers: Though they have not signed formal contract with international buyers (except in exceptional cases), they have established and maintain time-tested durable relationships with their buyers. Quite often, orientation for varieties/products comes from foreign buyers, and they pass over this orientation to the farmers.

Input suppliers: Doni fruits cooperate with an input supplier by giving him access to its own facilities. When farmers sell the product, they have the opportunity to buy inputs as well

Competitors: There are 23 vegetables exporters operating in the area. Everyone looks after his own business. There is no cooperation among them, according to the interviews with various traders.

Success factors: Main success actors for Doni Fruits include: market orientation and durable relationships with international buyers, working relations with farmers based on mutual interest, investment in up to date technology, and product quality standards.

Source: Authors own elaboration based on semi-structured interviews.

4.3. VALUE CHAIN FLOWS AND CHAIN GOVERNANCE

Product flows, information and financial flows

Product flow. Two distinct channels may be observed in the greenhouse vegetable value chain, namely domestic channel and export channel (refer to Figure 9). In the domestic channel, the produce transported to local consolidators facilities by farmers or consolidators collect the product on farm, is then transferred by the latter to wholesale market and from there to retailers. Sometimes, farmers themselves transport the product to the wholesale market. In the export channel, farmers transport the produce to local consolidators or wholesalers facilities; the latter export the produce. In some cases, the product is taken by local consolidators or wholesalers to destination market using transportation companies services (mainly foreign companies), or importers come and buy the produce at domestic operators' facilities.

Financial flows. The financial relations among actors in the value chain are usually short term, meaning that late payment are quite rare - input suppliers nowadays usually do not accept late payment and farmers require to be paid at the time of sale (or within a short time period). The reason for avoiding late payment is problems encountered in the past - some input suppliers complain that many farmers are due (late payment) large amount of money for the supplied inputs. There are also large wholesalers that avail short-term loans to pay the farmers.

Information flows. Input suppliers represent a major source of information and advice for farmers and so are wholesalers and - to a lesser - local consolidators. Input suppliers advise farmers on plant nutrition and plant protection and sometimes conduct visits to farmers' fields, and sometimes experiment on behalf of international seed/seedling companies at selected farms. Input suppliers´ advice may by perceived to potentially represent a conflict of interest (they may be motivated to induce farmers to overuse inputs in order to sale more, or may orient farmers to use inputs form which they have the highest margins). Hence, the advice by buyers may be considered 'healthier' for farmers (farmers and buyers are interested to produce both higher quantity and quality).

Value chain governance

Export channel (Figure 9), may also be named export coordinated channel. This is particularly true as long as consolidators/wholesalers are also input (seedling) providers. Field interviews with key players (e.g. Doni fruits, Biti & CO and AgroKoni) support that consolidators/wholesalers deal repeatedly with a core group of farmers. Although, there is quite some flexibility in the relationships with farmers (there are farmers who enter and exit relationships with buyers), there is a core group of farmers with who buyers have more stable relationships. The latter sell inputs to this group of farmers sometimes with late payments, offer advice and technical information, and buy the farmers produce. In exceptional cases, buyers have also written contracts with farmers such as in case of 'Doni Fruits'.

5. PRODUCTION TECHNOLOGY PROCESSES

Tomatoes, similar to the other protected (under greenhouse) crops (such as cucumber) are relatively competitive, as climatic conditions in the best production areas allow production without artificial heating for at least 9 months of the year.

In the following table (Table 21), the main operational cost components are highlighted. Soil preparation consists of the first ploughing 20-30cm, the scarification (15cm) together with basic fertilization. Planting is a high cost process because of the cost of saplings and the labour to plant them in the greenhouse. After the first basic fertilizing, there is a continuous use (every 5-6 days) of chemical fertilizers during the cultivation period. Chemical treatments against diseases and insects have a very high cost. It is highly recommended that all treatments be according to the production needs determined by monitoring and analysis (integrated management) and assuring safe produce.

Below the monthly dynamics of services/processes which are linked to expenditures for tomatoes (which is indicative because there may be variation depending on a number of factors) are summarised.

Table 21: Calendar of tomatoes production processes

Main type of expenditures	Months											
	1	2	3	4	5	6	7	8	9	10	11	12
Early tomato, first season												
1.Soil plowing &scarification												
2.Planting + saplings												
3.Basic & complement fertilizer												
4. Chemical treatments, spraying												
5. Irrigation												
6.Harvest												
Late tomato, second season												
1.Soil plowing &scarification												
2.Planting + saplings												
3.Basic & complement fertilizer												
4. Chemical treatments, spraying												
5. Irrigation												
6.Harvest												
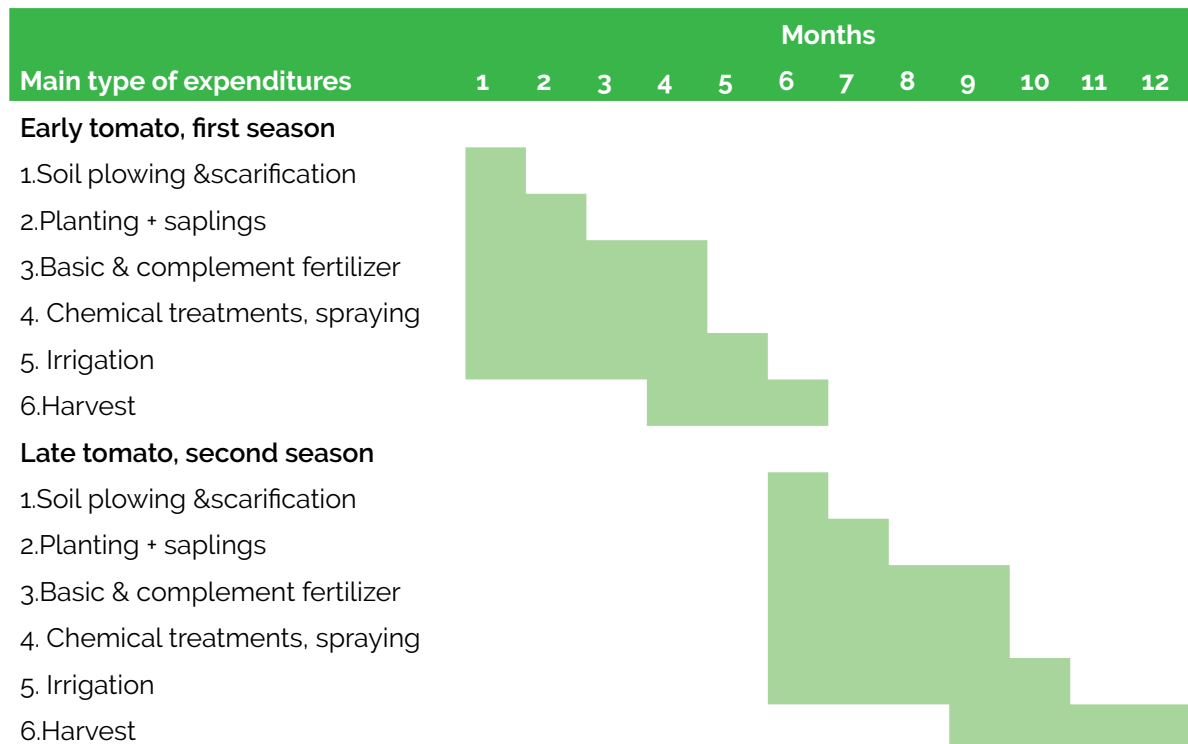
Source: Expert assessment, based on desk review and interviews.

The following table (Table 22) shows the monthly dynamics of services/processes that are linked to expenditures for cucumbers (which is indicative because there may be variation depending on a number of factors).

Table 22: Calendar of cucumber production processes

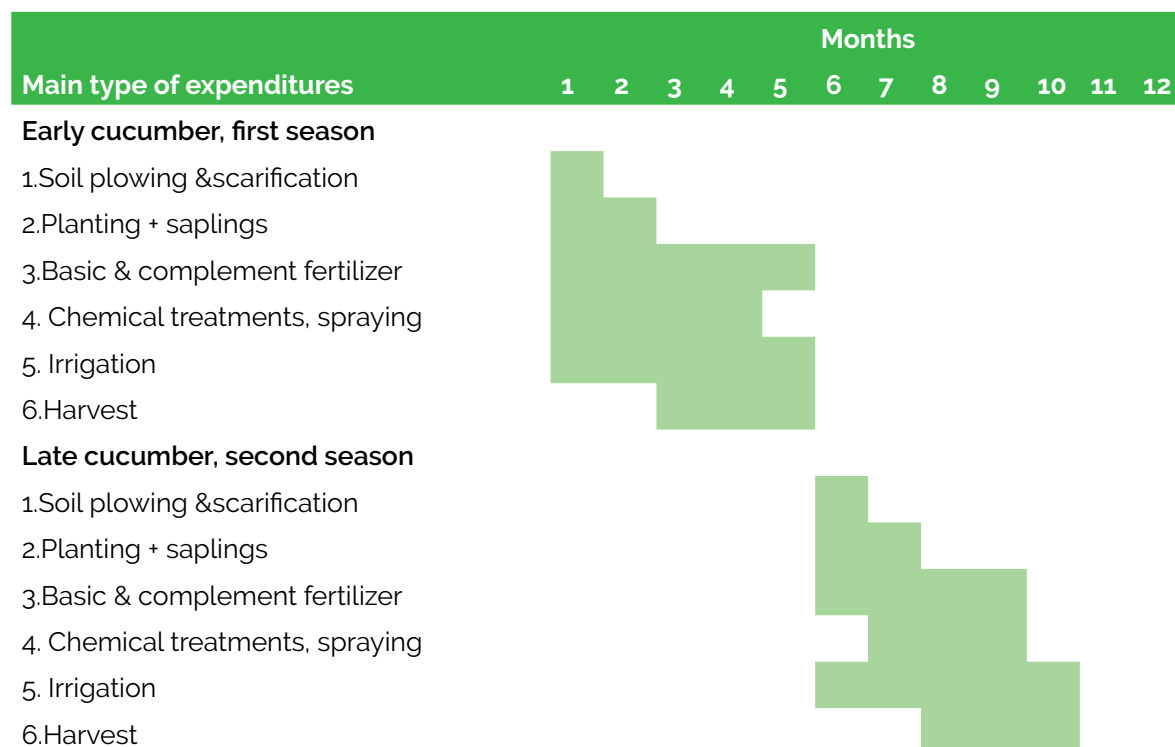| Main type of expenditures	Months											
	1	2	3	4	5	6	7	8	9	10	11	12
Early cucumber, first season												
1.Soil plowing &scarification												
2.Planting + saplings												
3.Basic & complement fertilizer												
4. Chemical treatments, spraying												
5. Irrigation												
6.Harvest												
Late cucumber, second season												
1.Soil plowing &scarification												
2.Planting + saplings												
3.Basic & complement fertilizer												
4. Chemical treatments, spraying												
5. Irrigation												
6.Harvest												

Source: Expert assessment, based on desk review and interviews.

Most traders that export vegetable including tomatoes need/use cold storage capacities for short periods (e.g. 1-2 days) before loading trucks. As such, storage for longer periods to benefit from price changes (increases) is not a usual practice.

Table 23: Market availability of locally produced greenhouse tomatoes and cucumbers

Product	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Tomato I									
Tomato II									
Cucumber I									
Cucumber II									

Source: Expert assessment

There is a time lag between the moment that the expenditure occurs and the sales – in the past, that was often covered by input suppliers who would accept late payment from farmers. However, field interviews showed now, that after experiencing growing debts from farmers, inputs suppliers are less likely to accept sales based on late payment. Thus, there is a time window and need for short term loans for farmers that could be covered by banks.

6. SWOT ANALYSIS AND FINANCING NEEDS

6.1. SWOT ANALYSIS STRATEGY

The following SWOT analysis strategy is conducted with the objective identifying financing opportunity in the greenhouse tomato and cucumber sector.

Table 24: Greenhouse tomato and cucumber sector: SWOT analysis strategy

	STRENGTHS (+)	WEAKNESSES (−)
	Suitable soil and climate conditions for growing vegetables in protected areas	High cost of fuel making heated greenhouse business inefficient
	Relatively large production base allowing sustainable supply	
	Important investment by vegetable consolidators and wholesalers in collection facilities	Insufficient proper storage technology by consolidators and wholesalers
	Greenhouse cluster: area between Berat and Lushnje, including Gorican	Insufficient investment in marketing infrastructure and technology by consolidators and wholesalers
		Insufficient mechanization at vegetable storage facilities
		Insufficient specialised transportation
OPPORTUNITIES (+)	**S (+) / O (+) STRATEGY**	**W (-) / O (+) STRATEGY**
Still available area to be allocated to greenhouse production. Still available, cheap labour.	Support larger and high tech green-houses investment (based on sound expertise including feasibility studies) and renovation of already existing greenhouses that have proven successful.	Support alternative heating and efficiency-enhancing solutions in centrally-heated greenhouses
Export opportunities due to already well established relationships between Albanian exporters and international buyers, provided that safety and quality standards are met. Increased integration in export markets has been a major driver for investments in the sector		Support cold storage in traders´ facilities
		Support marketing infrastructure (packing houses [1]) and technology
		Support mechanization at vegetable storage facilities
		Support specialised refrigerated transportation
THREATS (−)	**S (+) / T (−) STRATEGY**	**W (−) / T (−) STRATEGY**
Export risks due to safety and quality issues		Support postharvest technology
The lack of market and sector analysis exposes new investments to a high risk		Support GlobalGAP certification

Source: Authors own elaboration

6.2. FINANCING NEEDS

6.2.1. Investment trends and financing needs

Investment trends

Investment in non-heated (simple) greenhouses for vegetable production is the main investment in the value chain. Greenhouse may be used for more than one production cycle and in some areas up to three production cycles, making this kind of investment very profitable. Using bees for tomato pollination is also a new trend in the sector that enables higher quality production. There are a limited number of heated greenhouses as well. Almost all local consolidators and large wholesalers have made modern investment in storage facilities. Packaging house which include cleaning, sorting, and packaging lines are also a new trend particularly for large export-oriented actors. This category of exporters has also invested in cold rooms even if it does not represent a typical investment for local consolidators.

Investment financing needs

Following the SWOT analysis strategy and investment trends, investment financing needs are summarised in the Table 25.

Table 25: Investment financing needs

Type of investment	Green hose farmers	Consolidators	Wholesalers
1. Construction/renovation of non-heated green houses	▓		
2. Installation of bio-mass heating systems in central heated greenhouses (to be considered based on feasibility studies/assessment)	▓		
3. Support pollination bee hives	▓		
4. Installation of automatic heat control and/or climate control sensory in green house system to improve energy efficiency systems in central heated greenhouses	▓		
5. Replacement of current non-heated greenhouses simple plastic with thermic plastic	▓		
6. Support to vegetables storage facilities		▓	
7. Support to vegetables cold storage technology		▓	
8. Support to sorting, grading, cleaning, packaging and labelling line (packing houses)		▓	
9. Support to mechanization collection/consolidation facilities (palletized transport within large storages and other similar machineries and equipment)		▓	
10. Support to specialised refrigerated transport			▓

Source: Authors own elaboration

Investment in greenhouse construction represents a main investment at farm level, as well as an interesting opportunity for financial institutions. Expert assessment support that there are still huge opportunities to increase greenhouse area. In order for Albania to exploit its potential, greenhouse area could grow to 5,000 ha (and even more based on field export opinion) from a currently low base of close to 1,500 ha. Tomato bee pollination may also be considered for support.

Heated greenhouses have proven less efficient than simple non-heated greenhouse, particularly given the high cost of fuel. Hence, installation of bio-mass heating systems in central heated greenhouses represents an opportunity to explore for financing. However, there should be careful considerations and feasibility studies. Installation of automatic heat control and/or climate control sensory in greenhouses system to improve energy efficiency systems may also be considered for heated greenhouse.

Vegetables greenhouse 'industry' is an export-oriented industry. For the time being the geography of exports is focused on regional countries (Kosovo, Serbia, Bulgaria, Bosnia e Herzegovina) at relatively low reported prices. Since export is growing fast, there is a need to target high income European countries, but which are more demanding in terms of product quality and standards. Such a transition would call for investment in marketing and quality infrastructure, including packaging houses. Cold storages also needed to preserve the quality in case of exporting to high

income EU countries. Investment in storage capacity and mechanisation within collection point are also needed.

Foreign companies, mainly Macedonian, Montenegrin and others, supply most of the transport services. Support to investment in transport – including refrigerated transport - should be considered broadly considering the need for it, competition from well-established foreign transport companies and fiscal and support government policies.

Box 3: Public support schemes for Albanian agriculture

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

Objectives and measures for ANSS-2018 are summarized below:

- Increase of competitiveness by providing support to investment (construction of greenhouses, investments in marketing), supporting innovation technologies, and certification and insurance

- Vertical and horizontal and business formalization

- Diversification of rural activities.

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

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

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

6.2.2. Operating capital financing needs

Operating capital financing trends

In the recent past, input suppliers have used late payment for agricultural inputs they supply to farmers. Given problems encountered by input suppliers concerning payment collection from farmers, input suppliers now prefer on the spot cash transaction for agricultural inputs. Payment for the farm produce supplied to buyers is made both within a short period of time or late payment. Payment within a short period of time is made in case the buyer downstream (including exporter) make timely payment, and late payment is made in case buyer make late payments particularly for groups of farmers with whom traders have more durable relationships especially larger farmers.

Working capital financing needs

Since input suppliers prefer on the spot cash transaction, there is a manifested a need on the side of farmers for short term working capital. This is particularly needed in case of larger farmers - smaller farmers may accommodate working capital needs using own savings or borrowing from relatives. The need for short term working capital from farmers is also to be explored in case buyers face problems with other buyer downstream (exporters).

As mentioned above, there is a time lag between the moment that the expenditure occurs and the sales. Thus, there is a time window for short term loans for farmers that could be covered by banks.

6.2.3. Value chain financing

Support to contract farming is included in the GoA support scheme for 2018 (measure 41) - government subsidizes 50% of seedling price to farmer through buyers subject to a contract between the buyer and the farmer. Interestingly, there have been reported a high number of application to benefit from this measure.

The applicants for this measure (buyers and farmers) may be considered as realistic candidates for value chain financing. The banks may extend short term loans for covering the need for working capital of buyers or investment loans to farmers using buyers as their agents.

7. CONCLUSIONS

There has been an improved performance of the vegetable sector– especially in the case of greenhouse vegetable. The surface of greenhouses has almost doubled since 2005. The increase of greenhouse area, coupled with improved production technologies, has resulted in significant increase of production enabling a surplus for the key vegetables produced under greenhouse (most notably tomatoes). Domestic production of vegetables covers domestic demand, except 2 winter months, as production in heated protected crops (i.e. heated greenhouses) is not competitive when compared with imported products.

A significant increase of exports, from quasi-inexistent in early 2000 to significant levels in the last years took place. In 2016, exports of vegetable mounted to almost 40 Million EUR (almost 4 times higher compared to 2013). Tomato is one of the main exported vegetables (making up for more than ½ of total vegetable export), followed by cucumber.

The main actors in the greenhouse value chain are input suppliers (mainly seedling suppliers), farmers, local consolidators and wholesalers. Typical investments made are investment in greenhouse construction, storage facilities and – although less often - investment in cold storages, and packaging house mainly by large wholesalers.

The value chain is structured around two main channels, namely domestic and export channel. In the export channel, which may also be named coordinated channel, there is some kind of coordination between buyers-exporters and core groups of farmers. Buyers advise farmers on production technology including type of cultivars, supply inputs (in case buyers are inputs suppliers as well), buy the produce and sometimes perform late payments for farmers. This kind of relationships contains the potential for value chain financing.

Based on SWOT analysis strategy and investment trends, the main investment financing needs for greenhouse value chain are investment in greenhouse construction. In order for Albania to exploit its potential, greenhouse area could grow to 5000 ha from a low current base of close to 1500 ha. Since investments in heated greenhouse have proven less efficient than simple non-heated greenhouse, installation of bio-mass heating systems in central heated greenhouses combined with automatic heat control and/or climate control sensory to improve energy efficiency systems may also be considered for support.

While the geography of exports is focused on regional countries at relatively low reported prices, the need to target high income European countries which are more demanding in terms of product quality and standards call for investment in packaging house, increased storage facilities and cold storages facilities and mechanisation within collection point are also needed. Support to investment in transport should be considered as well.

There is a potential for value chain financing, particularly in cases where buyers are also input suppliers. In order to 'control' cultivars suitable for export and the seedling quality, the buyer-input supplier is interested to enter in a more durable relationship with the farmer, by proving them seedlings that farmers pay back at the time of produce supply.

Greenhouse value chain is considered a priority sector for Albanian government based in its export potential - the sector has been included in all public financial support schemes, including recent support schemes. The current partial grant policy has important implications for financial institutions - they have the opportunity to co-finance the investment for up to 100% of investment amount out of which at least 50% short term loan (the part to be reimbursed by government) and at most 50% loan term loan for the part to be paid by the beneficiary.

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9. ANNEXES

Table 26: Regionalization of national subsidy schemes (2018)

No	Measure	REGION											
		Berat	Dibër	Durrës	El-basan	Fier	Gjiro-kastër	Korçë	Kukës	Le-zhë	Shko-der	Tiranë	Vlorë
1	Apple												
2	Cherry												
3	Walnuts, hazelnuts												
4	Pomegranate												
5	Chestnuts												
6	Olives												
7	Oilive groves renovation												
8	Citrus												
9	Vineyard												
10	Strawberry												
11	Medicinal and aromatic plants												
16	Melon/watermelon in low tunnels												
12	Tomato, cucumber, paprika												
18	Vegetables bee polination												
14	Bio-mass heating system												
19	Greenhouse automation system												
13	Drip irrigation												
15	Cover plastic replacement												
17	Hail nets												
25	Global GAP certification												
27	Organic certification												
28	ISO 22000 certification – olive oil												
29	Insurance prime												
41	Suppor to green house seedlings												
43	Cereal cultivation												
30,37	Cattle ear tag and milk supply												
30	New born small ruminants ear tagged.												
38	Beehives												
21-24, 31,33-35, 44-52													

Table 27: Distribution of greenhouse tomato and cucumber commercial farms

Region	up to 2 dn	Between 2.1 and 5 dn	Between 5.1 and 10 dn	Between 10.1 and 20 dn	over 20.1 dn	Total	% to qark
Berat	89	247	47	14	2	399	32.7
Diber	7	0	0	0	0	7	0.6
Durres	70	16	8	4	4	102	8.4
Elbasan	25	39	14	1	0	79	6.5
Fier	66	120	99	66	44	395	32.4
Gjiroka	13	2	1	0	0	16	1.3
Korce	4	2	0	0	0	6	0.5
Kukes	0	2	0	0	0	2	0.2
Lezhe	34	6	0	0	0	40	3.3
Shkoder	12	7	3	6	3	31	2.5
Tirane	105	14	1	0	0	120	9.8
Vlore	2	10	7	2	1	22	1.8
Total	427	465	180	93	54	1219	100.0
% to size	35.0	38.1	14.8	7.6	4.4	100	

Note:

Note:

Tiranë, 2019