

IFEAT Conference 2014 Rome, Italy

Sunday, 21st September to Thursday, 25th September 2014

“An Overview of Albania’s Medicinal Aromatic Plants and Essential Oils Industry”

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I. Introduction

Albanian territory is stretched along the Eastern Adriatic and Ionic seas. Its landscape is comprised of large mountains, forests, arable lands, pastures, lakes and rivers with high water flow. This country is very rich in natural and water resources. The strategic geographical position and the climatic conditions of Albania, favor the biodiversity and in particular the one of herbs and spices (*tea, menthe, chamomile, rosemary, sage, oregano, parsley, thyme, cinnamon, etc*), which are well known for their wide and effective uses in everyday life. For example, the herbal teas have been broadly used in the past as medicines for the properties to relief cold, cough and bronchitis symptoms, to treat stomach and intestines problems, to reduce blood pressure and to stabilize diabetic problems. As such, they are still brewed and consumed today. Herbs and spices products are also known for their pureness, free of chemicals, pesticides and insecticides since they grow in the mountains and for this reason they are very required by many western foreign companies whose main objective in their business is the safety and quality.

Nowadays, safety and quality of food are becoming an issue of great concerns. The consumers are noticeably more aware of the potential risk of chemicals, pesticides & herbicides, food poisoning, low nutritional values food and poor diets. Based on recent scientific studies, the trend shows a fast revolution on consumers’ behavior. The impact of the consumers’ awareness can be noticed from their preferences to buy foods made by large producers, rather than by small ones. This report is targeted to the producers, growers, individual collectors of herbs and spices and to the processors who can assist to advice and support them, since the processors buy products from them for

further processing steps. The aim is to present the basic principles of quality and safety of herbs and spices products to satisfy the consumers' and large companies' demands. It will guide all the stakeholders in herbs and spices supply chain to how to improve the production and processing and keep up to date with the changings according to EU standards. In addition, a new management tool of Hazard Analysis and Critical Control Point systems (HACCP) - a system used to control contamination in food processing - is briefly described for the herbs and spices processing sector, in order to show how the enterprises can implement appropriate quality assurance systems at low cost.

The classical supply chain of *herbs and spices* starts with the small collectors continues with processors and traders and it finishes with the ending consumers of these products. The small collectors in Albania collect herbs and spices in the mountains and hillsides. After that, they need to select, clean, dry and storage them, to be ready for the next processes such as processing and packaging. Based on the previous evidences, it has been concluded that the women, in particular play an important role in maintaining the quality of these products, because they are substantially involved on harvesting, handling, processing and in packaging processes. Basically, the women in North of Albania are continuously making efforts to develop this activity according to the traditional methods and practices, but the reality shows that these methods are not sufficient with respect to the plants health and quality, due to the lack of collectors' knowledge and technologies. In order to comply with European standards, and specifically with the sanitary and phytosanitary standards, different foreign projects have considered supporting most of the regions in Albania. The main aim has been to improve and to update the women' knowledge and the capacity building skills in this sector, which have further increased the collectors' financial profits if we consider this activity as new job opportunities, and in the same time it has improved the marketing of the herbs and spices supply chain.

The companies which deal with the business of the medicinal and aromatic plants in Albania are usually specialized in the collection, selection, cleaning, processing and import-export of herbs and spices, aromatic and medicinal plants and other derivatives such as forests fruits, non-wood forest products, essential oils etc.

Companies have created different brands for its products and recently some supermarkets in Tirana are already selling their products that are made by farmers and the processing companies including herbs and spices products as well.

Generally, the specific objectives of Albanian companies for herbs and spices products and essential oils are:

- To ensure the domestic market for products of herbs, spices and essential oils
- To increase the promotion of herbs, spices, essential oils products and services mainly in processing and marketing
- To increase the building capacity of growers, processors and traders of herbs, spices and oils products to be competitive in the market.
- To improve the infrastructure (technology and working conditions) of herbs, spices and oils processing companies

The process flow is different for herbs and spices. The following table shows the steps for the processes on which the herbs and spices should be relied on.

Table: Process flow chart

Steps	Herbs	Spices
Step 1	Harvesting	Harvesting
Step 2	Drying	Drying
Step 3	Transport	Winnowing
Step 4	Sorting	Transport
Step 5	Cutting	Finish drying
Step 6	Separate	Grinding
Step 7	Oil Processing	Packaging
Step 8	Packaging	Storage
Step 9	Storage	Distribution
Step 10	Distribution	Distribution

Dried food products relatively have a lower risk in terms of causing poisoning, compare to other normal food products, since the drying process ensure an appropriate low moisture content to avoid the multiplication of micro-organisms. However, herbs and in particular spices, are an exception and commonly contain very high levels of micro-organisms, including those that cause food poisoning. There are two key

explanations for this high level of contamination. *Firstly*, the extensive contamination happens during the harvesting, washing and sun drying processes which are commonly done “on the farm” under primitive conditions. *Secondly*, the processing of herbs and spices should be regulated at low temperature during drying, grading, cleaning and grinding. They should not be treated under warm conditions because this would cause loss of flavor and the micro-organisms may thus survive during processing as well.

When dealing with the herbs and spices processes, the quality control needs to be taken into account during the following phases:

Phase 1: Cultivation, harvesting and primary processing by cultivators.

Phase 2: Processing techniques during the production

Phase 3: Packaging and storage after processing

The growers and processors need to consider seriously each of these phases in detail. Further the processors need to establish the management tool of HACCP in order to identify the potential problems or hazards. If there is any, they need to control the critical points in order to comply with EU standards and even more important to meet the consumers’ and companies’ requirements with high quality products.

In most developing countries, in Albania as well, the herbs and spices are commonly grown by individual collectors, who are in most of the cases females. A good financial return may be obtained for the people possessing a small plot of land. Others are using the public land to collect and deal with herbs and spices and further to sell them to the processors who have contact with the state to use the public land. This fact has some direct consequences for the buyers / processors such as in most of the cases the growers and the collectors are poor farmer, and their level of education may be low. Hence they must be very well informed and updated for the changes when dealing with these processes.

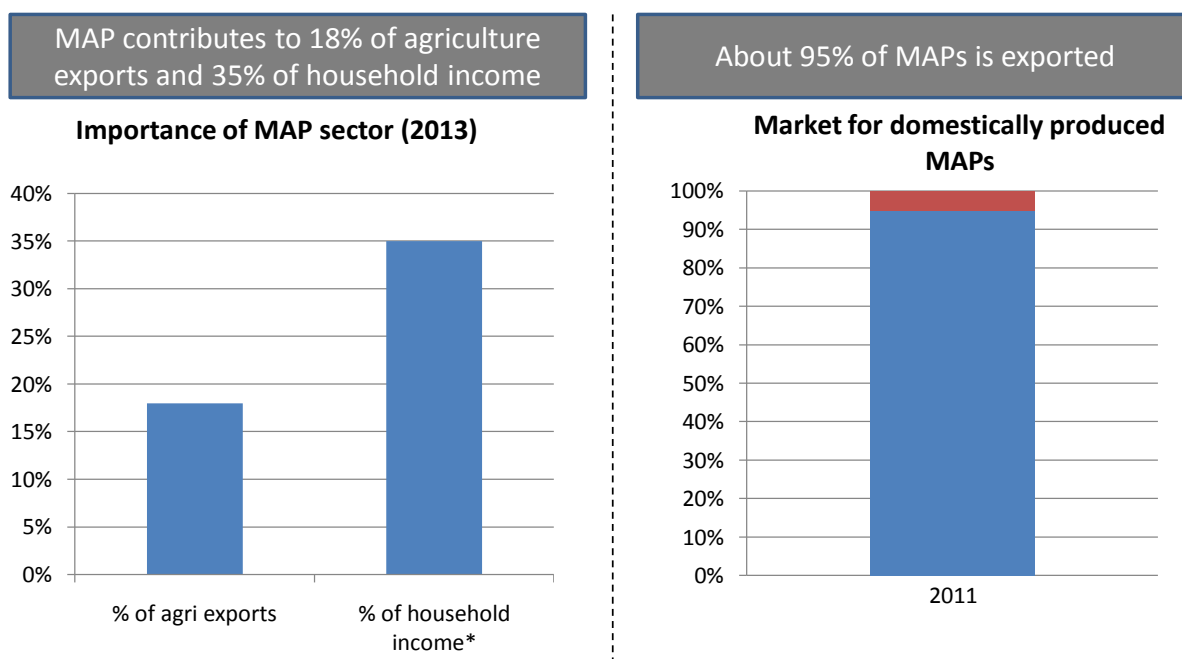
II. Importance of medicinal and aromatic plants sector in Albanian economy

Medicinal and aromatic Plants (MAPs) is a major agri-forestry business in Albania, especially in terms of international trade. More in general, Balkan countries are a major source of raw material or half finished products for many EU and US industries in different fields, where Albania is the main supplier. Exports of MAPs account for

60% of total exports of forestry products (USAID 2013). A small but increasing flow of export of essential oil is recorded due to the increase of processing capacity.

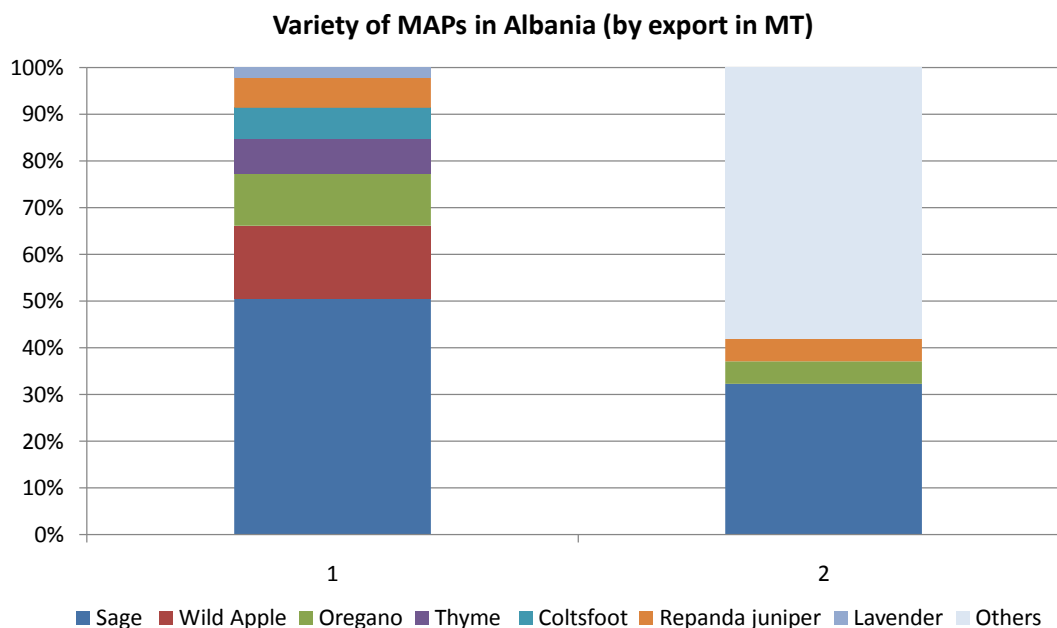
MAP sector plays a very important role in Albanian economy as a major revenue source. As we can see from the following graph, MAPs contributes to 18% of agricultural export and 35% of household income. MAPs sector is export oriented. About 95% of MAPs exported is domestically produced (Ministry of Agriculture, 2011).

Graph. 1 . Importance of MAP sector in Albania



Even the varieties of MAPs are diversified the last few years, the sage and lavender remain still the largest MAP produced, respectively about 58% of lavender and 32% of sage (DSA 2010). Regarding to the domestic value chain, the main economic pillars are: value addition, profit margin and value chain integration.

Value addition is equal to the difference between sale price and cost price, expressed in dollar per kg. From the interviews with the stakeholders of the this sector, the post harvest practices are high value addition activities for sage and lavender with a basic price of 1.5 dollar/kg, while processing / exporting is even a larger value addition activity for sage with a price of 3.5 dollar per kg. In the meanwhile, the basic price for lavender is 3.5 dollar per kg, which after the value addition becomes 4.5 dollar per kg.



This report shows that the harvesters and the cultivators get the highest profits across whole value chain of MAPs primarily due to lower costs. The gross margin for the harvesters is 80% and the net margin is just 10%.

In addition, there is a good level of value chain integration as each person largely sells to the same person in the next value chain segment. Consolidators and exporters sell to same people but also look out for others. For example, *“I sell to the same person every year as he provides transport. I only work as a middle man in between him and the harvesters.”* (Consolidator). *“I sell to the same person in Germany. I tried selling in the US 10 years ago but there were issues with payments so stopped selling there.”* (Exporter of dry MAPs). *“I usually sell to the same set of persons but I am also meeting others to expand by business and customer base.”*(Exporter of essential oils)

The following figure shows that the high cost is the reason for low productivity (quantity) of good quality seeds in Albania. For example the price of seed of safe in Albania is 200 euro per kg, while in other countries such as Netherland or Italy it is 120 euro per kg (ATTC Shkoder).

Sage	Albanian	Foreign (Netherlands, Italy, etc.)
Price	€2.5/ kg	€2/ kg
Life	5-6 years	3 years
Germination	6 months & 50% germination	Better germination
Productivity	4000-6000 kg/ ha	5000-6500 kg/ ha
Quality	Higher oil content	Lower oil content

“We have approximately 100 customers, only 20 of them are from the Malesi-e-Madhe region. Rest are from other regions in Albania, Kosovo, etc.”

Seedling cultivator, Malesi-e-Madhe

In Albania, there is a big problem with incorrect harvesting practices. Many harvesters undertake improper practices for harvesting wild sage, thereby threatening the long term sustainability of wild harvested plants. This includes:

- Uprooting whole plants to increase weight of final produce
- Use of sickles to save time and in the process cutting the whole plants

Sometimes harvesters and cultivators undertook drying in the sun instead of doing so in the shade. This led to loss of essential oil and active principles. In the case of sage, due to improper drying facilities in the 2nd cycle of harvesting (autumn), prices fall by ~25%. Produce was either casually stored in their own house or in a room near their house and packing was done in sack cloth that was not fumigated each time it was reused. It may happen that exporters mix good and lower quality produce to meet minimum market requirements. Many of them have also started diversify away from sage due to unsustainable practices.

Exporters rely primarily on organic certification to access US and European markets. The most emphasized are ISO 9001:2008, American spice trade association (ASTA), NOP organic, Kosher ect.

Advisory service delivery structure doesn't enable good service delivery; most farmers reported not having got such services or the need for it. For example, all except a few farmers reported not having received any advisory service. Few who reported receiving advisory service showed no remarkable difference in agri. Practices. None of the farmers expressed a need for any form of advisory service:

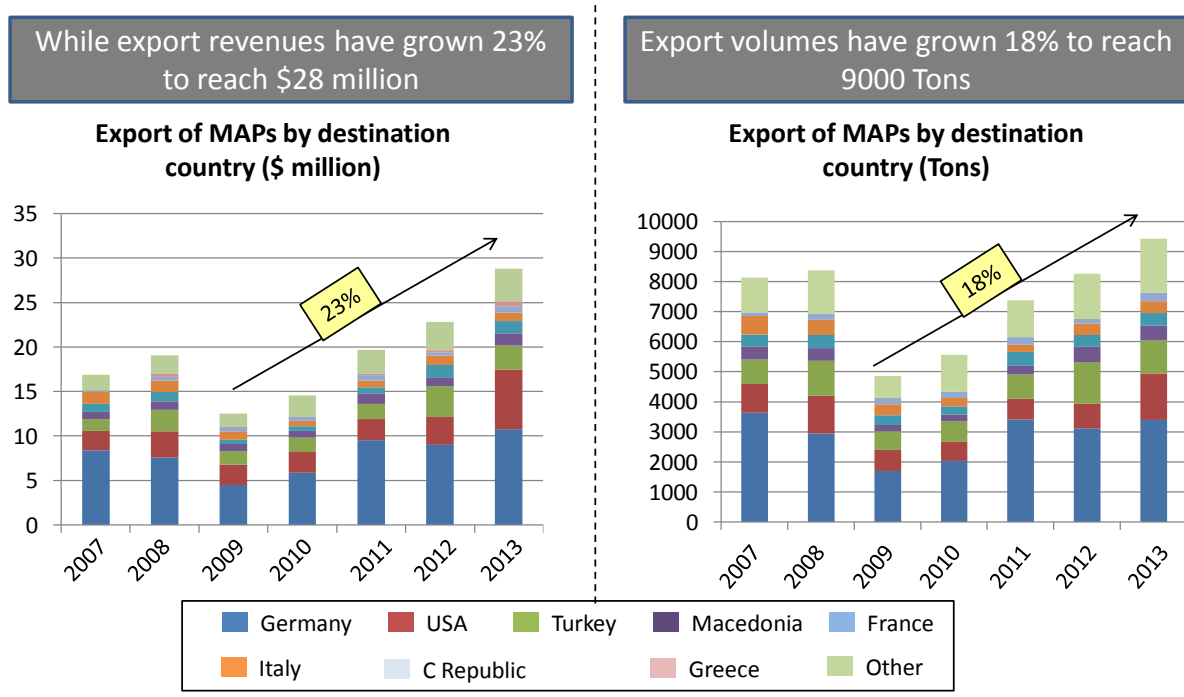
- They felt that they all had sufficient knowledge in how to cultivate/ harvest sage and lavender
- Quality is never a concern for farmers so the provision of quality related technology doesn't meet much demand

Key exporters in spite of having many years of experience use basic technology to undertake basic processing of MAPs; some also produce essential oils.

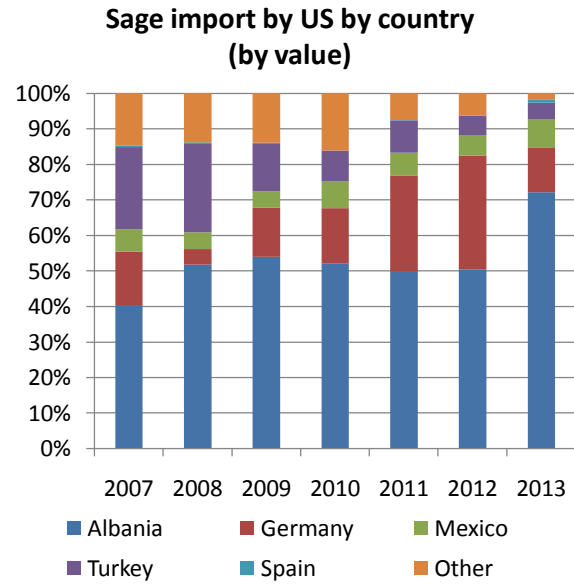
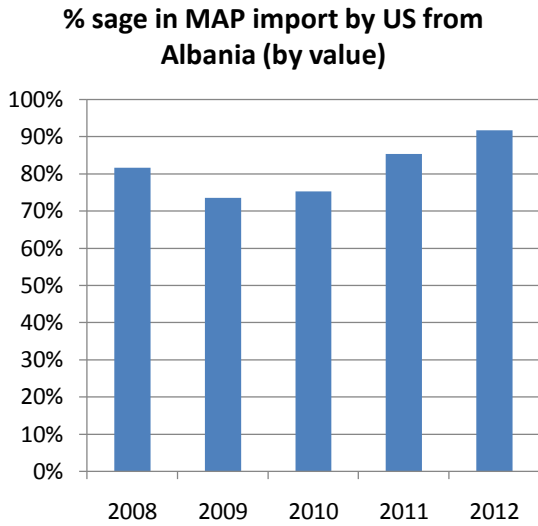
Component testing quality in Albania is missing. For this reason it has high cost since it is usually done abroad.

Type of quality testing requirements	Details of quality	Whether is done in Albania or not	Procedure certified or not
Phytosanitary testing	Organic	√	√
	Safety	√	√
Component testing	% of essential oil	√	X
	% of thuyon (basic α,β) for sage	√	X
	% of thuyon (42 component) for sage	X	X
	Active principles for lavender	X	X
	Nitrite content	√	X

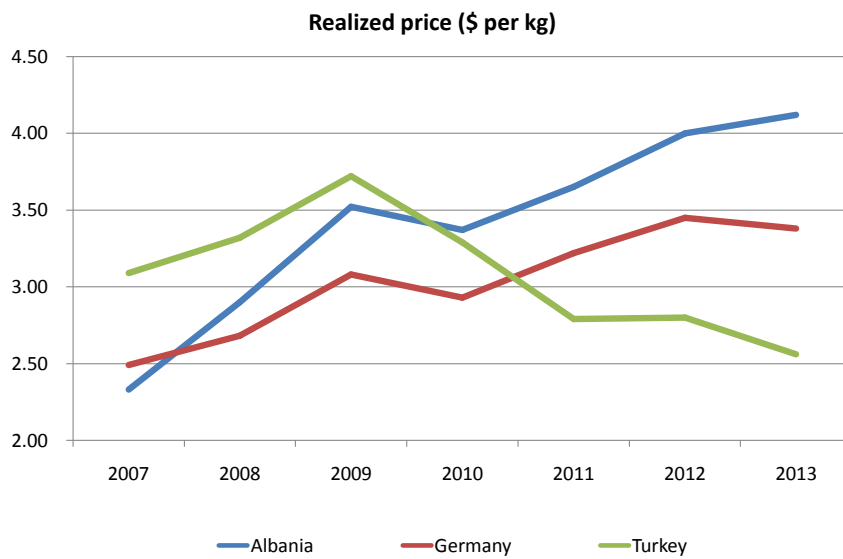
Albanian export revenues grew at a higher rate than export volume. While export revenues have grown 23% to reach \$28 million, export volumes have grown 18% to reach 9000 Tons (Comtrade; Ministry of Agriculture 2013)



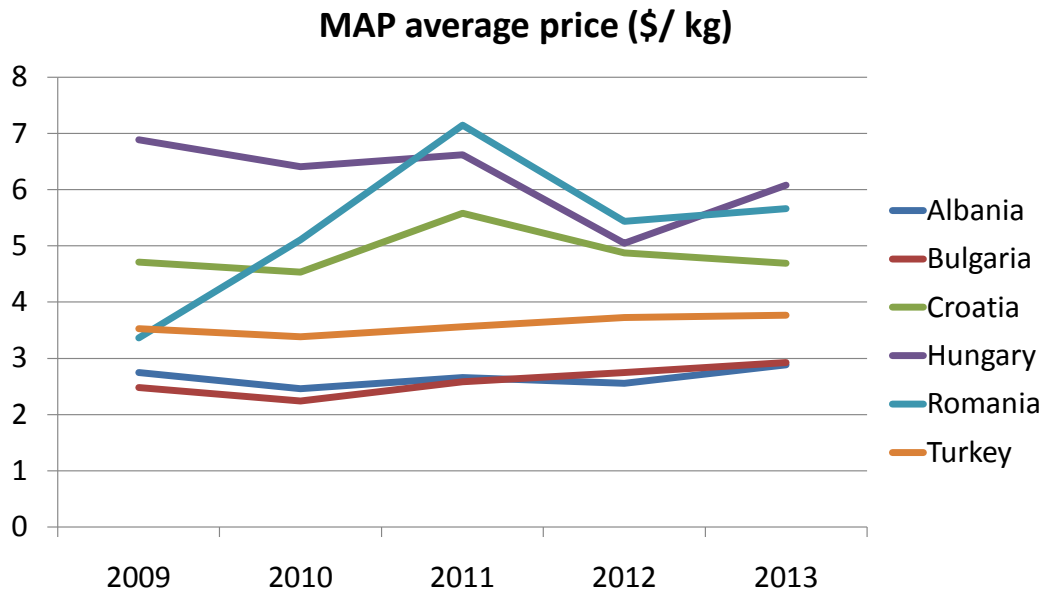
Sage forms a majority of the MAP imports of the US from Albania; about 70% of US sage imports is from Albania. US imports of MAP from Albania primarily consist of sage. US is highly dependent on Albania for its sage imports. In 2012, about 90% of sage in MAP was imported by US from Albania.



According to Comtrade, Ministry of Agriculture and USITC, Albanian sage commands a high price for the US market (export price 4.3 dollar per kg in 2013)



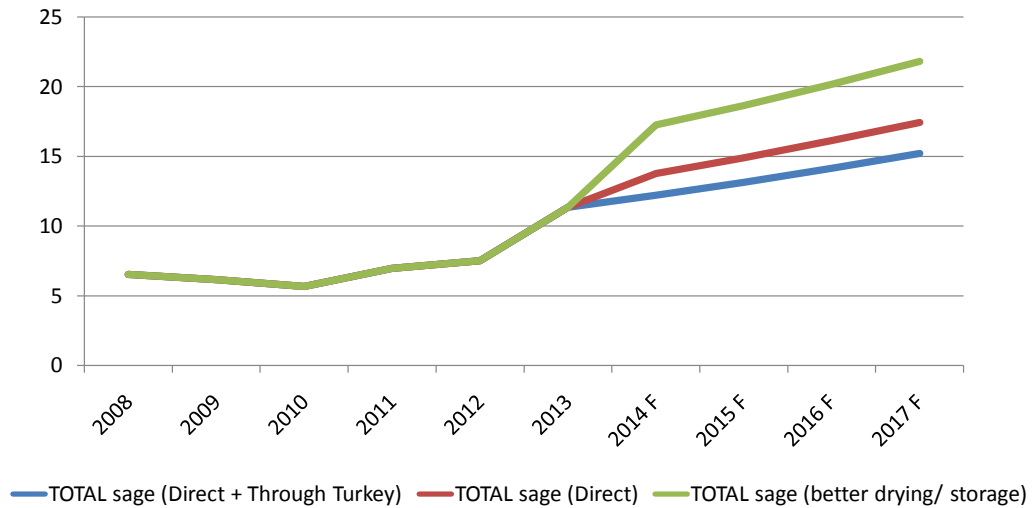
Competitive pricing is likely one of the reasons for Bulgaria and Albania leading in the market.



Albania is at short end of whole value chain from production to end-market. According to the Ministry of Agriculture, for a price of 1.6 dollar per kg, the profit would be 60%-80%. For a price of 3.5 dollar per kg, the profit would be 15%-20%. For a price of 4.35 dollar per 28 grams, the profit would be 40% (gross) and 14% (net)

Kutas, Kalustyan, Krauter Mix, AA Sayia, Elite Spice and Kutas are the biggest buyers of sage, importing sage leaves to further process for “B2B” customers.

Sage exports are expected to grow between 8%-18% (million dollars) depending on its success to implement changes in value chain & post-harvest drying/ storage (USITC, Albania Customs Data, Comtrade).



The report suggest that Albanian Brands have a great perspective for building international market knowledge and links to enhance long term growth of the industry

Albania Association of Marketing (AAM) should collaborate with existing MAP industry associations (EPCA and ACPEMP) to build/promote a brand for Albania’s MAPs industry via demand driven export promotion strategy:

- Prepare a comprehensive “Albania” branding strategy for MAPs and ensure marketing documents used by companies follows the branding requirements
- One stop website with relevant information regarding available Albanian MAPs, involved players and contacts

Albania representation in trade shows and trade missions to build relationships with businesses and government.

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