

# COMPETITIVENESS OF ALBANIAN AGRICULTURE: VALUE CHAIN ANALYSIS FOR FRUITS AND VEGETABLES SUB-SECTOR IN FIER REGION

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## Abstract

Despite great potentials for production and export of fresh fruits and vegetables, Albania is experiencing a *very negative foreign trade balance* for fruits and vegetables with a skewed export to import ratio of 1/19. Analysis reveals that the lack of competitiveness can be found in the industry's value chain. Therefore, the appropriate approach to understand the problems is to use the *value chain approach*. Factors affecting the fruits and vegetables competitiveness are evaluated using a "Likert" rating scale. This study focuses on the commercial farmers for two types of produce: fresh produce and processed produce intended for export. Evaluation exercise was complemented ranking competitiveness drivers.

The analysis of this study leads to the following *conclusions* (i) the basic competitive challenge is low capacity and low performance of the chain actors, (ii) value chain governance (role of a "chain governor") is simply missing, (iii) government role to support the is inadequate. Following this analysis, the authors *recommend* that the government should: (i) continue with farm supply support program, (ii) partner with businesses to improve technology, food safety, management and marketing at farm and processing level (iii) support improvement of the value chain governance, (iv) support well established agents who can enhanced the entire chain's competitiveness through chain governance improvement, and (v) improve infrastructure and strengthen supporting institutions.

**Key words:** competitiveness, Albanian agriculture, fruits and vegetables, value chain approach

## COMPETITIVENESS OF ALBANIAN AGRICULTURE: VALUE CHAIN ANALYSIS FOR FRUITS AND VEGETABLES SUB-SECTOR IN FIER REGION

### Problem Statement

#### *Background*

After five decades of centrally planned socialist economy, Albania is transitioning to a market-oriented economy. During this transitional period beginning in the early nineties, agriculture and agribusiness systems have been facing major challenges such as poor business management skills, inadequate decision-making by farmers and businesses, poor infrastructure and support services and insufficient legal framework. As a consequence of the privatization process, over 400,000 small farms have been created. However, the marketing and distribution sectors and government support services to these farms are still adjusting to the new environment resulting in sub-optimal agricultural sector economic performances.

Agriculture is a major sector of the Albanian economy, contributing to 19% of the GDP in 2006. More than half of the Albanian population is still employed in the agricultural sector. However, there is a huge deficit in agricultural trade. In 2007, there was US\$ 80 million worth of exports and US\$ 700 million worth of imports<sup>1</sup> creating a skewed export to import ratio of 1/9.

The fruit and vegetable sub-sector in Albania is growing fast. For the period of 2000 to 2007, fruit production almost doubled; vegetable production increased by around 10% per year and greenhouse vegetable production increased by 147%. The main reasons for the sub-sector growth include available arable land, relatively high profitability and increasing demand for fruits and vegetables.

This study's focus is the Fier region as it is the area ranked first in the country for vegetable production and second for fruit production. Fier "exports" large quantities of fruits and vegetables to the rest of the country and increasingly to neighboring countries.

#### *Problem*

The fruits and vegetables sub-sector, despite its export and import substitution potentials, project a less than promising outlook. Although the import of fruits and vegetables have decreased over time (vegetable imports fell from 28,000 MT in 2004 to 17,000 MT in 2007, and fruit imports fell from 103,000 MT in 2004 to 95,000 MT in 2007<sup>2</sup>) showing Albania's success in substituting imports. However, *the fruits and vegetables subsector is still not as competitive*. The export of fruits and vegetables has been negligible. In 2007, the export to import ratio for fruits is 1/21 and for vegetables is 1/13 (one dollar export per 13 dollars import). The combined fruits and vegetables export to import ratio is 1/19 which is much lower than all the agricultural commodities' combined ratio of 1/9. This implies a higher import to export ratio of fruits and vegetables than most of the other agricultural commodities. However, as revealed by import data<sup>1</sup>, Albania's opportunities of exporting fruits and vegetables are good for both European and neighboring countries' markets.

The higher trade deficit and the competitiveness problem for fruits and vegetables sub-sector strongly suggest that problems exist along the value chain. In economies emerging from planned to market oriented systems, it takes time for the actors in the value chain system (private and

public) to be fully established. Their linkages are initially expected to be weak and uncertain and market information is expected to be limited.

### **Objectives**

The overall objective of this study is to evaluate the competitiveness of one of the fastest growing agricultural sector, fruits and vegetables, in the largest growing region (Fier) and make recommendations to improve its economic performances. Specifically, the sub-objectives are:

- (1) Identify and evaluate the competitiveness drivers for the fruits and vegetables subsector using the value chain approach framework
- (2) Rank factors affecting competitiveness for fruit and vegetable subsector.

## **Methodology**

The conceptual framework of the study, data sources and collection methods are described in the following section. The definition for competitiveness in this study, the value chain approach framework and competitiveness evaluation procedure are also discussed in this section.

## **Conceptual framework**

### **Competitiveness definition**

In the *Global Competitiveness Report 2008–2009* (Porter and Schwab 2008), competitiveness is defined as the “set of institutions, policies, and factors that determine the level of productivity of a country”. According to *Wikipedia*, “Competitiveness is a comparative concept of the ability and performance of a firm, sub-sector or country to sell and supply goods and/or services in a given market.”

Though productivity is generally considered as the most important determinant of competitiveness, it is not to be taken for granted that if one country produces at a lower cost than another country, that country can sell in the other country’s market. Other determinants, such as quality, safety standards and non-tariff trade barriers can prevent trade to occur. Therefore, for emerging transitional economies, it seems that “the ability to sell in a given market” is a more appropriate measure of competitiveness than the productivity measure. Additionally with “a given market” we imply a foreign market in this study. Therefore, competitiveness in this paper means the “ability to sell in a foreign market”

### **Value chain approach framework**

The competitiveness problem for the fruits and vegetable sub-sector stated above will be evaluated using the value chain framework. The value chain approach analyzes relationships between economic variables in a value chain that play a role in the competitiveness of an industry. A brief description of the value chain approach framework follows.

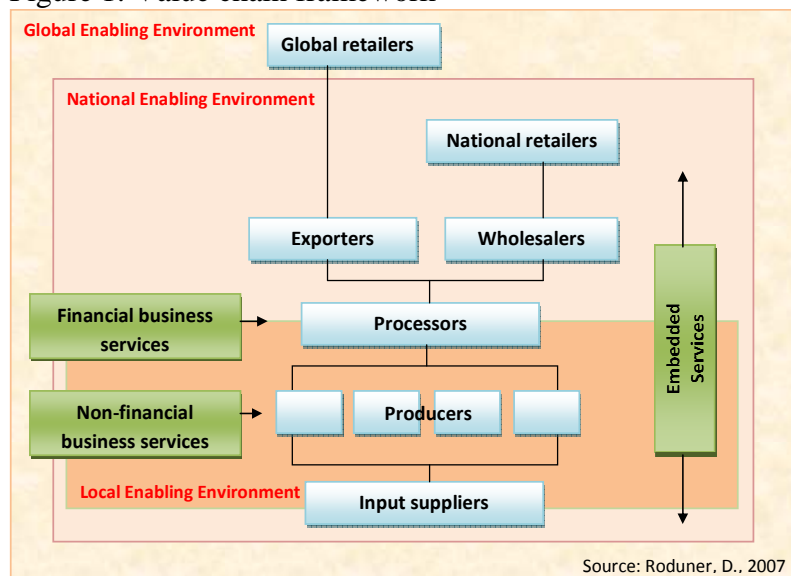
### **Description of value chain approach framework**

Value chains can be defined as “the full range of activities that are required to bring a product from its conception to its end use. These include design, production, marketing, distribution, and

support to get the product to the final user<sup>3</sup>”. The focus of the framework is on the value chain linkages.

A systemic view of value chain approach integrates three important levels within a value chain network and allows for the discovery of the potentials and bottlenecks within these levels and the dynamic interactions among them. The three interacting levels in the value chain framework are shown in Figure 1 below.

Figure 1: Value chain framework



The three interacting levels are:

(1) *Value chain enabling environment (pink color in figure)*. Any value chain is influenced by the people, organizations and institutions that are responsible for developing and managing the macroeconomic policy and regulatory framework.

A favorable and enabling business environment provides economic and political stability, ensures low costs for business transactions, and

allows for efficient business operations, which lead to greater innovation and creativity. International trade and macroeconomic policies, government support, food safety regulation and inspection, infrastructure, R&D, public policies and local environment represent enabling environment.

(2) *Value chain supporters (green color in figure)*. These are the supporting services provided by organizations and institutions to the value chain actors. These organizations include the financial and non-financial businesses that support enhancing production capacities of producers and small agribusinesses. They ensure equitable access to information, knowledge and know-how, and linking numerous, small producers with markets

(3) *Value chain actors (blue color in figure)*. These are the individuals or entities that directly deal or add value to the products, i.e. producer or farmers, processors, wholesalers, traders and sellers. How well they respond to market signals and interact with each other could affect an industry's competitiveness.

### **Fruit and vegetable value chain study delimitations**

The fruits and vegetables value chain study delimitations include specifying the product, components and geographical dimensions for more precise evaluation of the subsector competitiveness.

#### ***Product dimension***

This study focuses on the fruits and vegetable subsector. The questions of why study fruits and vegetables together and which fruit and vegetables to include are important questions related to the product dimension of this study.

Focusing on which groups of commodities to study is an analytical choice. Fruits and vegetables were combined in this study, as there are sufficient similarities in the way their supply chains are organized and perform. In the present paper, fruits and vegetables were studied together for two main reasons. First, horticultural crops (fruits and vegetables) have many production similarities at the farm level such as input use, disease and pest control methods and post-harvest techniques. Second, a number of the value chain actors and infrastructures are similar for both fruits and vegetables such as: (i) post-harvest infrastructure and equipment (cold storage and the collection points), (ii) main wholesale markets that are operated by the same agents and their firms (management, infrastructure, equipment) and, (iii) the processing industry that handles both fruits and vegetables. The reason why firms in the processing industry handle several different fruits and vegetables is to maximize their plant put through capacity year round. They need to have the operational flexibility to capitalize on the seasonal growing cycles of different horticultural crops for profit maximization.

### ***Chain Components dimension***

Most input industries have a transversal dimension, in the sense that their products are inputs for many different agrifood systems. For example, the same fertilizer trading company can supply fertilizer to different crops, in different agrifood chains. The same can be said for most of the input industry: pesticides, machinery, etc. Perhaps because of this inherent characterization, the initial component of many chain analyses is at the farm level. This will be the case of our study as well.

Having determined the initial analysis stage of the chain, the delimitation of the product components was determined by examining the type of product flow to end users (see the section below on chain mapping). In our study, there were two major product flows, namely fresh and processed fruits and vegetables. Additionally, this study focuses at the export market for fresh and processed fruits and vegetables.

### ***Geographical dimension***

Value chain analysis delimitation in Fier region is as follows:

#### ***Value chain enabling environment***

Enabling environment can be delineated at the global, national and local levels. For this study the focus was on national and local environment but the global environment was not included as Albania is a small country.

#### ***Value chain actors***

The study focuses on farmers, processors, wholesalers and exporters of the Fier region.

The Fier region's *fruits and vegetables producers (farmers)* can be easily "isolated" for assessment because they are located in the Fier region. Additionally, farmers could be divided into two large groups to be assessed: commercial farmers and subsistence farmers. In the present

study commercial farmers will be examined with the produce flowing to export<sup>4</sup> either as fresh or processed products.

The major *fruits and vegetables processors* are located close to the center of the Fier region. Raw materials from the Fier region farms to the processing industry can be shipped at reasonable costs. Therefore, processors at a reasonable distance from the Fier region will be assessed.

*Fruits and vegetables wholesalers* group is small in the Fier region. Wholesalers also perform the export function. Therefore, the whole “community” of wholesaler/exporter will be taken into consideration.

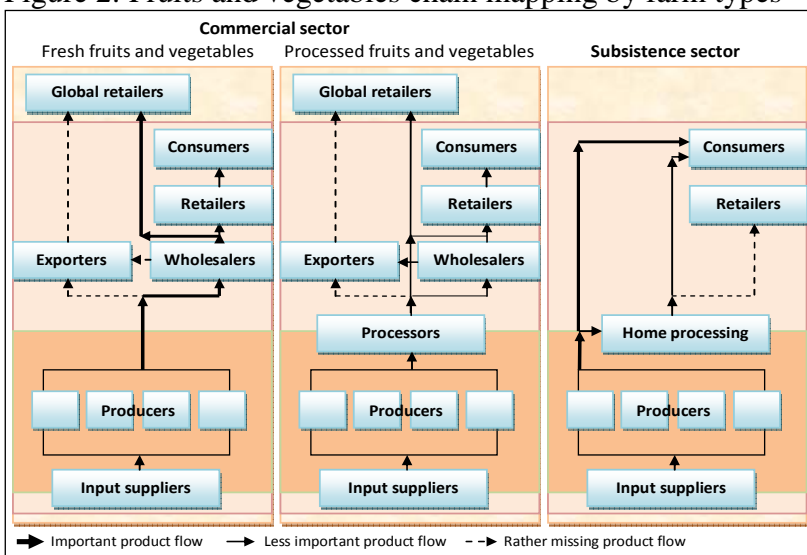
### Value chain supporters

The value chain supporters identified for this study are the public and private extension service, banking services, business and legal services, information services, transport services, and marketing services beyond the farm. Some of the supporters are at the local level, but others are at the national level. All supporters indicated affecting the Fier fruits and vegetables sub-sector value chain were assessed.

## Actor chain mapping and product flow

Fruits and vegetables farms in the Fier region could be divided into two major types: subsistence and commercial farms.

Figure 2: Fruits and vegetables chain mapping by farm types



Subsistence farms produce mainly for family needs and sell directly to consumers’ if there is marketable surplus. Part of the produce is home processed and sold directly to consumers (as shown on the right panel in Figure 2). Commercial farms produce mainly for the market.

For commercial farms, they produce two types of produce: fresh and processed fruits and vegetables for the export market (see left and central panel of Figure 2).

Distinguishing the above-mentioned types of produce (flows) is particularly important for two reasons. First, the farming technology, marketing and physical product flows are clearly different and two, the current export and its potentials are also different for fresh and processed products. Export of fresh fruits and vegetables for 2007 amounted to US\$ 4.2 million and export of processed fruits and vegetables was US\$ 163 thousand<sup>5</sup>. The bulk of both fresh and processed export is sold to the neighboring countries.

The main fresh vegetables and fruits considered in this study are watermelon, melon, tomato, cucumber, intensively grown apples, and table grapes. The main processed vegetables are

paprika and cucumber. Tomato is a product with high processing potentials, but is not being processed currently. As shown in Figure 2 (the panel on the left), fresh produce flow from farmers to wholesalers or exporters and then to export market or global retailers. It is found that there are no buyers solely for the export market. Generally, the wholesalers are also buyers for exports. Lushnja wholesale market (in the Fier region) serves as a hub for export. Produce intended for processing (central panel of Figure 2) generally flows from farmers to processors and then directly to exports. Processors as a rule are both wholesalers and exporters.

## Competitiveness drivers evaluation procedure

Drivers (factors affecting competitiveness) were evaluated for each value chain levels: value chain actors, enabling environment, and value chain supporters. Each driver might consist of several sub-drivers. For example, for the driver post-harvest technology at the farmer's level, it consists of post-harvest knowledge, marketing operations, and cooling storage availability. For each sub-driver, a rating and a weight were assigned and then a composite evaluation is computed for each driver.

An example of the post-harvest technology driver using the following evaluation procedure is shown in Table 1:

Table 1: Competitiveness drivers' evaluation procedure(for post-harvest technology)

Drivers and sub-factors	Controllability*		Influence on competitiveness		Drivers composite evaluation $P*W_i$
	CF	CG	Rating **	Weight (Wi)	
<b>Post harvest technology</b>					
Postharvest knowledge	<input checked="" type="checkbox"/>		-2	0.29	-0.58
Marketing operations at farm level	<input checked="" type="checkbox"/>		-1	0.38	-0.38
Coldstorage at the farm level	<input checked="" type="checkbox"/>		-2	0.33	-0.66
<b>Total (Sum of the column)</b>				1	-1.62

\* CF-controlled by firm; CG-Controlled by government; \*\* very favorable=2, favorable=1, neutral=0, very unfavorable=-2, unfavorable=-1. Source: Silva & Batalha,2000

**How the table above is calculated and interpreted.** Given the possibility of controllability of the drivers by different actors a check () is placed in the appropriate cell if either the firm or government has control of the drivers. This information is important to highlight who is able to take responsibilities to remedy any negative competitiveness impacts. A rating to each sub-driver using a "Likert" five scale measure (+2 for very favorable to -2 for very unfavorable)is then assigned. Based on expert's assessment, each sub-diver was assigned an importance weight (Wi) such that the sum of Wi for each driver is equal to 1. Then, multiplying rating and weight derives the composite rating for each sub-driver. If the sum total of each driver is positive, it means that the driver has a positive impact on competitiveness, and vice versa. The higher the value of the driver, the higher the influence on competitiveness. Multiple data sources will be used to conduct the competitiveness evaluation exercise for selected drivers as described in the section *Data Source and Collection Methods*.

## Competiveness drivers ranking procedure

Expert choice software is used to rank factors affecting competitiveness. Competitiveness factors have been compared pair wise in terms of their impact to competitiveness, using a "five scale measure": equal impact it to competitiveness, moderately stronger impact, stronger impact, very stronger impact and extremely stronger impact. Ranking procedure goes through three steps: in a first step, levels (enabling environment, supporting services and chain actors) are ranked; in a

second step, chain actors (farmers, processors, and distributors) are ranked, and in a third step factors within each level and each actor are ranked. The software computes an overall ranking automatically.

## **Data Sources and Collection Methods**

Data and information sources for the competitive was evaluated were collected from: on-site observations, primary surveys, workshop and in-depth interviews, secondary data collected from the Ministry of Agriculture statistical yearbooks and literature reviews.

For this study, data from 2 surveys were used. One was from a 2006 survey and the other was from a 2008 survey. The survey conducted in 2006 in the Fier region<sup>1</sup> has a sample size of 60 respondents in total of all the actors in the value chain (farmers, processors and traders). Farmers were asked about resources and input availability and their prices, production and post harvest technology, management, market structure, market relations etc. For wholesalers, they were asked in terms of access to and importance of markets standards and compliance, HACCP, ISO, marketing assistance, package materials, credits, information (demand, price) and training. For processors, they were asked how much they buy from Albanian sources vs. imports. For traders, they were asked the quantity sold to Albanian buyers and exporters and indicate their main problems with access to customers, credit, and to standard compliance information, and other problems related to competitiveness. Some responses in the questionnaires were quantitative and others qualitative. A focus group was also organized in Lushnja (Fier region) with the main actors in the vegetables value chain. Actors were asked to indicate the major problems in the chain and their ideas on possible solutions. A limited number of in-depth interviews were conducted with key informants (experts from the Ministry of Agriculture, farmers association representatives, etc.) in 2006 to validate the responses from the 2006 surveys and observations. In 2008, another survey was conducted. Twenty face-to-face in-depth interviews were carried out. Main chain actors interviewed were fruits and vegetables farmers, processors, traders, experts and policy makers from the Ministry of Agriculture in the Fier region. In addition, sub-sector experts were interviewed on farmer's problems, processing problems, market and trade problems and related policies. A survey with 5 experts was conducted and used to rank competitiveness factors. Expert selection has been such as to bring technological, economic and management, policy, academic and chain system perspectives.

## **Results and discussion**

### **Evaluation of competitiveness drivers**

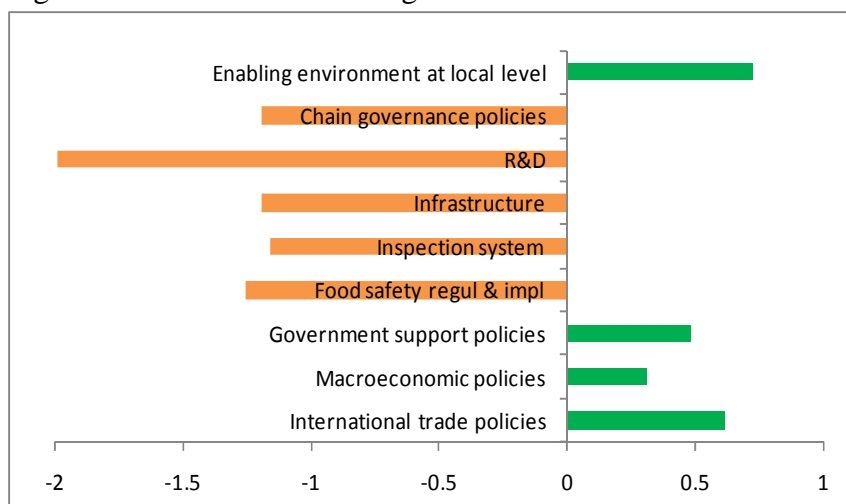
Based on the competitiveness evaluation procedure described earlier with the data and information collected, evaluation for the major competitiveness drivers - enabling environment, support services, and chain actors was carried out and results presented below:

#### **Evaluation of enabling environment**

Competitiveness ratings for the enabling environment drivers are mixed, with chain governance, R&D policies, food safety regulation and inspection as negative influencers and government support policies, international trade policies, and macroeconomic policies as positive influencers (see Figure 3).



Figure 3: evaluation of enabling environment



*International trade policy* is evaluated as rather favorable overall (+0.61). Albania has Free Trade Agreements (FTA) with European Union, Turkey and a multi-lateral trade agreement of the CEFTA type with Bosnia and Herzegovina, Croatia, Macedonia, Moldova, Montenegro, Kosovo and Serbia. In the framework of FTAs with European Union all *ad valorem*

custom duties for fruits and vegetables have been removed with specific tariffs remaining unchanged while in terms of FTA with neighboring countries Albania has been granted tariff quotas by all CEFTA agreement countries. All fees having equivalent effect similar to custom duties have also been removed with EU, CEFTA members' countries and Turkey. However, food safety and food quality requirements imposed by importing countries still exist.

*Macroeconomic policies* are evaluated rather favorable (+0.31). The policies had positive effects of increasing domestic demand for fruit and vegetables induced from increased income along with changing consumer diet (consumption of fruits and vegetables has more than doubled between 1988 and 2002; 679 gr/capita/day was consumed in 2002 versus 290 gr/capita/day in 1988<sup>6</sup>). However, the effect is somewhat offset by an over evaluated domestic currency and high interest rates.

Recently, the Government of Albania has decided to make the fruit sector and greenhouse vegetable production a priority for growth. A grant program has been designed to support increasing area of new fruit plantations. Therefore, *government support policies* are also considered rather favorable (+0.48).

*Food safety regulations* and their implementation are evaluated as unfavorable (-1.26). Albania has a new law on safety and quality of food products, which requires setting up a traceability system with maximum residue levels (MRL), and adoption of HACCP by the food processing companies. That having said, the laws are not yet enforced and few food-producing companies are implementing them. In addition, *inspection* system has limited resources to enforce the standards.

*Infrastructure* is evaluated as unfavorable (-1.2). Irrigation water shortages represent a major factor negatively affecting farming in the Fier region. Frequent power shortages "disturb" normal operations. Roads are not very good especially at rural areas, although they are improving.

*Research and development* is evaluated as very unfavorable (-2). Public agricultural and food research system is in the process of being restructured. The research function has been formally (legally) transferred to Agricultural University of Tirana (AUT) from the Ministry of Agriculture, but the process is slow. Therefore, there is no any institutional research being carried out at the public agricultural universities at the moment. Private research of fruit and vegetable processing industry is missing as well.

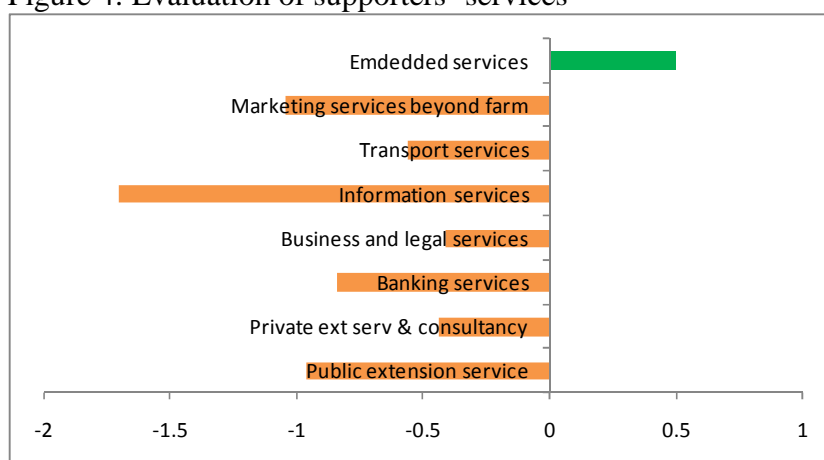
*Government policies on chain governance* are evaluated as unfavorable (-1.2). Despite the lack of chain awareness, influence of the government to make private local actors come together and make the value chain operational is completely missing.

Enabling environment at the local level is evaluated as rather favorable (+0.72). The local government is active in supporting agribusiness with a number of locally based NGOs supporting the local government's efforts. Chamber of Commerce is however less active.

## Evaluation of supporters

Supporters' services are evaluated as rather unfavorable overall. Off-farm marketing services and information provided being the less competitive sub-drivers as shown in Figure 4.

Figure 4: Evaluation of supporters' services



*Public and private extension service and consultancy* are evaluated as rather unfavorable (rated -0.96 and -0.44 respectively). Though public extension service has a rather good design layout, services provided to farmers are inadequate.

The public extension system consists of three levels: central, regional and field levels. Central level deals with policy design and

supervision; regional level deals with service delivery, namely technical and economic advice; and field level deals mainly with information dissemination. Four subject matter specialists are employed at the regional level. Their job responsibilities include coordinating advice delivery of fruits, vegetables and animal production technology – which are the stated priorities of the Ministry of Agriculture. They also give economic advice. Hence technology adoption and farm management advice are supposed to be provided to farmers.

In fact, delivery of technological advice is rather favorable, but assistance in terms of farm management and standard compliance assistance and advice have been missing. According to a 2006 survey, more than 70% of farmers consider access to (quality) standard compliance assistance as very important, however, 51% reported to have had very bad experience and bad access to standard compliance assistance. The same analysis could be said of private extension and consultancy.

*Banking service* is evaluated as rather unfavorable as well (-0.84). Though there is a good network of banks in the Fier region and borrowers can easily access the Tirana banking services. However, access to credit is rather difficult especially for small farms for two main reasons: (1) farm business is not preferred by banks due to perceived higher risks and non-credible collateral and (2) high interest rates. The processing industry does not have a big problem with collateral, but high interest rate remain a major discouraging factor. Private or public business and legal services remain underdeveloped.

*Business and legal services* are evaluated as unfavorable (-0.41). While there are sufficient business and financial services available, legal services intended for farmers, processors and exporters are deficient. Product certification services for fresh produce quality are only emerging.

*Information on agricultural markets and standards* requirements are deficient. They are evaluated as rather very unfavorable (-1.7). Public institutions, including the Ministry of Agriculture have failed to provide sufficient and relevant market information. There are some private efforts to provide price, market and product standards requirement information. The Albanian Agribusiness Council<sup>7</sup> in its Newspaper publishes fruits and vegetables prices. “Green Market” web site publishes fruits and vegetables prices, possible business partners, EU standards requirements for fruits and vegetables, etc. In any case, information on market and standards is insufficient for quality business decision-making.

*Transport services* are evaluated as rather unfavorable (-0.56). Farmers as a rule have to lease vehicles to take their produce to market. The vehicles used – though available – are expensive and do not provide proper conditions to preserve the quality of the produce.

*Marketing services (and infrastructure)* are evaluated as unfavorable (-1.04). From the focus group interviews and farmer’s surveys they clearly stated, services at “collection points” are important services. Collection points are places where produce is value-added: washing, sorting, grading, packing, labeling, etc. These vital collection points are currently missing. Additionally cold storage is practically non-existent. There have been important investments made at wholesale market level in recent years. In Fier region there is a good fruits and vegetables wholesale market. According to the survey data, 70.2% of farmers report they have good to very good access to wholesale market.

*Embedded services* or services bundled are becoming more frequent in Fier region. Input suppliers and processors provide technical advice to farmers. This kind of services is evaluated as rather favorable (+0.5) to farmers.

## **Evaluation of value chain actors**

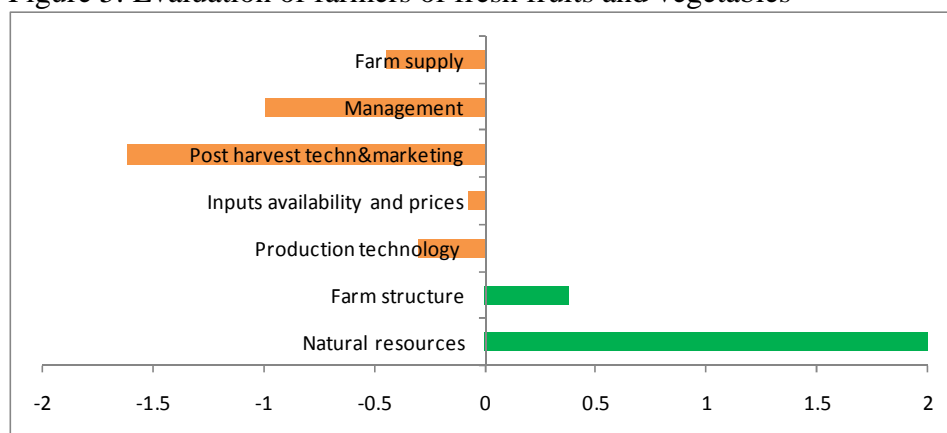
### ***Farmers***

The Fier region ranks first in vegetable production in Albania. In 2007, more than 30,000 farms produced 175,000 MT of vegetables<sup>8</sup>. The Fier region also ranks first in greenhouse vegetable production mainly in plastic greenhouses. It is the most suitable area for greenhouse production of vegetables and for field production of vegetables and watermelon. From available information<sup>9</sup> it is clear that Albania export supply is expected to originate mainly in the Fier region. The region produces large quantities of fruits, especially apples, peaches, and citrus. Financial analysis shows that intensive fruit production, particularly intensive apple production has a high profit rate.

### ***Evaluation of farmers producing for fresh produce***

Evaluation of fresh produce farming is overall unfavorable, with only natural resources and farm structure (size) evaluated as very favorable and somewhat favorable respectively.

Figure 5: Evaluation of farmers of fresh fruits and vegetables



Fier region has very rich *natural resources* such as fertile soil and abundant water resources, and suitable climate for growing a variety of fruits and vegetables. This driver is evaluated as very favorable (+2)

*Farm size (structure)* characteristic for this subsector is rather favorable (+0.38). Average farm size in the Fier region of 1.6 ha<sup>10</sup> is rather small but is among one of the highest in Albania. That having said, two major factors make the effect of farm size of fresh fruits and vegetables farming rather favorable. They are: (i) the adoption of greenhouse technology (farmers in the Fier region are the first to adopt plastic greenhouse for vegetable production) and (ii) there are opportunities for increasing the farm size through leasing more land.

*Input availability and price* are evaluated as neutral (+0.08). Commercial inputs and land are available. Land is available at relatively low price. However, agricultural machinery, labor and water though available but are relatively high cost. Therefore, overall rating is almost neutral.

*Production technology* as a composite indicator is not evaluated favorably (-0.30). Experts' opinion in the interviews support that greenhouse technology and introducing new fruit tree cultivars are suitable but the knowledge on cultivation techniques and farmer management skills are inadequate.

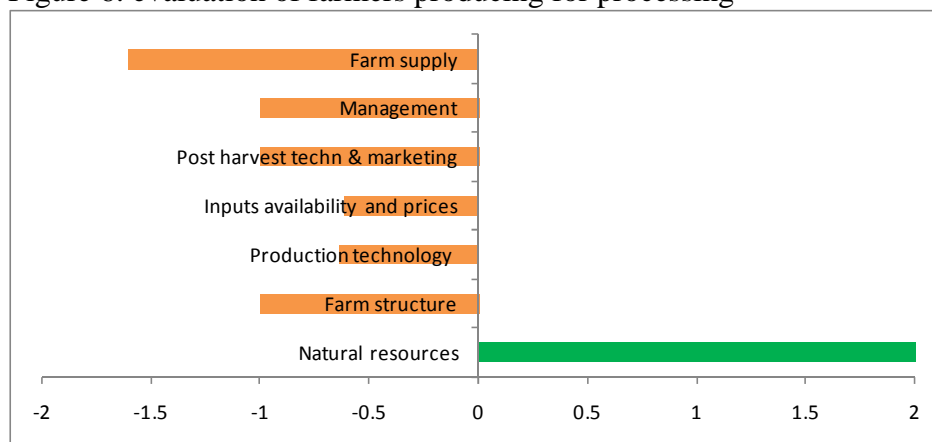
*Post-harvest technology and marketing* are rated as very unfavorable (-1.62). Farmers do not have sufficient knowledge and on-farm infrastructure for quality post-harvest management. Most farmers do not have any storage facilities and have to send produce directly from the field to the market without any post-harvest handling operations. In addition, they do not have equipment for cleaning, washing, calibration, grading and cooling of produce.

*Management* is rated as unfavorable (-1). Management tools and skills for cost and quality control, certification, traceability, strategic planning, production planning are missing. Farmers are focused on production and often overlook the economic aspects.

#### *Evaluation of farmers producing for processing*

The evaluation of the farm competitive drivers for producing for processors reveals a very unfavorable situation.

Figure 6: evaluation of farmers producing for processing



*Natural resources* are rated as very favorable (+2) similar to farmers growing for fresh produce.

*Farm size (structure)* is evaluated as unfavorable (-1), unlike for farmers producing for fresh produce. To

produce vegetables and fruits for processing requires larger farm size to benefit from economies of scale. This is not the case currently for the Fier region. Increasing farm size through leasing more land seems to be a feasible solution since there are large quantities of land available at relatively low price. However, farming on leased land is not risk free in a country that does not have any precedent in enforcing legal contracts.

The evaluation of *input availability and prices* is rated as rather unfavorable (-0.61). This is similar to the one for fresh produce. Problems exist in terms of availability and high price for agricultural machinery, irrigation water and labor.

*Production technology* is rated unfavorable (-0.63). Production of vegetables and fruits intended for processing requires suitable cultivars and related knowledge and skills. In fact, only in isolated cases, farmers meet the standards required by the processing industry.

*Post-harvest technology and management* are rated unfavorable similar to the situation of the farmer (-1). Finally, *farm supply* is rated as very unfavorable (-1.6) due to two main reasons: supply unsuitability in terms of meeting processing industry requirements and small volume.

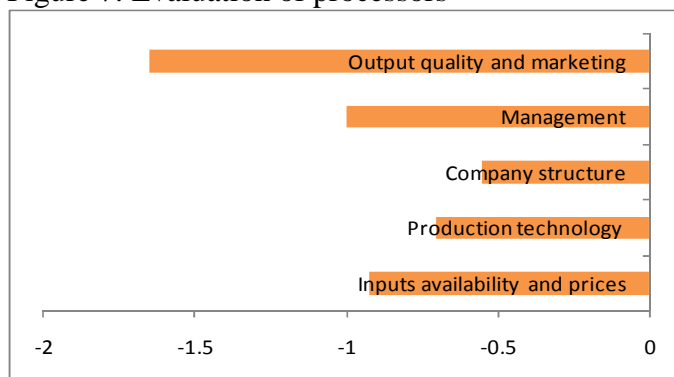
### ***Processors***

The vegetable and fruit processing industry in Albania has 27 processing plants and most (18) are within a reasonable distance from the Fier region (maximum distance of 150 km) with six of them based in the region<sup>11</sup>. Two-thirds of the plants produce canned vegetables mainly cucumbers, paprika and tomatoes. Domestic supply of canned vegetables oscillates. It increased dramatically (almost 20 times) between 2000 and 2005, but decreased drastically in 2006 and 2007. The quantity of canned vegetables in 2007 was only 40% of the 2005 level. The same pattern is observed with processed fruits. The fluctuation of the processing industry output reflects the unreliable farm supply.

### ***Evaluation of the processors' competitive drivers***

Competitiveness of the evaluation of the fruits and vegetables processors is very unfavorable, as shown in the Figure 7.

Figure 7: Evaluation of processors



*Input availability and price* is rated as unfavorable (-0.93). Raw materials from farm (farm produce) are unreliable, of inconsistent quality and high price mainly due to using outdated farming production technology. “There is a large consensus that the lack of a critical mass supply from the farms represent a major obstacle for the development of agri-processing<sup>12</sup>” industry in Albania. Labor is available, but the labor wage is rather high. Other related inputs such as

containers and transportation are available but their costs are rather high. Some of these inputs are imported contributing to the high costs.

*Production technology* is evaluated as rather unfavorable (-0.71). This applies to the entire processing industry.

*Company structure* is evaluated as rather unfavorable (-0.55). Size of the firms is generally small. They cannot capitalize on economies of scale, product differentiation and innovation.

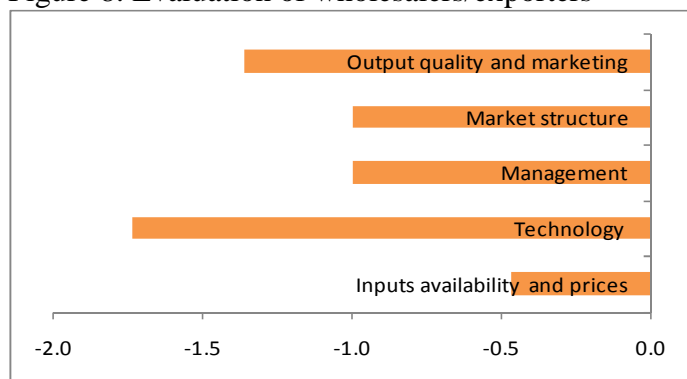
*Management* is rated as unfavorable (-1). Similarly to the farmers, key managerial tool, such as strategic and production planning, cost control, quality control, certification, and traceability system are missing. Also, not a single processing company has adopted HACCP or ISO standard.

*Output quality and marketing* are evaluated as very unfavorable (-1.65). Output quality is low, branding and promotion are limited.

### ***Distributors and exporters***

As a rule, main processors are also distributors and exporters. There are however wholesalers dealing with fresh produce. The last are perform also export function, mainly to neighboring countries. The overall evaluation of wholesalers and exporters is unfavorable.

Figure 8: Evaluation of wholesalers/exporters



*Inputs availability and prices* from processors are evaluated as rather unfavorable (-0.47), mainly because of high prices. *Wholesalers' technology* is clearly very unfavorable (-1.74). Technologies used by the wholesalers are sub-optimal especially in transporting, cooling, packaging and product presentation. Knowledge on availability of new technologies is limited.

*Management* is rated unfavorable (-1) similar to those mentioned earlier. Decision-making criteria tend to be more toward short term profit maximization rather than long term sustainability of business.

*Market's structure (size of firm and number of farms)* affects competitiveness unfavorably (-1). Wholesale firms are generally small with limited market power and no capital for technological innovation.

*Output quality and marketing* is clearly unfavorable (-1.36). The quality of output is poor due to the lack of proper storage and cooling facilities. There are limited branding and promotion of the products.

### ***Chain actors' coordination***

The sub-sector chain coordination is evaluated as very unfavorable both in terms of vertical and horizontal coordination.

### ***Chain governance***

There is no any chain governance in terms of presence of any “key actors in the chain who take responsibility for the inter-firm division of labor and for upgrading capacities of particular actors”. There is no value chain leadership. Information flow along the value chain to facilitate production and marketing efficiency is deficient. Only in isolated cases, traders or processors convey market information when they are purchasing the products from farmers.

The profit margins are not distributed evenly between farmers, processors and wholesalers. Farmers receive half of the price paid by consumers for fresh fruits and vegetables. The remaining half of the margin is being shared by the wholesalers and retailers. In the case of the processing industry, farmer receives a smaller portion of the price paid by consumer. Analysis shows that farmer receives only 1/5 of the price paid by consumer<sup>13</sup>. This implies that farmers receive less selling to processors than to wholesalers suggesting the processing industry has more market power.

### ***Collective action at chain actor level***

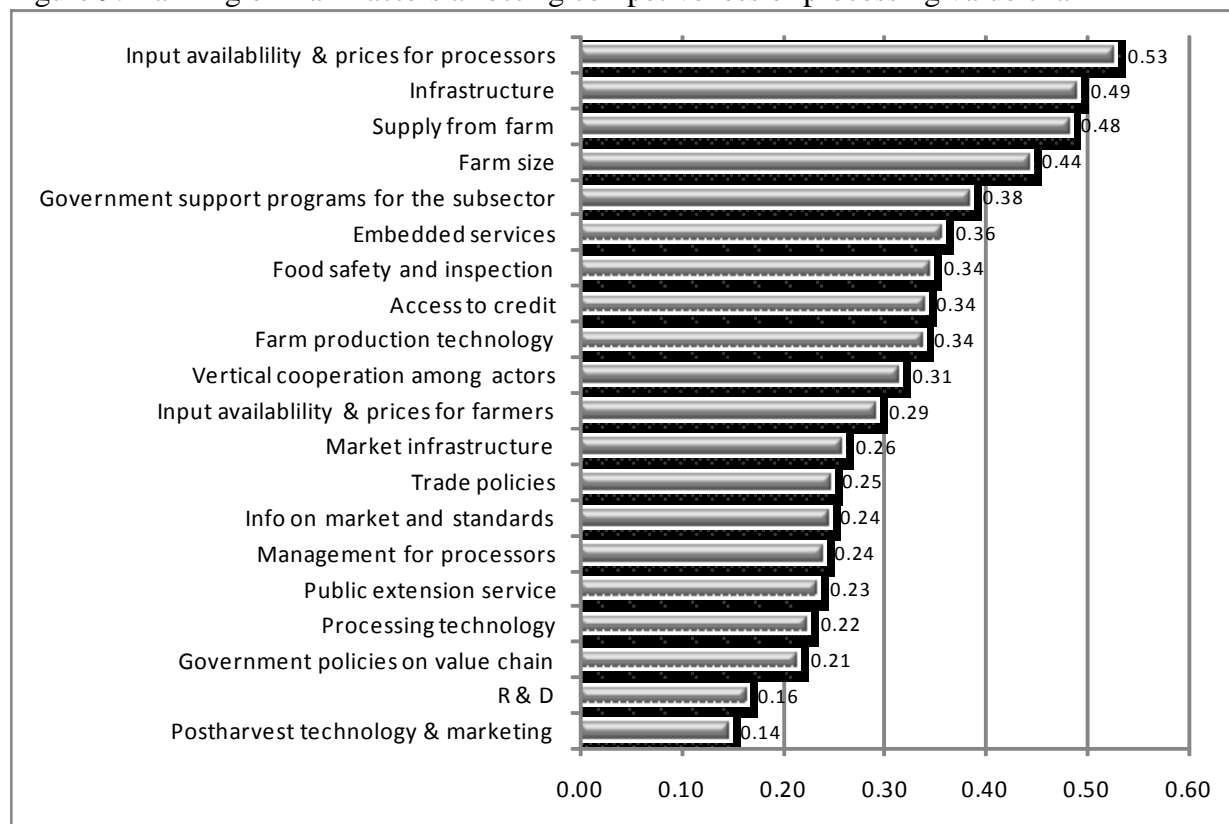
Cooperation among farmers is missing largely due to scarcity of social capital. The difficulties of engaging in cooperative initiatives are a major constraint to improving farming technology, marketing, and profit margins. Collective action or cooperation among processors is also limited.

## **Ranking competitiveness drivers for processing value chain**

Based on the competitiveness evaluation exercise and survey results, it shows that the Fier region has rich arable land and climate for growing fruits and vegetables. However, a number of problems hamper the sub-sector development.

Based on expert assessment, the major factors affecting competitiveness of processed fruits and vegetables subsector are presented below, by the order of importance:

Figure 9: Ranking of main factors affecting competitiveness of processing value chain



A brief description of twenty most important factors affecting competitiveness in fruits and vegetables processing sub-sector follows.

*Input availability and prices for processors.* The biggest problem for fruits and vegetable processing industry, and the factor affecting the most competitiveness of value chain is insufficient *supply of raw materials (produce from farms)* for the processing industry.

*Inadequate irrigation water infrastructure* resulting in water shortages represents a major factor increasing production costs at farm level. Former large-scale public irrigation system infrastructure is in poor condition; therefore farmers are resolve to digging wells to obtain water. This kind of “activity” increases farm produce cost or simply discourages farmers to produce more vegetables.

*Supply from farm is small in size, of inconsistent standard and of high price* (refer to Input availability and prices for processors). *Farm size* represents a major problem for horticultural production in the Fier region. Farms producing for processing have to produce large quantities at low cost. This requires large land areas using modern agricultural machinery. Farming based on land leasing contract – though to be considered - is not risk free for a country that does not have any sound contract enforcement system.

*Government support programs for the subsector* are considered important in terms of competitiveness because the way they have been designed support supply from farm.



*Embedded services* (advice from input dealers and processors) are considered particularly important mainly due to inadequate services offered by public extension service.

*Food safety and inspection play an important role in terms of sub-sector competitiveness.*

Albania has approved a large number of food safety regulations, but insufficient *food safety regulation implementation* constitutes a major barrier to export given that MRL, HACCP, and traceability are formal requirements to export to EU and pending EU membership countries.

*Food safety inspection* is insufficient as to harm competition. One of the main problems hindering the development of horticultural processing industry is the lack of a even “playing field” in terms of equal and fair business development conditions for all businesses, mainly due to informal arrangements and lack of legal compliance. Different standards in terms of hygienic conditions are an example. On the other hand, the formal (registered) sector of the processing industry is disadvantaged in the market place by the homemade processed products “sector”.

*Access to credit* which is needed to improve technology and to increase supply from farm is difficult due to unreliable collateral but especially due to high credit interest rate.

*Farm production technology* is inadequate for farmers producing fruit and vegetables for processing. This results in high produce cost.

*Lack of vertical cooperation among actors result in an inconsistent and unreliable supply from farm* in terms of cultivars used, quality and time. There is no collective action vertically among actors. There are reported anecdotal cases where processors or traders have tried to coordinate chain levels through “ordering” products to be exported or processed, but those remain isolated cases.

*Farm input availability and prices* is considered important in terms of competitiveness.

Purchased inputs (fertilizers, pesticides, fuel, etc.) are available but their price is high.

Availability of irrigation water and its price (farmers need to dig wells) is a major problem which increase production cost.

*Marketing assistance* (infrastructure and standards) at collection points is non-existent. There is consensus among fruits and vegetables farmers that what they need most in terms of marketing are well equipped and functioning collections points, which are simply missing. Collection points can be a conduit for collective farm actions, which seems rather unlikely for the time being.

*Trade policies* play an important role when it comes to export of processed fruits and vegetable. Policies to reduce non tariff barriers are supposed to improve market access for Albanian products.

*Information on market and standards though important is deficient. Public market information* is missing. Though there are anecdotal private initiatives to provide price, market and standards information to farmers and processors, government must make sure that chain actors receive sufficient and relevant information, either by providing or funding it or by making sure that third (private) parties provides it.

*Management for processors is insufficient. Management education* is clearly insufficient and management skills are low. Marketing at the processing level is in adequate. That having said, lack of *branding* for processed products represents a major factor negatively affecting product competitiveness.

*Public extension service advice and information is inadequate. Technology, economic and marketing advice* provided to farmers by public extension service is not sufficient and adequate. The whole public extension service suffers from in adequately trained agricultural and marketing

economists. At the regional level, one agricultural economist provides farm management advice and one horticulture specialist provides marketing advice to farmers, including post-harvest advice. In fact, the service is not adequate. Based on that situation, there is a consensus that marketing and especially farm management training have to be revived.

*Processing technology is inadequate.* In Albania the industry uses obsolete technology, and this is particularly true for the Fier region based industry. Additionally, the technology of informal, not registered fruits and vegetables processing industry is primitive.

*Policies on value chain* are expected to impact competitiveness of processed products. Value chain stakeholders need to understand that chances to compete increase substantially if the act as a system of actors. Government should facilitate and support collective action of actors in the chain. Currently, they are missing.

*Agricultural research is dysfunctional.* *Agricultural research system* is being restructured. The function of agricultural research has recently been transferred to the Agricultural University of Tirana, but the transfer has not been completed yet. Therefore, no public research is being carried out. Private research is also lacking.

*Postharvest infrastructure and technology is almost missing.* Infrastructure and equipment needed to perform operations that are needed for cooling (washing, cleaning, and chemical treatment) are non-existent.

## **Conclusions and policy recommendations**

Analysis of the fruits and vegetables value chain leads to the following conclusions:

### *1. The basic competitive challenge in the subsector is low capacity and performance of chain actors*

Farmers, processors, and wholesalers/exporters suffer the lack of management and economic knowledge and skills. Social capital is scarce and technology used is often obsolete. Economies of scale, especially at the farm level are limited and production cost is high. Food safety and marketing standards are low. Therefore competitiveness level is low. However, the competitiveness level is higher for the fresh produce when compared to processed products.

### *2. Chain governance is non-existent*

Though some aspects of the value chain are now in place one can hardly claim that there is any chain governance in place. And also missing is chain actor representativeness, leadership, fair distribution of chain gains, information flow and such. This fact negatively affects the performance of the industry.

### *3. Government supported enabling environment and effective supporting services are often inadequate*

Irrigation and marketing infrastructure for farmers are poor. Economic & technical advice given is poor and public market information is lacking. Food safety regulations development is not completed and law enforcement is a major problem. Food inspection is infrequent and agricultural research is lacking.

Based on the main bottlenecks and competitive challenges identified, the study recommends:

*1. Government should continue with the programs intended to support supply from farms but through processing industry*

Supply from farm in terms of size, consistency and price is clearly the most important factor affecting competitiveness of fruits and vegetables processing sector. Current government programs support supply from farm but without considering the link between farmers and processing industry. Therefore, government may consider providing support to farmers through processors.

*2. Government and businesses should partner for improving technology, food safety and management and marketing at farm and processing level*

Government should consider designing a competitive grants program for the sub-sector. Principles to be considered when designing the program are: need for competitiveness enhancement, clear and transparent eligibility criteria, and competition among grantees. Grants should be provided to farms (groups of farmers), processors, and wholesalers (distributors) for orientating farming, and improving technology, processing, marketing, food safety and management, and consolidating land through leasing.

*3. Government should support improvement of value chain governance*

In the fruits and vegetables sub-sector in the Fier region there is no chain governance. Therefore creating awareness of chain identity among chain actors and support improvement of value chain governance should be a priority for the government.

*4. Support provided to established agents who can improve the competitiveness of the whole chain*

It does not seem feasible for the government to be directly involved in enhancing value chain competitiveness. Supporting well-established actors is a better strategy for chain effectiveness. There are evidence shown that processors and traders could lead in improving chain effectiveness and coordination. Conditioning grants could be one way to provide potential chain leaders to improve the system. Producers' groups or traders could be chain leaders "candidates".

*5. Government should improve infrastructure and strengthen institutions*

Public irrigation infrastructure in the Fier region is in disrepair, government needs to make improvements. Collection points are poor or lacking. They are needed by farmers to be competitive. Therefore, improving irrigation infrastructure and developing functioning collection points should be a priority. Additionally, government should improve service such as: market and product standards information for targeted export markets, customized economic advice to farmers and processors, developing contract enforcement policies and provide relevant research for development. Provision of such services requires support to market information institutions (private or collective) and strengthening public extension service, private consultancy and the research universities. Lastly, government should invest permanently in *improving food safety inspection*, which is very important for consumers' safety, and providing a level playing field for processors.

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## Endnotes

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- <sup>2</sup> Agricultural Center for International Trade (ACIT) data base, [www.acit-al.org](http://www.acit-al.org)
- <sup>3</sup> Downing and al. (1992)
- <sup>4</sup> The part of produce reaching export market is modest the bulk of produce being intended to domestic market
- <sup>5</sup> Albanian Centre for International Trade (ACIT) dataset, [www.acit-al.org](http://www.acit-al.org)
- <sup>6</sup> FAO, 2005, Nutrition Country profile, Republic of Albania
- <sup>7</sup> Albanian Agribusiness Council (AAC) is a federation of business associations. Horticulture's producers association is a member of AAC
- <sup>8</sup> MoAFCP, 2008, Statistical Yearbook 2007
- <sup>9</sup> GTZ & Ministry of Agriculture, Food and Consumer Protection
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- <sup>12</sup> Skreli, E., 2008, Skreli, E., 2008, Agrobusiness Study, Fier Region, SNF-Fier
- <sup>13</sup> Skreli, E., 2008, Agrobusiness Study, Fier Region, SNF-Fier