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CHESTNUT SECTOR STUDY

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

CHESTNUT SECTOR STUDY

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	5
1. INTRODUCTION	7
2. METHODOLOGY	9
3. TRENDS AND PROSPECTS OF THE IDENTIFIED VC.....	11
3.1. Production trends.....	11
3.2. International trade trends.....	13
3.3. Market.....	14
4. VALUE CHAIN STRUCTURE AND KEY ACTORS.....	16
4.1. Value chain structure and actors' profiles.....	16
4.2. Value chain flows and chain governance.....	18
5. PRODUCTION TECHNOLOGY PROCESSES.....	20
6. SWOT ANALYSIS AND INVESTMENT NEEDS.....	22
6.1. SWOT Analysis strategy.....	22
6.2. Financing needs.....	23
7. CONCLUSIONS.....	26
8. REFERENCES.....	24
9. ANNEXES.....	28

LIST OF FIGURES

Figure1: Dynamics of the Albanian import of chestnuts in shell.....	11
Figure 2: Dynamics of the Albanian exports of chestnuts (in shell and shelled).....	11
Figure 3: Chestnuts Value Chain Map.....	13
Figure 4: Chestnut technological processes in Albania.....	17

LIST OF TABLES

Table 1: Production trends of Chestnut in Albania.....	9
Table 2: World production trends of chestnut (000 MT).....	9
Table 3: Chestnut data by districts.....	10
Table 4: Chestnuts export performance.....	12
Table 5: Supply balance of chestnuts in Albania (000 MT).....	12
Table 6: Calendar of chestnut production/harvesting cycle.....	18
Table 7: Chestnut sector: SWOT analysis strategy.....	18
Table 8: Chestnuts investment financing needs.....	19
Table 9: Governmental subsidy schemes regionalization map (2018).....	25

EXECUTIVE SUMMARY

Nuts (especially chestnuts) represent an important source of income for silvo-pastoral communities (considering that nuts, are typically located in mountainous areas), where intensive agriculture is not viable in Albania, and alternative employment are few. Chestnuts represent the most important nut product in terms of production and international trade. Contribution of nuts exports to total fruits exports are significant, corresponding to about ½ of the fruits export value (although that varies from year to year). This contribution comes solely from chestnuts – exports of other nuts are insignificant or inexistent over the years.

Production of chestnuts has been increasing and is expected to further increase in the future. In addition, export of chestnuts has increased significantly over the last years, exceeding 8 million USD in 2016.

The objective of this study report is to provide an overview of the nuts sector in Albania, with focus on chestnuts, 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. However, 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 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. 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 the financial institutions and other interested parties in supporting chestnut sector about the main opportunities to finance the sector. Some of the most important financing opportunities at farm level are chestnut plantations including autochthon cultivars which are well adapted to Albanian conditions, reconstruction/renovation of chestnuts forests, and better management of exiting chestnut forests. Two approaches may be considered to support to investment at the processing level, namely (i) address the traders/processers partial needs as they arise, and (ii) support large scale, integrated projects embracing all the main stages of chestnut processing. There is a need/potential for investments to increase storage capacity, support chestnut hot-curing facilities and equipment, support simple sorting/grading machines, and other marketing equipment. The increases in cold storage capacity are opportunities for financial institutions to realistically address value chain actors' needs. A complete line of chestnut

processing that is made of a grading line (which grades and sort chestnuts into chestnut destined for market as fresh products and chestnuts destined for processing), the fresh product line and industrial product line may also be considered given the sector export potentials.

Given the nature of the sector, there is no major need for working capital financing needs (inputs are hardly used – the only service related to maintenance and harvesting is usually covered through unpaid household labour). However, value chain financing may also be considered – chestnut traders may serve as agents of financial institutions, particularly in case farmers will be engaged in chestnut cultivation or chestnut forests renovation/better management. In this case, farmers would have needs for investment capital.

Nuts sector can benefit from public support schemes. The grant policies (which vary year by year) have important implications for financial institutions - they have the opportunity to co-finance the investment for 100% of investment amount out of which can be 50% short term loan (the part to be reimbursed by the grant after the implementation of the investment) and 50% loan term loan (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.

Nuts are one of the most important agrifood sectors with strong socio-economic relevance for mountainous communities. Contribution of nuts exports to total fruits (HS 08) exports is significant, exceeding 50% in 2013, and 40% in 2016. Chestnuts represent the most important nut product in terms of production and international trade.

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

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

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';
- synthesises the main points in a value chain through a SWOT analysis strategy, and;
- recommends on the main opportunities for (investment financing, working capital financing, and value chain financing) 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. 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 chestnut 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: market potential and other factors leading to product competitive advantages. Market potential is examined in two angles, export potential and potential to import substitution potentials. Export potential considers revealed export performance combined with international demand for the respective 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 chestnut value chain is considered a priority sector considering its export performance and 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 analysed. When applicable, data from other countries or regions were collected for comparative analysis purpose.

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 IDENTIFIED VC

3.1. PRODUCTION TRENDS

Nuts (especially chestnuts) represent an important source of income for silvo-pastoral communities (considering that nuts, are typically located in mountainous areas), where intensive agriculture is not viable in Albania, and alternative employment are few. Chestnuts represent the most important nut product in terms of production and international trade therefore also this report is focused on this product.

Production of chestnuts is largely based on existing forest massifs, most of them de facto organic and parts of the production sites also certified as organic, which represents a clear export potential. They are mostly exported as organic raw product for the processing industry.

Production and productivity of chestnuts are hampered by the large number of old trees and diseases. However, production has marked modest increase over the years (Table 1).

Table 1: Production trends of Chestnut in Albania

Chestnut	2000	2005	2010	2014	2015	2016
MT	5,000	5,000	5,453	6,590	6,600	6,040
MT/Ha+	3	3	2	2	2	3

Source: FAOSTAT (2018)

The increasing trend of Albania's production of chestnut has been slower when compared to world trend (which has been marked by high growth).

Table 2: World production trends of chestnut (000 MT)

Country	2000	2005	2010	2014	2015	2016
Albania	5	5	5	7	7	6
EU	120	112	124	122	132	135
World	941	1,369	2,002	2,057	2,044	2,262
Europe	127	119	131	130	141	143

Source: FAOSTAT (2018)

In terms of regional distribution, Kukës region is the main area of chestnut production. A huge massif of 2000 ha is found in Tropoja (located in the qark/region of Kukës).

Shkoder region, namely Malësia e Madhe is also important for chestnuts with a comparative advantage related to the quality of the varieties from Reçi, Shkreli Commune (including "Puka" genotypes). Due to the good quality, about 50% of production is exported mainly to Italy.

Dibër, Puke, Shkoder Bulqize, Librazhd and Mat districts are also significant chestnut producers. In other areas/municipalities, production of chestnut is much smaller.

Table 3: Chestnut data by districts

District	Tree number	In blocks		Production, MTs
		Area in ha	Number of trees	
1. Tropojë	190000	2000	190000	747
2. Dibër	24688	45	8790	913
3. M.Madhe	22990	350	NA	1280
4. Puke	16000	13	3961	465
5. Shkoder	10070	10	2000	305
6. Bulqiza	9726	27	5690	171
7. Librazhd	8000	0	0	144
8. Mat	6365	0	30	353
9. Devoll	3960	10	260	45
10. Pogradec	3750	1	300	82
11. Elbasan	3298	6	1132	52
12. Kukës	2017			31
13. Korçë	1488	7	1460	102
14. Kolonje	640	3	600	1
Total	336514	2416	235793	5420

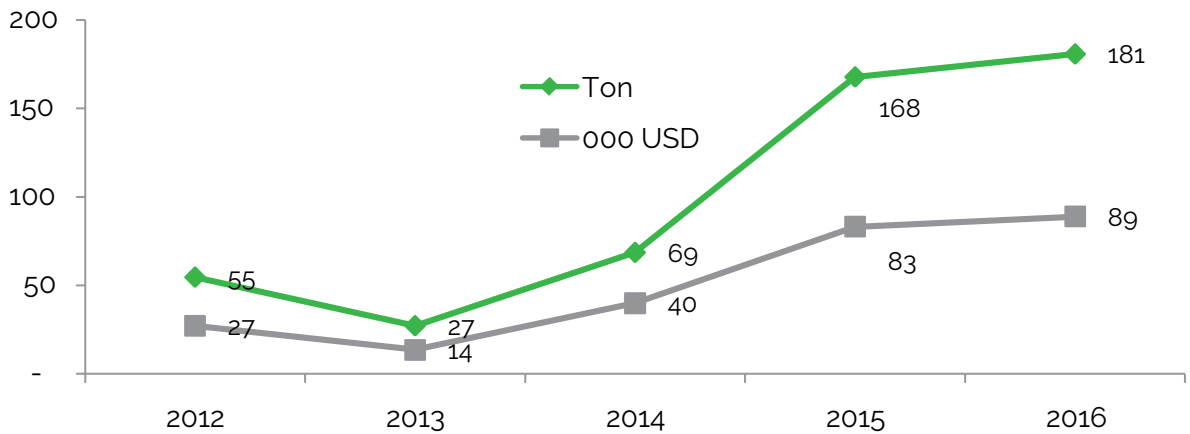
Source: SARED (2014)

In Albania there is no processing industry related to chestnuts.

3.2. INTERNATIONAL TRADE TRENDS

Import of shelled chestnuts is rather low, despite the increase over the last years.

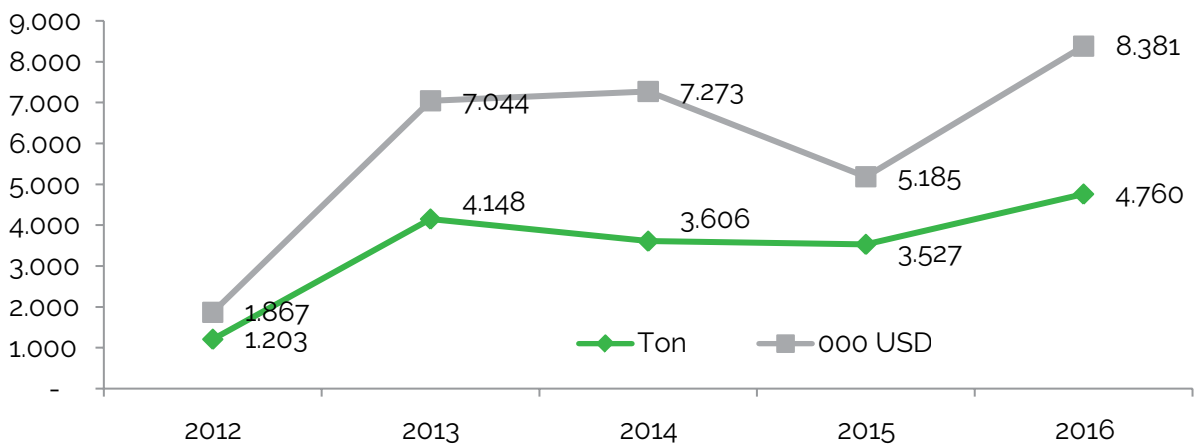
Figure 1: Dynamics of the Albanian import of chestnuts in shell



Source: UNSTAT (2018)

Export of chestnuts has increased significantly over the last year. As shown later, almost all exports go to Italy and are directed towards the processing industry.

Figure 2: Dynamics of the Albanian exports of chestnuts (in shell and shelled)



Source: UNSTAT (2018)

3.3. MARKET

3.3.1. International market

Albania has a positive trade balance for chestnuts. The export trend is quite impressive - the export annual growth between 2012 and 2016 for this product is 30% and between 2015 and 2016 is 59% (Table 4).

Table 4: Chestnuts export performance 2014-2016

Product label	Value exported in 2016 (USD thousand)	Trade balance 2016 (USD thousand)	Annual growth between 2012-16 (%)	Annual growth 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				
Chestnuts	6161	6072	30	59	0	9

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

Export of chestnuts occurs under stable international demand for these products. Albania ranks 9th for the world export of chestnuts.

In Albania, organic certification has been applied to chestnuts. Due to its nature of production it is feasible to be certified organic, and thereby could enable producers to receive a price premium (when combined also with marketing). This can provide additional incentives for farmers to harvest chestnuts.

3.3.2. Domestic market

According to the official statistics, most chestnuts are destined for exports while the imports of nuts are modest. Overall, about 75% of total production is exported. Domestic consumption is covered by domestic production.

Table 5: Supply balance of chestnuts in Albania (000 MT)

Category	2015	2016
Production	5.5	6.0
Import - In shell	0.2	0.2
Export - In shell	2.5	3.2
Export - shelled	1.1	1.6

Source: UNSTAT (2018) and EUROSTAT (2018)

The origin of production tends to be quite an important factor for most Albanian consumers. According to various studies, most consumers choose their products based on origin (domestic versus imports). Previous studies have shown that there is a clear preference for domestic chestnut and chestnut honey^{1,2} for which there is a preference related to specific territory within Albania, which represents a potential for marketing-related investments. Interestingly, the chestnuts and chestnut honey were among the first GI formally registered in Albania. Now chestnut and chestnut honey from Tropoje and Rec are four separate GIs in Albania (out of existing seven)³

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 which can be capitalized in marketing promotions and investment by producers/traders⁴.

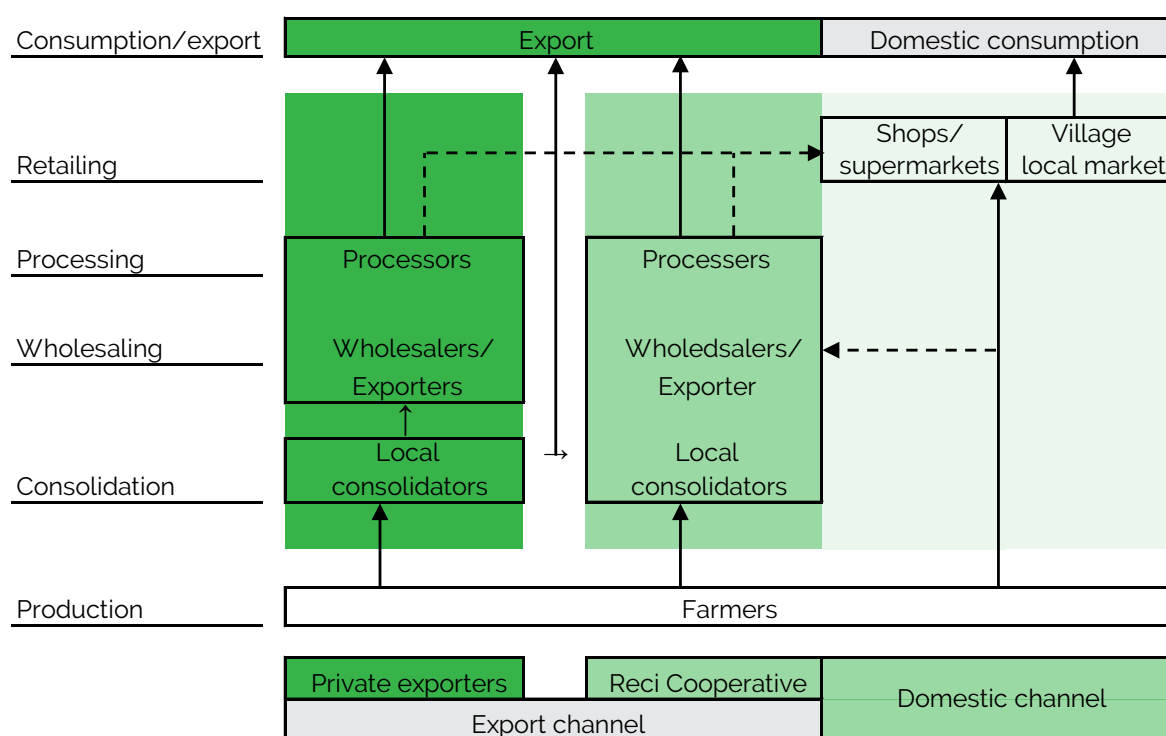
-
- 1 Cela, A., Zhllima, E., Chan C., Imami, D., & Skreli, E. (2017). Analysis of urban consumer preferences for honey in Albania. Food Distribution Research Society Annual Conference.
 - 2 Imami, D., & Skreli, E. (2013). Consumer preferences for regional/local products in Albania. Technical report prepared for FAO.
 - 3 Bernardoni, P., Leonetti, L., & Rama, K. (2018). Project "BiodivBalkans - Conservation et valorisation de la biodiversité : développement durable de la montagne balkanique". Final evaluation report.
 - 4 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. VALUE CHAIN STRUCTURE AND KEY ACTORS

4.1. VALUE CHAIN STRUCTURE AND ACTORS' PROFILES

Figure 3 maps the chestnut value chain actors and the main channels through which chestnut flows from farmers to end use consumer (Figure 3).

Figure 3: Chestnuts Value Chain Map



Source: Authors design

The main actors in the chestnuts value chain are farmers, local consolidators, wholesalers/exporters, who may also assume the role of simple processing, and retailers. We first give a short profile for the main actors in the value chain and then proceeded with value chain flows and value chain governance.

Farmers

The chestnut supply currently comes from farmers/harvesters. Farmers collect chestnuts from existing forests (mainly communal forest land to which they have customary rights and access). Apart from production, most farmers are involved in value chain activities, including: post-harvest care, storage, selection (removal of rotten and infected nuts), grading and marketing of nuts.

In general, there are large areas of natural chestnut forests because of the favourable soil and climatic conditions. These natural forests, however, are not well maintained which leads to very low yields. Trees, especially chestnuts, are not regularly pruned to reduce the fruit load and consequently increase fruit size.

There is no information about production of marrons (larger, higher value added chestnuts).

Chestnut cultivation has not been common / widespread in the past. MARD reports a limited number of farmers who have invested in the establishment of chestnut plantations. Semi-structured interviews also support the fact that chestnut cultivation, using autochthon seedlings, is already adapted to Albanian conditions.

Consolidators/traders

At the collector level, the chestnut market is quite competitive – there are of 30 traders/consolidators competing collecting the chestnuts from farmers. Most traders have some storage facilities for bulking products for a short term. They grade the products by hand according to different classes. Some traders show willingness to help farmers in establishing transit storage facilities (short-term) in remote communes.

Processors/exporters

There are a limited number of wholesalers/exporters in the chestnuts sector. Among them, Mazreku, Çitozi, etc. are the main actors in the chain. Reçi group of farmers represent an interesting organization of farmers, which is acting as a consolidator, wholesaler, as well as exporter. Chestnuts are usually sold without any marketing operation (sorting, grading, and packaging) and any processing operations (sometimes some drying is done). This leads to missed opportunities. The first quality of chestnuts may be sold at domestic market at a quite high price. The second quality may be exported at a quite remunerating price and the third quality chestnuts (which now are wasted) may be dried and sold to export market as well.

Box 1. Reçi chestnut cooperative

Reçi cooperative is one of the first cooperatives created in Albania. It has a good reputation in the areas of Malësia e Madhe and Shkoder.

Products. Reçi cooperative collects chestnuts fruits from farmers, simply removes small stones and other non-chestnut materials. The maximum handled output is round 300 MT. The product is heterogeneous given that the Reçi forest has a variety of chestnut cultivars – originally (long time ago) people have planted different chestnut cultivars. Heterogeneity has become even more pronounced following grafting operations.

Resources: In terms of assets, chestnut forest of an area of 350 ha is the most important asset. In addition, the cooperative has a storehouse which is used for both chestnut manipulation and medicinal and aromatic plants handling. There is not even a simple equipment for chestnut processing. The most pressing investment for the cooperative is a simple chestnut sorting and grading line. The Cooperative also plans to invest in new product drying that might increase the added value by 50%.

Partners. Reçi cooperative has a capillary supply chain: more than 200 families involved in forest maintenance. Trust relationships with farmers assuring quick and secure payment is one of the strongest points of the Cooperative. The product is brought to cooperative storehouse by 12 collectors working seasonally. Reçi cooperative has established rather durable relationships with some large processing companies, mainly Italian, Serbian and Montenegrin. Strong market linkages with some are also important for the success of the business.

Opportunities. There are a number of opportunities for Reçi cooperative, including: increase collection from other areas like Dukagjin, Shllak and Tropoja, export dried product used as an input for different food industries all over Europe, and supply domestic market with packaged products, as well as the creation of cold storage capacities to conserve products longer¹

The Cooperative of Rec is also the holder of two officially recognized GIs: Rec Chestnuts and Rec Chestnut Honey. This situation could provide a major competitive advantage in the future, if properly managed.

Source: Adopted from Gerdoçi, B., & Skreli, E. (2013).

4.2. VALUE CHAIN FLOWS AND CHAIN GOVERNANCE

Product flows, information and financial flows

Product flows. There are two main channels through which chestnuts flow from farmers/harvesters to end market, namely export channel and domestic channel (Figure 3). In case of export channel, one may observe two distinct sub-channels, namely private 'chaotic' export sub-channel and Reçi cooperative sub-channel. In the first sub-channel, farmers sell their fruits local collectors/transporter, which supply the produce to exporters. In some cases, the product reaches the export market through local consolidators/traders as well. This is mainly the case of Shkoder and Kukës farmers, and more specifically of Malësia e Madhe and Tropoja harvesters. Exporters who quite often make some processing export the product. Recently there have been established solid relations between exporters and trade agents in Italy. Only few are selling directly to the food industry in Italy. Reçi cooperative is a promising case having become an important chain driver for chestnuts in Malësia e Madhe. In case of Reçi 'cooperative', farmers sell the produce to the cooperative which export it after storing for some time.

A direct channel represents the domestic market channel. In the case of direct channel, chestnuts from Dibër and Korca are sold according to arising opportunities, at the village, local market, and /or to traders either in fresh and/or in dried form.

Information flow. Technology and information flow and advice from buyers to farmers is not common, except in some cases (refer to value chain governance)

Financial flow. Though late cash payment is common in the relationships between domestic buyers and farmers, the potential for operating capital is limited given that farmer deal with harvesting only and not chestnut cultivation.

Value chain governance

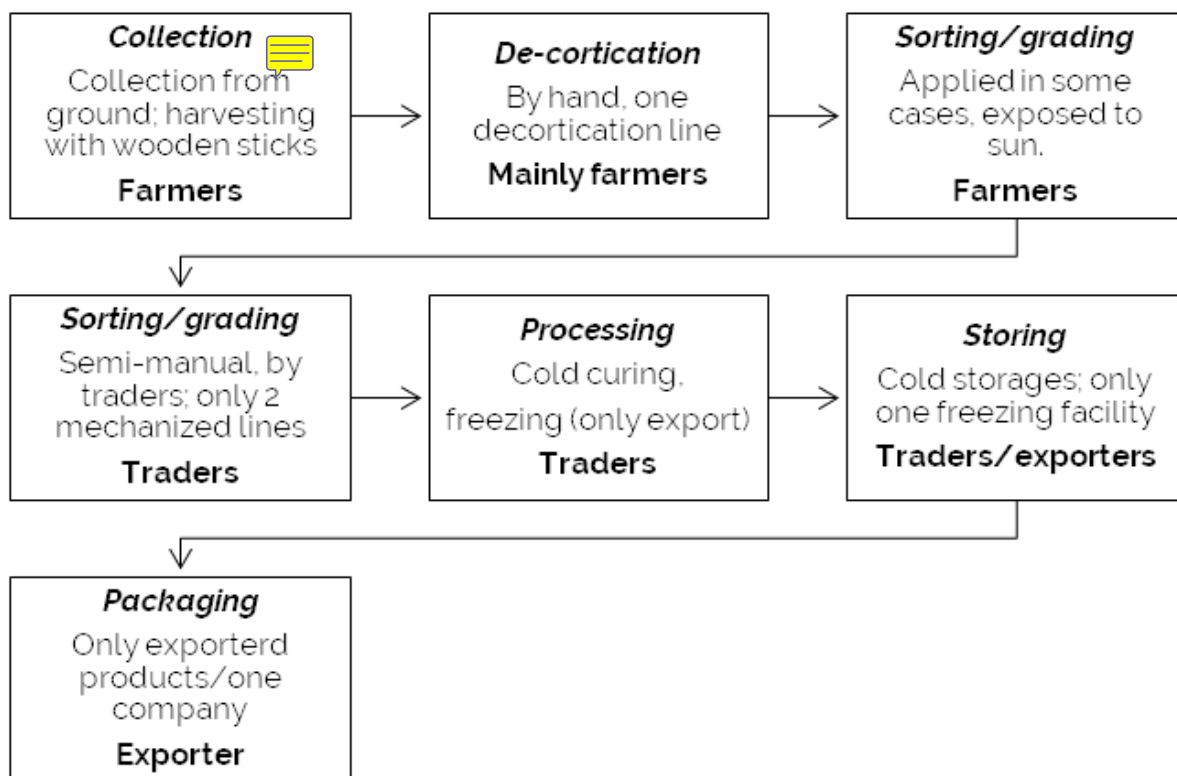
Some traders have shown some interest in better collaboration with farmers and could provide information on quality standards of products and post-harvest care. On the other hand, Reçi cooperative represent a rather integrated model – dealing with product collection, preparation for the market and exporting but also providing information to farmers on technological processes marketing.

5. PRODUCTION TECHNOLOGY PROCESSES

Chestnut harvesting occurs during autumn. Without post-harvest curing, chestnuts must be traded within ten days before being spoilt. The traditional way of “cold curing” chestnuts (putting them in cold water for a maximum of seven days and after drying and sorting them) allows preservation in good conditions for several weeks or at best few months; in fact, after winter there are hardly Albanian chestnuts in the market. Lack of appropriate storage and drying facilities after the “cold curing” increases the share of chestnuts, which are spoilt, sold for a very low price without any curing, or lost because they were unable to be sold and not timely cured. While “hot curing” (requiring sterilisation in hot water) coupled with use of cold storages is the only way to preserve chestnuts for a whole year. No facilities for “hot curing” are presently available in Albania. The homemade production of chestnut flour has been also occasionally reported, but not to an industrial scale⁵.

The current chestnut processing technological processes are summarised in the Figure 4.

Figure 4: Chestnut technological processes in Albania



Source: DSA (2008)

5 DSA (2008). Food chain analysis of chestnuts, walnuts, hazelnuts and almonds in Albania. Technical report prepared for SNV

There are a number of autochthon chestnut cultivars which are well adapted to Albanian conditions and which (superior selected genotypes) may be used for establishing new chestnut plantations with the aim creating a critical mass of qualitative supply for the export market. On the other hand, introducing other European and Asian high quality cultivars may also be considered. Finally, young chestnuts can be grafted to produce marrons, highly required in international markets, as frozen raw material for quality pastry ("marron glacee").

Box 2. Chestnuts' Cultivars

The modern nut sector in Albania is at infant stage of development therefore the issues of diversification are not as immediate as for some fruit species like apples. Moreover, in order to create a critical mass of production for enabling sizeable contracts, it is required to have few qualitative cultivars demanded by the international market too. For chestnut, local superior genotypes like "Tropojë", "Puke", "Shkodër", and "Mirditë" characterized of big fruit size or "Pogradec" and "Qafemollë" should be valorised by turn them into specialized varieties for making a chestnut "brand" linked to the producing district. Further specialization its orientation to processing industry and exportation could create a demand for internationally awarded cultivars, namely European and Japanese varieties.

Source: SARED (2014)

The following table shows the main chestnut production processes. As it may be observed, the core cost for the activities are labour costs, which can be covered from (unpaid) household labour force or through hired labour.

Table 6: Calendar of chestnut production/harvesting cycle

Main type of expenditures	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Cleaning and thinning of the chestnut forest												
Harvest												

Source: Expert assessment, based on desk review and interviews

6. SWOT ANALYSIS AND INVESTMENT NEEDS

6.1. SWOT ANALYSIS STRATEGY

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

Table 7: Chestnut sector: SWOT analysis strategy

STRENGTHS (+)		WEAKNESSES (-)	
Quite large area of chestnuts forests		Not well maintained chestnuts forests	
Settled ownership issues in Malesia e Madhe		Not settled ownership issues in Tropoja	
		Scarcely organised value chain at production and collector level	
		Insufficient storage facilities at both farmers (groups) and consolidators	
		Lack/insufficiency of cold storage capacities	
		Lack of simple sorting/grading and packaging equipment	
		Lack of integrated/complete processing lines	
OPPORTUNITIES (+)	S (+) / O (+) STRATEGY		W (-) / O (+) STRATEGY
High export market demand for Albanian chestnuts	Support reconstruction/renovation and maintenance of existing forests with priority to area where ownership issues are settled		
Well established chestnuts export channels	Support new chestnuts plantations		
Existing PGI in Tropoje and Reç	Consolidate value chain around the registered PGI	Support organization of producers following the example in Reç, especially in Tropoje	
		Investment in storage facilities	
		Investment in cold storage and packaging equipment	
		Simple sorting/grading machines, and other marketing equipment	
		Hot curing equipment	
		Integrated, complete, lines of chestnut processing	
THREATS (-)	S (+) / T (-) STRATEGY		W (-) / T (-) STRATEGY
Plant diseases may affect the forest and cause grave damages to production	Maintenance of existing forests		
Deterioration of fruit quality due to poor maintenance	Reconstruction/renovation of existing forests		

6.2. FINANCING NEEDS

6.2.1. Investment trends and financing needs

Investment trends

Farmers have started to graft chestnuts using superior and already adapted cultivars; Reçi Cooperative report to have made ca 30 thousand tree grafting out of total or 100 thousand which are already grafted in the Reçi area. The main investments at consolidation, wholesaling and processing level are investment in chestnut storing facilities (investment in cold storage facilities being only exceptions, only in one case). Decortication, sorting, grading and packaging lines are almost missing.

Investment financing needs

Following the SWOT analysis strategy and investment trends, investment financing needs and opportunities are summarized in Table 8.

Table 8: Chestnuts investment financing needs

Types of investment	Farmers	Local consolidators	Wholesalers/Processors/exporters
1. New chestnuts plantations using autochthon or/and export-oriented cultivars			
2. Reconstruction/renovation of chestnuts forests			
3. Better management of existing chestnut (pruning, removing decayed parts, prevention of disease and pest spread)			
4. Transportation means			
5. Storage facilities			
6. Simple sorting/grading machines, and other marketing equipment			
7. Hot curing facility and equipment			
8. Chestnut freezing line			
9. Cold storage capacities			
10. Consolidate management, control and marketing facilities for PGI Rec and Tropoje	X	X	X
11. Integrated chestnut processing project			

Important investment may be considered at farmer level. While the main trend in terms of chestnut forest renovation is grafting, Financial Institutions may also carefully consider supporting chestnut plantations using cultivars already adapted to local conditions– chestnuts exporters report that in isolated case there are limited investments in chestnut cultivation. In areas not exceeding 600

m of elevation, semi-intensive orchards with euro-Japanese hybrid plants could be established. This hybrid enters into bearing already in the third year, which represents a relatively fast income for the farmer. Other cultivars, which are preferred in terms of fruit size (for fresh consumption or processing purposes), include the cultivars Bouche de Bétizac, Marigoule, Marsoland and others which can be subject to testing (for soil and climate suitability). Considering this, substantial investments are needed in existing chestnut forests. Reconstruction/renovation of chestnuts forests aiming at transforming the existing chestnuts forests into chestnuts fruit plantations. This would involve drastically reducing the number of trees, cutting the old trees and growing young trees. Alternatively, there is an emergent need for better management of exiting chestnut forests by pruning, removing decayed parts, and prevention of diseases and pest spread. Grafting is a critical operation for converting wild forest into orchards and producing high quality homogenous chestnut product. A mother orchard may be supported to produce scions for grafting.

Box 3: A mother chestnut orchard for producing high quality homogenous chestnuts

Superior genotypes like "Tropojë" characterized by a big fruit size should be used to establish mother plants and producing scions for grafting young saplings and the coppices on the forest. This should turn the heterogeneous stands into specialized varieties for making a chestnut "Brand" linked to the producing district. Specialized orchard with *Castanea sativa* varieties should be selected from areas with climatic condition similar to the main Albanian chestnut areas (e.g. ChiusaPesio, Marigoule etc). These varieties are the reference species for the European markets.

Source: SARED (2014)

There may be two approaches to consider in support to investment at the processing level in the chestnut sector, namely (i) address the traders/processors partial needs as they arise, and (ii) support large scale, integrated projects embracing all the main stages of chestnut processing.

Following the first approach, investment to be considered are the increasing of storage capacity, support chestnut hot curing facilities and equipment, support simple sorting/grading machines, and other marketing equipment, as well as increasing of cold storage capacity.

In the past, a facility to freeze higher quality chestnuts for export was in operation. The relevant traders later went bankrupt. However, the market opportunity is still there and the relevant technology has been already successfully applied in Albania. For this kind of product, specific equipment is required (i.e. it is not possible to use any freezing facility).

Box 3: Value added for investing in a simple sorting grading line for chestnuts

Currently Reçi cooperative sells chestnuts to Italian buyers without even any simple processing. The chestnuts are simply put in bags after stones and other visible non-chestnut materials are removed

Simple sorting and grading is expected to result in added value. While Reçi cooperative currently exports chestnuts in bulk at a price of around 1.2-1.3 euro per kg, in case of grading, the first quality can be sold at Euro 2.8 per kg, the second quality can be sold at 1.4 Euro and, the third quality can be sold as dried product at Euro 2.8 per kg

Source: Interview with Reçi cooperative representatives

Following the second approach, financial institutions may consider supporting an integrated line (complete line) of chestnut processing which is made of an accepting line (which grades and sort chestnuts into chestnut destined for market as fresh products and chestnuts destined for processing), the fresh product line and industrial product line. The fresh product line is made up

of hot curing⁶, cold storing and packaging line. The industrial product line may be made up of roasting, de-cortication, or milling line.

6.2.2. Operating capital financing needs

Operating capital financing trends

At domestic level, late payment is rather common in the relationships between buyers (local consolidators, wholesalers/exporters) and farmers. Some farmers are paid after the produce has been exported and the traders have been paid by international buyers. Having said this, the form and timing of payments depends from case to case – smaller households or those with biggest needs are more likely to receive the payment upon delivering the product to the trader.

Operating capital financing needs

Even though late payments are common in the relationships between farmers and domestic buyers, there is no manifested need for short-term capital from the farmers' side. Farmers usually perform only harvesting (own household labour) work.

6.2.3. Value chain financing

Some chestnut traders tend to establish closer relationships with farmers – they advise farmers particularly on post-harvesting practices. This advice is more pronounced in case of Reçi cooperative. Such a close relationships buyer-farmer has allowed chestnut traders to have reliable information on farmers. These traders may therefore be likely agents for financial institutions in case they have plans to do business with farmers. This would be particularly relevant in case farmers will be engaged in chestnut cultivation or chestnut forests renovation/better management. In this case, farmers would have needs for investment capital.

6 Rather large investment

7. CONCLUSIONS

Nuts (especially chestnuts) represent an important source of income for silvo-pastoral communities (considering that nuts, are mostly located in those areas), where intensive agriculture is not viable in Albania, and alternative employment opportunities are few. Chestnuts represent the most important nut product in terms of production and international trade is chestnuts.

Production of chestnuts is largely based on existing forest massifs, de facto organic and parts of the production sites have been certified as organic, which represents a clear competitive export potential. Contribution of nuts exports to total fruits exports is significant, exceeding 50% in 2013, and 40% in 2016. This contribution comes solely from chestnuts – exports of other nuts have been insignificant or inexistent over the years. Export of chestnuts occurs under stable international demand for these products. Albania ranks 9th for the world export of chestnuts.

The current study informs the financial institutions and other interested parties in supporting chestnut sector about the main opportunities to finance the sector. Some of the most important financing opportunities at farm level are chestnut plantations including autochthon cultivars, which are well adapted to Albanian conditions, reconstruction/renovation of chestnuts forests, and better management of exiting chestnut forests. Two approaches may be considered to support to investment at the processing level, namely (i) address the traders/processors partial needs as they arise, and (ii) support large scale, integrated projects embracing all the main stages of chestnut processing. There is a need/potential for investments to increase storage capacity, support chestnut hot curing facilities and equipment, support simple sorting/grading machines, and other marketing equipment, as well as increasing cold storage capacities are opportunities for financial institutions to realistically address the needs of value chain actors. A complete line of chestnut processing which is made of a grading line (which grades and sort chestnuts into chestnut destined for market as fresh products and chestnuts destined for processing), the fresh product line and industrial product line may also be considered given the sector export potentials. There is also a potential to make investments related to the promotion or further development of GIs.

Given that farmers are actually chestnut harvesters in forests, they do not seem to manifest any working capital financing needs. Value chain financing may also be considered – chestnut traders may serve as agents for financial institutions particularly in case farmers will be engaged in chestnut cultivation or chestnut forests renovation/better management. In this case, farmers would have needs for investment capital.

The nuts sector can benefit from public support schemes. The grant policies (which vary year by year) have important implications for financial institutions- they have the opportunity to co-finance the investment for 100% of investment amount out of which can be 50% short term loan (the part to be reimbursed by the grant after the implementation of the investment) and 50% loan term loan (the part to be paid by the beneficiary).

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