



THE BUSINESS CASE TO EXPAND INTO COMMERCIAL CULTIVATION OF MAPS

In partnership with:



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TABLE OF CONTENTS

FOREWORD	4
OVERVIEW OF THE SECTOR	5
KEY BENEFITS OF CULTIVATION	7
KEY COSTS OF CULTIVATION	10
COMMERCIAL VIABILITY SCENARIOS	12
KEY RISKS TO CULTIVATION	14
CRITICAL SUCCESS FACTORS	15

FOREWORD

The RisiAlbania Project is supported by the Swiss Agency for Development and Cooperation (SDC), in partnership with the Ministry of Finance and Economy and implemented by a consortium consisting of HELVETAS Swiss Intercooperation and Partners Albania. The overall goal of the project is to contribute to an increase in employment opportunities for young women and men in Albania.

To achieve this goal, RisiAlbania is working with exporters in the Medicinal and Aromatic Plants (MAPs) sector to boost productivity and increase sales to higher-value markets.

Having started work in MAPs in 2013, RisiAlbania has accumulated a wealth of experience that has yielded two main lessons: firstly, Albanian exporters must switch their commercial models from an over-reliance on wild harvesting to more sustainable cultivation practices. This is because wild harvesting depletes ecological resources and does not offer attractive employment opportunities for rural young women and men, who tend to emigrate.

Secondly, exporters will only reach high value markets if they invest in improving the quality of their MAPs according to international and buyer-specific standards. This requires investing in technology such as drying facilities in proximity to production centres, as well as investing in providing embedded services to supplying farmers.

This document outlines the commercial benefits that exporters may experience when switching to cultivation, as well as likely costs that they may have to face. It is based on evidence gathered from Risi partners over three years.

We hope that exporters, public institutions and other donor programmes find information in this document that can support their activities.

This reports sets out the case for exporters in the MAPS sector to grow their businesses through investing more in commercial cultivation as a means to increasing quantity and quality of supply and therefore improving their competitive position within export markets. This report is based on Risi's experience in the sector as well as a series of interviews with a portfolio of Risi's partners, including Biobes, AgroMap and BioAlba, who are leading MAPS exporters. The data provided on potential costs and benefits should provide an indication of potential opportunities and scenarios for other exporters and investors, rather than a statistically significant evidence base.

OVERVIEW OF MAPS SECTOR

Albania has an abundance of indigenous MAPS with over 360 identified species. Albania has a long tradition of wild harvesting these plants and there is a significant level of 'inherited knowledge' amongst rural populations in terms of knowing which plants to harvest and when to harvest them. Exports from the sector have experienced consistent growth and in 2016 accounted for 26.7 million Euro. It is estimated that up to 35% of rural household incomes come from the MAPS sector with over 100,000 people being involved in the sector, the majority of which are marginalised groups such as youth, women and elderly populations.

MAPS can be wild harvested or cultivated on a commercial basis. Many MAPS grow naturally in mountainous regions of Albania and are harvested from the wild by rural households and sold on to either regional collectors, processors or exporters. Whilst this approach is much more prevalent and is more historically established in Albania, it can present significant challenges in terms of environmental sustainability, post harvest handling, seasonality, traceability, quality control, and security of supply for exporters.

What is commercial cultivation?

As an alternative to wild harvesting, commercial cultivation ('cultivation' from herein), has been increasing in recent years in Albania, particularly in plants such as sage, rosemary, lavender, thyme, oregano, lemon verbena as well as others.

Cultivation in a more formalised farm setting offers a platform for exporters to invest in partnerships and supporting services for their farmers. This investment allows exporters to better control their supply chain, by controlling what goes in the ground, how it is managed, how it is harvested and how it is handled post harvesting. This report demonstrates how greater control of supply through switching to a cultivation approach can lead to a series of positive social and commercial outcomes.

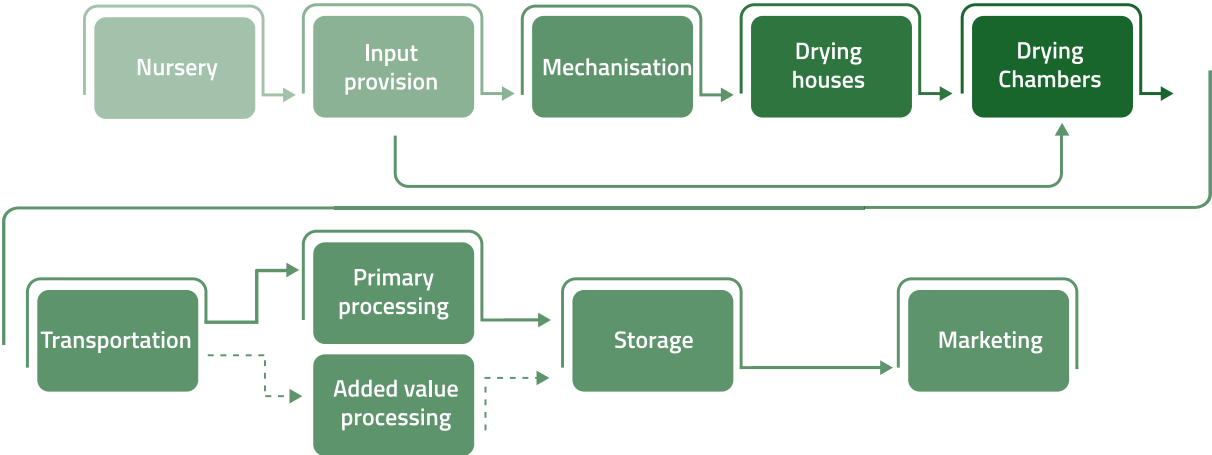
A key element to cultivation is the delivery of embedded products and services to farmers, for example extension advice. Whilst this is a direct comparison with, or a replacement to, the extension advice disseminated by the Directorate of Agriculture (DoA) works on an estimated ratio of 2,000 farmers to each extension officer. Whereas under a cultivation model, this ratio is much smaller, in some cases as low as 50 per agronomist.

However commercial cultivation goes beyond extension advisory and can provide a range of products and services throughout the season from seedlings, planting, mechanisation, localised drying chambers, networks of collection points and even the wider formation of mutually beneficial cluster partnerships. All of these products and services are designed to help farmers to consistently improve their quantity and quality of supply, which in turn offers significant

benefits and opportunities for exporters to grow their businesses. The diagram below illustrates the spectrum of potential services that are currently offered by exporters interviewed during the development of this document.

Exporters provide and invest in a range of services to farmers that help to improve consistency, security, quantity and quality of supply (see Figure 1). The level and diversity of service provision is flexible and can match the level of community engagement and appetite for risk that the exporter has. Drying chambers are a key first step to any investment in commercial cultivation and have therefore been highlighted in green.

Figure 1: Services exporters may provide to their suppliers



Cultivation is flexible and can be tailored to different risk appetites

For exporters looking to switch to cultivation, the approach is flexible and can be adopted in different ways with varying levels of initial investment costs and risk. For example, exporters can start by implementing small pilots with limited initial land sizes, specific crop varieties and a targeted range of initial services that are most relevant to their own context. Exporters may wish to view the switch as a gradual expansion rather than a complete switch, where they can learn from initial activities and bolt on different products, services and farms at the right time for them.

The following strategies have been identified during interviews as approaches to reducing the upfront costs and risks of cultivation, whilst at the same time making an attractive offer for farmers to sign up to the exporter’s programme:

- **Service provision on credit** – services are provided on credit for the duration of the season. At the beginning of the season, the exporter assesses the land size, location, access, water proximity etc. and the farmers track record to develop a package of relevant services over the course of the season. The costs of this package are recovered ‘in kind’ when the crops are harvested. In order to reduce risk, some exporters take a down payment in cash at the beginning of the season of up to 50%.
- **Build costs into operating margins** – other exporters decide to cover the cost of service delivery through either reducing their own operating margins, or through strategically

storing the product until such time in the year when the market prices are more favourable for them. Reducing pricing to farmers is not seen as a viable option initially to cover the cost of services unless farmers can see other benefits and areas of engagement in their community.

- **Pay as you go services** – this is when the exporter requests the farmer to pay for certain services at the time of delivery throughout the season. This is often related to services that are being delivered by, or use equipment from, third parties, such as machinery leasing.

KEY BENEFITS OF CULTIVATION

This section of the report outlines the key benefits highlighted by Risi Albania's partners in the MAPS sector. It is important to note here that each of these benefits cannot be pin pointed to a particular aspect of the cultivation approach, but rather the combination of interlinked activities and services delivered that come together to achieve these benefits.

“Overall, cultivation has given us the opportunity to sell greater volumes and quality, but most importantly it has improved our consistency and sustainability of supply”

Interview with the owner of Biobes.

Example of quality claim reductions

Prior to 2018, before Biobes started expanding into cultivation, quality claims represented 5% of sales. Since cultivation has been introduced this has been reduced to only 2%. Whilst this seems like a small reduction, it is significant when translated into absolute turnover for exporters especially when considering the relatively large scale of their operations, as well as standard operating margins for exporters being between 10% and 15%.

1. Increased turnover for the overall business

Exporters are likely to experience an increase in turnover as they invest in cultivation activities. The increase in turnover will be from a combination of increased production volumes, quality grading, quality associated pricing and decreased post harvest losses. Biobes has increased its sourcing of crops commercially cultivated as opposed to wild harvested from 15% in 2018 to 20% in 2019. During the same period the business experienced a 26% increase in sales derived from increased volumes rather than pricing.

2. Improved quality drives higher pricing and reduced claims

Exporters can expect to see consistent improvements in the quality of crops harvested. Improvements in quality grading lead to higher pricing for exporters, for example, on average across all MAPS products, Grade 1 quality attracts 20% price premium over Grade 2 products. This often derives from enhanced conversion properties for end

buyers. For example, cultivation of sage, rather than wild harvesting, is reported to significantly increase oil content opening up opportunities to essential oil usage and buyers.

Quality improvements are also apparent in the number of rejections or quality claims from buyers. Buyers often issue a credit note to the exporter and then the price of the rejections is deducted from subsequent invoices. These quality improvements can be attributed to the combination of the services and products delivered under the cultivation approach.

“If you don’t have a drying chamber then you should not be in this sector!”

An interview with owner of Biobes.

“Drying chambers are the Achilles heel of the cultivation approach to MAPS”

An interview with the owner of AgroMap.

3. Reduced post harvest loss generates significant cost savings

On a sector level, poor post harvest handling of crops has traditionally led to up to 40% loss of products with the risk often sitting with the harvesters. The main reason for these losses stem from limited drying facilities and technology, particularly at a localised level. International buyers often require exporters to demonstrate their drying capabilities during due diligence visits to Albania as a prerequisite to supply to them. Traditional sun drying usually takes place on plastic sheets on floors or on stones in the mountains and subsequent storage is normally within the harvester’s houses. This drastically increases the chance of spoilage and contamination which in turn poses significant risks for buyers and ultimately end consumers.

Example of portfolio growth and repositioning with buyers

In 2018 Biobes had 15 buyer relationships, located in Germany, Austria, Hungary, Greece, North Macedonia, Bulgaria and Israel. In 2019 Biobes secured 3 new buyer relationships, 2 in Germany and 1 in Austria. Biobes also report that the benefits associated with a cultivation model have helped them to elevate their position with some buyers from a secondary or tertiary supplier status often called upon as a reserve to now being a preferred supplier with some buyers. Biobes has also recently been developing new products with one of the buyers who no longer sees Albania as a poor quality supplier.

An interview with the owner of Biobes.

As part a central component to cultivation, implementing improved drying technologies on both a central and localised basis provides significant commercial benefits to both the exporter as well as the farmer.

Example of how drying chambers are critical to success for cultivation

Since the installation of the 40 sqm capacity drying chamber in Tepelena, Biobes has seen a reduction in transportation costs by 2 – 3 times to their central facility in Lushnje. This is due to the reduced weight and volume of dried MAPS versus fresh MAPS. Biobes state that their investment in localised drying chambers has been central to decreasing post harvest losses. They estimate that up to 70% of the benefits associated with cultivation derive from investing in localised drying chambers. Biobes also believes that the social benefits from investing in cultivation at a local community level has significantly helped to improve relationships with farmers. For example, in Tepelena, Biobes’s investment in cultivation has created 19 new jobs and prices paid to farmers have increased by 15 – 20%. This improved engagement with farmers is estimated to have contributed significantly to Biobes’s security of supply and therefore overall volumes.



4. Extended seasonality improves consistency of supply and position with buyers

Seasonality of wild harvesting practices is often limited to dryer months from July to November. Traditionally when wild harvesting has taken place outside this seasonal window, there have been significant reductions in quality due to inappropriate drying and storage conditions, which in turn has weakened exporter competitiveness. After adopting a cultivation approach, and in particular investing in localised drying facilities, exporters are now able to export MAPS throughout the year. This extended seasonality adds to the greater level of consistency and regularity of supply which has helped to enhance Biobes’s offering to current and new buyers.

5. New buyer relationships and repositioning with existing buyers

The improved capacity to consistently supply greater quantity and quality of product for 12 months of the year, transforms exporters competitive position within international markets. This is evident in not only increased sales volumes to existing customers but also in the number of new buyer relationships that exporters are able to secure. Exporters investing in cultivation are reporting that as well as identifying new buyers, there are significant opportunities to deepen existing relationships by developing new product lines for them and upgrading their position to being a preferred supplier.

6. Opportunities to expand and upgrade in the value chain

As exporters use cultivation as a platform to grow their businesses, this presents a series of opportunities to scale up as well as invest in upgrading their activities within the value chain. For example, Biobes has recently invested over €16k in expanding from primary processing activities such as cleaning, cutting and packaging, to include further added value processing such as extraction of essential oils. It now produces over 10 specific essential oil products. Biobes has also invested in greenhouse construction to produce high quality seedlings for distribution to their cultivation farmers.

KEY COSTS OF CULTIVATION

Initial investment and ongoing operation costs associated with cultivation depend largely on variables such as crop type, location, land size, soil types, level of service delivery, degree of localisation, extension advisory to farmer ratios and others. However, the following types and examples of Biobes's specific costs are listed below to provide guidance to exporters and investors.

1. Land lease costs

This largely depends on the location, soil type, fertility, ownership structure and length of potential lease. However, for the purposes of demonstration it can be assumed that leasing costs range from €240 - €400 / ha / year. In the case of Biobes, the land is either already the property of the business or is leased directly by the business. Further to this in some cases the farmers own or lease the land directly.

2. Input costs

Each exporter is likely to adopt a different approach to provision of input costs and how they recover these costs either directly from the farmer in cash or in kind or themselves through their own margin. As an example over the 6 ha of recently established cultivated land in Tepelena, over €21,000 was invested in initial inputs. This investment cost is a sunk cost and will subsequently be recovered in the exporter's operating margins, rather than recovered in kind or through a 'pay as you go' approach.

3. Extension advisory

The cost of extension provided to farmers engaged under a cultivation platform is at the discretion of the exporter. Variances will be notable depending on the type of engagement with extension staff (salary versus commission), the education and experience level, the regularity of farm visits and the existing capacity of farmers.

4. Drying chamber costs

Drying chambers vary according to size and capacity but as an indication, the chamber that Biobes has installed in the Tepelena region is 40 sqm with 3,000 kg / day capacity. This chamber cost approximately €10,000. In addition to this, ongoing costs such as labour and electricity should be factored in by exporters.

Type of drying chamber	Volume capacity	Indicative cost range
Biomass fuel/Thermogenerator	1,000 kg / day (16 sqm)-3,000 kg/day(40 sqm)	€10,000-€30,000

Interestingly, Biobes' drying chamber in Tepelena was designed and assembled in Albania by a local engineering team. According to Biobes, who also uses a drying chamber manufactured in Serbia at their Lushnja headquarters, the Albanian drying chamber is far superior as "it was designed according to their specifications – and should there be any problem, maintenance takes just a few hours to arrive, as opposed to days".

5. Quality assurance

Exporters switching and expanding into cultivation are advised that additional quality assurance is required to ensure consistent supply of quality products is delivered to its buyers. As an example, Biobes has recruited an additional full time quality assurance staff member at their central facility in Lushnje which covers all production. The cost of this staff member is approximately €4,300 per annum.

6. Additional labour costs

In total across the whole business, Biobes has recruited 3 new additional which cost the business €13,000.

7. Certification costs

Organic certification is a pre-requisite for many MAPS products and therefore for newly established cultivation operations certification must be obtained. There are different organic certification marks some of which are more suitable for different target markets. In the Tepelena example, Biobes budgeted approximately €1,000 per year for individual certification over 6 hectares with USDA Organic and EU's AB mark, utilising Albinspek as a support service to acquire certification.

COMMERCIAL VIABILITY SCENARIOS

Commercial viability of cultivation depends on a multitude of variables that need to be assessed collectively before switching sourcing from wild harvesting to cultivation. Purely as an illustrative exercise, the table below demonstrates how an exporter gradually increases their cultivation by 6 hectares per year for a period of 3 years, investing in farmers, new services, certifications, human resources and eventually added value processing.

	Wild Harvesting	Cultivation Y1	Cultivation Y2	Cultivation Y3	Assumptions
Commercial Performance					
Quality grading	30% Grade 1 70% Grade 2	35% Grade 1 65% Grade 2	40% Grade 1 60% Grade 2	50% Grade 1 50% Grade 2	
Additional revenue from increase in quality grading		€ 48,000	€ 96,000	€ 192,000	
Quality claims	5% of sales	3% of sales	2% of sales	1% of sales	
Additional revenue from reduced quality claims		€ 16,000	€ 24,000	€ 32,000	
Seasonality and regularity of supply	July – November 5 months	Extended to 6 months	Extended to 7 months	Extended to 8 months	
Additional revenue from increased seasonality		€ 64,000	€ 128,000	€ 192,000	Equal split divided by 12 months to work out add. Revenue from each new month
Transport costs		Reduction of 10%	Reduction of 10%	Reduction of 10%	
Additional revenue from reduced transport costs	€ 24,000	€ 2,400	€ 2,400	€ 2,400	Transportation costs = 3% of turnover
Number of buyers	15 buyers	18 buyers	21 buyers	24 buyers	
Additional volume sales from additional buyers		€ 80,000	€ 1600,000	€ 240,000	Equal split divided by number of initial buyers to work out potential additional revenue per buyer. This is then discounted by 50% to assume new customers will not purchase full demand volumes straight away. Conservatively assuming that existing buyers don't increase order quantities.
Sales split %	100 % bulk	100 % bulk	90% bulk 10% added value € 96,000	85% bulk 15% added value € 144,000	Assumption of added value sales increasing revenue by 20% over bulk sales
Overall projected turnover for the business (€)	€ 800,000	€ 1,010,400	€ 1,306,400	€ 1,602,400	
Projected year on year turnover increase as a result of cultivation		€ 210,400	€ 296,000	€ 296,000	

Costs of cultivation

Land lease costs		€ 2,400	€ 4,800	€ 7,200	Based on 6 Ha with cost of €400 / ha / year
Awareness campaigns		€ 1,895	€ 1,895	€ 1,895	To drive awareness and motivate new farmers to sign up to the platform
Management costs for collection warehouse		€ 7,389	€ 15,677	€ 23,516	Management cost increases apportioned to increase in land size / volume produced
Rehabilitation of collection centres		€ 3,930	€ 3,930	€ 3,930	The same cost each year as another 6ha is being added to the project
Input costs distributed to farmers		€ 19,040	€ 28,560,48	€ 28,560,48	Based on input provision being built into operating margins rather than on credit or pay as you go. 25% discount for Y2 and 50% discount for Y3
Extension advice and support		€ 1,290	€ 2,581	€ 3,871	The yearly cost of extension goes in line with land size covered and number of farmers covered
Drying chamber costs		€ 30,000	€ 0	€ 0	Initial upfront investment of €30,000 for a drying chamber that has 20ha capacity
Electricity infrastructure for drying chambers		€ 460	€ 919	€ 1,379	Electricity costs go up in line with number of sites and chambers
Organic certification		€ 1,032	€ 1,032	€ 1,032	Based on group certification
Quality assurance costs		€ 4,300	€ 8,600	€ 12,900	Quality assurance costs are in line with land covered and / or production volumes
Additional labour costs		€ 13,000	€ 26,000	€ 39,000	Additional labour costs are in line with land covered and / or production volumes
Added value processing investments and operating costs			€ 30,000		Assumption is major added value investment cost comes in Y2 of cultivation
Projected cultivation investment costs (€)		€ 85,186	€ 123,955	€ 123,284	
Projected return on investment		€ 125,214	€ 172,005	€ 172.716	

KEY RISKS TO CULTIVATION

The following key risks of commercial cultivation have been identified during the development of this report.

1. Being priced out

There is a risk that other exporters, particularly those that have not invested in a cultivation approach, being able to pay farmers slightly higher prices per kg. The potential for farmers to 'side-sell', and therefore not comply with agreements, is high. This would directly risk security of supply for exporters and ultimately the benefits of making the switch to cultivation.

2. Reducing rural workforce

The cultivation approach is dependent on their being a rural workforce to both farm MAPS but also a workforce to support exporters to deliver products and services. As urban migration increases the threat to the rural workforce will remain, however MAPS cultivation can offer new incentives and ownership for farmers if structured effectively.

3. Non-organic contamination from other crops

Organic certification is the 'norm' for MAPS exports and is an important foundation of Albania's differentiated position. In areas where other agricultural activity is intense such as fruit and vegetables there is a higher risk that MAPS products will become contaminated from pesticide usage.



CRITICAL SUCCESS FACTORS

1. **Demonstrate longer term incentives**

Whilst short term pricing gains may be on offer from competing exporters, it is important to develop longer term incentive structures that demonstrate a progression away from a volume based market and towards quality based incentives. Demonstrate to farmers their need to buy in to the approach, starting from uptake of improved seedlings and inputs through to better application of knowledge and agronomic practices. Contracts for farmers with clear timeframes, pricing and margin expectations can also help to validate the exporters commitment to their engagement.

2. **'Localise' products and services**

The more localised the exporters approach to cultivation is the more engaged this will keep local communities. In doing so this will help to keep the rural workforce motivated and present. From a commercial perspective, there are significant cost savings to be realised through localised service delivery, for example a reduction in transport costs when not having to transport the additional weight of fresh MAPS. Proximity of cultivated land is also key to reduce operation costs, especially if sourcing smaller volumes from each farmer.

3. **Engage lead farmers to carry out initial due diligence, monitoring and support service delivery**

Most exporters successfully implementing cultivation approaches have engaged and incentivised 'lead farmers' who can act as on the ground 'first-last mile' agents for exporters, supporting with due diligence of new farmers, monitoring ongoing cultivation and supporting with service delivery. Lead farmers are critical to exporters wishing the scale their cultivation operations, with ongoing community presence, whilst keeping costs relatively low.

4. **Use drying technology as a central service**

Drying technology should be viewed as a central service from which other upstream and downstream related products and services can be delivered. Improved and localised drying technology presents the most immediate and tangible commercial benefits.

5. **Invest in internal human resources**

Investing in the capacity of internal human resources will enhance the quality of services being delivered to farmers. In turn this will contribute to increased farm level productivity as well as improvements in consistency and quality of supply.

6. Diversify products and service offerings

Once drying technology has been established, exporters should look to expand and diversify their offerings to farmers operating under their cultivation approach. This will provide farmers more convenience and choice of services. Exporters will be able to benefit from integrated margins across these services, allowing some more profitable products and services to off set others. The more services provided to the farmer through the platform the more control the exporter will have over the quantity and quality of supply. In the short term, exporters that do not have the resource to invest in a more diversified offering could look to partner with relevant organisations that could fill the immediate gap.



