



Mastiha the diamond of Chios

North Aegean [Greece]



AGRISLES success stories booklets series

Project cofinanced by the European Regional Development Fund



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Introduction

Although widespread in the Mediterranean, *Pistacia Lentiscus* is producing only in one part of the island of Chios a resinous sap, from a local ecotype, i.e. *Pistacia Lentiscus* var. *Chia*, also called the mastic tree, due to the traditional use of this resin, called *mastiha* in Greek, as a gum, i.e. the mastic gum.

Also known as Chios mastiha this resin has been recognized since ancient times both for its distinctive aroma and its healing properties¹, especially against stomach upset, ulcers and heartburn. It has been thus been much appreciated and recorded as the first natural chewing gum in the ancient world (and from there, the etymologic root of the words *masticare* in Italian, *mastiquer* in French, or masticate, mastication, i.e. to chew, chewing in English, ...).

This natural resin in teardrop shape, is collected after falling on the ground in drops from superficial scratches induced by cultivators on the tree's trunk and main branches with sharp tools¹.

But its traditional cultivation was under threat, for economic reasons, and Chios mastic growers had to found a way to survive.

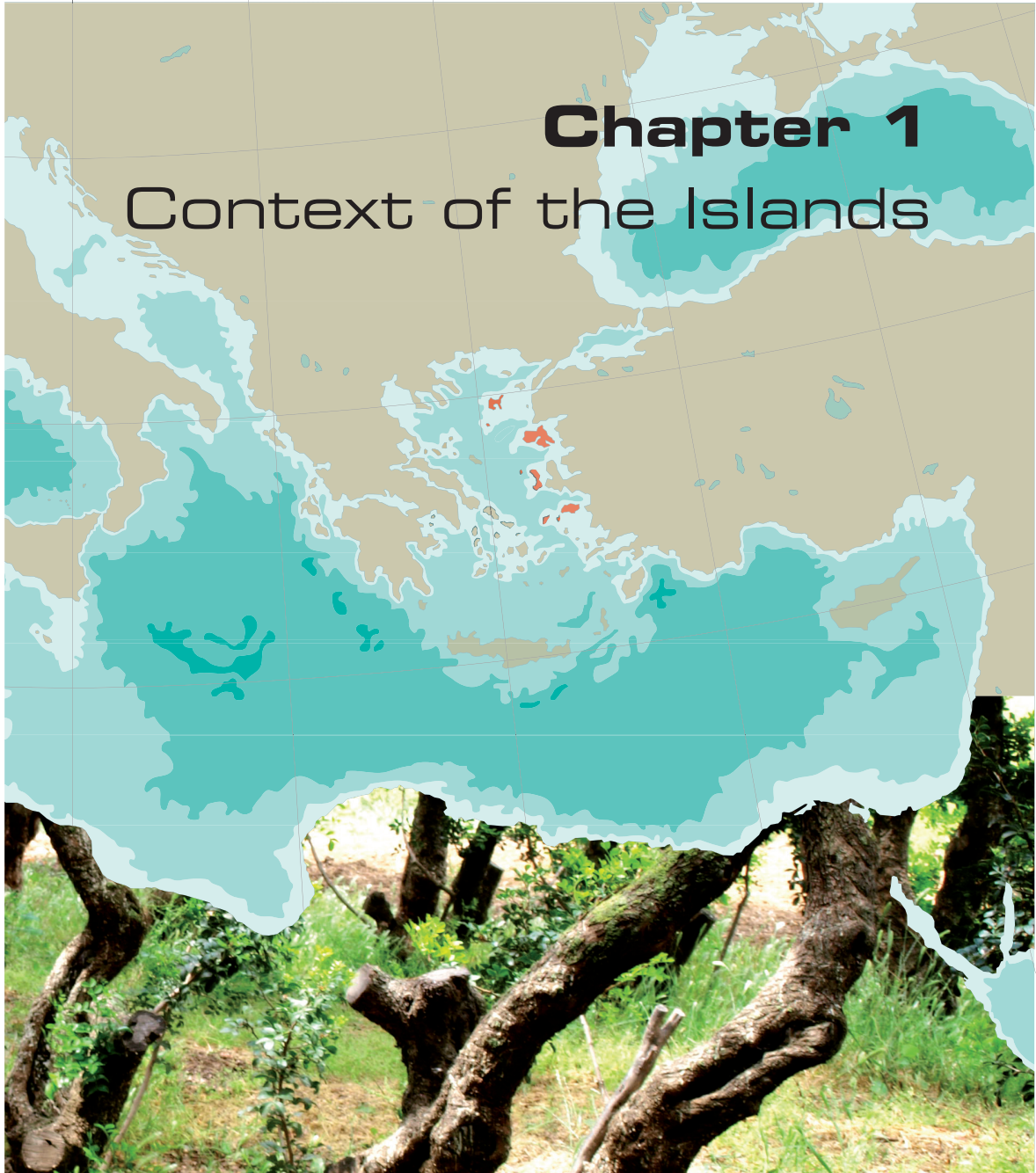
This booklet is telling the fascinating story of the economic revival of Chios Mastiha, the diamond of Chios, as a very good example of non-technological innovation in an insular context. It first presents the main characteristics of the agricultural context in the Greek archipelagic region of the North-Aegean, where is located the island of Chios.

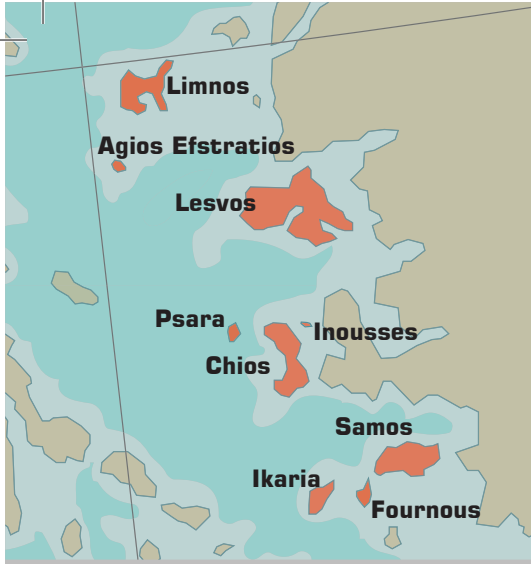
¹ From the Chios Mastiha Growers Association website www.gummastic.gr



Chapter 1

Context of the Islands





Brief description

The region of North Aegean is found in the north-eastern side of Greece and the south-eastern border of European Union. It consists in 3 prefectures, Lesvos, Chios and Samos with 9 inhabited islands in total (Lesvos, Lemnos, Agios Efstratios, Chios, Inousses, Psara, Samos, Ikaria and Fournous). The total extent of the Region is about 3.836 sq.km. with a total population of 206.121 citizens (2001 census) from which 117.125 citizens are rural population.

North Aegean at a glance:

Area: 3 836 km²

Population: 206 121 (2001 Census)

in urban areas: 88 996 individuals

in rural areas: 117 125 individuals

Density: 54,3 hab/km²

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Main administrative divisions: 3 island prefectures: Prefecture of Lesvos, Chios, and Samos, with 9 populated islands.

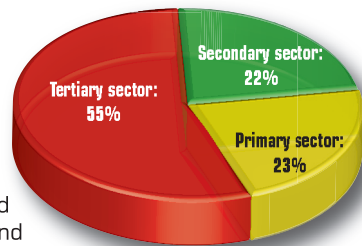
Name of the main geographic units: 2 main mountains almost with altitude of 1000 m, Olimpos and Lepetimnos. In our region 9 Special Protected Areas (SPA) have been integrated in Natura-2000 Network.

Main cities: Mytilini, Chios, Vathi, Myrina.

Main economic activities in the region: Agriculture, Stockbreeding, Fishery, Distillery (ouzo, winery), Tourism

Main economic activity in the rural area of the region: Agriculture, Stockbreeding, Fishery

GDP Structure by sector



General context

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Collaboration with University of Aegean Research • Production of high quality, well known local products • Strong demand of traditional products • Interest of new farmers for innovative actions • Favorable conditions encouraging organic production • Biodiversity • Many SPA of NATURA network • Natural and cultural heritage 	<ul style="list-style-type: none"> • Small holdings • Lack of qualified personnel, business modernization and innovative character investments • High cost due to sea transportation • Lack of dynamic marketing and publicity • Low level of secondary sector • Low interest of external investments • Difficulty of farmers in adopting innovative methods
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • High quality (PDO,PGI) and more competitive products in the market • Keep young people in agriculture • Promotion of local products through agrotourism • Using aggressive marketing and modern production methods • Building a green economy – environmentally friendly processes 	<ul style="list-style-type: none"> • Lack of regular transport with the main commercial centres and among the islands • Risk of isolation and products decomposition due to bad weather conditions • Globalization • Natural resources depletion • Soil erosion and desertification.



Agriculture and rural areas

SUCCESS	POTENTIALS
<ul style="list-style-type: none"> • mastic product marketing strategy • the revival of traditional products and varieties • production of organic products • natural cosmetics 	<ul style="list-style-type: none"> • high quality (PDO,PGI) and environmentally friendly products (organic) • organization of producers promoting a labelling policy • promotion of local products in the market and better marketing policy • innovative methods in agriculture (biodynamic, natural farming-Fukuoka's method).
WEAKNESSES	OBSTACLES
<ul style="list-style-type: none"> • small holdings • weak connection between primary and secondary sector • lack of qualified personnel • drought due to climate change • irrational management of water • difficulty in products transportation 	<ul style="list-style-type: none"> • lack of regular transport with the main commercial centres (Athens - Salonica) and among islands • strong competition due to globalization • difficulty of farmers in adopting innovative methods • insufficient diffusion of knowledge and innovative methods in agriculture in relation with the new technological ones • lack of producers technical support • soil erosion and desertification.

Challenges facing the evolution of agriculture

In a globalized and fast-changing economy, farmers and cooperatives are faced with increasing pressures, as well as challenges. Non-technological innovation can create competitive advantage through the creation of networks and the formation of a collaborative economic development partnership involving farmers, cooperatives, businesses, The University of the Aegean and government authorities. An important aspect is the degree to which every partner is willing to collaborate even when they compete in some circumstances.



Importance of agriculture in terms of land use, landscape, biodiversity

The North Aegean islands lie close to the Turkish coast and are marked by their particularly rich natural environment with very important ecosystems. They offer a variety of natural environment: the fauna is sufficiently rich in some islands, other are rather mountainous, while some islands e.g. Lesbos, are the migratory grounds of several species of birds. A considerable number of areas have been integrated in the NATURA-2000 Network.

The islands ecosystems are faced with disturbance as a result of limited available natural resources, insularity, and the development of monocultures in the agricultural sector. Extended fields of monocultures (olive groves in Lesbos, vineyards in Lemnos and Samos, mastic in Chios, cereals in Lemnos) mostly, and mixed natural and agricultural landscapes characterize the islands, while the main income of the local population comes mainly from the agricultural and livestock breeding activities and lesser from the tourist activities. Many socioeconomic processes (16th - 20th century) together with physiographical properties, have played a significant role in the formation of the land cover and are responsible for the alterations of the landscape.

In the last two-three decades the islands has experienced considerable land use/cover changes despite being far from the mainland and without any tremendous tourist growth. These changes are mostly due to human activities and interventions in the urban, agricultural and natural environment, which are manifesting in many ways, such as fires, deforestation, overgrazing, the penetration of cultivations into natural vegetation zones, land abandonment and the appearance of serious erosion phenomena and desertification.



Importance of agriculture in the regional economy

The North Aegean Region is registered as one of the underdeveloped regions of the EU where the per capita income is considerably lower compared to other EU regions. The island's economies depend on the Rural Sector (23%), Industry (22%) and Services (58%). Although the main source of income comes from Services, around 55% of the population is rural.

The primary sector is the main economic activity for Lesvos and Lemnos islands and also an important one for the rest of the islands. Primary production includes agriculture, fisheries, livestock breeding and aquaculture. The agriculture of the North Aegean Region presents a high percentage of specialized tree crops production. Cultivated areas are 2.5 times more than the country's average. This is mainly due to the olive culture especially in Lesvos island but also due to cultivations of citrus and mastic in Chios island. On Lesvos for example, the olive industry accounts for 3,6% up to 15,3% of the GDP, depending on the olive-growing period. Complementary to the major agricultural activities are viticulture in Samos and Lemnos islands and cereal cultivation in Lemnos island. The increased horticultural production observed cannot cover the local needs. Livestock breeding is an important activity showing an increasing trend concerning animal number and dairy products.

Secondary sector is limited in food and drink production, comprising of manufacturing of primary sector products (olive oil, wine, dairy products) and traditional products (ouzo, spoon preserve sweets, pasta).







Chapter 2

Mastiha, The diamond of Chios

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Summary

The good practice for non-technological innovation was the decision of the Chios Mastic Gum Growers Association, i.e. "The Union" to create a subsidiary company with a view to forward, demonstrate and promote mastiha, developing a network of stores in Greece and abroad. At the beginning, the Association and ENA (a municipal Development Corporation) had 70% and 30% of the ownership respectively in Mediterra S.A. Nowadays, the Association remains the main stockholder with 51% of the company. Taking into account the fact that natural Chios Mastiha constitutes both a series of products and a suggestion of prosperity with modern concepts of well being, their target group are people interested in quality, environmentally friendly, and trendy products.



Starting point

The main problem that Chios Gum Mastic Growers Association (CGMGA), or else "The Union", faced was the stagnation. So, in the context of a reorganization, they decided to create a subsidiary company in order to promote Mastiha, along with its different uses and qualities. MEDITERRA S.A., the subsidiary company of the Union, was founded in the summer of 2002.

Historical development of the experience

The farmer's price was doubled from 1999 to 2008. In 2003, the 20 % increased farmer's price was an economic motive. In 2005, ATTICA VENTURES, a subsidiary company of Attiki Bank, bought the 25 % of MEDITERRA S.A. in order to create more Mastihashops through a common plan. Sixteen Mastihashops were created in 7 years (2002-2009) in Greece and abroad. In 2006, was established in CGMGA the Research and Development Directorate. Day by day, Mediterra S.A. is developing new products with mastic in order to promote mastiha's different uses and qualities. Also in 2006, Mediterra S.A. created a plant in Kallimasia in order to produce tirokafteri, jams and other new and innovative products with mastic produced in cooperation with "Milelia" company and to sell them in Mastihashops.

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	1999	2000	2001	2002	2003	2004	2005	2006
Employees	60	58	65	65	63	60	63	63
Farmer's price in €/kg	39	44	52	58	70	75	75	75
Turnover (million euros)	7,92	10,23	11,35	13,36	9,99	13,76	14,48	14,42
Capital (million euros)	2,41	3,29	4,33	5,51	5,58	7,76	7,37	8,33
Mastic Exports (tn)	71	73	77	82	48	73	86	72
Mastic production (tn)	128	133	90	95	83	128	158	153
Sales of C. Gum (cart)	13336	17958	19187	26703	26194	26443	26802	29550



Approach or methodology used

A Cooperative such as The Union cannot afford to pay for a market research because it costs so much that only a big company or a multinational can. Developing a network of stores is a marketing tool and the cheapest way of communication. The Board of CGMGA decided to create a subsidiary company in order to be more flexible without interruptions by the members of The Union. According to Mr. Mandala Ioanni, the factors for promoting a product are:

1. Concept (the main)
2. Very good knowledge of concept creators
3. Personnel
4. And luck.

The mastic's concept is: to be a trend and to be related with the cultural heritage. For this reason, they have chosen to create a Mastishop in a road near a market with trendy shops and not in a market with traditional products. The term, for the agreement with Attica Ventures, was to remain in Mediterra S.A. the basic executives that created it and The Union the main shareholder. The vision of CGMGA is making mastihashops:

- embassies of Mastiha all over the world
- meeting and hosting points for all cultures of the Eastern Mediterranean.



Chios Gum Mastic Growers Association Strategic Development Plan

Development area	Details	Allocated money for the period 2003-2007	%
Training		400 000	4
Promotion	Market studies, media plans	2 000 000	20
Investments	Museum at Chios, new mastiha gum plant, chewing gum plant renewals, development of new products	4 500 000	45
Asset development	Database of EMX assets/property	500 000	5
Quality assurance	ISO, HACCP	100 000	1
Research and development	Cultivation improvement: mastiha improvement/ processing Mastiha	500 000	5
Farmer support	More support services, creation of experimental Mastiha farm, establishment of organic farms	1 000 000	10
Business plans	Museum management company, Mediterra SA, Establishment of ELMA SA (chewing gum company)	1 000 000	10
TOTAL		10 000 000	100

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mastihashop[®]
VOYAGE TO THE EAST MEDITERRANEAN

The Chios Mastiha

IDEA PEOPLE DESTINATIONS GOODS FELLOWS RECOLLECTIONS ACTIVITIES COMMUNITY

NATURAL MASTIHA
TRADITIONAL PRODUCTS
BAKERY PRODUCTS
GOURMET PRODUCTS
COSMETICS
PHARMACEUTICAL+PARAPHARMACEUTICAL PRODUCTS
BEVERAGES
GIFTS



GOURMET PRODUCTS

> Sahlab - Jural with Mastiha and Vanilla, Orange, Chocolate Flavour > Chocolate Bites with Mastiha
> Mahadeba - Rice Cream > Kashlala - Custard Cream > Sweet House Recipes with Mastiha without Preservatives > Salty House Recipes with Mastiha without preservatives > House Pasta and Sauces
> Filter Coffee with Mastiha Flavour > Sweet "Cigars" with Mastiha Filling > Mabon - Lebanese Sweets

Goods

[view images](#)

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Results obtained

In comparison to the initial situation with Mastiha good practice, our region has obtained, among the main results: an increase in production of quality products with added value, a support of mastic gum growers and trade, the development of the secondary sector, a better marketing policy, researches and interest of external investments. 17

	Initial situation	Current situation
YEARS	1999	2008
ACHIEVEMENTS		
MASTIHASHOP	0	15
RESEARCH	activated in a low level	activated in a high level
NEW MASTIC PRODUCTS	chewing gum	a lot of products for different uses (gourmet products, cosmetics, pharmaceutical etc)
FACTORIES	1	3
RESULTS		
REORGANIZATION	stagnation	development
FARMER'S PRICE in €/kg	39 euros	80 euros
POPULARITY	mainly in the middle east	more widely known (shops in western markets, e.g. New-York, Paris)
EMPLOYEES KNOWLEDGE LEVEL	low (zero with msc and phd)	8 with bachelor, 3 with msc, 2 with phd.
INTEREST OF EXTERNAL INVESTMENTS	0	ATTICA VENTURES bought with 1.000.000 euro the 25 % of MEDITERRA S.A.

Conclusion

So, the Mastiha good practice made clear to us that:

- developing a network of stores is a marketing tool and a way of communication with the target group,
- a good, unique, quality product can be known but this needs time and effort,
- for promoting a product are important:
 - the concept,
 - people involved to be co-operative, open-minded with a knowledge level,
 - the target group,
 - luck,
 - economic and international situation,
- the revival of a traditional product can enhance the development potential of a territory

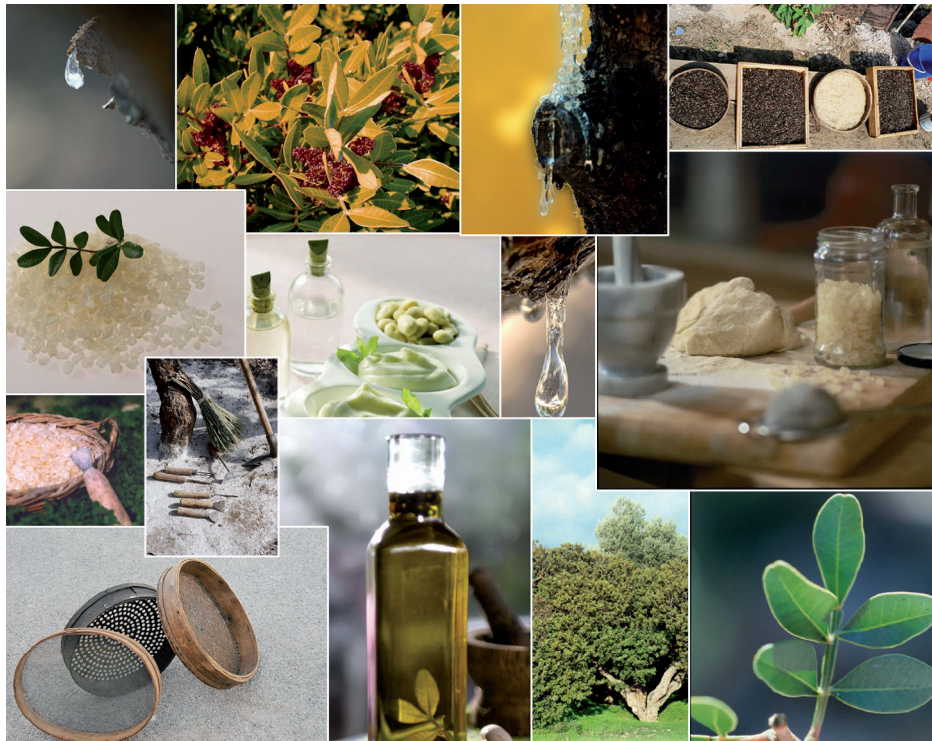


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THE AGRISLES SUCCESS STORIES BOOKLETS SERIES

The partners of the MED AGRISLES project, representing public authorities in charge of agriculture and rural development in the Balearic islands (Spain), Corsica (France, project lead partner), Sardinia and Sicily (Italy), Gozo (Malta), the Northern Sporades (Thessaly) and North-Aegean archipelagos (Greece), the Cyprus island (Cyprus) and the Azores (Portugal), altogether are exchanging experiences and developing a common method for non-technological innovation in agriculture and rural development. They publish a series of booklets to disseminate identified best practices on this issue.

Recognized since ancient times both for its distinctive aroma and its healing properties, Chios Mastiha, the mastic gum of Chios, once under threat of stagnation is at the origin of a fascinating economic revival. This booklet tells how drops of resin extracted since the antiquity from a local variety of the mastic tree, *Pistacia Lentiscus* var. *Chia*, in one part, only of the small island of Chios, led to an exemplary non-technological innovation adventure, with 16 mastiha shops now open in Greece and abroad, in the Middle East, Europe and North-America.

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