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„Local food culture on the Greek island of Samothraki
today and its traditional roots: Case study of a
Mediterranean nutrition transition.“

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1. Foreword.....	9
2. Introduction and theoretical background.....	11
2.1. The traditional Mediterranean diet.....	11
2.1.1. Definition.....	11
2.1.2. History of research.....	11
2.1.3. Characterisation of the traditional Mediterranean diet	12
2.1.4. Measuring the adherence to the Mediterranean diet	15
2.1.5. Health outcomes	16
2.1.6. The Mediterranean diet as an example of a sustainable diet	18
2.1.7. Unique characteristics of the Mediterranean diet	23
a) Fat and oil	23
b) Alcohol	24
c) Wild greens.....	25
2.2. Nutrition transition	27
2.2.1. Nutrition transition in the Mediterranean area.....	27
2.2.2. Drivers of the nutrition transition	28
2.2.3. Proposed strategies	31
2.2.4. Alternative approaches – term explanations.....	33
2.3. Greece.....	35
2.3.1. Cultural history	35
2.3.2. Nutrition transition in Greece	39
2.3.3. Adherence to the Mediterranean diet in Greece	45
2.3.4. Health status in Greece	45
2.4. Samothraki	46
2.4.1. The island of Samothraki.....	46
2.4.2. Research on Samothraki	47
2.4.3. Cultural history of Samothraki	47
3. Methods.....	49
3.1. Conceptual Framework.....	49
3.2. Research aims and questions	50
3.3. Methodology	51
4. Findings	55
4.1. Traditional food of Samothraki as reflected in the book by Anna Martezou (2005)	55
4.1.1. Food culture of Samothraki	56
a) Basic information.....	56
b) Food at special occasions	58
c) The kitchen, food storage systems and the use of fertilizer	60

d) The organisation of meals	60
4.1.2. Ingredients used on Samothraki.....	61
4.1.3. Recipes	63
4.1.4. Discussion.....	68
4.2. Current domestic food practices & adherence to Mediterranean diet patterns	69
4.2.1. Nutrition transition on Samothraki	69
4.2.2. Food supply infrastructure on Samothraki	73
a) Food sources.....	73
b) Share of food sources used by locals	76
c) Food choices of locals	77
4.2.3. Adherence to traditional food patterns in today's households.....	79
4.3. The use of local ingredients and the offer of traditional cuisine in restaurants & tourists' opinion.....	85
4.3.1. Menus of Samothrakian Restaurants	86
4.3.2. Usage of local ingredients in restaurants	96
4.3.3. Possibilities and challenges in using more local products in restaurants.....	98
4.3.4. Attitudes towards an online platform	99
4.3.5. Preferences of tourists regarding local food in restaurants.....	99
4.4. Conclusio.....	101
4.4.1. Discussion.....	101
4.4.2. Potential of marketing local and traditional food	105
4.4.3. Limitations.....	107
5. References	108
6. Appendices	119
6.1. Appendix 1: Ingredients as stated in Anna Martezou (2005)	119
6.2. Appendix 2: Anna Martezou's recipes.....	125
6.3. Appendix 3: PREDIMED screener score questionnaire	146
6.4. Appendix 4: Abstract in English and German.....	147

List of abbreviations

AD – Anno Domini

BC – Before Christ

CAP – European Union Common Agricultural Practice

cm - centrimetre

CVDs – Cardiovascular Diseases

CHD – Coronary Heart Disease

DOP – Denominazione d'Origine protetta (English: Protected Designation of Origin)

DQI – Diet Quality Indicator

EU – European Union

FAO – Food and Agriculture Organization of the United States

g – gram

g/d – gram per day

kcal – Kilocalories

km – kilometre

km² – square kilometre

ml – millilitre

NCD – Non-Communicable Disease

NR-NCD – Nutrition-Related Non-Communicable Disease

PDO – Protected Designation of Origin

SUSAKI - Sustainable Samothraki (Research Project)

UNESCO – United Nations Educational, Scientific and Cultural Organization

USDA – U.S. Department of Agriculture

WHO – World Health Organization

1. Foreword

The Mediterranean diet concept itself is a controversially discussed and very well researched nutritional topic. As some of its peculiarities contradict some widespread principles of nutritional science, such as its dealing with alcohol or fat, this topic still is a very interesting one. Furthermore, it is a concept that goes beyond the mere intake of nutrients and shows how important other lifestyle parameters can be, which are often left aside in classic nutritional research.

People's food choices are important in nutritional and health terms, but are also a great example and metaphor for social, economical, environmental and political developments. Therefore, it is important to include other structural factors in public health nutrition considerations [Caraher and Coveney, 2003] and to attempt to understand the landscape of food systems and food chains of a research area.

A rapid shift in dietary patterns can be observed almost worldwide in the last 70 to 100 years, which is called the nutrition transition. Food availability, quality and hygiene mostly improved, and new findings in medicine were discovered. Therefore, our average lifespan expanded. There rather is a shift from traditional risks to modern risks (**figure 1**), as well as a shift in suffering from communicable diseases to non-communicable ones, like obesity, diabetes mellitus type II, cardiovascular diseases or cancer. Many of these diseases are strongly associated with dietary patterns, and are moreover arising at a younger age than ever before. [Caraher and Coveney, 2003]

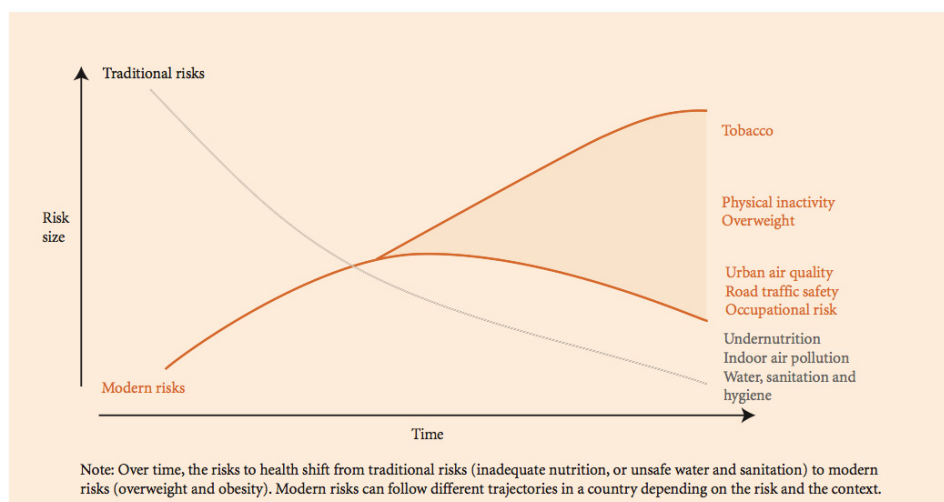


Fig. 1: Shift of health risks from traditional risks to modern risks over time. [WHO, 2009b]

The Greek island of Samothraki arouses the interest of many international researchers for various reasons. Not only due to its fragile ecosystem, which is facing irreversible tipping points, but also because of its moderate size, which simplifies systemic local research. After participating in a research project of the Institute for socio-ecological science on the island, I decided to dedicate my master thesis to this outstanding island and its food culture. In this whole context – taking nutritional facts, socio-cultural considerations and economic consequences into account, it seemed worthwhile to me exploring the landscape of traditional knowledge concerning food culture, nutritional changes and the current nutritional status on the Greek island of Samothraki.

2. Introduction and theoretical background

2.1. The traditional Mediterranean diet

2.1.1. Definition

The Mediterranean diet is a nutritional pattern reflecting the traditional food intake "in the olive-tree growing areas of the Mediterranean basin before the mid-1960ies, that is, before globalisation made its influence on lifestyle, including diet" [Trichopoulou et al., 2014].¹ It is characterised by a relatively high intake of vegetables, legumes, fruit, cereals, nuts and olive oil; a comparatively low intake of meat, milk (products) and sugar, as well as a moderate intake of fish and alcohol, usually wine.

This diet pattern is associated with a variety of positive health outcomes, especially concerning cardiovascular diseases [Menotti and Puddu, 2014; Trichopoulou et al., 2014] and has therefore become a topic of major scientific interest, not only because of nutritional benefits, but also due to its promising cultural and environmental aspects.

2.1.2. History of research

Around 1940, a doctor named Lorenzo Piroddi observed a direct relation between diet patterns and metabolic disorders and suggested a diet low in animal fat and high in plant oil [Schwingshackl, 2013]. Some years later, the American doctor Ancel Keys initiated the Seven Countries Study of Cardiovascular Diseases in the 1950s, after he had observed a comparatively low incidence of heart diseases in Mediterranean countries, and so he became one of the pioneers in exploring relations between eating habits and health outcomes. The study included 12,763 men aged between 40 and 59 years from the USA, Finland, Netherlands, Italy, Greece, Japan and Yugoslavia. Apart from examining nutritional intakes of the individuals, Keys collected data on the incidence of cardiovascular diseases (CVDs) every 5 years and in some cohorts even up to 40 years. The outcome showed an inverse correlation between typical Mediterranean consumption patterns, containing big amounts of plant based food, fatty fish and alcohol, and deaths due to coronary heart disease (CHD). A high olive oil use also seemed to be related to a reduced risk of CHD, which was of special interest to him.

¹ There are many diverse scientific definitions of the Mediterranean diet, but this widely used one includes not only regional and health aspects, but is also including temporal and diet-shifting factors.

He further concluded that healthy eating is more a question of dietary patterns and not about focusing on single nutrients or foods.

Several studies followed which supported the positive effects on different health outcomes such as prevention of CVDs and cancer by consuming a diet rich in plant based food, olive oil and fish, instead of animal based products and sugar. That research gradually led to the formulation of the concept of the healthy Mediterranean diet.

More recently, data from big cohort studies demonstrated a high range of potential positive health outcomes. [Menotti and Puddu, 2014]

Today the Mediterranean diet is the best explored and researched diet and it plays a major role in public health recommendations and strategies. Furthermore, it is the only nutrition pattern having been culturally awarded by UNESCO for various reasons, which will be explained in **chapter 2.1.6**. [Schwingshackl, 2013]

2.1.3. Characterisation of the traditional Mediterranean diet



Fig. 2: The Mediterranean region and location of the island of Samothraki; adapted from [Castro-Jiménez et al, 2013, adapted from United Nations Environmental Programme et al., 2009]

As shown in **figure 2**, the Mediterranean basin is a huge area. Naturally, large variations between different countries and regions regarding ingredients, cooking methods, preparation techniques and preferences are observable. Therefore, the Mediterranean diet is rather a dietary pattern than a diet in the sense of strict orders and rules [Lacatusu et al., 2019]. This perception is also consistent with the actual meaning of the Greek word *diaita*, which can be translated as lifestyle [Dernini, 2011].

Nevertheless, there are some specific ingredients and schemes which mark a common line in traditional eating habits along all Mediterranean countries [Lacatusu et al, 2019].

The Mediterranean diet is generally characterised by:

- A high consumption of vegetables, fruit, bread and cereals, potatoes, legumes, nuts and seeds
- Olive oil as the main fat source
- Low to moderate consumption of dairy, in particular cheese and yoghurt
- Low to moderate intake of fish and poultry
- Low share of red meat
- Moderate consumption of alcohol during meals, mainly wine
- Low-processed, seasonal, local and fresh products

[Schwingshackl, 2013]

While poultry and fish are consumed in a moderate amount [Schwingshackl, 2013], red meat usually plays a minor role in the Mediterranean area [Martinez-Gonzalez et al., 2017]. In general, the traditional Mediterranean diet is a predominantly plant-based dietary pattern. Apart from vegetables, fruit, legumes and (whole grain) cereals, plants also play a major role in constituting the base of oil production (olives) and wine (grapes). [Trichopoulou et al., 2014] A low consumption of processed foods high in sugar and fat is typical, same accounts for processed meat. Sugar-sweetened beverages are not common. Additionally, fresh fruit is often served as a dessert instead of cakes, pastries or other sweets. [Martinez-Gonzalez et al., 2017]

Although this general structure remains consistent throughout different definitions of the Mediterranean diet, more detailed suggestions and specified amounts of foods vary substantially among different publications. In **table 1** three main diet pyramids of the Mediterranean diet are compared: The *Oldway's Preservation and Exchange Trust pyramid* from 1993 (left) which was updated in 2009, the *pyramid of the Mediterranean Diet Foundation* (which is presented in **figure 3**) from 2011 (in the middle) and the *Greek Dietary Guidelines* from 1999 (right) which represents the traditional food habits. It is obvious that the three guidelines differ in the defined number of servings of specific ingredients. Specifying on exact amounts of certain foods or the number of servings per day is therefore not always very clear.

Foods	Oldway's Preservation and Trust (2009) [21]	Mediterranean Diet Foundation (2011) [5]	1999 Greek Dietary Guidelines (1999) [22] ¹
Olive oil	Every meal	Every meal	Main added lipid
Vegetables	Every meal	≥ 2 serves every meal	6 serves daily
Fruits	Every meal	1–2 serves every meal	3 serves daily
Breads and cereals	Every meal	1–2 serves every meal	8 serves daily
Legumes	Every meal	≥ 2 serves weekly	3–4 serves weekly
Nuts	Every meal	1–2 serves daily	3–4 serves weekly
Fish/Seafood	Often, at least two times per week	≥ 2 serves weekly	5–6 servings weekly
Eggs	Moderate portions, daily to weekly	2–4 serves weekly	3 servings weekly
Poultry	Moderate portions, daily to weekly	2 serves weekly	4 servings weekly
Dairy foods	Moderate portions, daily to weekly	2 serves daily	2 serves daily
Red meat	Less often	<2 serves/week	4 servings monthly
Sweets	Less often	<2 serves/week	3 servings weekly
Red wine	In moderation	In moderation and respecting social beliefs	Daily in moderation

¹ Serving sizes specified as: 25 g bread, 100 g potato, 50–60 g cooked pasta, 100 g vegetables, 80 g apple, 60 g banana, 100 g orange, 200 g melon, 30 g grapes, 1 cup milk or yoghurt, 1 egg, 60 g meat, 100 g cooked dry beans.

Tab. 1: Comparison of three main diet pyramids of the Mediterranean diet [Davis et al., 2015]

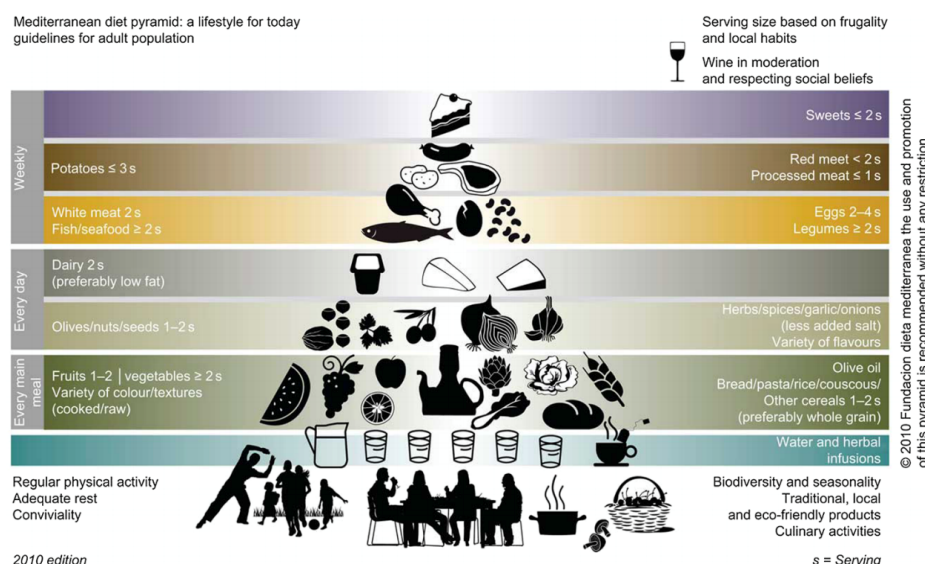


Fig. 3: Mediterranean diet pyramid, guidelines for adult population [Fundación Dieta Mediterránea, 2010]

Furthermore, the revised pyramid of the Mediterranean Diet Foundation shown in **figure 3** includes other considerations like physical behaviour as seen on the left bottom of the pyramid and food-related cultural traditions as seen on the right bottom of the pyramid, pointing out the preference of local, seasonal, traditional and eco-friendly products and culinary activities. [Dernini, 2011] Another interesting characteristic is the vague specification on alcohol consumption as seen on the right top of the pyramid. The phrases "Serving size based on frugality and local habits; Wine in moderation and respecting social beliefs" are promoting a self-responsible and culturally shaped consumption pattern instead of clearly defined allowed amounts. This is in contradiction to the relatively precise advised quantities on other foods in the pyramid.

It should again be mentioned here that the term Mediterranean diet in this work relates to a traditional nutritional concept that was practised in the Mediterranean region until around the 1960s and does not necessarily represent current nutritional consumption patterns in any Mediterranean country.

2.1.4. Measuring the adherence to the Mediterranean diet

There are numerous scores to measure adherence to the Mediterranean diet pattern in scientific studies. Two of the most frequently used are the Mediterranean Diet Score and the PREDIMED Screener Score, which are shown in **table 2**.

Both of them work as a system giving points for a higher consumption of positively weighted food items, such as live oil, vegetables, legumes and fish, and a lower consumption of negatively weighted food items, such as red meat or sweets. The more points reached, the closer the adherence.

	Mediterranean Diet Score (0 to 9 Points)	PREDIMED Screener Score (0 to 14 Points)
Positively weighted items	Monounsaturated/Saturated fat ratio * Vegetables * Fruits and nuts * Legumes * Fish * Cereals *	Olive oil as main culinary fat ≥4 tablespoon/day olive oil ≥2 servings/day vegetables ≥3 servings/day fruits ≥3 servings/week legumes ≥3 servings/week fish
Negatively weighted items	Meat/meat products † Dairy products †	≥3 servings/week nuts ≥2 servings/day olive oil sauce with tomato garlic and onion ("sofrito") Preference for poultry > red meats ‡ <1/day Red/processed meats <1/day Butter/Margarine/cream <1/day carbonated/sugared sodas <2/week commercial bakery, cakes, biscuits or pastries
Moderate alcohol intake	5–25 g/day (women) 10–50 g/day (men)	≥7 glasses/week of wine

* One point if the consumption was at or above the sex-specific median. † One point if the consumption was below the sex-specific median. ‡ The wording of the question was: Do you prefer to eat chicken or turkey instead of beef, pork, hamburgers or sausages?

Tab. 2: Two frequently used operational definitions of the Mediterranean diet [Martinez-Gonzalez et al., 2017]

The Mediterranean Diet Score was the first operational score used and is still used very frequently. It uses sex-specific medians as cut-off points, while the PREDIMED Screener Score uses pre-defined consumption goals for different food groups. [Martinez-Gonzalez et al., 2017]

2.1.5. Health outcomes

After dealing with the general characterisation and definition of the Mediterranean diet, a short overview of the current state of research on the health effects of a traditional Mediterranean diet pattern will be presented in the following chapter.

A strong inverse association of a higher adherence to the Mediterranean diet and the incidence and related risk of mortality of cardiovascular diseases is proven statistically significant. [Martinez-Gonzalez et al., 2017] In an umbrella review of meta-analyses conducted in 2018, Dinu et al. tried to make sense of the sometimes confusing, heterogeneous and endless amount of observational studies and randomised trials, with different methods and indices applied. 29 meta-analyses, covering a total amount of almost 13 million participants, were investigated to evaluate 37 health outcomes and their correlation with the adherence to the Mediterranean diet. Like in other studies before, strong evidence was found for a positive correlation between a higher adherence to the Mediterranean diet and a reduced risk of myocardial infarction and coronary heart disease, overall cancer incidence, neurodegenerative diseases like Alzheimer or Parkinson and diabetes, as well as for overall mortality. For specific cancers and inflammatory or metabolic parameters only weak evidence was given, in some cases due to a lack of data. No evidence was found for some specific cancers like ovarian or bladder cancer and for a correlation between Mediterranean-diet-adherence and low-density-lipoprotein levels. [Dinu et al., 2018]

Other studies moreover propose preventive effects on cardiovascular risk factors, such as high body weight, blood pressure or total cholesterol levels. This could partly explain the protective cardiovascular effect. [Lacatusu et al., 2019]

Another study by A. Trichopoulou also concluded a positive association between closer adherence to the Mediterranean diet and an extended lifespan among elderly people in Greece. [Trichopoulou, 2004]²

² In 2011/12, Greek media reported about so called ghost pensioners. It was said that family members had not reported the death of several thousand pensioners, in order to further obtain the deceased's pension. Therefore, a very high number of exceptionally old people existed, at least in the official papers. Although I am not able to verify the media's statements at this point, it is perhaps important to keep this in mind when talking about the sometimes claimed extraordinarily high life expectancy of the Greeks. [Der Standard, 2011; Dabilis, 2012]

To investigate the impact of specific ingredients on the association between Mediterranean-diet-adherence and a lower mortality, data of a huge cohort study was investigated, including more than 23,000 participants. The results suggested a clear impact of a moderate alcohol consumption pattern compared to excessive or minimal alcohol consumption, contributing to 24% of the effect. 17% of the positive effect was said to be caused by low consumption of meat (products), 16% by a high consumption of vegetables and 10-11% each by a high consumption of legumes, fruit and nuts and a high monounsaturated to saturated lipid ratio (representing the olive oil preference). Low impacts could be seen for fish and seafood, dairy and cereal intake. [Trichopoulou et al., 2009]

While these findings may be very interesting, it can be assumed that it probably is particularly the diversity, complexity and synergy of foods and their interactions in the Mediterranean diet that have a big impact on health outcomes, rather than focusing on single foods or nutrients. [Trichopoulou et al., 2014; Lacatusu et al., 2019]

A review from Tosti et al. tried to explain possible metabolic and molecular mechanisms related to an adherence to the Mediterranean diet, as can be seen in **figure 4**.

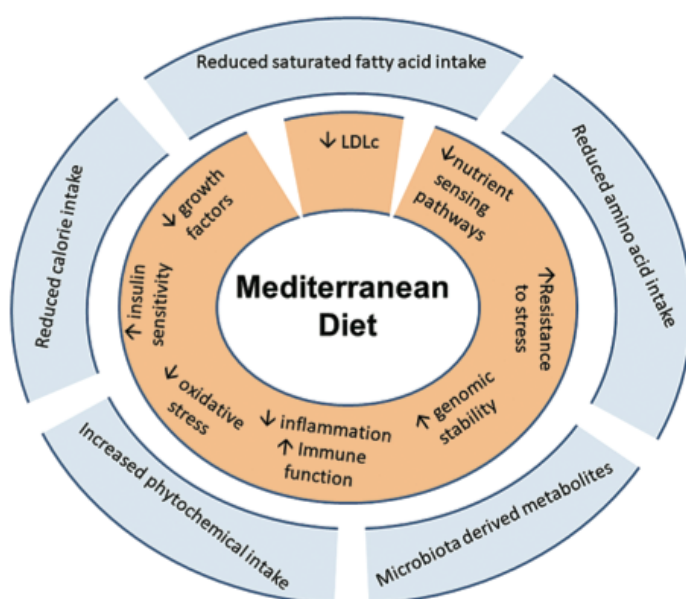


Fig. 4: "The effectors of the Mediterranean Diet" [Tosti et al., 2017]

Moreover, these factors shown in **figure 4**, which possibly play a role as effectors, may be related to each other. Nevertheless, the detailed mechanisms remain mostly unclear. The factors which are most likely to be involved in the health promotion and pro-longevity effects of the Mediterranean diet were defined in the study as:

"... (a) lipid-lowering effect, (b) protection against oxidative stress, inflammation and

platelet aggregation, (c) modification of hormones and growth factors involved in the pathogenesis of cancer, (d) inhibition of nutrient sensing pathways by specific amino acid restriction and (e) gut microbiota-mediated production of metabolites influencing metabolic health." [Tosti et al., 2017]

In addition, factors other than nutrition may also contribute to the positive health status. Social and economical aspects may play a significant role. A generally relaxed surrounding, including the daily *siesta* and a commonly extended family structure may remove pressure in daily life and may prevent stress-related health threats. [Trichopoulo, 2004]

In general, it is important to keep in mind that nutritional studies can only observe correlations between diet patterns and health outcomes, and do not necessarily constitute causalities. Other (co)factors and confounding variables have to be considered. An observed effect can hardly be traced back to one single cause, especially when investigating in such a complex topic as lifestyle.

2.1.6. The Mediterranean diet as an example of a sustainable diet

Apart from the various proposed health benefits explained before, further aspects of the Mediterranean diet will be the focus of the following passages.

Apart from investigating beneficial health effects, the traditional Mediterranean diet has also become a well-known research subject as being a great example for the concept of sustainable diets.

“Sustainable diets are those diets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources." [FAO, 2010]

Padilla et al. explained how nutritional aspects are interfering with other dimensions like agriculture, environment, culture or economics. The different elements and their interactions on various levels to promote the concept of sustainable diets are shown in **table 3**.

	Environment	Nutrition	Economic	Socio-cultural
Agriculture	Follow sustainable agricultural practices Enhance resilience of production systems Deploy and maintain diversity	Promote diverse food Produce nutritionally dense product	Deploy affordable cultivation practices Promote self reliance through local produce	Maintain traditional agriculture practices and promote local varieties
Food Production	Reduce impact of production, processing, commercialization	Preserve nutrients throughout the food chain	Strengthen local food systems Produce affordable food	Produce culturally acceptable food
Consumption	Reduce the environmental impact of feeding practices	Promote dietary diversity, food balance and seasonality	Promote access to dietary diversity	Safeguard food traditions and culture Meet local preference & taste

Tab. 3: Dimensions of the concept of sustainable diets [Padilla et al., 2010]

Undoubtedly, consumption patterns and their use of resources in production have a crucial environmental impact, as food production is one of the main contributors to the environmental footprint of a population. Greenhouse gas emissions in agriculture, water use, emissions through processing, transportation or storage [Saez-Almendros et al., 2013], land and soil degradation or unsustainable fishing practices are just a few examples for pressures the production of food puts on the environment. The effects of consumption and production of food are often underestimated and neglected in this context. [FAO and CIHEAM, 2015] According to the European Commission, food consumption was responsible for 27% of all environmental consequences in the EU in 2009. [Tukker et al., 2009]

Regarding the Mediterranean diet pyramid, it is very interesting that the products on the bottom of the pyramid, which one should eat more frequently, are usually those with the smallest environmental impact. Therefore, this diet pyramid is a guide to eat in a healthy way and to consume in a way that disburdens the environment at the same time. It shows the very close connection between food choices, their nutritional values and environmental effects. [Padilla et al., 2010] This concept is illustrated in **figure 5**.

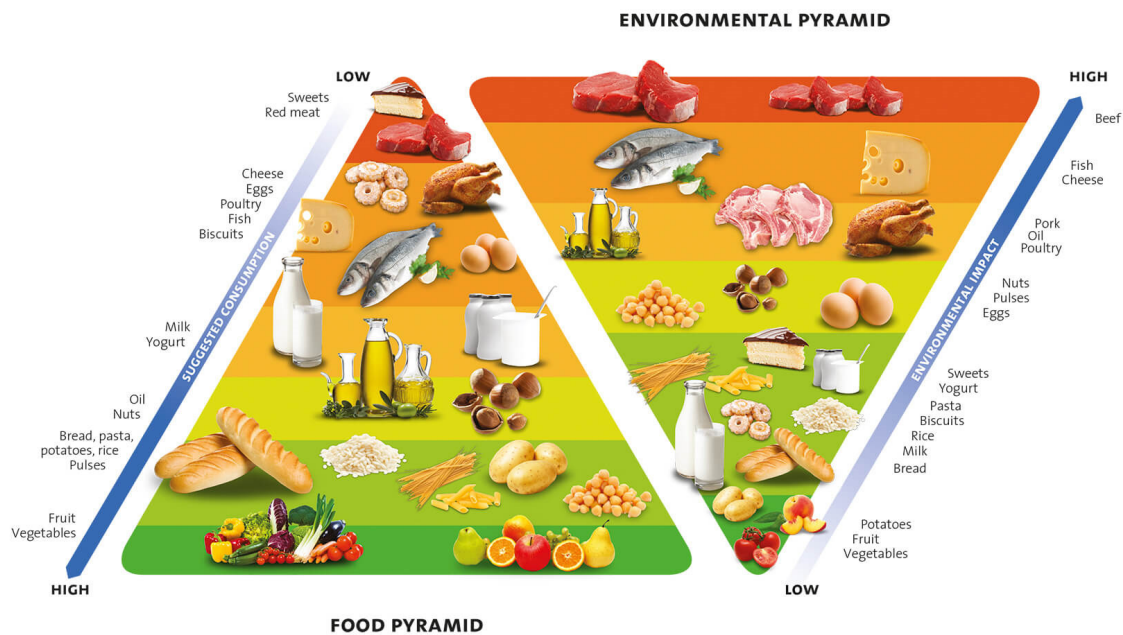


Fig. 5: The double food and environmental pyramid [Barilla Centre for Food and Nutrition, 2016]

Especially because of the relatively low share of animal products, which account for the highest environmental impacts, the environmental effects of the traditional Mediterranean diet are comparably low [Padilla et al., 2010]. There are a few products in the traditional Mediterranean diet which have greater impacts than others, for example vegetable oil, nuts or cereal production due to a high water and/or land use. Nevertheless, compared to a typical western dietary pattern, the Mediterranean diet shows a much smaller environmental footprint in terms of agricultural land use, energy consumption, water use and greenhouse gas emissions. [Saez-Almendros et al., 2013; FAO & CIHEAM, 2015]

Another important environmentally sustainable aspect is the diversity of foods and plants used. This is not only beneficial for health but also for sustaining biodiversity [Padilla et al., 2010] by taking advantage of the Mediterranean area as one of the most diverse ecosystems worldwide [Dernini, 2011].

An invaluable knowledge about different endemic species was common in the traditional Mediterranean diet. Both, diversity of available and used foods and ingredients as well as the awareness of how to cultivate, prepare and consume them, is about to change rapidly [Dernini et al., 2016].

Also, locality and seasonality are natural shapers of the diet's diversity. Nevertheless, it cannot be generalised that locally grown food is necessarily more sustainable, as there are different, more or less efficient production practices in different countries. Also locally grown food can be very inefficient from a sustainable point of view. For example, if it has to be kept in a heated storage to be sold at a later point of time during the year.

Culture and traditions play a major role in the concept of sustainable diets. It is a range of food practices and preparation, preservation and cooking techniques that were and still are known in all Mediterranean countries. Moreover, there is a general approach to value food on many levels [Padilla et al., 2010; Dernini et al., 2016]. Sharing and passing this knowledge on from generation to generation is a key element and keeps local food systems alive [Dernini, 2011].

UNESCO listed the Mediterranean diet of Cyprus, Croatia, Spain, Greece, Italy, Morocco and Portugal in 2013 as intangible cultural heritage of humanity and explained the decision as follows:

"The Mediterranean diet involves a set of skills, knowledge, rituals, symbols and traditions concerning crops, harvesting, fishing, animal husbandry, conservation, processing, cooking, and particularly the sharing and consumption of food. Eating together is the foundation of the cultural identity and continuity of communities throughout the Mediterranean basin. It is a moment of social exchange and communication, an affirmation and renewal of family, group or community identity. The Mediterranean diet emphasizes values of hospitality, neighbourliness, intercultural dialogue and creativity, and a way of life guided by respect for diversity. It plays a vital role in cultural spaces, festivals and celebrations, bringing together people of all ages, conditions and social classes. It includes the craftsmanship and production of traditional receptacles for the transport, preservation and consumption of food [...]. Women play an important role in transmitting knowledge of the Mediterranean diet: they safeguard its techniques, respect seasonal rhythms and festive events, and transmit the values of the element to new generations. Markets also play a key role as spaces for cultivating and transmitting the Mediterranean diet during the daily practice of exchange, agreement and mutual respect."

[UNESCO, 2013]

It becomes clear that the Mediterranean diet is rather an overarching idea, incorporating all stages of Mediterranean food systems, than just a healthy diet concept.

Conserving traditional knowledge and cultural diversity is a condition and an indispensable component in protecting biological diversity of ecosystems. Therefore, the approach of combining cultural and biological diversity to biocultural diversity is known to be important in integrating new policy concepts. From that point of view, the Mediterranean diet can be considered as a sustainable diet in the sense of obviously combining environmental and cultural aspects, for example traditional agriculture and fishery [FAO, 2010].

"Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilisation of such knowledge, innovations and practices" [UN, 1992]

Moreover, food is an important tool to define identities and beliefs. On the one hand, food is used to symbolize commonality, on the other hand to distinguish the own culture and beliefs from others. In that manner, food is also part of constructing a regional or national identity. Terms like traditional or authentic are commonly used in food advertisement to strengthen (and profit from) that communal feeling. [Kravva, 2011]

Another dimension in the concept of sustainable diets is the economic one. Maintaining a local food system is important for further strategies to retain autonomy and reduce dependence on imports.

Furthermore, local specificities could be used for marketing as many consumers value locally produced (food) items with all the related benefits mentioned. [Dernini et al., 2016]

2.1.7. Unique characteristics of the Mediterranean diet

In this chapter, some distinctive features of the Mediterranean diet are presented. They differ from common (western) nutritional recommendations, in some cases substantially. Nevertheless, they are an important part of local diets and also contribute to a healthy nutrition concept. Therefore, these unique characteristics are worth to be explained in a more precise way.

a) Fat and oil

Typically the share of fat in the total energy intake is moderate to high with 30 to 45%. Although this seems like a quite high intake of fat, the quality of the fat is perhaps more important than the quantity [Martínez-González et al., 2017; Trichopoulou and Lagiou, 1997]

The main fat source is olive oil, especially extra virgin olive oil, with a share of up to 15% of the total energy intake per day. The high content of unsaturated lipids [Martinez-Gonzalez et al., 2017; Trichopoulou et al., 2014] is generally preferable to saturated lipids, which appear in a low amount in the traditional Mediterranean diet, typically under 7 to 8% of the daily energy intake [Schwingshackl, 2013]. This comparable low share of saturated fats can be traced back to a low consumption of meat and meat products, but also to a low intake of industrial foods containing high amounts of palm oil and cocoa butter, which are also sources of saturated fats [Trichopoulou et al., 2014].

Other important sources of fat and oil are nuts and fatty fish [Martinez-Gonzalez et al., 2017], depending on the area and proximity to the sea.

Olive oil

Apart from the unique fat composition with 70% monounsaturated fatty acids and 15% polyunsaturated fatty acids, olive oil contains Vitamin E and K and bioactive components like polyphenols. These work as antioxidants.

Important for the quality and the nutritional content of olive oil is the region of origin as well as the pressing procedure. Extra virgin olive oil is the oil made from the first press of fresh-harvested olives and only processed mechanically, without chemical additions or the use of heat. Therefore it is very low in acidity, has a high polyphenolic content and a fine taste. Virgin olive oil is basically made in the same way, but shows higher acidity levels and lower contents of beneficial components.

Furthermore, there is refined olive oil, which is extracted from the remaining fruit parts with the help of chemical additives. Therefore, the antioxidant levels are even lower and it has got a higher fat and acid content.

Depending on the contents of antioxidants and other bioactive components, olive oil seems to have anti-inflammatory potential and a positive effect on the risk of cardiovascular mortality, effects like stroke or heart attack, and of all-cause mortality. Moreover, it showed protective properties against cancer, especially breast cancer, and diabetes type II. [Foscolou et al., 2018] A range of further unexplored effects of olive oil are currently investigated [Trichopoulo, 2004].

b) Alcohol

Alcohol, predominantly wine, is an important part of the Mediterranean diet. Normally, it is consumed in a moderate amount and mostly only along meals. [Trichopoulou et al., 2014] In a study investigating the Mediterranean diet pattern, a moderate amount has been defined as 10 to 50 gram per day (g/d) for men and 5 to 25g/d for women [Gea et al., 2014]. This is higher than the definition of moderate alcohol consumption in other countries like Germany [Szolnoki et al., 2019]. One glass of red wine (125ml) is equivalent to 10-12g of alcohol. That means that a moderate consumption equals about one to two glasses of red wine for women and one to four glasses for men [Souci et al., 2000].

Apart from the amount, there are other important dimensions in the typical Mediterranean alcohol consumption pattern. An evenly distribution throughout the week, avoidance of binge drinking (more than five drinks on one day), a preference for wine, especially for red wine over other types of wine, a low consumption of spirits and, as already mentioned before, a consumption of wine mostly along meals [Gea et al., 2014]. This drinking pattern probably may also be a key element in reducing overall mortality [Trichopoulou et al., 2009]. Compared with minimal/abstinent or exceeding drinking patterns, a higher adherence to the mentioned drinking pattern is associated with reduced mortality, [Gea et al., 2014]. It moreover is a distinctive characteristic of the Mediterranean diet, as it is one of very few diets approving any alcohol intake [Trichopoulou et al., 2014].

The effects of red wine on the human health have been studied widely, predominantly because of the high content of antioxidants in red wine, such as polyphenols, anthocyanins or catechins. Especially polyphenols like resveratrol seem to prevent cardiovascular diseases and protect the brain and nerve cells. Furthermore, antioxidants are likely to play a major role in the prevention of cancer and diabetes. [Snopek et al., 2018]

c) Wild greens

Chórta (also *hórta* or *vrouves*) is the Greek name for a variety of wild green leafy vegetables or salads, which are commonly wild-gathered in nature. Some of these plants also grow in inhabited areas, but in general *chórta* is defined as plants which are not influenced by human activity on purpose. [Leonti et al., 2006]

Wild greens are commonly used not only in Greece but also all along the Mediterranean area with different regional names. All in all, an estimated number of 20,000 species are gathered in the Mediterranean area, comprising of wild greens and wild forms of vegetables and fruit. The gathered plant species are differing according to the local and seasonal conditions of the area. The most important plant families used in the European Mediterranean, their parts used, common preparation techniques and the period of gathering are shown in **table 4**:

Family	Number of species*	Parts used	Preparation	Period of gathering
Asteraceae	83 (c:6/r:8)	Whorls, shoots, stems, roots, receptacles	Boiled and fried with olive oil and garlic	Spring
Rosaceae	36 (c:13/r:3)	Fruits	Raw, jam, dried	Summer, autumn
Liliaceae (s. l.)	24 (c:8/r:7)	Bulbs, corms	Omelet, boiled and fried, pickled	Spring, Autumn, winter
Apiaceae	20 (c:14/r:1)	Shoots, leaves, roots, seeds	Salad, boiled and fried, spice	Spring, summer
Brassicaceae	19 (c:13/r:2)	Shoots, leaves	Salad, boiled and fried	Winter, spring
Lamiaceae	14 (c:11/r:5)	Aerial parts	Spice, infusion	Spring, summer
Boraginaceae	11 (c:1/r:14)	Shoots	Soups, stews, pies, fried	Spring, summer
Fabaceae (s. l.)	10 (c:12/r:4)	Fruits, aerial parts, root, flower	Raw, boiled	Spring, summer
Polygonaceae	9 (c:0)	Leaves, shoots	Boiled and fried, pies	Spring
Chenopodiaceae	5 (c:4/r:9)	Shoots, aerial parts	Boiled and fried, pies	Spring, summer
Scrophulariaceae	5 (c:0)	Shoots	Salad, boiled and fried	Spring, summer

* Most important plant families as sources for wild gathered greens and fruits. Number of cultivated food species (c:) per family with European parentage are given in parenthesis as well as the ranking (r:) based on the number of cultivated species. For comparison: Poaceae 3 (c:11/r:6). (after Harlan 1992, Franke 1997, Zohary and Hopf 2000).

Tab. 4: "Plant families most utilised for wild gathered foods in the European Mediterranean." [Leonti et al., 2006]

Leonti et al. identified 147 wild (or semi-cultivated) plant species to be used in Greece. These wild greens played and still play an important role in times of food shortage and generally for the poor, but also in the daily nutrition of most rural populations. As nutrition patterns shift, some of this knowledge about wild plants and how to prepare them is disappearing. On the contrary, culinary and health interested individuals in gastronomy or science are recently showing increased interest in this topic.

Detailed scientific studies about nutritional values of wild gathered plants are widely missing, although they probably account for a significant amount of biologically active compounds in the diet of populations which make use of wild gathered vegetables. Most *chórta* are particularly rich in alpha-linolenic acids and antioxidants, and often also in vitamins, minerals, omega-3-fatty acids and fiber. Usually, they show differences to cultivated species in their nutritional value. [Leonti et al., 2006]

Some of them supposedly have a very high content of flavonoids, which sometimes is even higher than within a comparable amount of red wine [Trichopoulo, 2004]. In all probability, these plants are used as food and also as medicine in many cases, as their secondary compounds show "... a wide range of potentially physiological and pharmacological interactions including toxic, antimicrobial, anti-inflammatory, anti-oxidant, anti-atherosclerotic, astringent, hypo-glycemic, appetizing, diuretic, stomachic, carminative, laxative, aphrodisiac, and more properties." [Leonti et al, 2006]

2.2. Nutrition transition

Globally, agricultural practices changed substantially in the last 50 to 70 years, leading to a higher productivity. In the same time, lower prices and higher purchasing power of consumers contributed to an easier availability of food. That led to an enormous reduction of malnutrition worldwide, but also changed diet behaviour and composition in many parts of the world.

Many factors play a role in these changing consumption patterns. Urbanisation, globalisation, trade liberalisation, marketing, consumer incomes and attitudes as well as cultural, religious and regional impacts influence food availability, accessibility and consumer choices.

Worldwide, consumption of food steadily increased in most countries between the early 70s and the early 2000s in terms of energy (calorie) availability. This is called the expansion effect. Simultaneously, composition of diet changed globally. Especially foods such as vegetable oils, meat and animal products and sugar substitute, at least to a certain amount, the calories, which previously were received from cereals, roots and tubers. That shift is also described as substitution effect and varies between different regions in terms of actual diet composition and food items. [Kearney, 2010]

2.2.1. Nutrition transition in the Mediterranean area

The Mediterranean diet, as defined in **chapter 2.1**, used to be the common diet throughout the Mediterranean basin until the mid-twentieth century. [Burlingame and Dernini, 2011] In contrary, the concept of a western diet is based on ingredients which are high in saturated fats and refined carbohydrates and a high intake of red meat. Fruit and vegetables, seafood and fish, poultry and whole grains usually play a minor role. [Segens's Medical Dictionary, 2012]

When taking a closer look at the Mediterranean area, the situation does not differ substantially from the global trend: Between the early 1960s and 2000s, cereal and legume availability declined significantly, while meat availability more than doubled. Also the availability of sugar, sweeteners, vegetable oil and animal fat, fish and seafood, nuts, fruit and vegetables increased. [Da Silva et al., 2009]

It is important to mention at this point that availability does not necessarily equate to consumption. Food availability is measured with food balance sheets, which calculate the

mean amount of available food per capita in a country. That is usually more than the food actually consumed. Nevertheless, compared to individual dietary surveys, data for food balance sheets is easy to collect and presents a good marker for long-term food trends on a national level. [Kearney, 2010]

Adherence to the traditional Mediterranean diet is decreasing in general. The most obvious trends are on one hand an increased consumption of meat and dairy products and therefore saturated lipids, and on the other hand a decline in complex carbohydrates like pulses and cereals. [FAO and CIHEAM, 2015] Overall, a westernisation of diet can be observed in the Mediterranean region since the early 1960s. The diet composition shifts towards food items which are not originally part of a traditional Mediterranean diet [Da Silva et al., 2009].

2.2.2. Drivers of the nutrition transition

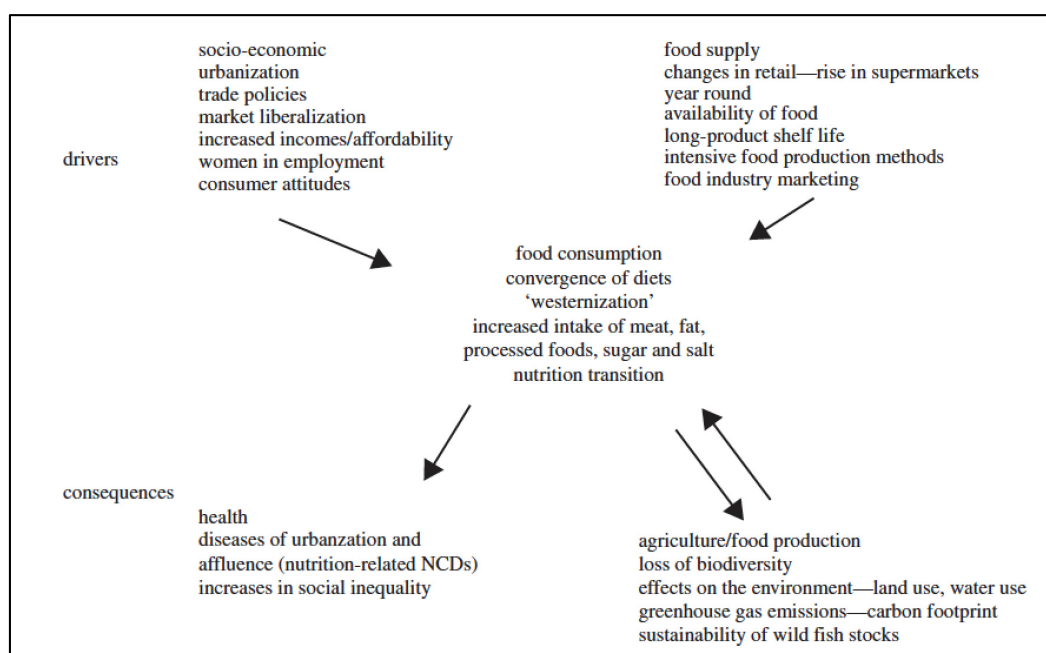


Fig. 6: The drivers and consequences of changing food consumption patterns. [Kearney, 2010]

Modern food distribution and a complex retail sector are established in the Mediterranean area, as supermarkets can be found anywhere, increasingly also in rural areas, and with them a food choice far beyond traditional Mediterranean food items. Increasing urbanisation is also one reason for a changing food consumption pattern, interrelated with other aspects like greater access to supermarkets and retailers, a higher spread of mass media and food trends [Kearney, 2010] and a loss of access to wild plants.

A variety in choice and seasonal independence is associated with health benefits and convenience. Another outcome of well-organised supermarkets is a remarkable improvement of logistic and food safety in the last decades. They also offer an endless amount of processed foods at a cheap price. These foods are often high in calories, fat, sugar and/or salt, while being nutrient-poor. The same accounts for spreading transnational food corporations in the fast food sector, who mainly serve highly processed food, which is often regionally adapted [Kearney, 2010].

According to Burch and Lawrence, who research on food regime theory, there is a new third food regime emerging in the last decades.

"Food regime theory focuses upon the dynamics, and agents, of change in capitalist food and farming systems. [...] a first food regime (was) based upon colonial trade in bulk commodities like wheat and sugar, and a second food regime typified by industrial agriculture and manufactured foods ..."

The proposed third food regime is characterised by

"... a shift in the locus of control over the establishment and management of such (food supply) chains from the manufacturing sector to the retail sector dominated by the large global supermarkets chains ...",

as well as a rising involvement of the financial sector in all stages of agri-food-systems with speculation and investment [Burch and Lawrence, 2009]. As power is concentrated in a few large corporations and transnational companies, it is them who control production, distribution, media, and finally consumer's choices to a large extent. [Caraher and Coveney, 2003] Naturally, economic considerations are prioritised to environmental, social or public health concerns in this context and therefore influence the available range of products. Product quality and (environmental and/or social) side effects which occur at different stages of the food supply chain are also affected.

At the same time, omnipresent modern mass media and marketing has reached an elaborate level, very well adjusted to consumers' preferences and ideas [Kearney, 2010]. These media and marketing influences strongly support a trend to a modern food consumption pattern, which is often connected with longer transportation routes and a higher grade of processing and packaging [Padilla et al., 2010]. Longer transportation distances and intensive agriculture are posing severe burdens on the environment. [Caraher and Coveney, 2003]

Describing food production as a complex system of various elements from agriculture to transport systems to retailers, one major problem is the predominance of economic considerations in organizing the food chain. Industrial-scale plantations, intensive monocultures and enormous transport logistics more and more have replaced traditional small-scale farming, crop rotation and local seasonal markets in the last decades [Padilla et al., 2010].

In addition, trade and liberalisation policies do influence the overall food supply and availability, but especially regarding highly processed foods and animal products. National or transnational policies like governmental or EU subsidies also shape the landscape of available food as for example subsidised products can be sold at a cheaper prize. Apart from that, increased incomes combined with falling food prices make food easier to access, especially animal products and processed foods. Nevertheless, higher wages also imply more possibilities to make healthier food choices. Access to (nutritional) education plays a major role here. Generally, it is important to communicate that consumers influence food production through their choices. Another factor is the rising employment of women who in most cases used to run the household and paid attention to a good diet and home-cooked food [Kearney, 2010].

As health awareness and access to health information are rising, consumer attitudes seem to evolve in a positive way. However, so-called nutrition-related non-communicable-diseases (NR-NCDs) are described to increase dramatically. Rising unhealthy diet patterns and rates of overweight and obesity are assumed to be one of the causes for this development. That phenomenon is called the consumer's attitude-behaviour-gap. [Kearney, 2010]

Rising rates of high blood pressure, blood glucose levels and unfavourable lipid patterns are strongly affected by unhealthy diets. This poses severe risk factors for the development of non-communicable-diseases, like cardio-vascular diseases, cancers or diabetes mellitus type II [Ronto et al., 2018]. Overweight, obesity and associated diseases are becoming a severe challenge. Direct negative consequences for individuals and their health are furthermore evolving to a public health issue, putting a heavy burden on the national health systems and moreover preventing these people from working efficiently [FAO and CIHEAM, 2015].

It seems intelligible that people favour these lifestyle changes worldwide in the sense of modernisation and progress. Nonetheless, they proceed to adapt to a uniform nutrition style, which is linked with (or the result of) a variety of issues, observable throughout our globalised world [Padilla et al., 2010].

Climate change and related loss of biodiversity are reason and outcome at the same time. Effects on the environment and cultural erosion can be observed throughout the whole area. As a result, some foods do not grow anymore in a shifted climate. Around 75% of plants species vanished in the 20th century. This affects not only sustainability but also food security. A lack of awareness and respect for food and traditions is a side effect of the standardised lifestyle – as a result traditional knowledge will be lost in people's everyday life [Dernini, 2011].

As nutritional patterns shift, there probably is no consistent Mediterranean diet pattern anymore in any country in that area, but still there are societies or individuals who follow the traditional way of agriculture, food chains and eating – in an intentional or habitual way [Menotti and Puddu, 2014].

2.2.3. Proposed strategies

Despite all aspects mentioned, there is a very important outline to keep in mind: not to glorify the past. It is not the aim to return to a lifestyle of the last centuries, where everyday life must have been extremely tough with hunger and diseases on the one hand and social issues and inequities on the other [Kizos, 2008].

Anne Meneley writes in her paper:

"When people are confident that they have enough to eat [...], questions begin to rise about what might have been lost in the transition to industrial food in terms of artisanal techniques and tastes and the confidence that comes from knowing the origin of one's food".

She also argues that the Mediterranean area and its imagined and proposed artisanal, traditional and healthy food system became a symbol of distinction from a suspicious and technointustrial food system, just when the latter became available and affordable. These attributions on one hand are used as very powerful marketing tools and on the other hand operate as distinctive features for an upper-middle-class, which can afford to decide on their food quality and origin. Therefore, considering social questions and scrutinising marketing schemes, like the image of the perfect traditional Mediterranean food system, is crucial [Meneley, 2007].

It is important to

"... Become aware of abuses of food systems in the Mediterranean. Traditional knowledge and experience are wiped out in the name of modernity. [...] It is still possible to build our future on the triad of traditional food, food industry and sustainable development including nutrition, environment and biodiversity." [Padilla et al., 2010]

It is highly recommended to promote the traditional Mediterranean diet pattern in theory and also in practical suggestions, for example by cooperating with caterers in institutions like schools or hospitals. A general promotion of the Mediterranean lifestyle, including other aspects like a relaxed surrounding and an extended family structure, seems to have positive effects in health terms [Trichopoulo, 2004].

With the evidence of the need to develop sustainable strategies in general and in nutritional terms, and the cognition of the unsustainability of the currently widespread western diet, the interest in sustainable diets has grown again recently, appearing like a new research area. It seems quite abstruse when considering that there already existed an invaluable amount of traditional knowledge and practices about local ecosystems, food diversity and their sustainable use before nutrition patterns, economy and agriculture changed so extensively. Nowadays, an enormous research effort is undertaken recently to frame sustainable diet concepts again. Rather than reinventing the wheel, it could be extremely useful to explore traditional knowledge about foods and local food systems and to use its potential in shaping new, modern strategies to maintain sustainability [Burlingame and Dernini, 2011]. This could be especially interesting when it comes along with obvious positive health effects and a range of environmentally favourable impacts. Interdisciplinary scientific strategies and (inter)cultural initiatives to keep the Mediterranean diet and its food culture system alive in order to prevent a loss of traditional knowledge should be considered urgently. Furthermore, it is important to include and address the young generation and their preferences [Dernini, 2011]. They will be the ones who will have to manage serious environmental problems combined with a growing population with rising numbers of simultaneously unbalanced over-nourishment and food insecurity [Gamboni et al., 2010].

Strategies and food policies which include agricultural and health aspects as well as sustainable, economical and social considerations are needed. They should aim at food economies that work regionally and self-reliant in order to retrieve power back from the current dominant food system where people are seen as mere consumers [Kearney, 2010].

The double aim is to tackle both the ecological and the fairness issues, as they are linked closely. Sustainable farming and a fair market, as well as various forms of collaboration and partnerships are also political topics, which strongly need to be supported. As Gamboni expresses it in his paper: "The most political act we do on a daily basis is choosing what to eat" [Gamboni et al., 2010].

For further information on the theory of the Mediterranean diet with all its different aspects, especially regarding the focus on sustainability, the report of the International Centre for Advanced Mediterranean Agronomic Studies from 2012 can be strongly recommended. [CIHEAM, 2012]

2.2.4. Alternative approaches – term explanations

Quiet sustainability

The concept of quiet sustainability describes

"... widespread practices that result in beneficial environmental or social outcomes and that do not relate directly or indirectly to market transactions, but are not represented by their practitioners as relating directly to environmental or sustainability goals."

In other words, quiet sustainability can be observed in many forms of food self-provisioning that are environmentally sustainable as a side effect. The motivation to do so has other reasons, for example the demand for fresh food, health, taste, financial reasons or merely a pleasure in growing your own food. Such practices are widely underestimated in their environmental impact, and they have rarely been studied scientifically. Examples of quiet sustainability practices in the food context could be the abdication of industrially produced fertilizers and chemicals for health reasons or the sharing, bartering or gifting of food. Besides their environmental and/or social benefits, it protects societies from being dependent on market fluctuations or state fundings and gives them autonomy in the sense of being able to react to social or environmental changes.

There is a big potential in supporting these kinds of practices with policy measures. Sustain and support (communal) gardening spaces, taxation reliefs on gardening material or promoting of quiet sustainability with positive reporting and provision of information material are just some examples of possible measures to maintain these practices [Smith and Jehlicka, 2013].

Food sovereignty

Food Sovereignty is a political concept developed by La Via Campesina in the 1990s. It is defined as peoples' or a region's right to decide over their policy regarding agriculture and food systems. The population itself should take part in decisions over the land they live on. Important aspects are the access to land and agricultural products of the region's inhabitants and a self-controlled agricultural production and consumption of the agricultural products. Local production and a local market are prioritised to cheap imports and dumping strategies. Overall, public goods, such as water and seeds should be protected, and genetically modified organisms are opposed. [La Via Campesina, 2003]

A variety of organisations around the world support and participate in these ideas and demands. Different initiatives, actions and information events, as well as the practical implementation of these ideas are part of the movement.

Quiet food sovereignty

Inspired by the concept of quiet sustainability, Visser et al presented the term "quiet food sovereignty". They conducted their research in rural Russia, but the concept is applicable in many regions where social movements, which are normally strongly associated with the concept of food sovereignty, are not or merely existent. Still, the abundance of organised activities or openly announced claims and demands does not mean that ideas and agricultural practices related to the concept of food sovereignty are not common. In contrary, everyday practices of a socially and environmentally sustainable food system are widespread, also without an explicit social movement in the example for Russia. Though, they are often not recognised for their environmental benefit and productivity. Traditional sustainable methods are common, without the intention to be sustainable in a modern way, but with the precondition of keeping the soil fertile to use it for more than a few years, the request for fresh and healthy food and the inability to spend much money on costly investments. As long as people have the right, the land and the control to produce their own food, there may also not be a big protest in future times. As Visser et al put it in a phrase:

"... it is a longstanding tradition, and a substantial degree of control over their own production is seen as the natural order of things. Why would smallholders state the obvious?"

[Visser et al., 2015]

2.3. Greece

2.3.1. Cultural history

The Mediterranean diet, as defined, did not emerge from one day to another. It is the achievement of thousands of years of intercultural exchange in the Mediterranean countries [Burlingame and Dernini, 2011] and was strongly shaped by climatic developments, poverty and misery [Trichopoulou and Lagiou, 1997]. As Dernini expresses, "...the Mediterranean diet represents the collective "memory" of different communities living in the Mediterranean" and has been shaped through many diverse societies with different attitudes, languages, religions and traditions. [Dernini, 2011]

While some of the typical ingredients like olives or oregano were domestic in the Mediterranean region, others came from totally different parts of the world and are meanwhile included as indispensable elements, such as tomatoes, eggplants or watermelons.

Especially the area of Greece, located between the Eastern and the Western culture, [Kizos, 2008] was influenced by a variety of cultures throughout millennia.

It is assumed that first specialisations in foraging developed between 11,000 and 6000 BC. Archaeological findings dating back to earlier periods are mostly bones of hunted animals. Very early remnants of plant origin are hard to find, as they mostly compost completely. Animal products like bones are more likely to be preserved. A number of bones of chamois, ibex and red deer were found from the period after 11,000 BC. Marks on the bones suggest that people tried to carve the medulla out of the bones, and that meat used to be grilled on the bone. Collecting mussels and snails seems to have been common. Remaining plant parts show a possible consumption of wild nuts, wild peas, lentils, sweet peas, peas, barley and oat. Tuna was the first fish that was proven to having been consumed in a big amounts, as tuna swims in big schools and is therefore relatively easy to catch.

It is supposed that sheep farming and cultivation of grains like emmer and einkorn started in Greece also before 6000 BC and was adopted from the East. Barley, lentils, peas and probably already domesticated goats came from the East too. In contrast, it is assumed that cows and pigs have been domesticated in Greece. [Dalby, 1998]

Neolithic Age

Animals were kept for their meat, but more and more also for their milk, their wool and their working power. In the 7th and 6th millennium BC people probably kept on eating fish and shellfish, nuts, elder, fruits of the strawberry tree as well as wild fruit, such as wild cherries, figs, plums, blackthorn and berries. Hunting was important, especially for game, rabbits and birds.

Around 6000 BC pottery was invented, therefore a variety of new cooking techniques evolved which enabled people to prepare a broader variety of ingredients. Chickpeas, broad beans and wheat came to Greece around 4000 to 3000 BC. Collecting wild herbs, honey and acorn was common. Grapes were eaten fresh or dried, and the first evidence for wine was found on Crete, dating back to around 2000 BC. That also was the time of the first evident production of olive oil on Crete, and the time when pomegranate came from Turkey. It is very likely that consumption of green vegetables and roots was common, but it is very hard to prove that other vegetables and fruit were consumed. Fennel, coriander, celery, dill and cumin came from central Asia. Other herbs like mint or thistle were used for dyeing. Seeds like sesame, linseed or poppy were already known. Though, it remains unclear if they were used already for nutritional purposes. [Dalby, 1998]

Archaic classic Aegean & Roman era

The first written documents in Greece date back to around 650 BC, but still little is known about the nutrition in the following centuries.

Lentils, barley and wheat were staple foods, called *sítos* ("what makes you full"). Wheat was not growing well, and was therefore the most expensive and unreliable staple food. *Ópson* was considered as the food which was eaten with bread: vegetables, eggs, cheese, fish and sometimes meat. Moreover, there was *oínos*: wine and desserts like cakes, sweets, nuts and fruit. Domesticated animals were the main meat source, and their milk was used to consume it directly or to produce cheese or yoghurt. Therefore, eating young animals, like lambs, was considered as very luxurious. Animals were also slaughtered as sacrificial victims [Dalby, 1998]. Their meat usually was eaten by the ritual's participants. [Dalby and Dalby, 2017] Beef, horse, donkey and dog meat was less common. The chicken, as we know it, came from the East, around 600 BC. Wild animals and all kinds of fish were caught, insects and snails were collected. A special kind of fish sauce, called *garós*, was made from small fish and salt.

Salt in general was used to preserve fish and seafood. Rather than using salt directly in a dish, the salty fish often was used instead. Because sugar was not known yet, people used honey, dates or figs as sweeteners. Fruit, nuts and olives were mostly eaten as a dessert or an appetizer. Some of the ingredients which also were already known at that time were apples, cucumbers, garlic, leek, onions, thyme, basil, salad, cabbage, capers, chicory and mint, as well as a variety of domestic wild vegetables and herbs. Sumac was an important spice, but the most important of all was *silphion*, which was imported from North Africa since about 630 BC, and is thought to be similar to the taste of garlic or onion, but was extinct due to its popularity.

Daily life dishes were soups or mashes from legumes or barley, all-grain bread, wine, wild vegetables and herbs. White bread, cake and in general a wider food choice was reserved for the rich. Farmers and fishermen had their own products and less diversification, although collecting a variety of wild vegetables and herbs was very common. In the first centuries AD a variety of spices from all over the world was added to the Greek menu, for example pepper, ginger, cloves or cinnamon. The way of cooking at that time was probably strongly influenced by regions like Lydia (today in Turkey) and Sicily [Dalby, 1998].

Byzantine empire (7th to 13th century)

More and more, Anatolia and Syria influenced the cooking techniques and choice of ingredients. Preparation techniques were refined, like baking special breads or producing a diversity of cheese. Recently added ingredients were nutmeg, aubergines, bitter oranges and sugar. Through the church's influence some fasting rules established: no meat and fish on Wednesdays and Fridays, fasting periods, for example before Easter, and the abstinence of oil and spices on important holidays. Moreover, new food symbols developed, for example the apple or pomegranate as a symbol of love. [Dalby, 1998]

Ottoman Empire (15th to 19th century)

The Ottomans undoubtedly influenced the Greek kitchen. Some examples may be the fondness for yoghurt, the introduction of dried meat (*pastirma*), *trachanás* (see **appendix 2**), and also new foodstuffs from India, Indochina or America. Chili, beans, potatoes, tomatoes and spinach came to Greece in the time of Ottoman rule. Other way round, Greece also influenced the Ottomans, for example with their fondness for sweets. Overall, there were not too many differences in the lifestyles and dietary habits of Greeks and Ottomans at that time. [Dalby, 1998]

The Greek state (after 1927)

Over time, European influences made their impact on Greek cuisine, introducing a variety of new ingredients and techniques. [Dalby and Dalby, 2017] Overall, it can be said that most of the typical ingredients in Greek cuisine have been there for centuries: grapes (wine), figs, honey, wheat and barley, onions, garlic, lamb, fish, mussels, calamari and squid. Moreover, the Greek cuisine still operates with relatively easy preparation techniques and rather relies on good quality condiments. Therefore, the original and unique taste is still maintained. [Dalby, 1998]

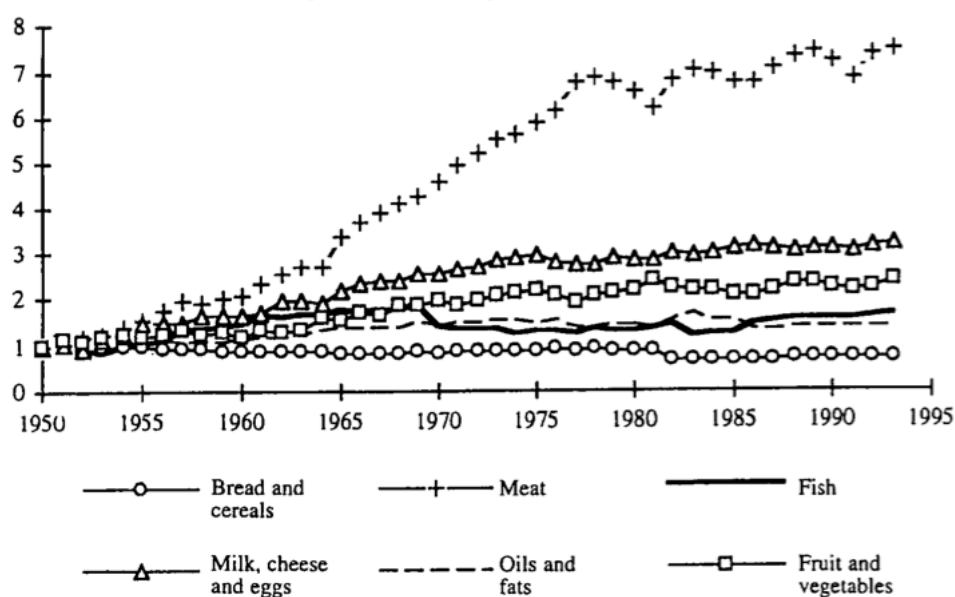
The traditional Greek version of the Mediterranean diet is largely based on the general definition. Olive oil was used as the main source of fat and played a central part in cooking. The share of fat in the total energy intake was relatively high with approximately 40% in Greece. Alcohol was used in moderation. A high intake of legumes, cereals, grains and bread, mostly whole-grain bread, and of vegetables and fruit was typical. Consumption of meat and meat products was rare because they used to be expensive, but fish was consumed due to its availability. [Trichopoulou and Lagiou, 1997] Seafood, such as cuttlefish, squid, crab, shrimp and octopus often were important ingredients, but this depended on the proximity to the sea. [Dalby and Dalby, 2017] A moderate intake of milk and milk products was common, mostly in the form of yoghurt and especially cheese, mainly feta, which was added also to salads and stews [Trichopoulou and Lagiou, 1997].

Like in most parts of the Mediterranean, food played a major role in Greece and was treated with respect and care. Home cooking was very common and still is among elder people. This included sometimes a lot of preparation, and eating was celebrated. Taking time to sit together and enjoy the meal was a sign of communality [Dalby and Dalby, 2017].

2.3.2. Nutrition transition in Greece

Concerning the actual changes of diet behaviour in Greece, it was observed already quite early that diet patterns are changing substantially. Already between the 1950s and the 1980s, energy intake was reported to have increased by 27%, mainly by a higher intake of protein and fat. A trend to continuously consume more sugar, meat, eggs, vegetables and potatoes, and less fish and cereals has been observed in that period.³ [Trichopoulou and Efstathiadis, 1989]

Figure 1 Evolution of Per Capita Food Consumption Index in Greece, 1950-1993*



* The index of per capita food consumption is defined as constant (1970) price expenditure divided by population.

Fig. 7: "Evolution of Per Capita Food Consumption Index in Greece, 1950-1993." [Karagiannis and Velentzas, 1997]

Figure 7 illustrates that between 1950 and 1995 the food consumption index per capita increased for all food items, except for bread and cereals. Especially meat and livestock products were consumed after 1965 in a considerably higher amount [Karagiannis and Velentzas, 1997].

³ Interestingly also mean height and weight increased significantly (7cm/4kg) between 1968 and 1982 [Trichopoulou and Efstathiadis, 1989].

The FAO analysed the change in the food quality index (also called DQI – diet quality indicator)⁴ in Mediterranean countries from 1960 to 2007. While it increased in some of the north-African countries, it decreased in most of the European Mediterranean countries, in some cases dramatically (**figure 8**). [Padilla et al., 2010]

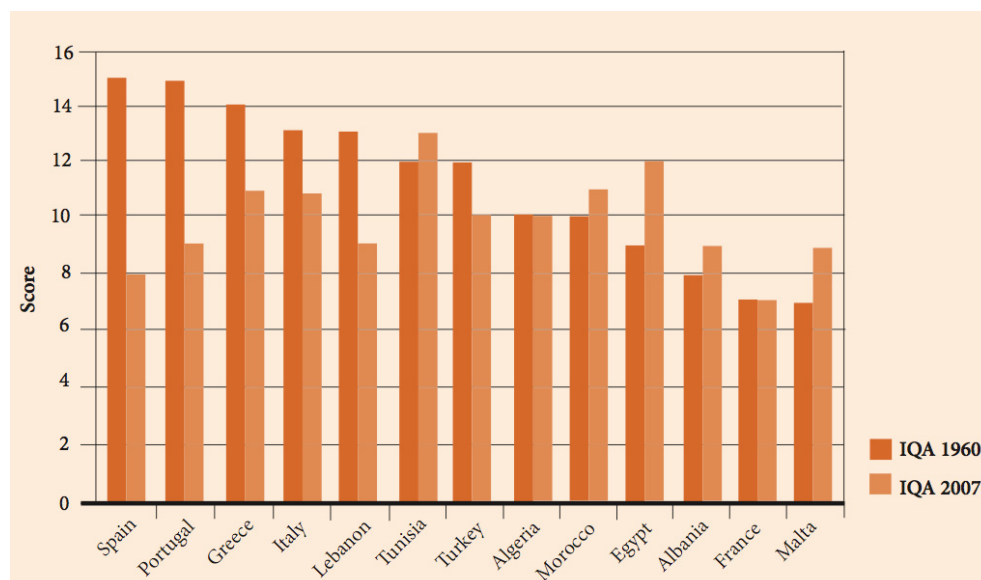


Fig. 8: Trends in the DQI in the Mediterranean countries 1960-2007 [CIHEAM, 2012]

Greece's score, third highest in 1960, also declined significantly in 2007, but still is among the five highest rated. An increase in meat, dairy and industrial foods lead to a shift from unsaturated fats to saturated fats, which is of major concern. Sugar consumption rises, whereas bread and potato consumption declines. Some researchers fear that the consequences will be micronutrient deficiencies, overweight, obesity and associated diseases. [Padilla et al., 2010]

Da Silva investigated changes in adhering to the Mediterranean adequacy index between the early 1960s and the early 2000s: Greece, once number one in the adherence ranking, dropped to the greatest extent [Da Silva et al., 2009].

⁴ "... The DQI (diet quality indicator) is a diet quality indicator calculated by adding scores attributed according to the level of consumption of certain foods, in relation to minimum or maximum recommended levels of consumption ceilings of recommended consumption. Based on WHO and USDA recommendations on amounts to be eaten for five major products (meat, fish, olive oil, cereals, and fruit and vegetables) and proportions of four nutrients (lipids, saturated fats, complex sugars and proteins) in the daily ration, a score is attributed for each level of consumption. A high score is the sign of high diet quality." [CIHEAM, 2012]

The change of eating habits also leads to a loss of local knowledge, varieties, plant species and cooking techniques and has therefore a big impact on the environment, especially relating to the definition of sustainable diets in **chapter 2.1.6**. [Padilla et al., 2010]

In Greece, traditional agricultural practices until the mid of the 20th century were characterised by a self-sufficient and market-independent attitude and adhered to methods typical for an oriental production style. Although these practices may not have been intentionally sustainable, there was no other option than preserving landscapes and resources on a long term scale. Therefore, at least as a side effect, farming techniques generally, but not necessarily, have been more or less sustainable.

Over time, these practices were perceived more and more as out-dated and backward and were substituted by modern and western techniques. These are aimed at a production beyond local needs and at exports to the international market. Less favoured areas, as for example smaller islands, retained their old farming systems in some cases, because large-scaled agriculture simply was unprofitable in these areas. The agricultural sector therefore diminished in many of these areas and got substituted by other income sources like tourism. An exception to that is sheep and goat husbandry, which is still practised to a certain extent in some of these areas.

In 1981, Greece became part of the European Union and the related Common Market. Agriculture transformed more and more towards a western production style and benefitted from EU subsidy for the production of certain foods. As a result, a subsidy-driven farming style emerged. A main consideration what to cultivate officially and in which amount, was not driven by local or international market needs, but by the rate of subsidy. [Kizos, 2008]

Figure 9 shows how available food energy changed between 1961 and 2013 in Greece. **Figure 10** represents the development of available fat and protein supply in the same timespan. Data was collected with food balance sheets.

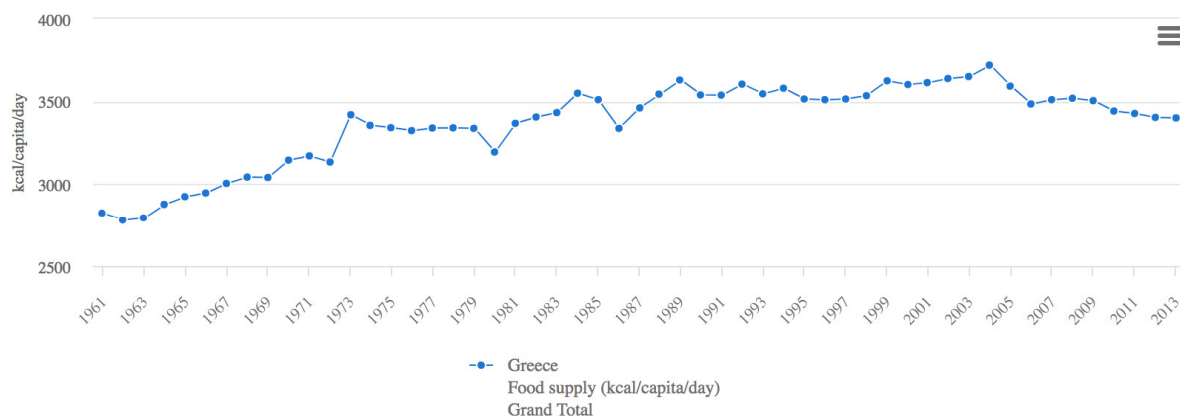


Fig. 9: Food supply in Greece 1961 to 2013 [FAOSTAT, 2017]

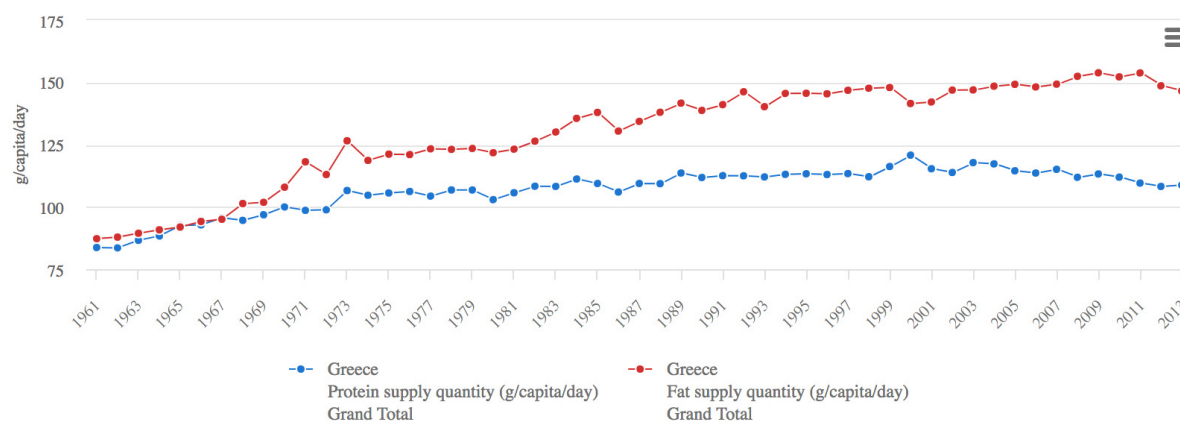


Fig. 10: Fat supply quantity and protein supply quantity in Greece 1961 to 2013. [FAOSTAT, 2017]

The graphs show a steady, though not always constant, increase in available food energy, fat and protein. The available food energy is given in kcal per capita per day, and increased from around 2800 kcal/capita/day in 1961 to about 3400 kcal/capita/day in 2013. In the same timespan, available protein rose from approximately 85 g/capita/day to about 110 g/capita/day, while fat supply quantity developed from about 90 g/capita/day to almost 150 g/capita/day in 2013.

The total energy availability peaked in the early 2000s, protein supply quantity around 2010, and both show a slightly decreasing trend since then.

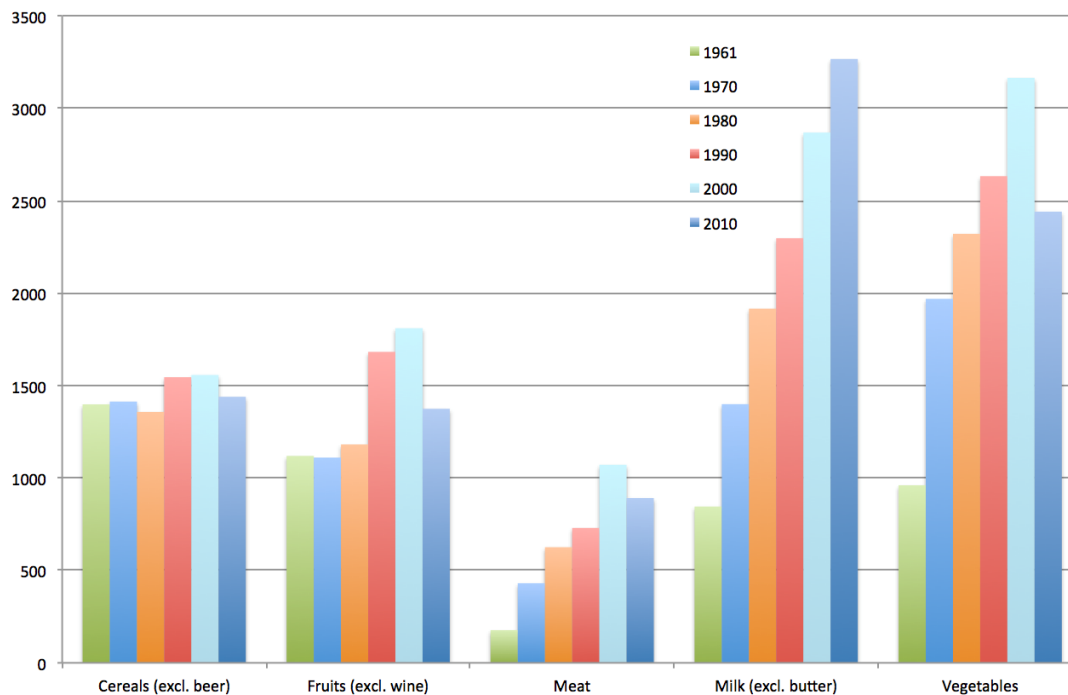


Fig. 11: Visualised FAO data: Availability of Aggregated food items (in 1000 tons) 1961 to 2010 in Greece. [FAOSTAT, 2017]

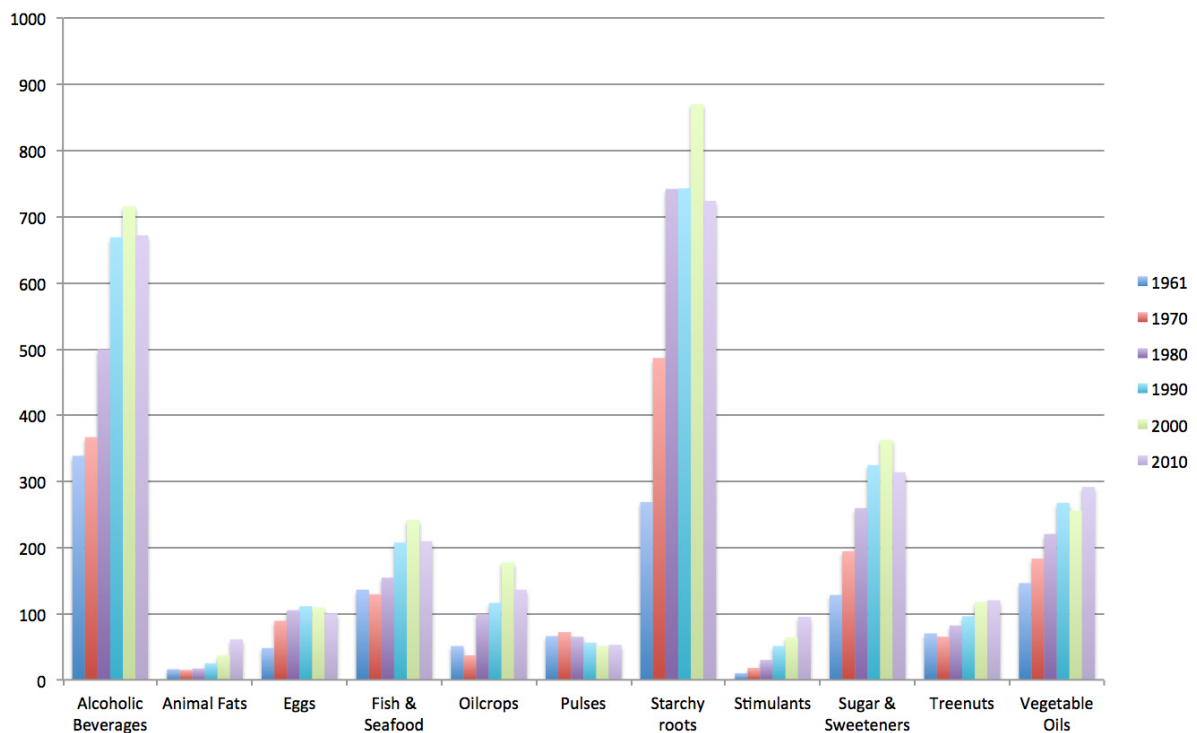


Fig. 12: Visualised FAO data: Availability of Aggregated food items (in 1000 tons) 1961 to 2010 in Greece. [FAOSTAT, 2017]

When we look into detail at the development of different food groups in the time between 1961 and 2010 in **figure 11 and 12**, the trend shown above is supported: most food items' availability increased significantly, peaked around the turn of the millennium and decreased more or less since then. Availability of animal fats, vegetable oils, treenuts, stimulants and milk did not decrease around the 2000s, but still increased until 2010.

According to this data, the availability of cereals is one exception to this trend, as it remained about the same. The second exception are pulses, whose availability decreased since the 1970s. For some aggregated food items, availability even doubled in the period from 1961 to 2013, for example for meat, milk, vegetables, animal fats, oilcrops, starchy roots, stimulants or sugar and sweeteners.

One possible reason for the drop after the 2000s may be the financial crisis.

Crisis

In 2009, Greece suffered from a severe financial crisis, leaving many people unemployed and financially insecure [Scarp et al., 2016].

In an Italian study, the effects of the global financial crisis in 2007 were observed. While they monitored an adherence to the Italian Mediterranean Index of 31,3% in 2005/06, they found a significant drop after 2007 to a mean adherence of 18,3%. But more interesting than the actual drop is the fact that socio-economic factors seemed not to be associated with adherence before 2007, but definitely were associated after the crisis. It therefore can be assumed that the effects of the crisis hit mostly disadvantaged subjects, which could also have negative effects on their health. Restriction policies and fiscal austerity measures may support that development [Bonaccio et al., 2014]. It is supposed that similar impacts could also have been caused by the Greek financial crisis in 2009.

In contrast, there are more recent studies which observed a positive development of nutritional awareness. In a study conducted among Greek students between 2006 and 2016, a desirable progression towards healthier food choices and meal preparation at home was monitored. The latter could also be traced back to financial constraints due to the financial crisis as preparing meals at home is usually cheaper than eating out. [Kyrkou et al., 2018]

Evaluating the possible outcomes of the financial crisis therefore seems to be complex and controversial. Primarily, there may be direct negative impacts on purchasing power and affordability of healthy food items. In the long term, a monetary crisis may influence people's habits and consumer attitudes towards alternatives to mere consumption. The foundation of corporations, a preference for home cooking or sharing goods are just some examples for possible favourable outcomes.

2.3.3. Adherence to the Mediterranean diet in Greece

In Greek populations, adherence to the Mediterranean diet was examined in a systematic review by Kyriacou et al. in 2015. Despite some inter-study comparison difficulties, the study classified the general adherence as moderate, which was defined as an adherence of 33% to 66%. These findings supported the hypothesised trend of a decreasing adherence since the 1950/60s. In most of the investigated studies included in that review, no significant differences between genders were found. Also, only a heterogeneous, possible slightly lower adherence of younger participants in comparison to the older population was found. [Kyriacou et al., 2015]

2.3.4. Health status in Greece

The general health status of the Greek population improved steadily in the last decades as most communicable diseases could be reduced, and the medical sector enhanced. Nevertheless, compared to other European countries, these improvements made slower progress. The main causes of death in 2011 were diseases of the circulatory system, cancer, injuries and diseases of the respiratory system.

In 2014, the WHO estimated that 66% of men and 55% of women were overweight. 22% of men and 24% of women even were classified as obese. These numbers accord with the European average, only the share of overweight men is higher in Greece. High systolic blood pressure, an unfavourable diet, physical inactivity and smoking, which is very prevalent in the Greek population, are among the most important risk factors for developing diseases. In 2013, almost half of the male and a quarter of the female population were recorded to be active smokers, which is a high percentage compared to the European average. Alcohol consumption is decreasing in the last decades and is lower than the average in Europe. [WHO, 2016]

Nevertheless, it is also important to mention that the life expectancy in Greece rose significantly since the 1960s [Trichopoulou and Lagiou, 1997]. Between 1980 and 2011, the life expectancy at birth increased from about 73 years for men and 77,5 years for women to 79 years for men and 84 years for women in 2011 [WHO, 2016; WHO, 2020]. Therefore, the development of different risk factors and associated diseases over time also has to be considered in that context.

2.4. Samothraki

2.4.1. The island of Samothraki

Samothraki is an island in the north-eastern Aegean sea, consisting of the quite impressive mount *phengari* which rises from sea level to an height of over 1600 meters, an outstandingly beautiful fertile coastal area in the north (**picture 1**), fed by numerous rivers which make their way down the mountain, shaping plenty of waterfalls and natural basins. On the other side of the island, in the southwest, there is a drier, rocky landscape, as shown on **picture 2**. [Lehmann, 1998]



Pic. 1: The North of Samothraki [own picture]



Pic. 2: The South coast of Samothraki [own picture]

The size of the island is about 178 km², with about 22 km from west to east and 13 km from north to south. [Ehrhardt, 1985] At the last census of 2011, 2859 people lived on the island. [ELSTAT, 2012] The closest city on the Greek main land is Alexandroupoli, from where the only ferry connection is operating. Though being located even closer to Turkey than to Greece, there is no ferry connection to Turkey.



Fig. 13: The island of Samothraki [adapted from Google Maps, 2020]

2.4.2. Research on Samothraki

Samothraki has been of interest to international researchers in the field of sustainability sciences since 2007. The relatively small island is part of the Natura 2000 network with three quarters of its total area. In 2011, it should also have been included in the UNESCO Network of Biosphere Reserves for its ecological richness and cultural heritage [Fischer-Kowalski et al., 2011]. Samothraki is a perfect study object for the complexity of sustainable development due to several factors, for instance limited resource availability, a fragile ecosystem and socio-economic issues like slow population decline and the consequences of Greek's governmental and economic crisis. All these challenges might lead to environmental tipping points. Therefore, several scientists are investigating these topics and are trying to support the local population to get on a path towards more sustainability on the island [Petridis and Fischer-Kowalski, 2016]. The overall aim is to find sustainable solutions for the burdens the island is facing [Brosche et al., 2020]. Previous studies described a transition from a traditional agricultural society towards a modern industrial society on the island, mainly based on tourism. This probably will lead to a tendency towards a westernisation of food consumption [Petridis and Huber, 2017].

2.4.3. Cultural history of Samothraki

Supposedly, the island was inhabited in the Neolithic Age. A variety of pottery was found in the excavations of Samothraki, dating back to the Bronze Age. Around 700 BC, Greek colonists arrived on the island and merged the indigenous culture with their civilisation, developing a place of religious and cultural interest with the *Sanctuary of Great Gods*, a mysterious temple where rituals were undertaken. Many important characters and travellers were attracted, at least until the third century AD. The favourable geographical location on the sea route from Greece to the Dardanelles and further to the Black Sea constituted the island as an important spot for travellers and merchants in antiquity, but made it also attractive to pirates. [Lehmann, 1998]

Little is known about nutrition in antiquity, but it is likely that sheep and goat husbandry played a major role in any time of history, as it still does today. Onions from Samothraki were one of the export goods known in antiquity. Probably, other vegetables and fruit, which grew at the fertile coast, also always have been an important part of daily nutrition. [Lehmann, 1998] Legumes, sesame or fennel still grow along the northern coast.

In contrary, it seems that the fields used for growing grain in the drier south never have been sufficient in size to cover the demand of the residents. Samothraki probably relied on fields situated on the main land since antiquity. That may be a reason for the island's poverty throughout time. Nevertheless, wine and grain imports, as well as exports of onions, cheese, olive oil and wood may have been common in ancient times. [Ehrhardt, 1985] Wine also seems to have been important part of the culture. Drinking wine to excess seems to have been part of the culture, at least in the rites of the Sanctuary in early times [Lehmann, 1998].

After several centuries of different dominations, Samothraki belonged to the Byzantine Empire from the 5th century AD until the year of 1431. Samothraki's culture started to decline due to the downfall of the ancient sites and a lack of functional harbours and therefore a loss of interest by sailors and visitors. Cruel pirate attacks contributed to the cultural decline too. The island downgraded to a dismal exile for prisoners, very few records are preserved from that period. [Ehrhardt, 1985; Schwab and Schwab, 2017]

In 1431, the island was handed over to an Genoese lord who built many of the medieval sites whose ruins still can be seen today. After some years of conflicts and wars between the Genoese and the Turks, Samothraki got eventually conquered by the Ottomans around 1500 and continued its entity as a remote and relatively poor island [Ehrhardt, 1985]. The cruel war between Greece and Turkey in 1821 and the Balkan wars also hit Samothraki, apart from that little is known about that period. It finally was reunified with Greece in 1912, with a short break of Bulgarian military rule during World War II.

In the 19th century, first excavations of the old temples were made, which continued in the 1930ies and 1940ies and retrieved the island's attention due to their mysteries. [Lehmann, 1998; Municipality of Samothrace, 2011] The population of the island was declining after the 1950s, when many locals migrated to the mainland or to Germany to work. Until the 1960s, Samothraki is said to have been self-sufficient in terms of food. [Petridis and Huber, 2017; own interviews]. Exceptions to that probably were wheat and certainly some imported spices.

3. Methods

3.1. Conceptual Framework

Following the approach of Petridis and Huber, I chose a holistic perspective in order to embed my research results in the larger context of Samothraki's food system. Therefore, I use their adapted conceptual model, which illustrates the natural, cultural and essential economic influences on the food system of Samothraki in **figure 14**.

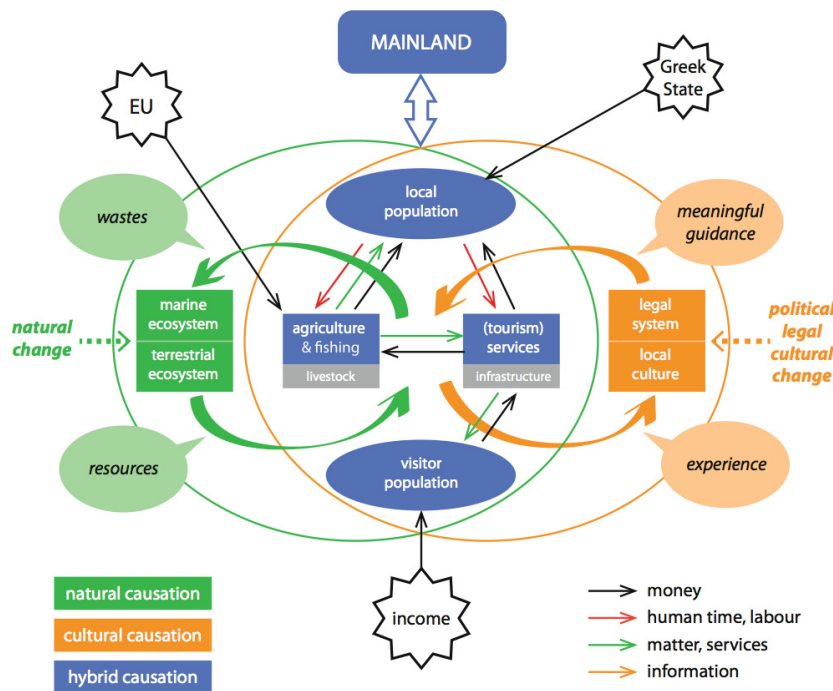


Fig. 14: "A conceptual model of the food system on Samothraki, described as a socio-ecological system." [Petridis & Huber, 2017, adapted from: Petridis and Fischer-Kowalski, 2016]

The green part shows natural influences and outcomes: ecosystems and their change through natural impacts influence the main economic sectors. In return, these sectors consume resources and produce waste.

On the other side, the orange circle shows the influence of cultural factors. Political, legal and cultural circumstances also determine the economy. Moreover, natural and cultural conditions certainly influence each other and cannot only be considered separately. The central blue part is described as hybrid as it represents the societal structure, which is shaped both naturally and culturally. The two relevant economic sectors on the island are agriculture and tourism. On the one hand, they are related to the labour force and working hours of the local population, who in turn earn money or obtain goods directly from agriculture. On the other hand, tourists make use of infrastructural services, which of course are interconnected again with agriculture, as for example with supplies for tourist

restaurants. Touristic income, which is spent on the island, is one of the main three external income sources. Other external sources of income are EU subsidies for the agricultural sector, and payments from the Greek government to the local population (administration, old age pensions).

Finally, there is the ferry connection, which is the link to the mainland and thus to the outside world. Both goods and persons are transported via this route between the island and the mainland [Petridis & Huber, 2017].

3.2. Research aims and questions

There were three main research aims of this thesis.

First of all, it was necessary to identify what local traditional food culture actually means on the island of Samothraki. To understand an area's food system, it is crucial to identify the ingredients which have been used in the past and which influences and factors determined food culture throughout history. [Essid, 2012] According to that, my first research question was:

1. What are the characteristics of Samothraki's traditional local food culture?

The second aim was to analyse already existing secondary data on the inhabitant's dietary habits, purchasing decisions and food origin, which was surveyed by Julia Huber in 2016. In order to make today's nutritional patterns on Samothraki comprehensible, I compared them with current schemes for the investigation of adherence to a traditional Mediterranean diet pattern as well as with the results of the investigation of traditional local food patterns.

2. To what extent do current consumption patterns on Samothraki fall under the definition of a traditional Mediterranean diet and therefore can be considered as a nutritionally eligible diet?

The third research aim covered touristic catering and tourists' preferences. The food offered by restaurants and the origin of the products they buy had not been researched so far. Especially in the summer months, restaurants and tourist establishments purchase far more food than the local people. Therefore, the research group I was part of conducted a survey of local restaurants in the course of the summer school organised by the institute of social ecology in 2019, as part of the SUSAKI project.

The purpose of that group research was to understand the landscape of tourists' food supply by exploring the food offered in restaurants and the food preferences of tourists, and by analyzing the perception of restaurant owners. A secondary idea was to promote collaboration between restaurants and farmers to enhance the utilisation of local food. At that time, the idea of the municipality was to set up an online platform where farmers could easily offer their products to restaurants. The potential of this project, as well as obstacles to further collaboration were investigated.

In order to reach these aims, four research questions were defined within the team:

3. To what extent do restaurants use local ingredients from Samothraki?
4. What are the possibilities and challenges in using more local products in restaurants?
5. To what extent can an online platform enhance the use of local products on Samothraki?
6. What are the preferences of tourists regarding local food in restaurants?

On top of that, I investigated the restaurants' menus to answer my last research question, and also to get an overview of the restaurants' prices.

7. How far does the traditional food culture influence today's tourist food supply in restaurants?

3.3. Methodology

To receive information about local traditional food culture, I initially had informal talks with many locals to gain general opinions and views, which helped a lot to find the right contact persons. After identifying relevant persons, I conducted five unstructured narrative interviews with locals (who live on the island at least half the year). These qualitative interviews were framed very openly to influence the locals' perception on this topic as less as possible. They were asked about their definitions of local traditional food on the island, about examples of dishes, their cooking habits today and their impression of a possibly changing cuisine on the island. The questions were altered depending on the context and the given situation.

On top of that, I consulted four producers of agricultural products to gain more information about food production and retail on the island, and to hear their opinion on traditional food patterns.

One of the most helpful discoveries was a cookbook about Samothrakian cuisine and tradition, written by Anna Martezou, who spend her whole life on the island, and used to be the headmistress of the local school. There was a common line in the opinion of most

interviewees on this book. They explained that it would be very authentic and well researched, and most of them referred to this book when answering my questions about local cooking traditions. That drove me to concentrate on this book and analyse the recipes, the local ingredients used, and other given information, after having it translated with the help of a Greek translator and two locals from the island, to clarify local terms.

To answer my second research question, I used secondary data on food consumption of locals [Huber, 2016] and compared them with current schemes for the investigation of adherence to a traditional Mediterranean diet pattern. I chose the PREDIMED screener, as it is an easy adherence-scoring tool, which refers to actual consumption amounts of different typical foods and food patterns. Though there are many adherence scores, the PREDIMED screener was the most usable, also concerning the available information on food intake. To specify on nutritional benefits, I followed on one hand the widespread scientific opinion that the mere adherence to a Mediterranean diet pattern is already considered as nutritionally eligible. On the other hand, I investigated recently published scientific papers to comment on details of the local diet on Samothraki, whenever necessary.

Regarding the third research aim, all restaurant owner and tourist interviews were conducted in the course of the teamwork of the summer school of the institute of social ecology, as part of the SUSAKI project. These interviews were held by Christiane Brosche, Helene Dallinger, Julia Plattner and me, guided by the tutor Angelos Varvarousis. To cover all research questions concerning the locality of the food used in restaurants, as well as the tourists' opinions, two interview guidelines were designed – one for restaurant owners, and one for tourists. Restaurants suitable for the research questions had to be localised and restricted to a reasonable number. According to the developed sampling strategy, two pilot interviews were conducted, followed by a collective reflection process to adjust and refine the guidelines concerning the interview setting.

In addition to structured interviews with restaurant owners, an interview with a local farmer and one with an employee of the municipality were arranged. These interviews helped to cross-check the impressions that emerged through the interviews with the restaurant owners and to gain additional information. At the end, the interviews and collected data were evaluated and put into context of the research questions.

The interview guidelines for restaurant owners and tourists were based on two different approaches. The interviews with restaurant owners were structured, but in many cases also included some unstructured questions that emerged in the course of the interview. In some cases the process even ended up being an open discussion. This approach was used to collect basic information and hard facts, but also to build a flexible setting and interact more freely with the owners of tourism establishments. By this means, background stories were gathered and the source of used ingredients was identified with the help of a previously designed list. Furthermore, insights into the restaurant owners' social embeddedness on the island were gained. In contrast, the design of the questionnaire for tourists was kept short and limited to a sequence of four structured questions on their food preferences when on holiday. The collected data was later used for a comparison to the statements of the restaurant owners.

The restaurant sampling was created by search engine hits and a geographical division of the island. Most of the places considered were found using the search engines Google Maps and TripAdvisor. The top rated restaurants were chosen, assuming that they are the ones with the highest food turnover and that they are the “pioneers”, shaping the landscape of tourist food supply on the island. Permanently or seasonally closed restaurants were excluded. Smaller places like *ouzeris* which serve only small snacks or *méze* (small dishes, comparable to Spanish *tápas*), *cafés* and fast food places were also not taken into account.

Geographically, the island was divided into three zones: North-Eastern Samothraki, Central and Northern Samothraki, and Southern Samothraki. In the North-East large campsites and many other tourist accommodations are located, whereas in Central and Northern Samothraki the two biggest villages can be found and the South of the island attracts many tourists with its wide sand beach and traditional villages.

Eventually, eight out of nine selected and requested restaurants were open for collaboration and interviews. Furthermore, 37 tourists were interviewed in tourist facilities like restaurants or beach bars. [Brosche et al., 2020]

After the research with the summer school team, I continued to explore the existing information. I took photos from the menus of all restaurants investigated in order to analyse them. On one hand, I evaluated the dishes offered, classifying them in categories. On the other hand, I investigated the prices to get an overview on which dishes are sold at which price.

On top of this, the information of the menu observation was used for a comparison with traditional recipes to answer the question in how far traditional food culture is influencing today's tourist food supply in restaurants.

Throughout this work and the research conducted, the term local was defined as "from Samothraki". Due to the island's characteristics it was assumed that an increase in locally produced food would have a positive impact on the island's sustainability and local economy [Brosche et al., 2020]. The term traditional was defined as knowledge, techniques or recipes that accord with the definition of "...following or belonging to the customs or ways of behaving that have continued in a group or society for a long time without changing". [Cambridge Advanced Learner's Dictionary & Thesaurus, 2014] Although traditions obviously shift over time, it can be assumed that this definition applies to the period up to the 1960s on the island of Samothraki. Finally it has to be mentioned that the term traditional does not necessarily imply being local and vice-versa. Therefore, these terms should not be equated with each other.

4. Findings

First, I will try to draw a picture of the traditional local food and cooking culture, mainly based on the cookbook of Anna Martezou (**chapter 4.1**). Different characteristics on various levels are explained – foods and their meanings as symbols, the organisation of meals and the kitchen as well as storing systems, locally used and wild gathered ingredients, and finally an analysis of numerous recipes. The complete lists of local ingredients are attached in **appendix 1**, the recipe texts in **appendix 2**.

All data to answer the second research question on the current situation regarding food patterns is presented in **chapter 4.2**. First of all, different dynamics are mentioned which contributed to a change in nutrition over the last decades. Furthermore, food choices of locals and the food supply infrastructure on the island are described. Finally, current domestic food practices, according to Huber's data, are described and evaluated, with a focus on potentially still perceptible traditional Mediterranean influences.

In **chapter 4.3** the situation in restaurants regarding the use of local ingredients, possibilities and challenges in using more of them, as well as the offer of traditional dishes and tourists' opinion on these topics, are described. Furthermore, an analysis of the restaurants' menus, including the mean prices of the most commonly offered dishes, is presented.

4.1. Traditional food of Samothraki as reflected in the book by Anna Martezou (2005)

The following passages are translated from the book "Samothraki – Gastronomy, Identity, Inherited Knowledge" by Anna Martézou and reflect the knowledge and statements of the author. Though it is told to be a well researched book and many inhabitants of the island assured me that the author is the one with the greatest knowledge on Samothrakian cuisine and associated traditions, it has to be considered as the narrative of a native, and not necessarily as scientifically proven. Text passages from other sources are marked accordingly.

Anna Martezou used to be the headmistress of the local school and spent her whole life on Samothraki. Her detailed research on the island's culture, food, nature and chapels shows a great interest for the island's tradition. [Huber, 2016]

4.1.1. Food culture of Samothraki

a) Basic information

Cooking in general is an important part of culture and an interesting parameter for the development of people and society. Geographical, social, economic and religious circumstances influence and shape people's diets. The island's food culture and tradition was strongly shaped by its long-lasting isolation, only few elements changed since ancient times. The basis remained relatively constant until the second half of the 20th century.

Olive oil and grains probably were the most fundamental products of the island. Eating bread with olive oil was an important identification symbol for people in the region as it symbolises life.

Grains and legumes have been crucial since Neolithic times, as it can be assumed for olives. Because of its exceptionally high quality, olive oil also was increasingly exported. In 1950, olive groves covered almost 21% of the island, increasing until 1967 to almost 39%. Between 1961 and 1996, the island produced around 315 tons of oil annually. The oil was not only used for cooking, but also as medicine against inflammations and colds [Martézou, 2005]. One of my interviewees supplied a detailed description on the handling of olives on Samothraki:

One variety of olives cultivated on Samothraki is called *adramitini* (named after the bay of Adramiti in Turkey). These olive trees are very old, and Samothraki seemed to have been famous for its olive oil exports since ancient times.

One technique of storing olives without fridge is very old, but still practised in parts of the island: The olives have to be handpicked when they are purple (purple variety). Handpicking directly from the tree is a very important detail, because it means that the olives' acidity does not rise. Acidity is affected by the fact that the olives touch the soil, so that should be prevented. In other parts of Greece, nets on the ground are used to collect the olives about every 10 days – that means they already touched the soil.

After picking, the olives are put in linen bags with crushed sea salt of good quality and perfect crystal structure. Details like this are very important, as too big salt crystals would destroy the olives' skin and they would get very salty. The olives have to be turned upside down every day, very carefully. After about 40 days, they have to be rinsed and dried in closed, but sunny places, without any ovens. To preserve them for the whole year, they are placed in big barrels and covered with extra virgin olive oil.

Apart from olive oil, also sesame of high quality grew on the island as well as legumes like lentils, chickpeas or beans. Also vegetables, for example aubergines, zucchini, bell peppers or a variety of wild green leafy vegetables and fruit, for example melons, cherries, apples, peaches, figs, oranges, lemons or also wild fruit like berries or wild peas as well as almonds and dates grew well due to abundant water resources.

Meat always was an important part of people's diet, especially at celebrations. Sheep and goat were the most important meat sources of high quality due to their ability to run free. The original wild goat does not exist anymore, due to hunting and crossbreeding with other goat species. Furthermore, pigs and chicken were kept and animals like rabbits, wild birds or snails were hunted or collected. Beekeeping has been common among farmers and shepherds.

Due to the lack of natural harbours and the widespread fear of pirates in the Middle Ages, the island's food culture did not really concentrate on seafood. Only a few fishermen caught fish in the summer months in the North of the island, which was then salted and stored. Octopus was easy to catch and therefore popular seafood, as well as river eels and crabs. Remaining fish in the fishing nets was used to prepare fish soup.

As the island was relatively poor in monetary terms, alternative economic systems were common as for example the countertrade of foodstuffs like grains, eggs or fruit, or of processed products like cheese or olive oil. Renting land to others for cultivation of cereals or goat husbandry was also common. Sharing food in general with the poor was an important sign of solidarity. Vegetables were given to the poor when possible and at many occasions. For example at Christmas or New Year's Eve, bread and meat was shared in the framework of the church⁵.

Samothraki's dishes may look simple, but were shaped by time and traditions to create a special taste, which is an important part of its culture. Recipes and traditions were passed on from generation to generation, remained relatively constant throughout time, but nevertheless got influenced by every new generation.

⁵ In whole Greece, it was customary to prepare certain foods to share with neighbours and friends, but also with strangers and beggars, for example at Christmas. [Dalby and Dalby, 2017].

b) Food at special occasions

Food also played a major role at certain occasions, not only as well tasting, nourishing dishes to celebrate various events, but also as a symbol, a part of rituals and (religious) beliefs.

At every stage of life, various occasions were celebrated and connected to special dishes. Some food-related traditions were based on symbolic or linguistic associations. An example for this is that pregnant women should not eat rabbit meat, as "rabbit sleep" in Greek is a synonym for light sleep – therefore eating its meat was said to cause sleeping problems. Another saying goes that pregnant women should not eat snails, so that the child does not salivate too much.

Other habits were more related to the actual tradition related to the event. For example, at the birth of a child, oven-baked chestnuts, nuts, figs and rusk were served. Examples like this are numerous and often include symbolic meanings. Honey and nuts, for example, were symbols of fertility and were therefore served at weddings. Furthermore, rice and grain were thrown at the bridal couple in order to root the marriage. The close relatedness of events with food and eating was also expressed in the way of inviting people to the wedding: "We invite you to eat with us" was a phrase used for wedding invitations.

Many traditions were certainly closely linked to religious beliefs. Therefore religion was a main shaper of food habits on religious festivals, but also in the everyday household throughout the year. Religious food habits like fasting in specific periods are still very common.

Ingredients which are often mentioned in connection to special traditional occasions or events are nuts, figs, rusk, honey, grains and bread, meat, cheese as for example *mizithra*, sweets like *baklava* and different cakes, pasta-like products like *flomaria* (see **appendix 2**), and of course drinks like wine or *ouzo*.

At Christmas, there was the tradition of slaughtering a pig, which had been raised in the household in the year before. If an animal was slaughtered, the aim was not to waste any part of it. Feet and head were smoked and processed with a special technique. The belly was cooked and eaten fresh. The back fat was cut into stripes, salted, dried and stored in wooden boxes. Big meat parts were salted and hung up to store them. Other meat parts were minced, salted and roasted, and later used as fillings for *pitas* or *manti* (see **appendix 2**).

Fat was stored as lard for cooking or as spread. Remaining meat and fat was cut in small pieces and processed to *kavourma* (see **appendix 2**), which can be stored over months in the fat. Moreover, all innards were used, liver was fried and eaten immediately, while other innards were washed, salted, cut, fried in fat and stored in clay vessels. Bowel was used for preparing smoked sausages with minced meat, caraway, oregano and pepper or eaten after smoking and grilling⁶.

On the day of Christmas, *souvla* from the pork (pork on a spit) was served. Meat was important in many religious festivals or other events, mostly pork, lamb or goat, often roasted on a spit⁷.

Many recipes for special breads and cakes are available in the cookbook for traditional holidays like Christmas, sometimes decorated with religious symbols like crosses.

Before New Year's Eve, a pomegranate was smashed traditionally on a stone or it was also hung on doors with grain and olive branches. On New Year's Eve, a special cake with nuts, named *vasilopita*, was served with a coin inside, which would bring luck for the person who found it in his or her piece of cake. Apart from that, they traditionally served chicken with rice or *stifado*, *manti*, *tiganites* and *baklava*.

Easter was the most important festival of the year, including the traditional lamb on a spit and red Easter eggs⁸ as typical related foods.⁹

Before Easter, the fasting season was connected to many specific rituals, dishes and prohibitions. Fasting dishes were often vegetables, prepared in a simple way. Abstaining from oil was also common on important fasting days. There were other fasting days and periods too, for example the first two weeks of August or the 14th of September.

⁶ Sausages always were an important way of making meat storable through air-drying or smoking. Before refrigeration was common, these preservation techniques were essential to store meat after slaughtering. Therefore, many recipes, varying according to different regions, can be found. In Thrace and Greek Macedonia cumin, allspice, black pepper and hot red peppers were common ingredients in sausages. In the region east of Thessaloniki, pork meat and fat was mixed with goat meat, as goats were available. Another preservation technique was storing meat in fat, like *kavourmas*. [Dalby and Dalby, 2017]

⁷ Food in general was a very important part of many Greek festivals throughout the year, but especially at festivals in winter and spring. [Dalby and Dalby, 2017]

⁸ The egg was also a symbol for reincarnation [Dalby and Dalby, 2017]

⁹ In Greece, after midnight on Easter Sunday, a soup from kidneys, other entrails and rice was traditionally served. Before eating the Easter lamb, *kokoretsi* was served at midday, made from the lamb's intestines: kidney, liver, lungs and heart were speared on a spit with fat, wrapped with the bowel and roasted over coals [Dalby and Dalby, 2017].

c) The kitchen, food storage systems and the use of fertilizer

The kitchens in most traditional houses were built around the fireplace, as food was cooked directly on the open log fire. Water supply or a sink was built in the direct surrounding. Before refrigerators were introduced, the cellars were used as cool dry places to store food. Separated from the rest of the house, there used to be a stable where animals were kept. Several techniques were known to store food around the year, therefore many basic ingredients were commonly found in the kitchen: wine and olive oil in vessels, wheat and corn stored in wooden boxes, cheese like *mizithra* or *feta* in leather bags, olives and nuts in sacks. Melons were stored covered with straw, chestnuts were kept fresh in sand. Other fruit could be dried or – like pomegranates, pears or apples – hung up not to touch each other, to last longer. Meat and fish was salted and dried or covered with fat or oil.¹⁰

In summer, an outside fireplace was built out of stone, loam and soil to protect it from the wind. The ash from these fireplaces or animal's dung was used as fertilizer. In former times, people knew exactly which dung from which animal is best for a certain soil and for growing certain plants.

d) The organisation of meals

Food was eaten on a table with a cloth. Around the table used to be benches with pillows. Fixed mealtimes were kept: breakfast was served at sunrise, consisting of *trahanás* (see **appendix 2**) with grinded *paximadi* (see **chapter 4.1.2**). The children who went to school got almonds, figs or chestnuts as snacks. Lunch was served strictly at 12 o'clock, dinner at sunset.

When all family members gathered around the table, the meal could start, framed by a prayer before and after. Washing the dishes was the daughters' task and the mother decided which daughter was supposed to do so.

¹⁰ As most Greek ingredients were seasonal, a big effort was made to preserve them for the winter months. Cabbage, turnips and carrots could be stored, as well as dried fruit, nuts, pomegranates and pears. [Dalby and Dalby, 2017]

4.1.2. Ingredients used on Samothraki

Martezou gives a very detailed record on the ingredients that were used. They are shown in detail in **appendix 1**. These lists of ingredients demonstrate the wide variety of food from local sources, often collected from the wild. They also reflect a main research effort on my part to identify the meaning of the (often local) terms with the help of locals.

Grain: The island's bread was made with yeast and flour of barley or wheat, a mixture of both or maize. Buckwheat is also used in some recipes. Different names, procedures and techniques were known for bread, which will not be explained here in detail. *Pita* was a term for bread or cake in many forms: savoury filled *pitás*, little pancakes or different cakes for various occasions. *Paxmadia* was a kind of rusk as it was small, double-baked and very hard bread (**picture 4**).



Pic. 3: Traditional bread baked in the wood oven [own picture]



Pic. 4: *Paxmadia* [own picture]

Apart from bread, *trachanáś*, or pasta like *flomaria*, *makarones* or *cous-cous* were some of the basic staple foods made from grain. Recipes for these staple foods can be found in **appendix 2**.

Legumes (*ospria*): A variety of dried beans are listed, as well as some kinds of fresh green beans and chickpeas.

Wild greens: *Chórta* usually was collected, cleaned and washed by groups of women. Martezou's lists are separated in different categories. Crops for raw salads for example include celery, cress or different herbs. Sprouts of different plants are listed separately, but seem to be used commonly. Crops for bitter salads include dandelion species, while crops for sweet salads are mostly wild forms of vegetables and some edible tasty greens. The last category of mushrooms lists some regional species.

Medical/aromatic plants: In this chapter, Martezou lists a great variety of common herbs, such as thyme, mint or basil, but also numerous other aromatic (wild) plants.

Fruit: Different local fruit are named, such as cherries, plums, mulberries, pears or figs. For most fruit, different varieties are known. Furthermore, some wild fruit are listed, such as berries or wild varieties of different fruit. Also fruit like nuts or olives are named here.

Fish and seafood: Numerous local fishes and types of seafood are listed in that section. It seems like a great variety was known and used due to the proximity to the sea.

Game animals: Game always played an important role on the island. Different animals are listed by Martezou, such as hare and a variety of wild birds.

Poultry: Chicken and cocks are listed as farm animals.

Dairy: Mostly goat milk was used, but sometimes it was mingled with sheep milk. Butter and cheese like *mizithra* or hard cheeses were the most important dairy products.¹¹ They were produced in spring or summer and either eaten fresh or stored for the winter, for example in goats' skin.

Sweets: Generally, all sweets used to be homemade. A variety of cakes, often with dried fruit and nuts were known. Other popular sweets were fresh or dried fruit. To sundry them, fruit had to be very ripe. After drying, they were cooked with laurel, oregano or fig leaves to kill potential bugs. Afterwards, the fruit were dried again and stored. Another speciality was the so-called spoon sweets: fruit like cherries, oranges or figs in very sweet syrup, served on little spoons.¹²

¹¹ *Myzithra* is a whey cheese, comparable to Italian *ricotta*, and is made of boiled goat milk. *Feta* is basically made from sheep milk, sometimes it also contains goat milk, but only to a maximum share of 30%. Nowadays, *Feta* can only be sold under this name if it was produced in Greece. [Dalby and Dalby, 2017]

¹² Spoon sweets were presumably known since the Byzantine Empire, and consisted of all sorts of fruit or nuts (walnuts, almonds), preserved and cooked in sugar syrup, honey or grape syrup. Also other parts of plants were used to make this kind of sweets, for example citron peel or mastic.

Greek cakes and sweets often had Turkish names, like *baklava*, but were often strongly influenced by preferences known from Byzantine and classical times. Many of them were soaked in honey and are therefore very sweet [Dalby and Dalby, 2017]

4.1.3. Recipes

In the analysis of the recipes given, my investigation focusses on main dishes, and excludes pickles, sauces, desserts and drinks, as well as breads and staple foods. In total, I will analyse 56 recipes and their ingredients according to my research questions.

First, the ingredient lists are analysed in order to gain information about prevalently used ingredients. After that, preparation techniques and recipe texts are explored. Finally, the identified ingredients are examined to evaluate whether they have been potentially available locally in the discussion in **chapter 4.1.4**.

The complete list of translated recipes can be found in **appendix 2**.

The recipes are structured in the following way:

Chapter	Translation	Notes
<i>Psomiá</i>	Bread	Breads & dough
<i>Mageiriá</i>	Cooking	Staple foods, basics
<i>Laderá</i>	Oily dishes	Only vegetarian dishes
<i>'Ospria</i>	Legumes	
<i>Chórtá</i>	Wild greens	Wild vegetables & mushrooms
<i>Galakterá</i>	Dairy products	
<i>Kréata</i>	Meat	Meat & omelettes
<i>Psária</i>	Fish	Fish & seafood
<i>Pites</i>	Pastry	Salty or sweet pastry
<i>Eliés - Toursiá - Skordaliá</i>	Olives - Pickles - Sauces	
<i>Glyká - Glyklómata</i>	Sweets	Cakes & cookies
<i>Glyká tou Koutalioú</i>	Spoon sweets	
<i>Potá</i>	Drinks	

Tab. 5: Recipe structure in the cookbook of Anna Martezou, adapted from [Martzou, 2005].

The highlighted chapters in **table 5** are investigated, as they are the ones with reproducible recipes.

Recipe classification	%	total
Vegetarian	50%	28
Vegan	30%	17
Meat	36%	20
Small ruminants (goat & sheep)	12,5%	7
Pork	14%	8
Game animals	5%	3
Poultry	5%	3
Fish & Seafood	14%	8
Fish	5%	3
Seafood	9%	5

Tab. 6: Proportion of differently characterised recipes

In general, the ingredient lists do not follow a certain consistent scheme or order of ingredients. Also, varying names or spellings are used for the same ingredient in different recipes. Specifications of amounts of the ingredients¹³ are relatively exact in most recipes as one can see in the following example:

Soupies Pilafi

1,5 teacups of *krikout* or rice
1 kg cuttlefish
2 medium-sized onions
1 level tablespoon of sugar
1 teacup of olive oil
3 teacups of water
2 hands full of wild spinach, finely chopped

Nevertheless, they are missing completely in other recipes, like the following one:

Kolokytholoulouda Tiganita

Zucchini-blossoms
Flour
Milk
Eggs
Grinded cheese
Mint
Salt

Side dishes, like bread, rice or potatoes, are usually not specified or mentioned at all. Some dishes though already contain rice or potatoes, as for example rice-fillings, potatoes in

¹³ There is no specification on the number of persons a recipe is intended for. It seems like quantities of most recipes could be considered as sufficient for four to five people, a family. Others are sufficient for one to two people, for example some vegetable dishes, which may also be considered as side dishes, or omelettes, which are usually for just one person. Finally, there are a few dishes, where the specified amount depends on the size of an animal. It is obvious that a whole lamb or goatling probably feeds more than one family. Clearly, a fundamental understanding of ingredients and their required quantities seems to be assumed by the author.

a stew or similar and therefore could be viewed as complete recipes. In most other cases, no side dishes are given.

Because not all the ingredients used in the recipe texts are listed in the ingredient lists, the lists are completed with all ingredients mentioned throughout the preparation texts.

Salt, as the most prevalent ingredient, is mentioned in over 80% of the recipes. In addition, one has the impression that salt is used in even more recipes. Although it is not listed in every case, most of the recipes are salty. The same applies to the usage of oil or fat, which is assumed to be used more frequently than stated in the recipes: Oil is mentioned in almost 43% of all recipes, and olive oil in over 32%. It remains unclear if oil necessarily means other oil than olive oil. Added up, some kind of vegetable oil is used in 75% of all recipes. Other fats are used only rarely (pork fat in 3.5% and butter in 9% of the recipes).

Other ingredients in all probability are listed more precisely than salt or oil, which are basic ingredients and may have been considered as self-evident by the author. However, onions occur in 62.5% of all investigated recipes and pepper is mentioned in almost 54% of the recipes. Other frequently used food items are rice (32%), tomatoes (27%), mint (19%), laurel (16%), eggs (16%), pork meat (14%) and flour (14%).

A variety of different vegetables are used throughout the recipes. Half of the recipes are vegetarian, 30% vegan. The most frequently mentioned vegetables are tomatoes in 27% of all recipes, followed by zucchini, zucchini blossoms, green beans, dried beans and mediterranean hartwort, which are mentioned in more than 5% of the recipes each. Mediterranean hartwort is a type of *chórta*, which can be gathered wild on the island. A number of other wild herbs and vegetables are mentioned throughout the recipes too, for example wild spinach, wild asparagus or *vlíta*. Added up, some kind of (semi) wild *chórta* are used in over 21% of all recipes.

Onions, pepper, laurel, mint, oregano, fennel green and sugar are frequently named condiments, as they are mentioned in more than 10% of all recipes each. Sugar is used also in savoury dishes in small amounts, and could be replaced with honey in some recipes.

Rice is used very commonly, and is also the preferred ingredient for fillings. In some recipes, *krikout* is proposed as an alternative to rice. *Krikout* probably is a mixture of grinded

wheat, water, salt and milk or oil, crumbled into small lumps. Wheat flour is used in most recipes requiring flour (in over 14% of all recipes). Only in one recipe corn flour is used.

For the usage of meat in the recipes, **table 6** gives exact numbers on the meat types used most. Interestingly, pork is the most used meat type, followed by goat. Different game animals are used too. Poultry is mentioned only in three recipes, beef is never used. Overall, meat is used in 36% of all recipes. Other animal products are used rarely, except for eggs and milk. 14% of all recipes contain fish or seafood, while mostly seafood, especially octopus, is used rather than fish.

Recipe preparation

Most staple foods, aside from bread and rice, are made of wheat, water, milk, oil and/or eggs, and mostly are more or less small clumps or little pasta. They are mostly used as fillings or soup insert. Some kinds of porridge, made from grain of wheat or corn, are also described.

Vegetarian recipes mostly follow similar preparation techniques: Vegetables are cleaned and often roasted with onions, and then cooked with water, olive oil and in many cases grinded tomatoes. They are cooked until they are soft in their more or less thick and oily juice. In a similar way, most legumes are prepared. Dried legumes always are placed in water over night, and are prepared on the next day.

One interesting detail is mentioned for many recipes. Instead of stirring the vegetables with a spoon, rather the whole pot should be moved in order to mingle the ingredients. It is also noteworthy that salt is often added just before finishing the dish. Another common preparation technique is to fill vegetables, like bell peppers, tomatoes, wineleaves or zucchini blossoms with rice or *krikout* and herbs, before cooking them as mentioned above. Most vegetarian dishes are seasoned with salt, pepper and different fresh herbs. Wild greens (*chórta*) can be prepared as salad, either fresh or after blanching with salt, olive oil and lemon juice. They are also used for *pilafi*, *pita* or *stifado*. *Pilafi* is always a rice dish, which can be prepared with different ingredients and also with meat. *Pita* is often made of several layers of dough from oil, salt, water and flour, containing different fillings of vegetables or meat, baked in the oven. *Stifado* is also mentioned very often with different

ingredients. The base of *stifado* is a lot of roasted onions, which are cooked with the other ingredients in an oily sauce afterwards.

Meat dishes with all types of meat, as goat, chicken, game or snails are very often prepared as *pilafi* or *stifado*. Young goats and lambs are also grilled as a whole, and can also be stuffed with rice filling. Other recipes for goat and sheep are again based on oily tomatosauce with different vegetables. Their entrails are also used in many recipes as soup or roasted in a pan.

As already mentioned, pork is also used frequently. Interestingly, some recipes for pork meat are prepared with fruit like plums or quinces in a seasoned sauce. Pork is also used to preserve meat dishes with its fat. Another preserving technique is the preparation of sausages, which are seasoned with cumin and oregano and smoked in the end.

Many recipes for omelettes are given with different vegetables or herbs. Fish is mentioned to be grilled or fried or cooked in often tomato-based sauces. Octopus is prepared again either as *pilafi* or *stifado* or cooked with wild greens, same accounts for calamari or squid. Small fish are salted and preserved.

For *pites*, many different recipes are given. Like already described, one often mentioned technique of *pita* is layering thin sheets of dough with different sweet or savoury fillings before baking it. Another preparation technique is *Manti*, little meat-filled dumplings. *Kalampokopita* is rather a kind of sweet baked polenta, and other *pites* are prepared in a way that a mixture of ingredients is baked directly on a tray and cut in pieces afterwards, like a sweet or savoury cake.

Apart from these, some other recipes for sauces, spreads and pickles are given. *Tahini* is a paste from sesame, *skordalia* a garlic sauce. Olives are pickled or preserved with different techniques, depending on their ripeness. Other vegetables can be pickled in brine. For sweets, many different cakes and pastries are mentioned, which will not be described in detail here. Commonly mentioned techniques are baking different types of cakes or biscuits or preserving fruit in sweet syrup.

The complete list of translated recipes can be found in **appendix 2**.

On top of all that information, often-mentioned traditional local cooking practices include cooking in the wood oven, goat in general and the use of herbs from the mountains.

4.1.4. Discussion

The main part of the ingredients used in the cookbook was regional products. For vegetables, fruit, herbs and spices (except for pepper, cinnamon and allspice), it can be assumed that all of them were or still are cultivated on the island. Salt could theoretically have been produced directly on the island, but the actual production in the past remains unclear. Sugar beets are grown today on mainland Greece [Bundesanstalt für Landwirtschaft und Ernährung, 2018]. Both, salt and sugar, could have been obtained theoretically from the close mainland. Grains like wheat, and possibly corn too, may always have been produced directly on the island, but not in a sufficient amount and therefore probably had to be imported from the Greek mainland throughout history [Ehrhardt, 1985]. Rice was and still is grown on the Greek mainland and also in Turkey and could therefore have been purchased from relatively nearby sources [Maclean et al., 2002]. All meat and animal products mentioned in the book were regional, with the only exception of butter. Theoretically, butter could also have been made of goat or sheep milk, in that case it could also have been a regional product. But it is assumed that butter means butter from cow milk and cows never were kept in a noteworthy number on the island. Olive oil clearly was produced locally.

This does not necessarily mean that these possibly locally available ingredients have been sourced regionally at all times, and they are certainly not today. Nevertheless, a self-sufficient, environmentally responsible agrarian system seems to have been a central element of Samothraki's nutrition.

Summed up, Martezou's book shows a great variety of local traditions, techniques and ingredients, which were known and used. Many of the plants were collected in the wild by season and possibly had beneficial health impacts. Other specialties of the island definitely are goat and sheep meat. Most of these many ingredients listed by Martezou were actually used for common dishes, as one can see in the recipes presented in **chapter 4.1.3**. The recipes show an elaborated cooking culture and different interesting preparation techniques. Obviously, a major effort was made to preserve ingredients throughout the year, which is probably incompatible with a modern lifestyle of two adults engaged in wage labour. Also, the strong connection of food with special occasions, such as religious festivals or private events, shows the great importance of food in general. A great knowledge about ingredients, preparation and cooking can be assumed to have been common in every household.

4.2. Current domestic food practices & adherence to Mediterranean diet patterns

First of all, I will try to explain possible reasons for a shifting diet in the last decades in **chapter 4.2.1**. A short overview on different dynamics in the nutrition transition since the 1960ies is given. At the end of this section, recent studies and the impression of locals regarding this topic are given.

In **chapter 4.2.2**, the island's food supply infrastructure is explained, to make consumption patterns and food choices comprehensible. Furthermore, Huber's data on preferred food sources of locals, and factors which possibly influence locals' food choices are presented. Finally, in **chapter 4.2.3**, current consumption patterns of locals are investigated. Huber's data on recent food practices is presented and compared with a traditional Mediterranean scoring scheme, to evaluate current diet patterns and their adherence to a traditional Mediterranean diet. The outcomes are discussed critically, also in nutritional terms to answer the question if current domestic food practices could be considered as nutritionally eligible.

4.2.1. Nutrition transition on Samothraki

Since technological innovations and globalisation reached the island, traditional cooking was neglected more and more. Little details of traditional knowledge got irrelevant [Martézou, 2005]. The same drivers as mentioned in **chapter 2.2.2** basically influence the shifting dietary patterns on Samothraki too. Moreover, labour migration (mostly to Germany) was very common in the 1960s, resulting in an increased income and purchasing power on one hand. On the other hand, there probably was a shift of preferences of the labour migrants, who got used to a more modern western food pattern, and brought some of their new culinary experiences and preferences to Samothraki when returning.

Especially after the accession of Greece to the EU in 1981, Samothraki faced a rising number of supermarkets and therefore a variety of new products, and with them an increasing dependence on imports.

The change of the old way of food production started to change in the time of EU accession, when supermarkets appeared on the island and mentality changed in general. In the 1980s, very few people grew their own vegetables in their garden. It was the time of affluence and everybody went to the supermarket. People stopped working as productive as they used to do, relied on EU subsidy and did not use the money for what they should. Also, it was common to officially declare certain products and amounts, which were subsidised, even if they had nothing to do with the farmers' actual production. [...] [Notes from Interviewee 11]

One of the most famous examples of how the subsidy scheme of the European Union system (CAP) is influencing farmer's decisions on what to grow or breed, and in which amount, are the omnipresent goats and sheep on the island. Livestock keeping is, in most parts of the Mediterranean area, still a very common practice, especially in those areas where other types of agriculture are less practicable. On Samothraki, 22% of the economically active population work in the agricultural sector (mainly goat/sheep farming and olive production). In 1961, a number of around 15,000 goats and sheep were estimated to live on the island. Although there already was a trend of growing animal numbers (around 40,000 in 1991), it exploded within 10 years to approximately 68,000 goats and sheep. The reason for that supposedly had been the EU's CAP subsidy scheme, which attempted to support local agricultural practices and keep market prices constant, and paid subsidies according to absolute animal numbers. Therefore, farmers naturally increased their animal numbers in order to receive more money and did no longer determine the size of their herd on how much meat and/or milk they could sell. The animals were allowed to run free, and soon exceeded the farmer's ability to feed them with supplementary food. Therefore, they were overstressing the natural ecological balance of the island's ecosystem, leading to a tipping point of soil degradation and devastating environmental outcomes through overgrazing. In 2005, the subsidy scheme was altered in order to pay subsidies per farm and former herd size and not per additional animal. Due to that alteration and other reasons such as an increase in slaughtered animals, a decrease in animal fertility (due to food shortage) and some other factors, the number of animals decreased again to approximately 45,000 goats and sheep in 2013. Nevertheless, this is still far more of what the island's ecosystem and its inhabitants could bear. Meanwhile, as the tourism sector evolved since the 1990s, and with it a new market for food supply, local farmers are able to make more use of their goat and sheep milk and meat. Nonetheless, still nowadays livestock farmers mostly live on their subsidy income. [Fetzel et al., 2018]¹⁴

¹⁴ Nevertheless, there are also EU initiatives to protect local traditional cultures, food safety and the protection and the promotion of local products, for example the *Protected Origin Policy* (*protected designation of origin* PDO, or often also DOP – *Denominazione d'Origine Protetta*) which includes a label for products which were produced in a certain area under certain regulations and norms. Its name is thereby protected on the European market. It ensures a defined quality of raw materials, their origin and eventual processing techniques, but is also a great marketing instrument as it is often linked to imaginary attributions like traditional or natural products. Interestingly, 75% of all PDO products come from Southern Europe. An example for a PDO product is *fêta*, which can only be called and sold as *fêta* when it was produced in Greece [Kravva, 2011]. Apart from the PDO or DOP labels, there are many other labels with different product and quality requirements. These kinds of qualitative and/or geographical labels have a great potential in marketing local products, especially among tourists, and when exporting these products to other countries.

[...] That mentality change definitely was a reason for the Greek economic crisis. The crisis itself was a very hard time for most of the people, but in the same time they were forced to overthink their values and had to see it as a big chance. As subsidy systems changed, the situation is different now, because people got less money and controls got stricter. [Notes from Interviewee 11]

The Greek economic crisis may also showed its influences on the island, but one outcome of the crisis was the foundation of some social cooperatives on the island to secure financial and social stability without relying on the state. Although these cooperatives have different approaches and objectives, they have a common concept of an independent working and income framework and a horizontal decision-making structure. These approaches may contradict traditional work structures, which were characterised rather by hierarchy and patriarchy, but are favourable alternative attempts.

Social and environmental sustainability, although being perhaps not the main goal, is at least very often a side effect of such local cooperatives. [Varvarousis, 2016; Scarp et al, 2016] Another point, mentioned by some locals, was an observable climate change in the recent decades on Samothraki.

Instead of constant climate fluctuations (a good season for the olive groves, following a bad season), it changed to a scheme of one good season, followed by two bad seasons in the last decade. [Notes from Interviewee 11]

Overall, the island is generally undergoing a transition process from a traditional agrarian system to a modern, industrialised society. This trend also has effects on the island's food system: shifting preferences and westernised diet patterns are accompanied by a growing dependence on the mainland and the international markets. Therefore, also provisioning shortages or price fluctuations concern the island's economy increasingly. [Petridis and Huber, 2017]

Surprisingly, Anna Martezou stated in her cookbook from 2005 that interest in local cuisine is growing again, especially in the younger generation. Scientific research outcomes about the Mediterranean diet also reached Samothraki and aroused interest for traditional eating patterns. [Martézou, 2005]

Among the interviewed locals, the general impression was that young people eat in a different, more modern way when they make their own food choices. However, they often may not cook for themselves, but eat whatever their mother or grandmother prepares. It is still common that women cook for the family, and in general they tend to be good cooks with knowledge on things like herbs and their usage. In contrary, younger people may favour local products because they have an increased awareness on topics like environmental impacts of food production.

Locals started to grow their own food again in the last ten years. Awareness about the food's origin is rising, especially among the younger generation. The will to buy products produced on the island is also increasing, even if prices are higher than for imported foods (for example tomatoes from the supermarket: 1.20 €/kg, locally grown tomatoes: 1.50 €/kg). Production of local food would increase, if demand rises. [Notes from Interview 11]



Pic. 6: Bell peppers



Pic. 7: Aubergines



Pic. 8: Basil

Vegetables and herbs growing in a private garden on Samothraki. [own pictures]

Especially older locals still seem to cook in a very traditional way. More or less the same ingredients were said to be used today as some decades ago. Some adults were said to cook in a traditional way, but sometimes with a modern twist. They still use traditional products, but also adapt to a new taste and other products, which can be found in the supermarket nowadays.

Interestingly some of the locals said that the food served in the restaurants is only partly traditional and not as tasty as the dishes people cook at home. One thing that changed in the last years, as one interviewee observed, is that besides local fish, fish from breeders is sold to restaurants due to the tourists' demand in high season.

4.2.2. Food supply infrastructure on Samothraki

a) Food sources

There are three supermarkets in Kamariotissa, two minimarkets in Chora, two small shops in Therma and one minimarket each in the villages of Lakkoma and Profitis Ilias. Apart from that, there are two bakeries, two butchers and two fishmongers in Kamariotissa. In Chora there are two more bakeries, one is a small traditional wood oven bakery, which is only open for the summer season. There is one more bakery in Therma. Additionally, the two campsites offer basic products. Products from the mainland are sometimes offered by sellers next to the ferry in Kamariotissa [Huber, 2016; Schwaiger, 2017; Samothraki, 2017]. Supermarkets and minimarkets were found to sell mostly imported food, except for some dairy products from the island's dairy and some fruit and vegetables. The same applies to bakeries and butchers, except for goat and sheep meat. The fishmongers sell only local fish which is caught by the local fishermen. [Huber, 2016]

Apart from that, some farmers, beekeepers and producers of olive oil, wine or *tsipouro* sell their products directly. Due to the absence of a farmer's market, farmers often sell directly at their production site, or sell their fruit and vegetables from a small truck. Other products like olive oil, wine, honey, *tsipouro* or other homemade products are sold also through informal networks, can sometimes also be bought on touristic spots or are exported. [Huber, 2016; own investigations] There are two olive oil presses on the island, but the price is comparatively high (around 5€ per litre for pressing). [Interviewee 11] These products are exclusively locally produced.

There is one slaughterhouse, which processes local meat. It is also still common for goat- and shepherds to slaughter their animals themselves and sell them directly either to consumers or to restaurants. Selling the meat beyond the island's borders is difficult due to shipping logistics and the absence of facilities needed, like cooling, storing or packaging. Though it is officially illegal, the animals often are shipped alive and sold on the mainland. In the very South of the island the only dairy is located, which processes milk, yoghurt and cheese. It sells its products to a supermarket in Karamiotissa and runs its own shop at the mainland. While many herders in the South use the dairy, it is too far away for many farmers in the North to bring their fresh milk there regularly. Therefore, these herders concentrate mostly on meat production or they produce their own milk products, although this is sometimes also not legal. [Huber, 2016; Fetzl et al., 2018]

In general, the potential of goat and sheep milk and meat production on Samothraki is not even close to being used to full capacity, as **figure 15** shows:

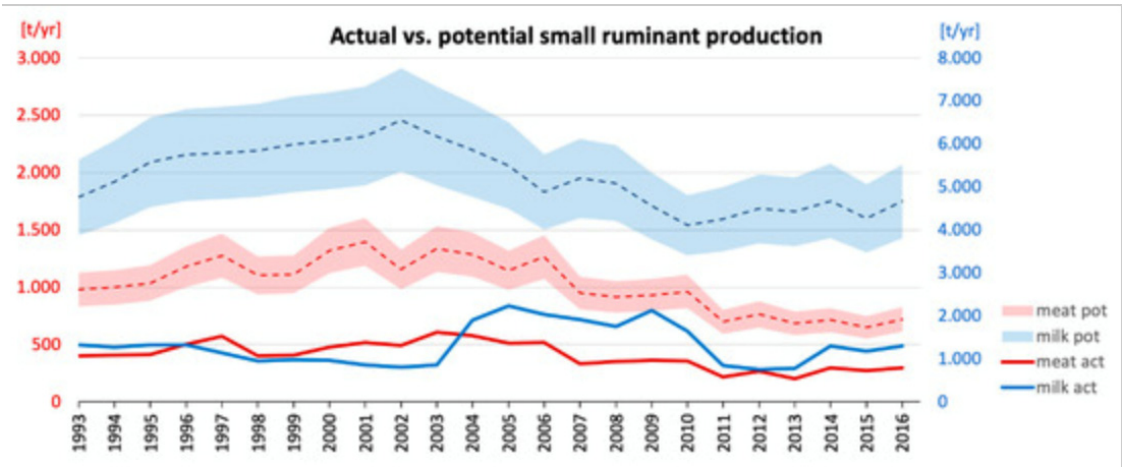


Fig. 15: Actual vs. potential small ruminant production on Samothraki. [Noll et al., 2020]

In 2016, the actual production accounted for 759 tons of sheep milk, 543 tons of goat milk, 164 tons of sheep meat and 135 tons of goat meat. [Noll et al., 2020]

Apart from goat and sheep, there is an estimated number of 9000 chicken and 1000 pigs kept on the island, but mostly for own food supply. [Huber 2016]



Pic. 9: Imported chicken [own picture]



Pic. 10: Poultry of a local farmer [own picture]

Fonias is the locally brewed pale ale beer brand. The small family brewery started brewing on Samothraki in 2017. The production was estimated by the owners to be as much as 12,000 bottles of 330 ml per month in summer, which equates to almost 4000 litres, and less in winter. Almost all restaurants on Samothraki sell their beer, and they also export to big Greek cities like Alexandroupoli, Thessaloniki or Athens. Still, the main ingredients are imported: malt comes from the area of Thessaloniki, and hops is imported from the Czech Republic, New Zealand, USA or other countries. [Interviewee 12]



Pic. 11 & 12: *Fonias* brewery production [own pictures]

Furthermore, it is usual to obtain or barter local/home-grown food items through informal networks of family, friends and neighbours, which counts up to almost 22% of the total food supply. 15% of food consumed by locals is homegrown or collected in nature, for example wild plants (*chórta*) and fruit. These are examples for non-monetary strategies locals still use, at least to a certain amount. The main motivations for these practices seem to be due to qualitative and taste aspects, as well as to a sense for communality and solidarity. Though an environmental factor has not been mentioned by all locals, practices like that considerably contribute to an environmental relief and can in all probability be described as examples for quiet sustainability. [Petridis and Huber, 2017]

b) Share of food sources used by locals

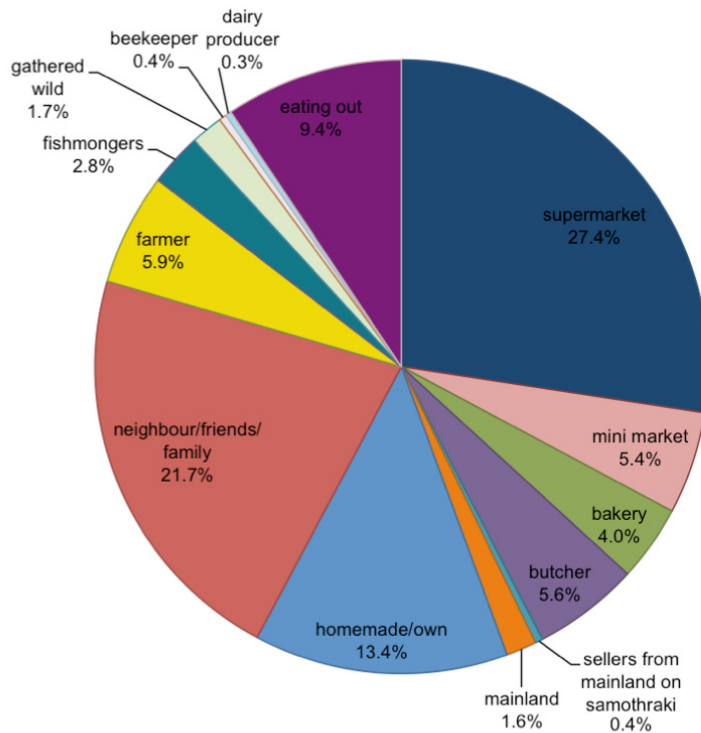


Fig. 16: Distribution of 14 food sources in % from which respondents obtain food in summer (May-October) (n=34) [Huber, 2016]

Elder respondents significantly grew more food at home, while young people tend to go out more and obtain food from neighbours, family and friends. Huber's data, according to her, confirm the trend that young people in particular are less inclined to follow local traditions. These outcomes make sense, if one considers that (grand)mothers usually cook for their (grand)children. These neighbours/friends/families, from whom young people obtain their food, may be the group of "elderly people", who grow/prepare their own food. That does not necessarily imply that young people are not following traditional consumption and production patterns, they may just do not cook/grow their food themselves.

Overall, assuming that the category of eating out is using partly imported, partly locally produced foods, Huber concludes that about 50% of all foods consumed in the summer months is locally produced, while the other 50% consist of imported products. The share of imported food may be even higher in the winter months, assuming that fewer local agricultural products are available. [Huber, 2016]

c) Food choices of locals

In her questionnaire, Huber also investigated the main reasons influencing food choices. Concluding her findings, the factor health is a very important consideration for many people, on one hand due to general health concerns, on the other hand due to concerns about the use of chemicals and hormones in food production. While these concerns were prevalent among the elderly, there also was a trend for organic fresh products, especially among young parents. A higher importance of the factor health was associated with a higher prevalence of growing own foods, preparing most foods at home and buying increasingly from farmers, but had no significant influences on actual food choices, except for eating more fruit.

The price of food did not seem to be a major influencing factor. The impression occurred that food plays a very important role in people's life. Cutting back on other commodities and obtaining food through informal networks are preferred strategies, rather than buying cheap foods. Nevertheless, more than a quarter of the interviewees mentioned the necessity to save money due to the economical crisis. A greater valuation of the factor price was associated with lower prevalence of growing own foods, which seems reasonable when one considers that growing own foods usually saves some money.

The factor of being locally produced or not plays a very important role among locals. More than 50% stated that locally produced food is very important to them in their food choice, these respondents also significantly bought more meat from farmers. Almost all interviewees support locally produced food in general. Reasons for the importance of locality, in order of decreasing relevance, were health considerations, taste, jobs on the island, tourist preferences, protection of environment, trust in product quality, monetary reasons and community support.

Interestingly, the most often mentioned favourite preparation type was "grilled", before "baked", "boiled" and "fried". [Huber, 2016]

Religious influences today

The fasting days, suggested by the Greek Orthodox Church, are Wednesdays and Fridays, when religious people should abstain from meat, milk products and oil. Some locals, particularly elderly women, still seem to stick to these habits. More commonly, many people adhere to the fasting periods before Easter (48 days) and Christmas (40 days), renouncing meat and milk products (and fish before Easter). [Huber, 2016]



Pic. 13:The church *kremniotissa* on Samothraki [own picture]

Food in the nursery school

As an example of the influence of traditional local food patterns on catering in institutions, the menu of Samothraki's nursery school is revealing interesting information too: A variety of foods and dishes and a generally healthy diet is obviously attempted, as well as a seasonal adaption of the meals. These may be signs of a still existing traditional structure. Additionally, Wednesdays and Fridays are the vegetarian days, which is in line with the Church's fasting recommendations. On contrary, the selection of food items seems to follow a more western pattern instead of a traditional Mediterranean one, especially regarding breakfast. Some traditional foods, like *trahana*, *flomaria*, *haslamas*, goat, lamb or fish and seafood are not served at all. Furthermore, almost all ingredients bought for the nursery school come from imported sources. [Huber, 2016]

4.2.3. Adherence to traditional food patterns in today's households

A study conducted 2009 among elderly people from eastern Mediterranean islands (also from Samothraki) found a mean moderate adherence (about 60% of total theoretical adherence score) to the traditional Mediterranean diet. Compared to other studies, it seems that elderly people on eastern Mediterranean islands follow traditional dietary habits more strictly than middle-aged people in Greece. [Katsarou et al., 2010] Furthermore, the locals' consumption of different food groups was investigated: olive oil was consumed very frequently, as well as fruit, vegetables, salads and greens. Meat was also consumed frequently, and alcohol in a moderate amount. [Panagiotakos et al., 2007]

Product type	Day Median
Feta	73
Yoghurt	45
Milk	16
Egg	12
White bread/toast	58
Wholemeal bread/rusk	1
Pasta	31
Trahana	0
Potatoes	124
Goat	13
Lamb	5
Pork	35
Chicken	63
Minced-meat	37
Fish	60
Seafood	13
Pulses	33
Tomato	339
Cucumber	170
Pepper	52
Eggplant	22
Peas/runner beans	37
Chórta	9
Melon	396
Pears	17
Peaches	143
Figs	8
Nuts	2
Olives	17
Puff pastries	14
Sweets made in tray	3
Honey	14
Sugar	6
Olive oil	112
Wine	13
Beer	350
Strong alcohol	4
Coffee	227

In her master thesis, Julia Huber surveyed 34 locals on Samothraki on their dietary habits in the summer months (May-October). Consumption frequency and quantity of 39 food items were accessed:

Single food items, which were consumed very frequently (at least once daily, but sometimes in relatively small amounts), were olive oil, white bread or toast, coffee and sugar as well as vegetables like tomatoes and cucumber.

Table 7 is combining food frequency and quantity and shows the median consumed amounts of food items per person and day (in gram). [Huber, 2016]

In terms of quantity, some food items may not be consumed very frequently, but in big portions. One note to add: the very high quantity of melon was caused by a weighting mistake in the questionnaire (weight with melon peel).

Tab. 7: Food quantity per capita (respondents' median consumed amounts of foods and drinks) (n=34) per day in gram [Huber, 2016]

Other items, like *trahanás*, wholemeal bread or rusk, or milk were not commonly used frequently in the summer months. *Trahanás* and also *flomaria* were said to be consumed preferably in winter. Also, the consumption of pulses and soups in general was reported to be higher in the colder months. The same accounts for winter vegetables like broccoli, cauliflower or cabbage and winter fruit. *Chórta* is also collected by some people only in winter, when the plants are said to be young and fresh and very healthy after the snowmelt. Apart from that, there were other foods mentioned by some interviewees to be consumed additionally regularly in summer, like ice cream, chocolate, biscuits, other fruits than the ones asked in the questionnaire and softdrinks to a lesser extent. [Huber, 2016]

The 39 food items have been aggregated to 14 food groups in **table 8**.

Food quantity per food group (g/cap/day)	
Food group	Median
Dairy	236
Cereals	137
Potatoes	124
Eggs	12
Meat	184
Fish and seafood	76
Legumes	69
Vegetables	651
Fruits	778
Nuts and olives	32
Sweets and puff pastries	49
Olive oil	112
Alcohol containing beverages	378
Coffee	227

Note: dairy (feta, yoghurt, milk); cereals (white bread/toast, wholemeal bread/rusk, pasta, trahana); potatoes; eggs; meat (chicken, goat, lamb, pork, minced-meat); fish and seafood; legumes (white beans, peas/runner beans), vegetables (tomato, cucumber, pepper, eggplant, chórta); fruits (melon, pears, peaches, figs); nuts and olives; sweets and puff pastries (puff pastries, sweets made in tray, honey, sugar); olive oil; alcohol containing beverages (wine, beer, strong alcohol); coffee

Tab. 8: Median consumption of 14 food groups (n=34) during summer season [Huber, 2016]

Huber mentioned the high amounts of vegetables, fruit and alcohol containing beverages, compared to data from the Greek mainland (from 2004/05) and argues that consumption of these food groups may be higher in the investigated summer months, compared to the all-year-data from Greek mainland. Apart from that, the mentioned weighting mistake is also interfering here. Regarding olive oil and legumes, locals on Samothraki also seemed to consume more than participants of the Greek study. Consumption of meat, fish and seafood, potatoes and dairy is comparable to the Greek data. In contrary, the data of Samothraki shows a significantly lower consumption of cereals. [Huber, 2016]

To evaluate the adherence to the traditional Mediterranean diet, I investigated the data of Huber with the PREDIMED screener score in **table 9**. The complete questionnaire for the PREDIMED screener score can be found in **appendix 3**.

1) Olive oil as the main culinary fat	Olive oil is assumed to be the main added lipid – although no other fat/oil had been asked in the questionnaire, other oil/fat have also not been mentioned by the interviewees.
2) > 4 tablespoons of olive oil/day	One tablespoon of oil weights 10-15 g, therefore the minimum amount of 40-60 g/day is definitely surpassed with the median amount of 112 g/day.
3) Min. of 2 servings of vegetables/day (> 400 g)	Surpassed 2 servings/day
4) Min. of 3 servings of fruit/day	Below according to food frequency (1-2x/day), but definitely surpassed according to food quantity (778 g/day)
5) Red/processed meat <1x/day (1 portion = 100-150 g)	About equivalent according to food frequency (2-5x/week), but still high red meat quantity (median 90 g/day)
6) Butter/margarine/cream < 1x/day	Below 1 serving/day
7) Carbonated/sugared sodas < 1x/day	Below 1 serving/day
8) > 7 glasses of wine/week	Below 7 glasses/week (other alcohol is consumed rather than wine)
9) Min. of 3 serving of legumes/week (> 450 g)	About equivalent according to food frequency (2-4x/week), and surpassed according to food quantity (median 483 g/week)
10) Min. of 3 servings of fish & seafood/week (1 portion = 100-200 g)	Below 3 servings/week according to food frequency (1-3x/week), but surpassed according to food quantity (median 507 g/week)
11) Commercial bakery, cakes, biscuits, pastry (max. 3)	No clear data
12) Min. of 3 servings of nuts/week	Below 3 servings/week (1-3x/month)
13) Poultry > red meat	No
14) Min. of 2 servings of "sofrito"/day	Unclear, but could be assumed due to high to high tomato and onion intake

Tab. 9: Evaluation of Huber's data regarding the adherence to the traditional Mediterranean diet with the use of the PREDIMED screener score [Huber, 2016; Martínez-González et al., 2012]

For better visualisation, those parts which meet the definitions of the PREDIMED screener score, are marked in dark green. Light green symbolises slight deviations from the definitions. Those who do not meet the definitions are marked in orange. The parts in white could not be classified due to lacking data.

Olive oil clearly is the main added lipid, although there was no control question in the questionnaire of Huber's assessment for other fats. Regardless of that, it can be assumed that mainly olive oil is used, especially according to the quantity of a median intake of 112 g per day, and due to the fact that no interviewee mentioned other fat sources. This is also in accordance with the traditional cookbook, where olive oil also is the main fat source.

While Huber's evaluation of most ingredient's intake is clear, there are some further notes to add. For fruit, the intake frequency was estimated to be one to two times a day, but only counting the fruit given in Huber's questionnaire. Other fruits were consumed additionally. On the other hand, the mentioned weighting mistake for melons has to be considered. Nevertheless, the high median intake is indicating a more than sufficient intake of fruit. Similar results were observed for legumes and fish/seafood. The impression occurs, that some ingredients may not be consumed very frequently, but in a greater amount than calculated in the PREDIMED questionnaire.

Regarding wine, it is interesting that, according to Huber's data, people on Samothraki are drinking clearly more beer than wine. In that point I disagree with Huber's conclusions, as 378 grams of alcohol containing beverages per day is not an extraordinary high amount, as it equates to a bit more than one small glass of beer (330ml), and therefore can be considered as moderate alcohol intake, which always has been part of a traditional consumption pattern in most Mediterranean countries (see **chapter 2.6.2**). Neither the median amount of consumed alcohol nor the frequency is very surprising. Only the fact that beer is preferred to wine deviates from a traditional Mediterranean drinking pattern.

However, that does not mean that it is a negative trend in nutritional terms. Beer has been the focus of many scientific studies in the last decades and was found to be related to many positive health outcomes, when consumed in a moderate amount. In that sense it could be compared to wine. Polyphenolic compounds are part of fermented drinks like beer and wine and were found to correlate with positive outcomes, for example on cardiovascular and immunological parameters. Moreover, beer in particular seems to have positive effects on the gut microbiota. These effects only apply for a moderate consumption of alcoholic beverages [Redondo et al., 2018; de Gaetano et al., 2016; Quesada-Molina et al., 2019].

The intake of red meat seems quite high, though beef consumption was not separately investigated by Huber as a category of its own. Nevertheless, the category minced-meat supposedly implies beef. Therefore, the actual median consumption of red meat may be even higher. Animal husbandry of small ruminants, and therefore the consumption of goat and sheep meat, is definitely part of a traditional diet in the area of Samothraki. They play, along with pork meat, the major role in Martezou's cookbook, whereas poultry is mentioned in only 5% of the recipes. Interestingly, it seems like the current meat consumption is more in line with the general definition of a Mediterranean diet than the traditional cookbook from Samothraki. Still, from a nutritional point of view, a preference for poultry over red meat would be desirable.

For commercial sweets, no clear data is available here. Huber's questionnaire implied mostly traditional (homemade sweets) and her calculations for the median daily intake also included sugar and honey, whereas the PREDIMED screener is only asking for commercial sweets or pastries. [Huber, 2016] The same applies to the intake of *sofrito*, which is defined as a sauce from tomatoes, olive oil and onion, leek or garlic. Nevertheless, it could be assumed, due to the high median intake of tomatoes, olive oil and onions, that that kind of sauce(base) is used very commonly.

Compared to Martezou's traditional cookbook, there are many parallels, but also some contradictions in consumption of many single ingredients, though it is not possible to conclude from the data of the cookbook, which ingredients and in which quantities locals actually ate some decades ago. Nevertheless, some trends and preferences can be identified. For vegetables, it is interesting that tomatoes are the most frequently used vegetables in the cookbook, and still are the ones consumed in the highest quantity today. In contrary, cucumbers are consumed in the second highest quantity today, but do not even appear in Martezou's recipes. Other vegetables are difficult to compare, as not all of them were asked separately in Huber's questionnaire. *Chórta* still is gathered and consumed nowadays, but is said to be consumed in higher amounts in winter.

For staple foods, there are bread and pasta, which can be considered as traditional foods, though the flour some decades ago in all probability used to be wholegrain flour. Interestingly, potatoes seem to be the most consumed carbohydrate-source today. In Martezou's book, potatoes do not play a major role and only appear in two recipes, though it has to be remembered that there are no side dishes given at all in Martezou's book.

The traditional role of potatoes on the island remains unclear therefore. Potatoes could be considered as an example of a shifting diet, but a shift that may have started some time before the mid 20th century, as potatoes are grown in Greece at least since around 1830. [Fuchs-Eckert, 1993] The intake of rice unfortunately has not been surveyed by Huber.

In conclusion, the question to what extent current consumption patterns on Samothraki fall under the definition of a traditional Mediterranean diet can be answered easily. Following the scoring scheme of the PREDIMED screener score, there is one point for each fulfilled criteria of the 14 questions. Depending on the two unclear ingredients commercial sweets and *sofrito*, nine to eleven points could be given. The adherence to the traditional Mediterranean diet therefore seems to be moderate to high, with 64 to 79% of the total adherence score according to the PREDIMED screener score.

The adherence seems relatively high especially when compared to other data from Greek islands or the Greek mainland. [Katsarou et al., 2010] The mere adherence to a Mediterranean diet pattern correlates with positive health outcomes, as explained in the introduction, and therefore already could be considered as a parameter for a nutritionally eligible diet. Furthermore, the question concerning the consumption of alcohol could not be considered as nutritionally undesirable, as moderate alcohol consumption (of beer or wine) seems to have positive effects on health. Also developments like the increased preference for potatoes, and the shift from pork, goat and sheep to chicken meat, which were identified when comparing Huber's data to Martezou's traditional cookbook, are signs for a shifting diet, but not in a nutritionally alarming way.

4.3. The use of local ingredients and the offer of traditional cuisine in restaurants & tourists' opinion

In this chapter, Samothraki's restaurants are investigated. After a short overview on numbers and hard facts on local restaurants, there are three focuses: first, the menus of restaurants are observed, in order to investigate the impact of traditional food patterns on the tourist's food supply in Samothrakian restaurants today. Secondly, it is explained to which degree restaurants use local products from the island, including possible obstacles and possibilities in a collaboration with local farmers. Finally, tourists' opinions on local and traditional food in Samothraki are presented and discussed in relation to the other aspects.

According to Schwaiger, there are 85 food and drink providing businesses, including 36 *kafeneios* (cafés), 38 taverns, 6 bars, 4 bakeries and 2 fast food places. Many of them close in winter, as one can see in **figure 17**.

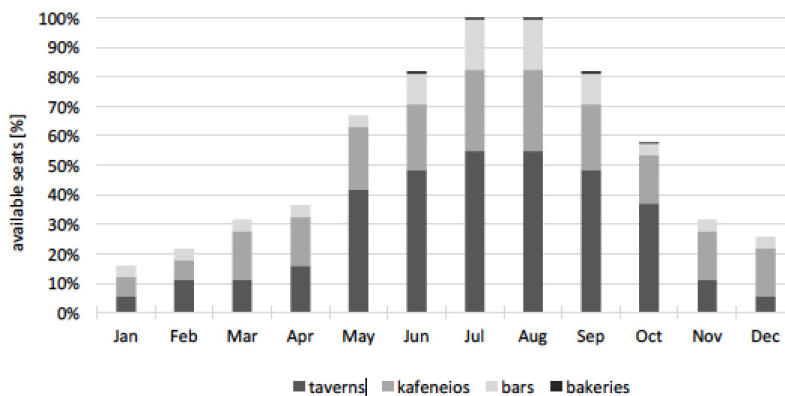


Fig. 17: "Estimated proportion of available seats in food and drink provisioning establishments per day in the month (n=1,526) (own estimates based on online data)" [Schwaiger, 2017]

With an on-going labour shift from the agricultural to the service sector (in 2011, 66% of the workforce was employed in the service sector) and an estimated number of 36,000 tourists, tourism plays an important role in the island's economy and sustainability. Tourism on Samothraki is highly concentrated in July and August. Therefore, environmental pressures are significantly higher during summer, as one can see for example at the increase in waste, water pollution, greenhouse gas emissions through transportation and demand of imported food.

In 2015, 71% of the tourists visited restaurants (almost) every day in the peak season of July and August. [Schwaiger, 2017] When exploring Samothraki's touristic development, the question of sustainable and local food supply should be taken into account. Furthermore there is a potential to increasingly use traditional knowledge as a tool to promote a sustainable lifestyle [Petridis and Huber, 2017].

4.3.1. Menus of Samothrakian Restaurants

The analysis of the menus of the eight investigated restaurants is presented in this chapter. First, the dishes on the menus are divided in the following eight categories: Salads, soups, *meze* and appetizers, vegetarian dishes, meat, fish and seafood, breakfast and desserts. For the dishes marked with a "*", a recipe is given in **appendix 2**.

Salads

A salad is usually defined as a dish of vegetables, which is served cold. Other ingredients, such as fish or meat can be part of a salad. Normally, a dressing, for example of vinegar, oil or other seasonings is added. [Oxford English Dictionary, 2019]

All restaurants offer salad. The most popular ones are presented in **table 10**:

Dish	% of restaurants serving	Mean price
<i>Choriátiki</i> (the classic "Greek salad" - see pic.14)	87.5 %	5.36 €
Cucumber-Tomato-Salad	87.5 %	3.07 €
<i>Melitsanosaláta</i> (creamy eggplant salad)	87.5 %	3.14 €
Cabbage salad	87.5 %	3.36 €
Beetroot salad	87.5 %	3.50 €
<i>Chórta</i> (wild greens)* ¹⁵	87.5 %	3.42 €
Lettuce	75 %	3.25€
Rocket lettuce	62.5 %	4.50 €
Potato salad	62.5 %	3.13 €
Tomato salad	37.5 %	3.33 €
<i>Ouggaréza</i> - Hungarian salad	37.5 %	3.00 €
Cauliflower salad	25 %	3.25 €
Broccoli salad	25 %	3.25 €

Tab. 10: Common salads served in Samothraki's restaurants, including the share of restaurants serving the dish and the mean price (n=8)

The assumption could be made that some restaurants also serve some salads which are not explicitly listed on the menu. For example, it can be assumed that it is also possible to order tomato salad or cucumber salad, if a restaurant offers cucumber-tomato-salad.

Apart from what could be observed on the written menu, one restaurant stated that cabbage, cauliflower and broccoli were currently not available due to seasonal reasons (in June). Other restaurants nevertheless claimed to offer these vegetables.

¹⁵ If the specific type of *Chórta* is given, it was *Vlíta** (Amaranth, see **picture 15**) and on one menu purslane.



Pic. 14: *Choriátiki* (Greek salad) [own picture]



Pic. 15: *Chórta* (Amaranth) [own picture]

Soups

Soups not seem to play a major role in tourists' catering. Three out of the eight investigated restaurants offer soup on their menu, one of them explained that soups are only served in winter. Soups offered in the menus were *kotósoupa* – chicken soup, *kreatósoupa** – meat soup, *giouvarlákia* – soup with meatballs (all three currently not available), *gída vrastí* – goat soup and *psarósoupa** – fish soup. Each soup was served only by one restaurant. Prices for soups vary between 6 € and 8.50 €.

Méze & appetizers

The word *méze* means appetizer in Turkish and can be traced back to the term *maza*, which means to relish in Persian. These kinds of dishes are common along the Turkish, Greek and Middle Eastern kitchen. [Oxford English Dictionary, 2019] *Méze* could be compared to the Spanish concept of *tapas*. Traditionally, they were served as little dishes that came along with the wine or the drinks served, but a variety of *méze* can also form a delicate dinner with family and friends. *Méze* can be cold or warm, simple as some qualitative olives or elaborate recipes of various ingredients. In recent years, the culture of *méze* gained popularity again, especially among the younger generation, turning out a variety of new modern creations. [Vassilas, 2017]



Pic. 16: Variation of *méze* in a restaurant on Samothraki [own picture]

The distinction between salads and *méze* is sometimes not very clear, as some dishes suit with both definitions. Therefore, everything being not a salad in common sense is defined as an appetizer, as for example *tzatzíki* or *octopus salad*. Nonetheless, the exact distinction is furthermore not essential for this work.

Usually, *méze* are also served in *tavernas* or *kafenios*, which are not included in this work. Therefore, data on available *méze* on Samothraki could be lacking, as the investigated restaurants are assumed not to be specialised in serving appetizers and *méze*.

Nevertheless, all eight restaurants serve at least some appetizers:

Dish	% of restaurants serving	Mean price
<i>Tzatzíki</i> – yoghurt cucumber sauce	100 %	3.00 €
<i>Féta</i> – white sheep cheese	100 %	3.00 €
Fried potatoes	100 %	3.00 €
<i>Tyrosaláta</i> – cheese salad	75 %	3.00 €
<i>Florínis</i> – peppers	62.5 %	3.70 €
Fried/grilled eggplants	62.5 %	3.50 €
<i>Choriátiki piperiá</i> – hot peppers	50 %	1.58 €
Fried zucchini	50 %	3.75 €
Fried peppers	25 %	3.50 €
Olives*	25 %	2.00 €
Other salted/pickled dishes*	25 %	3.25 €
<i>Kolokythokeftédes</i> – pumpkin/zucchini fritters*	25 %	4.00 €
<i>Ntomatokeftédes</i> – tomato fritters	25 %	4.00 €
<i>Ntolmadákia</i> – stuffed wine leaves*	25 %	5.50 €
<i>Fáva</i> – pea cream*	25 %	3.50 €
<i>Tarama</i>	25 %	3.00 €

Tab. 11: Common *méze* served in Samothraki's restaurants, including the share of restaurants serving the dish and the mean price (n=8)

Other appetizers, offered by only one restaurant each, were *revithia fáva* – chickpeas cream, *kolokytholoúlouda** – zucchini flowers, *koúpes*, *manti** – meat-filled little dumplings, *sieftaliés* – meat balls, crab salad, octopus salad, *chtypiti* – feta cream, *tyrokauterí* – feta with hot peppers, other cheeses like *haloúmi*, *katiki* or *kaseri*, and *flogeres* – cheese rolls.

Vegetarian dishes

All dishes without meat or fish are considered as vegetarian dishes. Most main dishes, especially the vegetarian ones, could also be served or ordered as appetizers or *méze*. As explained before, the distinction between appetizers and main courses is not always clear.

All observed restaurants serve vegetarian dishes:

Dish	% of restaurants serving	Mean price
<i>Féta saganaki</i> (or a similar dish with feta)	100 %	4.63 €
<i>Imám*</i> – eggplants with tomatoes	62.5 %	5.50 €
Spaghetti with tomato sauce	62.5 %	5.00 €
<i>Gemistá*</i> – stuffed green peppers and tomatoes	62.5 %	5.90 €
<i>Fasólakia*</i> – cooked green beans	37.5 %	5.00 €
<i>Gigantes*</i> – giant beans	37.5 %	5.67 €
Mushrooms*	37.5 %	4.83 €
Chickpeas*	37.5 %	5.50 €
Beans*	25 %	6.00 €
<i>Tourlou briám*</i> – oven-baked vegetables	25 %	5.75 €
<i>Kefaloxryi</i> cheese*	25 %	4.00 €
Potato <i>saganaki</i>	25 %	4.25 €
Stuffed eggplants*	25 %	5.00 €

Tab. 12: Common vegetarian dishes served in Samothraki's restaurants, including the share of restaurants serving the dish and the mean price (n=8).

Furthermore, one of the eight restaurants each offers dishes with okra*, lentils, peas, *talagani* cheese, stuffed mushrooms, *spanakoprasóryzo** – spinach rice, and ravioli.

Some vegetarian dishes (not specified) were not available due to seasonal reasons, as stated by one restaurant owner [Interviewee 7]. It remained unclear, if the term seasonal referred to unavailability of the ingredients or if certain dishes were not served due to low season, as the interviews were made in June, before high seasons starts. Generally, most restaurant owners explained that the complete menu is only available in high season, when the demand rises.

Meat dishes

Main dishes with any kind of meat are served by all investigated restaurant. Pork, chicken and beef meat are served by 100%, goat by 75% and sheep/lamb by 37.5% of all observed restaurants. As there are a lot of possible preparation and cooking techniques and widely varying additional ingredients, only the most commonly served meat dishes are presented in this chapter. Dishes served by only one of the eight investigated restaurants are not mentioned in most instances.

Interestingly, the kinds of meat available in a sufficient amount on the island (goat, sheep) are offered less often than other meat types, which usually have to be imported. However, goat and sheep often require cooking techniques and kitchen facilities, which are not available in every restaurant. Therefore goat and sheep are often served in specialised restaurants.

Goat dishes

Dish	% of restaurants serving	Mean price
<i>Katsikakiournou*</i> – goat baked in the oven with varying additional ingredients	62.5 %	8.45 €
<i>Gatsiki souvlas</i> – goat on a skewer	50 %	about 25 €/kg
<i>Katsikaki gemistó*</i> – baked stuffed goat	37.5 %	not clear
Differently prepared goat entrails*, e.g. <i>Tzigerosarmás</i> or <i>Kokoretsi</i>	37.5 %	9.42 €
Goat ribs	25 %	9.00 €

Tab. 13: Common goat dishes served in Samothraki's restaurants, including the share of restaurants serving the dish and the mean price (n=8).



Pic. 17: Goats and lambs on a spit in a restaurant on Samothraki [own picture]



Pic. 18: Goat dish in a restaurant on Samothraki [own picture]

Lamb dishes

Dish	% of restaurants serving	Mean price
Lamb chops	25 %	7.50 €
Lamb giblets	12.5 %	7.50 €
Roasted lamb	12.5 %	24 €/kg

Tab. 14: Common lamb dishes served in Samothraki's restaurants, including the share of restaurants serving the dish and the mean price (n=8)

Pork dishes

Dish	% of restaurants serving	Mean price
<i>Loukániko</i> * – sausage	100 %	6.69 €
<i>Panseta</i> – grilled pork belly	100 %	6.75 €
<i>Souvlaki</i> – grilled on a skewer	75 %	6.92 €
Pork steak	62.5 %	7.00 €
<i>Choirinó tiganiá</i> * – pork in a pan with different sauces like wine or lemon gravy	50 %	7.25 €
Pork, oven-baked, with varying ingredients	37.5 %	6.67 €
Pork schnitzel	25 %	7.25 €
<i>Kavourmas</i> *	25%	6.00 €

Tab. 15: Common pork dishes served in Samothraki's restaurants, including the share of restaurants serving the dish and the mean price (n=8)

Chicken dishes

Dish	% of restaurants serving	Mean price
<i>Kotópoulo filéto</i> – chicken filet	100 %	6.88 €
Chicken schnitzel	37.5 %	7.25 €
<i>Kotopouló fóurnou</i> * – oven-baked chicken	37.5 %	7.17 €

Tab. 16: Common chicken dishes served in Samothraki's restaurants, including the share of restaurants serving the dish and the mean price (n=8)

Beef dishes

Dish	% of restaurants serving	Mean price
Beef steak	62.5 %	7.40 €
Burger	50 %	6.63 €
<i>Biftéki</i> – (stuffed) minced beef steak	12.5 %	8.25 €

Tab. 17: Common beef dishes served in Samothraki's restaurants, including the share of restaurants serving the dish and the mean price (n=8)

Beef is used only for modern/western dishes, which is not surprising due to the fact that there are no cows on the island and beef therefore never was part of a traditional diet. Moreover, nowadays minced meat usually consists of 50% pork meat and 50% beef meat. [Interviewee 15]

Minced-meat dishes

Dish	% of restaurants serving	Mean price
<i>Moussaka</i>	62.5 %	7.40 €
<i>Pasticcio</i>	62.5%	7.40 €
Spaghetti with minced meat	62.5 %	6.00 €
<i>Keftédes</i> (meat balls grilled)	62.5 %	6.90 €
<i>Soutzokakia smyrneika</i> (meat balls in tomato sauce)	37.5 %	7.67 €

Tab. 18: Common minced-meat dishes served in Samothraki's restaurants, including the share of restaurants serving the dish and the mean price (n=8)

Prices of meat dishes are varying widely. The mean price of a meat dish is 7.81 €. Prices for goat and lamb on a skewer are commonly declared in price per kg (24-25 €/kg), therefore the prices for a single dish are hard to define. Overall, dishes with pork, chicken and minced meat (*moussaka*, *pasticcio* etc.) are usually sold at a lower price, while dishes with goat in general are more expensive, as well as more complex dishes with meat of any kind.

Fish and seafood dishes

Main dishes with fish or seafood are sold by 75% of all investigated restaurants. There are usually only a few fish or seafood dishes on the menu, except for specialised fish restaurants which usually sell fresh fish and seafood, depending on the daily catch. It can be assumed that not every fish and seafood on the menu is available every day.



Pic. 19: Fried sardines [own picture]

Dish	% of restaurants serving	mean price
Octopus*	62.5 %	8.00 €
Sardines*	62.5 %	6.60 €
(Smoked) mackerel	62.5 %	5.63 €
Grilled/fried squid*	62.5 %	7.63 €
Shrimps	50 %	9.00 €
Mussels	25 %	6.50 €
Anchovies*	25 %	6.75 €
Bream	25 %	33.5 € / kg
Seafood pasta	25 %	11.00 €

Tab. 19: Common fish dishes served in Samothraki's restaurants, including the share of restaurants serving the dish and the mean price (n=8)

A range of other fish is served by two specialised fish-restaurants, at prices between 6.50 € and 14 € per portion, though many prices were given in €/kg.

Breakfast & Snacks

In this category, some dishes are unlikely to be associated with a traditional Greek breakfast pattern.

Dish	% of restaurants serving	mean price
Toasts with different ingredients	37.5 %	2.43 €
Omelettes or fried eggs*	37.5 %	5.08 €
Sandwich	25 %	2.75 €
<i>Crêpe</i>	12.5 %.	2.75 €

Tab. 20: Common breakfast dishes and snacks, served in Samothraki's restaurants, including the share of restaurants serving the dish and the mean price (n=8)

Desserts

Any sweets offered were classified as desserts.

Spoon sweets (**picture 21**) are offered in 25% of the observed menus. Yoghurt with honey and nuts is the only other dessert in one menu. Nevertheless, a dessert is served in most restaurants. It seems like it is not common to offer desserts in the menu, but to serve them in any case as a gift of the kitchen to all guests. Spoon sweets are served often, but also cakes, fresh fruit, pudding or similar desserts. Due to this practice, it was almost impossible to further analyse the restaurants' offer regarding desserts and sweets, as they mostly are not given in the menus.



Pic. 20: Lemon cream



Pic. 21: Spoon sweets

Desserts served in restaurants on Samothraki [own pictures]

Menu discussion

In the following discussion, the influence of traditional food culture on today's tourist food supply in restaurants on the island of Samothraki is investigated.

In general, there are surprisingly many parallels between the traditional cookbook and the menus of most restaurants. At least 26 recipes from the cookbook can be found in a comparable manner in the restaurant's menus, although the detailed preparation could not be investigated and compared in my research. Many basic ingredients and staple foods, which are described in the cookbook, are also used as the basic ingredients in most restaurants. Bread is served to every meal today, and rice is very common. Other staple foods, especially porridges and soup inserts like *trahanás*, *cous cous* or *flomaria* are not very common. That also may be due to the fact that most soups were said to be winter food, and are therefore not listed on the menu's of most restaurants, which make their business almost exclusively in the summer months.

A variety of vegetables is still used. While maybe not all of them were introduced to Samothraki before the 1960s, there still is a focus on vegetables, which definitely also is part of a traditional consumption pattern. A wide choice of salads, as well as many appetizers and other vegetarian dishes can be found on all menus of the restaurants. Especially among vegetarian dishes, many of the ones on the restaurants' menus, are described also in the traditional cookbook, for example *fêta*, zucchini fritters or stuffed wine leaves and zucchini flowers. While some of these recipes are only served in a few restaurants (which may be specialised on traditional food), other dishes like oily eggplants (*Imám*), oven-baked vegetables (*Tourlou Briám*) or different recipes for legumes are offered in most restaurants. Interestingly, wild gathered greens (*Chórta*) are also served in most restaurants. That definitely is a sign of a traditional food culture which is still alive, and is also included in tourists' food supply. Most other vegetarian dishes could possibly be prepared with the same ingredients as described in the cookbook. Preparation techniques also seem to stick to traditional procedures, for example the preference for oily dishes, which can be found on any menu.

Among meat dishes, there are two observable trends: on the one hand, there is a range of traditional dishes offered, like differently prepared goat or pork dishes, which mostly can be considered as traditional dishes, especially regarding the preparation techniques.

Oven-baked meat, in some restaurants in very old wood ovens, or meat roasted on a skewer, is still very commonly served.



Pic. 22 & 23: Old wood ovens for traditional cooking in a restaurant of Samothraki [own pictures]

On the other hand, there clearly are modern influences observable: burger, steak or chicken schnitzel are examples of dishes served in order to meet the demands of tourists, which prefer a more western, international way of eating. Understandably, all restaurants do serve some dishes that satisfy the preferences of those tourists.

When it comes to fish and seafood dishes, most restaurants stick to the types of fish/seafood that are (and have been caught in former times) locally. Seafood, like octopus, which is also mentioned repeatedly in the cookbook, is also offered in most restaurants. However, some restaurant owners have stated that they would also offer imported fish if tourists demanded it.

Few restaurants offer snacks like toasts or sandwiches. Nonetheless, the share of fast food and snacks may be higher in other not investigated establishments. Some restaurants nevertheless serve western breakfast, such as fried eggs with toast or similar dishes, which are not considered to be typically Greek. Surprisingly, the traditional cookbook contains several recipes for omelettes, which were apparently part of the Samothrakian food culture. But here again it has to be taken into account that coffee houses or similar establishments may have a different offer than the investigated restaurants, which often open only at noon. Although this thesis concentrates on main dishes rather than investigating the variety of desserts and sweet dishes, it must be noted that traditional spoon sweets are served very regularly in many restaurants. Nevertheless, also more modern desserts are served.

In summary, it can be said that all restaurants offer both traditional and modern cuisine. A tendency to both, traditionalism and modernisation, can be observed in the menus, whereby the share of (possibly) traditional dishes strongly predominates.

Another important aspect is the strong seasonal character of the menus, which suits traditional circumstances. During low season, most restaurants do not serve all the food on their menu, especially concerning main courses. However, during high season in July and August, all restaurants claimed to serve all the dishes on their menu due to a highly increased food demand which influences the amount and variety of needed ingredients.

4.3.2. Usage of local ingredients in restaurants

Figure 18 shows the main ingredients used in restaurants and their share of being produced or bought locally (blue) or imported (red).

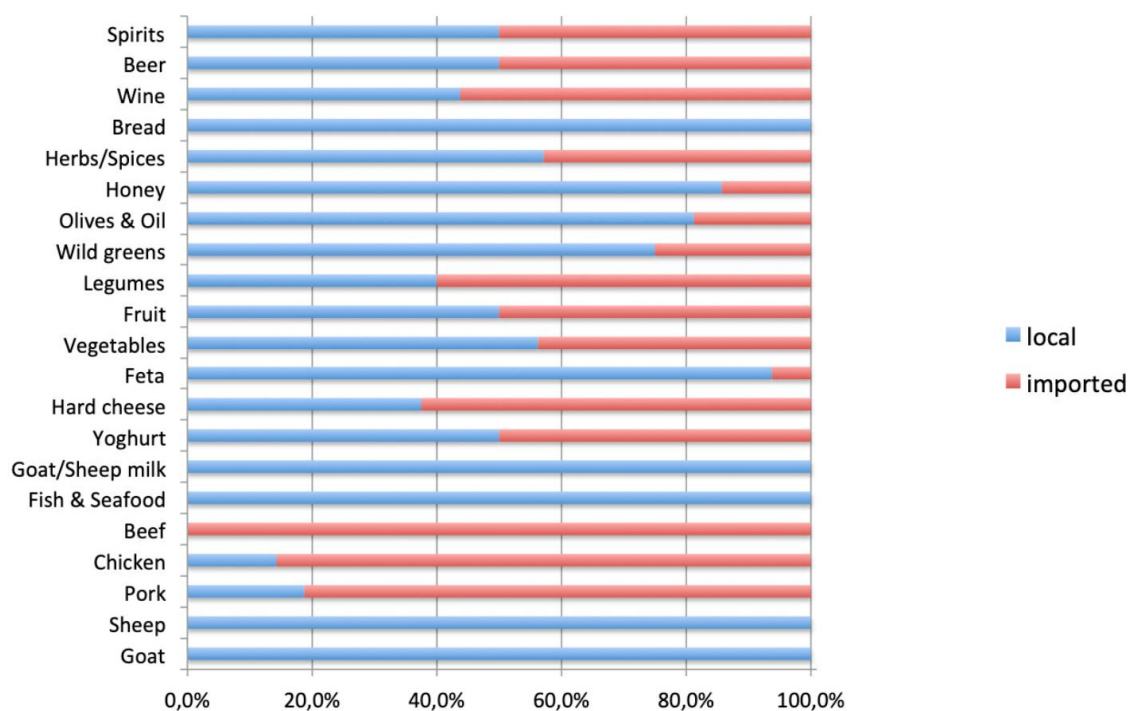


Fig. 18: Use of local versus imported ingredients in Samothrakian restaurants [Brosche et al., 2020]

The table shows the proportion of local and non-local ingredients as stated by the restaurant owners. It must be noted, that 100% refer only to the number of restaurants, which actually use the ingredient. That means that 100% do not necessarily represent all of the eight restaurants for all products.

Furthermore there are some notes to add:

- Beer is only partly produced locally: *Fonias* is the beer brand of the only local brewery, but the ingredients (hops, malt) are imported. Nevertheless, it was classified as local by all restaurant owners. All other beer brands are imported.
- Though all restaurants buy bread in local bakeries, it has to be considered that the flour for the bread is usually imported.

Some products have to be imported as they are not cultivated on the island, for example beef, specific herbs or vegetables, whereas some other products do have potential in increasing the share of local production as they are produced on the island, but not necessarily in a sufficient amount, for example honey, olive oil, legumes, vegetables, cheese, yoghurt, chicken or pork.

Practically all of the interviewed restaurant owners would favour offering a broader variety of local ingredients. Almost a third of them answered that they do already serve all available local products, and most of them doubted the possibility to purchase more local ingredients. A number of obstacles were mentioned, which are described afterwards in **chapter 4.3.3**. About half of the interviewees stated that they were open for a collaboration platform to increase local exchange of food, while the others said that they are not in need of further collaboration or are sceptical about the implementation or the benefit.

When asked about their perception of the tourists' food preferences, more than half of the restaurant owners believed that tourists prefer local food, two did not know, and only one interviewee felt that tourists like to eat what they are used to. [Brosche et al., 2020]

It depends on the particular menu and the available suppliers if a restaurant used more imported food during high season or not. It remains an open question if and how local food production could generally cover the increased demand of ingredients in that period [Brosche et al., 2020]. At least theoretically, most of the ingredients used in Samothraki's restaurants could also be grown or produced on the island. Exceptions are for example beef and cow milk products, cereals on a larger scale and special spices.

4.3.3. Possibilities and challenges in using more local products in restaurants

One of the obstacles indicated by restaurant owners was the insufficient local food production on the island to meet the increased food demand in high season. This especially concerns vegetable production, which is very limited.

This problem is partly related to legal issues on the island which constrain a further increase in local production. In general, many small-scale local farmers are not officially licenced and therefore not allowed to hand out receipts for their products. This results in problems for restaurant owners who would like to legally purchase local food. Also, the design of the EU subsidies on the island seems to lead to a preference of goat husbandry over diverse vegetable production among farmers. More specifically according to the interviewees, the EU legislation requires some sort of monoculture in order to provide farmers with subsidies, and promoting thus a more professional, large-scale type of farming that is unsuitable for small islands such as Samothraki. In other words, if local farmers want to add other agricultural products to their annual production instead of cultivating only one kind such as tomatoes or wheat, they will not receive any subsidies. This condition either leads to a production of a very limited variety of products that cannot cover the diverse needs of the local restaurants, or to the illegal production of undeclared products that are difficult to be sold legally. [Brosche et al., 2020]

Another obstacle mentioned was the workload of growing agricultural products compared to investing in the growing tourism sector: people concentrate on other, more profitable businesses, and are, due to the currently improved economic situation, merely no longer dependent on working in agriculture.

Social networks and capital largely influence the possibility to offer local food. Restaurant owners who are originally from the island or have been living there for a longer time have much fewer difficulties in networking and collaborating. Also, they may have bigger family support which constitutes a huge advantage when it comes to find local producers or produce and sell food themselves, even though it might not always be in a legal way. The cooperation within this smaller social networks tends to be strong. Outside of these closed networks, distrust and scepticism are common and present a major problem for collaboration. [Brosche et al., 2020] One interviewee named some examples of previous incidents which led to increased scepticism, though it is irrelevant whether they really happened.

On the one hand, some farmers are said to have sold products from the supermarket, but claimed them to be from their own production in order to sell them for higher prices. On the other hand, it is said that some local farmers use even more chemicals and pesticides than the companies from which the supermarkets import their products. [Interviewee 6]

4.3.4. Attitudes towards an online platform

The interviews show that restaurant owners are not prepared to push new structures on themselves, but wait for somebody else to do so. They are also sceptical to engage in a possible platform for more cooperation, for example on the Internet, and would rather wait and see if the project turns out to be effective.

Moreover, people who have been integrated on the island for a very long time and take advantage of their social capital, do not perceive the problem of overall collaboration as such. Only a few were in favour of an external platform for collaboration and stated that networking on the island largely happens informally and personally, for example in cafés. Restaurant owners who recently immigrated or spend their time on the island only during high season do not have as much social capital and therefore have more difficulties in meeting legal requirements. They were more in favour of an external platform, assuming they would benefit from it to a greater extent.

Interestingly, the price seemed to be one of the minor issues. Most of the interviewees stated they would buy local food as a matter of principle, even if the price was higher. However, some restaurant owners claimed that there is a certain threshold in the price, above which even if they would like to have more local products in their menu, they would not be able to afford it. [Brosche et al., 2020]

4.3.5. Preferences of tourists regarding local food in restaurants

The 37 tourist interviews show a balanced gender and age distribution (19 females and 18 males of all ages between 17 and 60+ (exact age not stated)). 59% of the interviewees were Greek, 27% Romanian, 8% Bulgarian and 6% from other countries. The duration of their stay varied between three days and one year (military service). Excluding the military servants, the mean duration of stay was nine to ten days.

As an introductive open question, they were asked about their general food preferences when they are on holiday, to get an insight in important criteria in tourists' food choices. 59% stated that they prefer special foods or ingredients (for example fish, seafood, meat, goat, salads), local food was answered by 49% of the interviewees and almost 30% mentioned traditional food. Interestingly, only 5% mentioned quality, for example freshness of food being important in their food preferences.

92% answered that local food in general is important to them, but the personal spontaneous definition of local food differed among the interviewees. 73% defined it in terms of local products, dishes or specialties, while 16% defined local food as being part of cultural and/or traditional identity. Only a few people had different definitions, like homegrown or different from home, or had no definition at all. Though, the diverging answers may not be necessarily contradictory.

The purpose of the final question was to investigate the importance of products served in the restaurants being locally produced. 92% answered that it was “very important” or “important” to them, another 3% stated that it was “quite important” and 5% said it was “not so important” to them, as shown in **figure 19**.

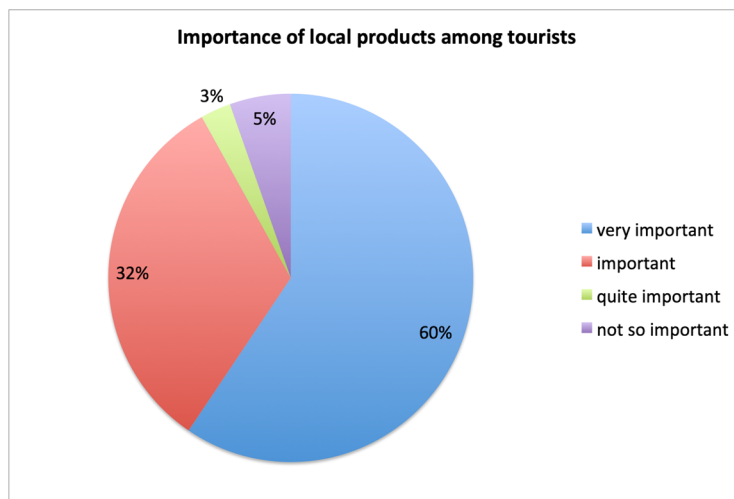


Fig. 19: Importance of local products among tourists

[Brosche et al., 2020]

4.4. Conclusio

4.4.1. Discussion

Even though Samothraki's traditional local food culture consists of many single important details, some characteristics can be summed up.

The island's food culture, shaped by poverty and isolation, remained relatively constant until the second half of the 20th century. Basic staple foods were grains, legumes and olives, next to a variety of vegetables, "wild greens" (*chórta*) and fruit. Wheat, barley or corn was used to bake different breads, *pitas*, dumplings, pasta, porridges or cakes. Rice was consumed frequently too, as a side dish or as a filling for vegetables or meat.

A variety of legumes, vegetables and herbs were used. Very often, they also were collected in nature. A wide choice of edible plants was available, and a great knowledge on these plants existed. The most frequently used vegetables in the traditional cookbook are tomatoes, zucchini, green or dried beans and some kinds of wildly gathered greens like Mediterranean hartwort. Vegetarian preparation techniques often include an oily sauce of onions and tomatoes. Other frequently described dishes are *pilafi* (rice dish), *pita* (usually layered or mixed with a dough of wheat flour) and *stifado* (cooked in a thick sauce with a lot of onions).

Fruit were also gathered in nature or grown in the garden. They are also used in savoury recipes and often are dried or preserved with sugar.

Olive oil is the base of most dishes in the cookbook; other fat sources are butter and pork fat. Fresh herbs, but sometimes also dried (imported) spices are used for seasoning the dishes. Frequently mentioned condiments in the cookbook are onions, salt, pepper, laurel, mint, oregano, fennel green and sugar. Overall, it is noticeable that vegetarian meals seem to have been very common. Nevertheless, meat, especially goat, sheep and pork, played an important role. Many different preparation and preserving techniques for all parts of the animal were known. This displays that meat was valued and much effort was put into preserving it. Described preparation techniques include grilling whole animals, cooking meat parts in oily sauces, making *pilafi* or *stifado*. Of course, animal products were also used, goat and sheep cheese like *feta* or *mizithra*, or chickens' eggs were an important part of Samothraki's cuisine. The collection of snails and the hunting of game animals were also practised. Fish was part of the diet due to the proximity to the sea, but as a result of frequent pirate

attacks and the lack of natural harbours, the fish consume rather concentrated on fish and seafood which were easy to catch, such as octopus.

Food used to be strongly attached to religious and personal family events and rituals. Various ingredients had strong symbolic characters and played an important role at different occasions. Naturally, the use of the different ingredients was linked to seasonal availability. Regarding locality, most ingredients could at least possibly have been cultivated on the island. Some spices like pepper definitely had to be imported, while other ingredients, especially basic foods like rice, sugar or salt are likely to have been imported from the nearby mainland.

Against the background of the theory of the Mediterranean diet explained in the introduction, the traditional food system in Samothraki could be classified as very typical for the Mediterranean region. Naturally, it is a local variation of the definition of the Mediterranean diet with its own specialities. One example for that is the traditionally high intake of red meat due to the widespread practice of livestock keeping of goat and sheep in the area.

Furthermore, all dimensions of the definition of a sustainable diet are fulfilled. A diverse diet from local sources and sustainable agriculture contributed to environmental sustainability. Appropriate animal husbandry, a focus on vegetarian food and moderately practised fishing are some examples of this. On the health level, the described nutrition with all its facets could be classified as beneficial to health, especially due to the high proportion of (wild) vegetables and vegetable oils, herbs and the generally conscious handling of food. In the economic sense, the traditional food system was certainly well adapted to a lifestyle that was as self-sufficient as possible. On the other hand, such an agricultural-based society certainly did not allow for prosperity in a monetary sense. However, this is not necessarily the goal of a sustainable form of nutrition. In socio-cultural terms, the nutrition system on the island was certainly a very good example of a sustainable form of nutrition. Traditions, religious and other cultural and social influences were strongly noticeable, and knowledge about the handling of food was of great importance.

Various reasons for the global nutrition transition (see **chapter 2.2**) together with regional peculiarities such as the wave of emigration in the 1960s or the process of EU accession, are factors that have significantly changed the island's food system over the decades.

On its way from a traditional agricultural society to a modern (food) system, the island is situated in the middle of a process that is determined by external (globalisation, market prices, subsidies etc.) as well as internal factors (new preferences, tourism etc.).

In many respects, today's food intake clearly reflects a traditional pattern. Olive oil is still the basis of almost every meal and, just like vegetables and fruit, is consumed in relatively large quantities. Consumption of red meat is quite high too. Nevertheless, it has to be said that goat- and sheepherding always was very typical for this region and therefore a relatively high consumption of red meat can be assumed to have some tradition. While the amount of meat consumed is still within the definition of the traditional Mediterranean diet, the meat consumption contradicts this definition in another respect: white meat is not preferred to red meat. According to the cookbook analysed, white meat however has never been of great importance on Samothraki.

Pulses, fish and seafood are still staple foods today, although perhaps to a lesser extent than a few decades ago. The role of sweets remains unclear due to lacking data. Sweetened drinks are certainly consumed, but, according to Huber's study, not in such quantities that they would not correspond to the given definition of the traditional Mediterranean diet. The role of the classic *sofrito* also remains unclear, even if frequent consumption of tomatoes, onions and olive oil could indicate a regular intake. Clearly, the desired consumption of nuts is not fulfilled. Today's consumption of red wine also clearly deviates from traditional patterns, as beer is generally preferred to wine. This deviation may be interesting in a traditional aspect, but is not a worrying trend from a nutritional point of view. The same accounts for the preference for potatoes today, which can be observed in Huber's data, but is not mentioned as an important ingredient in Martezou's cookbook.

Very traditional, special foods like *trahanás* or *flomaria* are not consumed regularly in summer, but their intake may be higher in winter. Some traditions and cultural or religious influences however still persist, like fasting on certain days, food being related to certain symbols, the gathering and preparation of *chórta* or the use of non-monetary food sources.

Overall, the adherence to a traditional Mediterranean diet pattern seems to be moderate to high, with 64 to 79% of the total adherence score (depending on the two unclear ingredients, commercial sweets and *sofrito*), and is therefore higher than other data from the Greek mainland [Katsarou et al., 2010]. As explained in the introduction, the adherence to a Mediterranean diet pattern correlates with many positive health outcomes.

Overall, preferences and consumption patterns may not have changed too much. What definitely has changed, however, are the origin, the production and the supply chains of the foods. Especially younger locals are likely to tend to rely on tourism or other sectors, rather than aspiring to a career as a farmer. They may grow their own foods for themselves, but to cover the demand of a growing touristic sector would require agriculture of a larger scale. The potential of production, especially for goat and sheep products on Samothraki is not even close to being used to full capacity. Concerning the total food consumption, at least 50% of the food consumed by locals is imported, although the will to buy local products would be present. [Huber, 2016]

Regarding restaurants, there are surprisingly many parallels between the traditional cookbook and the menus of most restaurants. In summary, it can be said that all restaurants offer both traditional and modern cuisine. A tendency to both, traditionalism and modernisation, could be observed in the menus, whereby the share of (possibly) traditional dishes strongly predominates.

Almost all restaurant owners seemed to be in favour of an increased local food production, and mostly were very proud of their traditional dishes. It seems as if this is still an important aspect for most people. Also, the tourist interviews show that there is a large potential demand for more local food on the island. These results indicate a general positive attitude and willingness towards an increased use of local ingredients and also a general curiosity and interest in tasting traditional dishes. Therefore, economically promising potential may lie in marketing locality and traditionality of the served dishes to attract more tourists. Apart from that, of course there will always be dishes offered that are demanded by tourists with other, more western food preferences. Whether these preferences can be covered by regional sources remains unclear.

However, the current legal structure on the island plays an important role regarding the obstacles and possibilities of increasing the use of local food and its variety on the island. Generally the legal structure, including the EU subsidy system, seems to counteract diverse local food production and sales. People who have been integrated on the island for a long time use unofficial ways, mostly within their immediate social network, which they obtained throughout the years. Finding solutions like these in the face of legal constraints is much more difficult for people who have not been based on the island for a long period of time.

The legal circumstances not only prevent a promotion of local food production, they also support and push illegal solutions for collaboration. Therefore, you will find a high tolerance for these solutions within an exclusive group of citizens on the island. As long as tolerance towards illegal forms of collaboration and a structure that pushed these forms exist, overall legal cooperation between farmers and restaurants in order to increase local food production on the island is prevented and the conventional structure is strengthened. In this way, equal rights for the island's society as a whole are prevented and individual strategies get supported.

Regarding the potential implementation of a platform for more cooperation, it is recommended to precisely consider different target groups and their social capital. Regarding the controversial culture of solidarity and distrust, it would be necessary to analyse which third party would fit best to manage and establish this cooperation platform. Therefore, physical elements should be explored as part of establishing a new cooperation structure on the island, such as markets and personal networking.

4.4.2. Potential of marketing local and traditional food

For a theoretic background of Samothraki's intervention potential, I recommend the paper of Petridis and Huber from 2017. In general, proposed strategies investigated in **chapter 2.2.3** are of course also applicable here in the context of the island.

As already explained in the introduction, local food production comes along with many social, economical and environmental advantages. On the island of Samothraki, visited by a considerable number of tourists every year, locally produced foods and products, especially from the omnipresent goat and sheep, still have great potential. [Schwaiger, 2017] In *Chora* there is a shop, selling souvenirs for tourists, which concentrated on the topic of the goats (as they are kind of an attraction to many tourists). T-Shirts and other items with funny goat prints can be bought, as well as soaps and cosmetics made from goat's milk. [own observations] This may not be a classic example of today's use of traditional local food systems, but it is an interesting concept to use existing resources economically in a responsible way. Sustainable creative marketing strategies could of course also be applied to the sale of food products, especially those that are available in larger quantities anyway, such as olives or goat and sheep products, especially since the tourists' demand for local products definitely seems to exist.

Tourists on the island value these products as well as good quality and are willing to spend more money on qualitative local products. For example, premium quality (handpicked) olive oil can be sold for a much better price than normal olive oil. [Interviewee 11]

The arising problem here is that such terms of quality and traditionality are often used in the marketing of highly mechanised products to create images of an artisanal world. The prominence of extra virgin olive oil worldwide is a good example of a successful marketing strategy, with all its attributed positive health outcomes and the image of an authentic, natural lifestyle. Though, techniques of processing olive oil nowadays are mostly highly mechanised, and many industrial mass-producers make use of the marketing effect of terms like traditional or artisanal. Small-scale producers, who make their unique and high-class olive oil therefore struggle in terms of marketing, competing with and distinguishing from mass-produced, cheaper olive oil. [Meneley, 2007] Instead of relying solely on such marketing terms, products could convince through their quality and personal touch. Regional markets, where handmade products are offered, an establishment of an agrotouristic sector or the branding of regional, probably also organic products would certainly be a welcome attraction for tourists. [Huber 2016; own interviews]

Traditional knowledge, which may seem uninteresting and backward to younger people, could be made interesting again with different notations and reinterpretations. With the arguments of sustainability, food sovereignty, job opportunities or health considerations, much of the old knowledge could be made attractive again. Strategies that rely on such methods of reframing should be strongly supported. This applies to both local people and tourists. Knowledge on traditional and healthy cooking or the gathering of wild plants could be used for workshops for interested people. Overall, it is important that the observed trend of a recently growing interest in local products and traditional knowledge is maintained and strongly supported.

4.4.3. Limitations

Exploring the field of legal constraints among the restaurant owners opened up new perspectives, but also included many contradictions. A more profound evaluation of legal issues was not possible during the research period. For further research, it is recommended to take a deeper look into the legal issues concerning local food production and sales and the connection with EU rules. Since the used ingredients varied partly between restaurants, a broader and more detailed data collection of those ingredients and their origins is recommended. Having a closer look at the culture of *méze* would be very interesting too, as many of the locals mentioned that some restaurants specialised on *méze* still cook in a very traditional way.

An updated nutritional evaluation of the locals' food habits would be recommended, especially including ingredients commonly mentioned in the traditional cookbook, such as rice or particular wild greens, to make a statement on the current use of wild greens, which would be a very interesting topic in any case. Also modern foods should be included in the questionnaire, to investigate for example the consumption of softdrinks, commercial sweets or beef meat.

Furthermore, a precise translation of the missing ingredients mentioned in the cookbook of Anna Martezou would be recommended, as some of the terms were only given in local dialect and it was not possible to have all of them translated clearly in the course of this work.

It would also be important to record traditional knowledge in detail. Other sources than Anna Martezou's book would be very helpful and interesting, as one single author can never display an objective description on something complex like a population's food culture. Cooking techniques, recipes and knowledge about ingredients and nutrition should definitely be written down or recorded with the help of other media to avoid a loss of this knowledge, as it probably will take some more time until the interest in this knowledge will fully return. I hope that this work was able to do its part to record some of this knowledge, as long as it still exists.

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6. Appendices

6.1. Appendix 1: Ingredients as stated in Anna Martezou (2005)

Grain products

Name	Local name	Translation
Trahanás glykós	<i>Ta-ahanós</i>	Sweet <i>trahanás</i> (see appendix 2)
Trahanás xinós	<i>Xnouta-ahanós</i>	Sour <i>trahanás</i>
Psiroúki	<i>Psi-ouk(i)</i>	Small flour crumbs with water and salt, prepared immediately before serving
Chylopítes	<i>Floumaria or Mat's</i>	Small pasta, square or rectangular shaped
Makarónes	<i>Makaónis</i>	Pasta
-	<i>Cous-Cous</i>	Small pearl-like pasta (not to confound with the middle-eastern couscous)
Katsamák	<i>Koutsamák(i)</i>	Polenta

Legumes

Name	Local name	Translation
Revýthia	<i>Livíthia</i>	Chickpeas
Koukiá	<i>K-kiá</i>	Broad beans
Fasólia	<i>Fasóulis</i>	Beans
Aspres	<i>Aspi-is</i>	White ¹⁶
Pardalés	<i>Bardalés,</i>	Dappled
-	<i>Róuskis (aspres-roz)</i>	White-pink
-	<i>Katzoui-idis</i>	Variety of fine, slightly curly green beans
Asprómavres	<i>Hanoumòdis,</i>	
	<i>Róuskis (asprómavres)</i>	Black and white
GíANTES	<i>Papoùsis</i>	Giant beans
Barmpoúnia	<i>Kókk'nis</i>	Borlotto beans
Ampelofásoula	<i>Yiftofâsla</i>	Green string beans
-	<i>Amirikàn'ka</i>	
Mávres	<i>Kats-vilòdis</i>	Black

Wild greens (*Chórta*)

Crops for raw salads (*Hourtaria*)

Name	Local name	Translation
Kafkalíthres	<i>Kafkalidis</i>	Mediterranean hartwort (<i>Tordylium apulum</i>) ¹⁷
Sélina	<i>Sélina</i>	Celery
Koufosélina	<i>Kfouséelina</i>	Wild celery
Kárdamo	<i>Kardamida</i>	(Garden) cress
Xiníthra	<i>Xnida</i>	Bermuda buttercup (<i>Oxalis pes-caprae</i>)
Glistrída	<i>Ti-iflida</i>	Purslane
Vlastária Koukión	<i>Koukniés</i>	Sprouts of broad beans

¹⁶ All color descriptions (right-aligned) relate to color of the ingredient named before (left-aligned), e.g. "white beans".

¹⁷ Latin names are given in the case of probably unclear specifications.

Sprouts (*Vlastaria*)

Name	Local name	Translation
Avorniés	<i>Vourliés</i>	Black bryony (<i>Tamus communis</i>)
Sparággia	<i>Sfa-àgia</i>	Asparagus
-	<i>Psiakoukólis</i>	
Vroúves	<i>Lapsànis</i>	Mediterranean mustard (<i>Hirschfeldia incana</i>)
Stífnos	<i>Mavou-ouvoutànīs</i>	Black nightshade (<i>Solanum nigrum</i>)
Arkoudóvatos	<i>Zimlakiés</i>	Mediterranean smilax (<i>Smilax aspera</i>)
Vlíta	<i>Vlíta</i>	Purple Amaranth (<i>Amarantus blitum</i>)
Gyalisterá vlíta	<i>Gyalistouvlítāa</i>	Other type of Amaranth
Koukdovlástara	<i>Koukdovlástāa</i>	

Crops for bitter salads

Name	Local name	Translation
Taraxákos	<i>Ps'iakoradíkia</i>	Dandelion
-	<i>Ps'iakoukódīs</i>	Probably ¹⁸ : other species of (bitter) dandelion

Crops for "sweet" salads

Name	Local name	Translation
Zochoi í Galatsída	<i>Zóch'</i>	Sow thistle (<i>Sonchus oleraceus</i>)
Paparoúnes	<i>Koukliés</i>	Poppy leaves
Lápathou	<i>Lápatou</i>	Bitter dock (<i>Rumex obtusifolius</i>)
Agriokaróta í Agriomaintanó	<i>Vasil'kária</i>	Wild carrot or wild parsley
Kafkalíthres	<i>Kafkalidis</i>	Mediterranean hartwort (<i>Tordylium apulum</i>)
Agriorepanákia	<i>I-ipanídis</i>	Wild radish
Spanáki ágrio	<i>Spanák'</i>	Wild spinach
Voúglossos	<i>Voudógloussous</i>	Borage
Glistrída	<i>Ti-iflída</i>	Purslane
Molócha	<i>Milócha</i>	Mallow
Ftéri	<i>Ftér'</i>	Fern
Pentánevro	<i>Pintánivouou</i> <i>Angidógloussous</i> <i>Glykukóllis</i> <i>Glykouradíkia</i>	Plantain
Stavrángathos	<i>Stavángathous</i>	Thistle

Mushrooms (*Manitaria*)

Name	Local name	Translation
-	<i>Aftítsia</i>	Species of <i>Pleurotus</i>
-	<i>Glystí-itis</i>	Big sheath mushroom (<i>Volvopluteus gloiocephalus</i>)
-	<i>Daachlín'</i>	Probably: <i>Macrolepiota procera</i> var. <i>procera</i>

¹⁸ "Probably" is written at those translation which could not be clearly identified by the locals.

Medical/aromatic plants

Name	Local name	Translation
Agriáda	<i>Agirgiá</i>	Bermuda grass
Thymári	<i>Thí-im</i>	Thyme
Dáfni	<i>Vágia</i>	Laurel
Dyósmos	<i>Dgiásmous</i>	Spearmint (<i>Mentha spicata</i>)
Ménta	<i>Flaskón'</i>	Peppermint
Faskómilo	<i>Fouskoumliá</i>	Sage
Rígani	<i>'Igan'</i>	Oregano
Málathros	<i>Málathouous</i>	Fennel (<i>Foeniculum vulgare</i>)
Kalamíthria	<i>Kalamíthirgia</i>	Lesser calamint (<i>Calamintha nepeta</i>)
Spathóchorto	<i>Balsamóchourta-ou kai Gourgougián's</i>	St. John's wort
Matzourána	<i>Matziou-ána</i>	Marjoram
Drakontiá	<i>Aakoudiá</i>	Italian arum (<i>Arum italicum</i>) or dragon arum (<i>Dracunculus Vulgaris</i>)
Pentánevro	<i>Pintánivouou</i>	Plantain
Nychtolouloudo	<i>Anychtolouloudia</i>	Probably: Common evening-primrose (<i>Oenothera biennis</i>)
Basilikós	<i>Basil'kós</i>	Basil
Amparórizia	<i>Dintrisák</i>	Geranium
Mellisóchorto	<i>Milsoúd</i>	Balm
Flómos	<i>Flómous</i>	Mullein
Ladaniá	<i>Chamokíssa-ou</i>	Pink rock-rose (<i>Cistus</i>)
Dontóchorto	<i>Dimounariá Daimonaréa tou Vyzantinón</i>	
Krítamo	<i>K'í-itamo</i>	Rock samphire (<i>Crithmum maritimum</i>)
Skourpídia	<i>Skourpídia</i>	Rustyback (<i>Ceterach officinarum</i>)
Perdikáki	<i>Pirdikoúd</i>	Spreading pellitory (<i>Parietaria judaica</i>)

Fruit

Name	Local name	Translation
Korómila	<i>Tzan'-a gada-outzan'a</i>	Cherry plum (<i>prunus cerasifera</i>)
Damáskina	<i>Damás'na Gadár Tzakát'ka Skoupilít'ka Aspou-oudamás'na Pragoústia</i>	Plum
Kerásia	<i>Ki-ásia</i>	Cherry
mávra	<i>máva-a</i>	Black
kókkina	<i>kók'na</i>	Red
Sklavokérasa	<i>Sklavok'i-asa</i>	
Petrokérasa	<i>Pitou-ouki-asa</i>	Whitehearted (<i>Prunus avium</i>)
Výssina	<i>Vís'na</i>	Sour cherry

Móúra	Askámnia	Mulberry
áspra	áspa-a	White
mávra	máva-a	Black
kókkina	kók'na	Red
Veríkoka	Tzirtziloúdis	Apricot
Kaisia	Kaisia	Apricot (<i>Prunus armeniaca</i>)
Míla	Míla	Apple
Firikia	-	Variety of small rare apples
Xinómila	X'nómla Mpouliftá Patóm'la	Green, sour apples
Achládia	-	Pears
	Apídia Koukknánda X'ápda Cháapda Magiánda Vas'lapídis Chésses	Small local pears Red pears
Kontoules	Kountoulis	Small, rare pears
Krýstalla	Kou-oustália	Greek variety of pears
Sýka	-	Figs
Ágria Sýka	Agirgiosk' Ournoi Aspó-os'ka Mavó-os'ka Apoustouliátka Galaná-is Mutil'niá Pitsós'ka Matós'ka	Wild figs (<i>Ficus carica</i>) White figs Black figs Early, big figs Figs with red, juicy flesh
Karýdia	Ka-ídia	Walnut
Stafýlia	-	Grapes
mávra	máva-a	Black
áspra	áspa-a	White
mávra chodróroga	Agoúmastos	Ancient variety of black grapes (<i>Vitis vinifera</i>)
Soúrvala	Soúrvala	Sorb tree (<i>Sorbus Domestica</i>)
próima	pó-oma	Early
ópsima	'ops'ma	Late
Kástana	-	Chestnut
Kydónia	K'dónia	Quince
próima	pó-oma	Early
ópsima	'ops'ma	Late
Moúsmoula	Misp'la	Medlar
Ródia	'Odia	Pomegranate
Eliés Liés	Makou-ouliés Ada-amitianés	Olives

Wild fruit

Name	Local name	Translation
Vatómouira	<i>Aváts'ná</i>	Blackberry
Agriofystíkiá	<i>Koúkda</i>	Wild pistaccio
Koúmara	<i>Koúma-a</i>	Fruits of strawberry tree
Loútska	<i>Loútska</i>	Barberry (<i>Berberis cretica</i>)
Poúrna	<i>Poúrna</i>	Wild plums (<i>Prunus insititia</i>)
Agriotriantáfylla	<i>Agirgioutrantáfla</i>	Wild roses
Agriostáfylla	<i>Agirgiádis</i>	Wild grapes

Fish and seafood

Name	Local name	Translation
Achinoí	<i>Ach'n'</i>	Sea urchin (<i>Paracentrotus lividus</i>)
Sardéles	<i>Sardélis</i>	Sardines (<i>Sardina pilchardus</i>)
Zargánes	<i>Zargánis</i>	Garfish (<i>Belone belone</i>)
Marídes	<i>Zma-idis</i>	Picarel (<i>Spicara maris</i>)
Gópes	<i>Goúpis</i>	Bogue (<i>Boops boops</i>)
Sárpes	<i>Sárpis</i>	Dreamfish (<i>Sarpa salpa</i>)
Kolioí	<i>Koulioí</i>	Mackerel
Mélaines	<i>Mél'nis</i>	Blotched picarel
Safrídiá	<i>Savi-idiá</i>	Horse mackerel (<i>Trachurus picturatus</i>)
Chtapódia	<i>Achtapódia</i>	Octopus
Kalamária	-	Squid (<i>Loligo vulgaris</i>)
Soupiés	<i>Spiés</i>	Cuttlefish (<i>Sepia officinalis</i>)
Pofói	<i>Oufói</i>	Grouper (<i>Epinephelus malabaricus</i>)
Chélia Achélia	-	Eel (<i>Anguilla anguilla</i>)
Kavóúria	<i>Kavouír'</i>	Crabs (mainly <i>Cancer pagurus</i>)
Spároi	<i>Spár'</i>	Bream (<i>Diplodus annularis</i>)
Melanoúria	<i>Milanoúria</i>	Saddled seabream (<i>Oblada melanura</i>)
Kefália	<i>Kifália</i>	Mullet (<i>Mugil cephalus</i>)
Glósses	<i>Glóssis</i>	Sole (<i>Solea solea</i>)
Koutosmoúres	<i>Ktsoumouís</i>	Red mullet (<i>Mullus surmuletus</i>)
Barmpoúnia	-	Goatfish (<i>Mullus barbatus</i>)
Skulópsara	<i>Sk'lópsaa</i>	Spurdog
Vátos	-	Thorn black ray (<i>Raja asterias</i>)
Seláchia	-	Ray
Trugónes	-	Stingray (<i>Raja clavata</i>)
Kómpiza	-	Another species of ray
Mpakaliáros	<i>Mpakal'áous</i>	Salt cod (<i>Merluccius merluccius</i>)
Galéos	-	Tope shark (<i>Galeorhinus galeus</i>)
Astakós	-	Lobster (<i>Homarus gammarus</i>)
Atherína	-	Smelt (<i>Hypomesus olidus</i>)
Gavros	-	Anchovy (<i>Engraulis encrasicolus</i>)
Garídes	<i>Gáidis</i>	Shrimps (<i>Crangon crangon</i>)
Karavídes	<i>Kaavidis</i>	Crawfish
Gámpari	-	Prawns (<i>Palaemon serratus</i>)
Lavrákia	-	Sea bass
Lithrínia	<i>Lithínia</i>	Red snapper (<i>Pagellus erythrinus</i>)
Palamídes	<i>Palamidis</i>	Bonito (<i>Sarda sarda</i>)
Pantelídes	<i>Pantili-idis</i>	Brown meagre (<i>Corvina nigra</i>)

Sargopapádes	<i>Sargoupapádis</i>	Two-banded sea bream (<i>Diplodus vulgaris</i>)
Kefaloí – niákia	-	Common grey mullet (<i>Mugil cephalus</i>)
Myxinária	-	Golden grey mullet (<i>Mugil auratus</i>)
Skorpídia	<i>Skourpídia</i>	Small red scorpionfish (<i>Scorpaena notata</i>)
Skorpiománes	<i>Skourpioumánis</i>	Large scale scorpionfish (<i>Scorpaena scrofa</i>)
Kefaládes	<i>Kifaládis</i>	Sand smelt (<i>Atherina hepsetus</i>)
Kapónia	-	Rock gurnard (<i>Trigla lineata</i>)
Chiónes, Mytákia	-	Sharpsnout seabream (<i>Diplodus puntazzo</i>)
Drákaines	<i>Da-ákinis</i>	Greater weaver (<i>Trachinus draco</i>)

Game animals

Name	Local name	Translation
Lagós	-	Hare
Pérdika	-	Partridge
Bekátses	<i>Bikátsis</i>	Woodcock
Fáses	<i>Fásis</i>	Cushat dove
Tsíchles	<i>Tsíchlis</i>	Thrush
Mavropládes	<i>Maovououpládis</i>	Common starling
Trygónia	<i>Ty-ígónia</i>	European turtle dove
Pápies	<i>Pápgis</i>	Duck
Chínes	<i>Chínis</i>	Goose

Poultry

Name	Local name	Translation
Kóta	<i>Pláda</i>	Chicken
Peteinós	<i>Pitnós</i>	Cock

6.2. Appendix 2: Anna Martezou's recipes

Cooking (*Mageira*)

Pligouri (Kiikout) 2 glasses of wheat, grinded with a handmill 2 glasses of water 1 glass of milk or 1 little cup of oil <i>Salt</i> ¹⁹	Heat the water and add some salt. When the water boils, add <i>krikout</i> (= wheat, assumption of the author) in according amount and leave it on the stove for about 20 minutes. A little while before taking it off the stove, add the milk or oil.
Flomaria 3 kg wheat flour 1,5 litres of milk 3 eggs	Sieve the flour and make a hole in the middle of the pile of flour. Put the milk and the mixed eggs into the hole. Knead into a firm dough. Then cover the dough with a cloth for one hour. Cut small pieces of the dough and make small balls. Roll out each ball slightly with the dough roller. Leave them on clean cloths to let the moisture out, but do not let them dry out either. Before they dry out, cut them into slices and then crosswise into very small strips. Leave them on cloths in a closed room for 3-4 hours to dry. If water is used instead of eggs and milk it is also a suitable fasting dish. Cooking: Heat the water with salt. When it boils, add the <i>flomaria</i>. Before removing the pot from the fire, add a glass of milk. In the same way one can cook the <i>flomaria</i> in soup, also with a little milk. If the <i>flomaria</i> has been prepared for fasting, grated nuts or sesame can be added before the pot is taken off the fire.
Makarones tis Tyrinis Flomaria 1 spoon of butter <i>Kefalotiri</i> (cheese), grinded Spearmint <i>Salt</i>	Heat the water and salt it. Add flomaria and butter. When the <i>makarones</i> are done, and the water evaporated, add cheese and spearmint.

¹⁹ Ingredients, which occur in the recipes' texts, but were not given on the ingredient lists of the corresponding recipe, were added to the ingredient lists and marked in Green.

Psirouki A handfull of durum wheat 1/2 litre milk Salt Spearmint	Sprinkle the wheat flour with a little water and stir until little clumps form. Cook these clumps in salted water for about 30 minutes. Then add the milk and heat until it boils slightly.
Kous-kous Flour <i>Krikoút</i> Water	Put the flour in a wooden tub and mingle it with the <i>pligouri</i> (=krikout; note from the author of this thesis). Dip a branch of basil in water and sprinkle the flour mixture with this water. Make a firm dough and grind it to clumps. When the clumps are too big, sieve them. To finish, put the <i>kous-kous</i> on clean cloths and let them dry. Note: <i>flomária</i> , <i>krikoút</i> and <i>kous-kous</i> can also be cooked in meat soup. Before taking it off the heat, add milk.
Koutsamak´ 200 g corn flour 2 spoons of olive oil Salt 2 spoons of honey	Heat the salted water. When it boils, add the corn flour. Make a hole in the centre of the dough and slowly add oil and honey. Stir for some minutes.
Trahanás 5 kg wheat flour, coarsely grounded 4 kg milk	Put the milk in a pot and slowly boil it at low temperature until the milk boils up. Then add the flour and cook for another 30 minutes. Stir regularly, so it does not burn. Take it off the heat, cover it with a clean cloth and let it rest for half an hour. Then put the dough in a wooden tub. Grind the dough with your hands and sieve the clumps. Finally, let them dry on clean cloths.
Einos Trahanás Flour Flour from hard wheat Yeast 2-3 hot peppers Water	Grind the peppers to powder. Knead the yeast with the flour and let the dough rest for three days until it gets sour. Then knead it again, add pepper ad libitum. Cut the dough in small pieces and let them dry. When they dried, grind them with your hands first, and then sieve them roughly. Finally, leave them until they are dry.
Soupa	Cook a piece of goat or chicken meat, salt the water. Finally, take the meat soup and add <i>trahanás</i> , rice or <i>pligouri</i> .
Tahini 1 teacup sesame 1,5 teacups of water 1 teacup of sugar	Roast the sesame in a pan, grind it in a mortar. Cook water with sugar until it turns into a syrup. Then add sesame and stir. In the end, it should look like honey and can be eaten on bread.

Vegetarian recipes

Fasolakia 1 kg green beans 1 big onion, minced Tomatoes 1 teacup of oil Salt Pepper	Clean the green beans with a knife and wash them. After drying, put them in a pot with the onions, grinded tomato, pepper and oil. Let it cook slightly. To stir, move the whole pot four to five times. Then, add warm water and boil until the water has evaporated. Shortly before it is done, add salt. In the past, people ate this dish with zucchini. Slice the zucchini in small pieces and put it on top of the green beans. After cooking it quickly, add salt and serve immediately.
Patates Giachni 1/2 kg potatoes 1 medium sized onion 2 garlic cloves 1,5 teacups of oil 3 ripe tomatoes 1 bay leave 1 spoon of sugar	Cut the onion in small pieces and roast it in oil. Cut the potatoes and add them, let them sear for a little while. Add a glass of water and cook until the potatoes are done. If necessary, add some more water. Heat until the water has evaporated, so that in the end only potatoes with oil are left.
Gemista 1 kg bell peppers or tomatoes 1/2 kg rice or <i>krikout</i> 1 coffee-cup of olive oil 2 onions Parsley Mint Basil Oregano Salt Pepper	Cut off the top of the bell peppers/tomatoes, take out (but keep) the seeds, and put salt and pepper inside the peppers/tomatoes. Preparation of the rice: cut the onions very fine and roast them in oil. Add parsley, basil, oregano, mint, salt and pepper and mingle everything, until it gets colour. Then add the rice and stir for 3 minutes, before adding half a glass of water and the seeds of the peppers/tomatoes. When the water has evaporated, stuff the peppers/tomatoes with the filling, put them on a baking tray and salt them a little. On the top of them, sprinkle some olive oil. Put a little bit of water on the tray and let it bake in the oven at 200°C.

Ntolmadakia 1 kg wine leaves 1 kg rice or <i>krikout</i> 1 onion or spring onion A bit of olive oil for frying 1 coffee-cup of olive oil for the <i>Dolmades</i> Fennel green Mint Salt Pepper Lemon juice or unripe mirabelle	Clean the wine leaves and cook them for ten minutes in boiling water. To prepare the rice: Roast the onions in oil and add fennel green and mint, both finely chopped. Then add rice, salt and pepper and stir everything for five minutes. Add a glass of water. When it has evaporated, take the filling off the heat and let it cool down. Take a leaf, put in a tablespoon of the rice mixture and roll it. After doing so with all the leaves, put them in a pot next to each other and pour the olive oil, together with salt, over them. Cover it with a plate and pour two glasses of water in, so it can cook. When they are finished, take them out and add a little lemon juice (except one already added mirabelle while cooking). If wanted, one can add minced meat to the rice.
Melitzanes Imam 1 kg aubergines 1/2 kg tomatoes 2 onions 2 heads of garlic Salt Pepper Olive oil	Wash the aubergines and carve them in four parts, without separating them. Cut the onions and garlic thick, and put them in the incisions. Heat the olive oil in a pot, put in the aubergines and let them brown from all sides. Grind the tomatoes and add them together with a little salt, pepper and water to the aubergines. Cook slowly. If necessary, add a little more warm water.
Bámies laderés 1/2 kg fresh okra 4 big ripe tomatoes 1/2 teacup of oil 1 big onion, minced Salt Pepper A bit of vinegar	Clean the okra with a knife, remove the heads and wash them. Dry them in a sieve. Put them in a pot and add oil, grinded tomato, pepper and vinegar. Move the whole pot four to five times instead of stirring with a spoon. Add a big cup of water and let it cook at low temperature for 20 to 25 minutes. Before taking it off the heat, add some salt.

Tourlou 200 g potatoes 200 g aubergines 200 g zucchini 200 g green beans 200 g okra Tomatoes Zucchini-blossoms A bit of <i>Vlita</i> 3 onions 100 g of oil Salt 1 hot pepper	Cut the vegetables in medium sized chunks and put them in a pot. Cut the onion in small pieces, grind the tomatoes and add both to the pot, together with oil and pepper. After covering the pot, move the pot four to five times, so everything is mingled. Cook at low temperature about one hour and without adding water. Cook until the juice of the vegetables has evaporated. Salt a little before taking the pot off the heat.
Kolokytholoulouda Gemista 25 zucchini blossoms 2 teacups of rice 1 minced onion 2 spoons of fennel green and mint, finely chopped Salt Pepper 1/2 cup of oil for the filling + 1/2 cup of oil for baking	Open the blossoms and remove the green stems. Roast the onions and add the remaining ingredients until it turns into a homogenous mass. Put the filling into the blossoms with a little spoon, fill them up half way. Put them in a low pot, add oil and cook them.
Kolokytholoulouda Tiganita Zucchini-blossoms Flour Milk Eggs Grinded cheese Mint Salt Oil	Stir flour, milk, mixed eggs, cheese, mint and a little salt in a bowl. Dip the blossoms into the dough and fry them in a pan with a lot of oil, until they get some color. Turn them around to brown from all sides.
Fasolia Aspra Dried beans, soaked in water for a whole night 1 onion A bit of wild mint & <i>Kalamithria</i> Mediterranean hartwort Salt 1 red hot pepper Oil	Put the beans in a pot with water and bring it to boil. Let them cool down, wash them and put them in fresh water. Cut the onion and add it to the pot, together with oil and the pepper, let it cook all together. In the end, add some salt, mint, <i>Kalamithria</i> and Mediterranean hartwort. In former times, it was common to add small pieces of lard.

Fasolia Xera Barmpounia 1 kg red dry borlotto beans with skin 1 onion 1 cup of oil	Put the beans in water the evening before. The next morning, wash them and cook them in a lot of water. When they are done, take them out, but keep the water. Cut the onions and roast them in oil, add the beans. Put all the ingredients in a pot and heat them, until they have absorbed all the water (some of the bean-water from before may have been added before; note from the author). Often some meat is added, mostly pork meat. This meat also should rest in water over night, so that it loses some of its saltiness. Clean the meat, cut it in pieces and roast it. When the meat is cooked, skim the occurring foam. In the end, add the meat to the beans. Note: <i>Fasolia</i>, just like lentils, are also prepared on days when no oil should be eaten (fast days). After cooking, a salad is made only with vinegar and without oil. One can add onions and tomatoes, <i>kafkalithres</i> in winter or wild mint in summer. If it is no fasting time, one can also add pork meat. These dried beans are a very common dish of Samothraki.
Revithia 1/2 kg chickpeas 3 tomatoes 1 onion 1/2 teacup of olive oil Salt Pepper Cumin	Soak the chickpeas in water over night with rough salt. On the next day, wash them and roast them in a pot with onions and oil. Add water and cook for about half an hour. Add tomatoes, salt, pepper and, when desired, also cumin. Keep it cooking for another 15 minutes and serve hot.
Koukia 1 kg dried broad beans 300 g olive oil 1 onion Oregano Salt	Soak the beans in water over night until the water is absorbed by the beans and they got bigger. On the next day, remove the beans' little black part with a knife. Cook the beans in oil with salt, onion and two cups of water. When the beans are done and the juice got a little thicker, add oregano. To prepare <i>fava</i>, remove the beans' skin and stir well, until they melt.

Chórta - wild greens

Salata me Chórta pikra Bitter <i>Chórta</i>: <i>Ps'iakoradíkia</i> (Dandelion) <i>Ps'iakoukódis</i> (?) Salt Oil Vinegar or lemon juice	Clean the <i>chórta</i> with a lot of water, remove yellow leaves, soil and other dirt. Heat a pot full of water with one teaspoon of salt. When the water boils, add the <i>chórta</i> and let it cook for a while. Serve warm, with a little oil. In former times, vinegar was added, because lemon was not constantly available. If it was available, it was rather used for ill people.
Vlíta 1 kg <i>Vlíta</i> 1 medium-sized onion Salt Oil Lemon juice	Put the <i>vlíta</i> in boiling water and squeeze it until all water is gone. Add salt, oil and lemon juice. Alternatively, sweat the onions and add the <i>vlíta</i>, stir for 15 minutes. With that mixture, one can make very good <i>pita</i> too. To retain the green colour of the <i>chórta</i>, put a bit of salt in the cooking water.
Chórta pilafi <i>Chórta</i> 1 large onion Oil Rice	In former times, rice with <i>chórta</i> or spinach was a very common dish. Cut a large onion, roast it with a little oil and add the cooked <i>chórta</i> (without water) and the rice. Add some of the water in which the <i>chórta</i> has been cooked, and cook until the rice is ready.
Pita me Chórta <i>Chórta</i> A bit of rice 1 onion Salt Pepper Oil Dough: Oil Salt Water Flour	Cook the <i>chórta</i>. When it is done, add some rice. Put some oil in a pan, according to the amount of <i>chórta</i>. Cut the onion and roast it with the <i>chórta</i>, salt and pepper. Roll out two to three layers of dough (out of oil, salt, water and flour) and put the <i>chórta</i> in between. In the end, pour some of the water in which the <i>chórta</i> has been cooked, over the pita.

Manitaria Stifado 1 kg mushrooms 4 big onions 1 Tomato Hot peppers or pepper Salt 1 teacup of oil	Clean the onions and cut them in thin slices. Clean also the mushrooms. Roast the onions in a pan at low temperature, without oil. Then add half of the oil and keep roasting. Put the mushrooms in a pot and roast them with the remaining oil. Add the onions and the remaining ingredients. Cover with a little water and let cook until the water has evaporated.
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Meat recipes

Katsiki í arni gemisto 1 goatling or lamb 2 cups of rice Fennel green Mint Spring onion 1 liver Salt Pepper Butter	Salt and pepper the goatling/lamb. Take the liver and the lung, but not the spleen of the animal, and cook it until it is soft. Cook the rice separately, so the liver does not colour the rice black. Cut the liver in small pieces. Melt the butter in a small pot and roast the onions, fennel green and mint. Add the liver and the rice and fry it all together. Add a bit of warm water, some more butter and let cook for a while. When it is finished, stuff the goatling/lamb with the filling and stitch it up well. Brush it with butter and let it bake in the oven slowly for at least three to four hours.
Proveio í Katsikisio me Fasolakia 1,5 kg lamb or goat 1,5 kg green beans 1 tomato 2 onions Salt Pepper Butter or olive oil	Wash the beans and pour the water away. Wash the meat and cut it in small chunks. Fry it with a bit of butter or olive oil and add the chopped onions until they are soft. Add tomato, salt and pepper and let it cook until everything is soft. Add two glasses of water and the beans, and let cook.

Gorgovrasti Gida me Pilafi Goat meat or meat from other "rough" animals (buck, ram, ewe) 6 glasses of soup 1/2 kg rice 1/2 kg milk Salt <i>Koukoudiá</i>	Put the meat in a pot and cover it with water. When it boils, remove the foam and add some salt. When the meat is done, put it on a baking tray and cover it with <i>koukoudiá</i> (unclear; note from the author). To cook the rice, use the water in which the meat has been cooked, after sieving and measuring it. Stir the rice constantly, so it does not burn. Shortly before it is done, add the milk and bring it to a boil. Take off the heat and cover it with a cloth until the rice is finished.
Gida Stifado 1 kg goat meat (from very thin goats) 4 onions Salt Pepper Bay leaves	Cut the meat into portions and clean it. Clean the onions too and cut them in semicircular slices. Roast the onion together with the meat. Put all ingredients in a pot with some water until it boils.
Patsas Head, belly, feet and intestines of an animal Salt	Burn off remaining hair of the feet and the head in the fire, also use a knife. Clean the belly and the intestines very well. Turn them inside out with the help of a wooden bar to wash the inside. Put all together in a pot with water and salt and let cook at low heat for a longer while. The old Samothrakians used to let it cook over night over charcoal.
Choirino me Damaskina 1 kg pork meat 1 dried onion 10-15 dried plums Oil Salt A bit of pepper 2 bay leaves 1/2 glass of white wine	Cut the meat in small pieces and add salt and pepper. Sweat the onion in oil and add the meat. Add white wine and cook slowly at low temperature. Add the plums and keep cooking.

Choirino me Kydoni 1 kg pork meat 1300 g quinces, cleaned and washed and cut in thick slices 200 g butter 1-1,5 spoons of sugar syrup Water Pepper Salt Cinnamon	Put half the butter in a pot and roast the quinces at medium heat. Cover them with water and leave the pot at low temperature, until the quinces get soft. Cut the meat in little pieces and roast it in another pot with the remaining butter. When the meat gets some color, add salt and pepper and just as much water to cover the meat. When the meat is done, add quinces, cinnamon and sugar. Cover the pot and let cook at low temperature until the juice gets a little thicker.
Pichti 1 pork head Pork feet Red hot peppers Salt 1/3 glass of vinegar Garlic	Burn off remaining hair of the feet and the head in the fire, and clean them with hot water. Cook them for two to three hours, remove foam if necessary. Take the meat off the head and cut it into small pieces. Cook it in another pot, together with hot peppers, garlic, salt and vinegar. In the end, put the mixture in clay pots and freeze them.
Kavourmas Pork meat Salt Pepper Oregano Pork fat	Cut the meat in small pieces, add a lot of salt and let it rest a whole night. The next day, put the meat in a kettle and add plenty of fat, salt and oregano. Let it cook and stir permanently to prevent it from burning. When it is still warm, fill it in little clay cups and cover it with fat. In former times, the island's pigs used to be very fat. Therefore, their fat was stored and used for cooking or as bread spread, for children with a little sugar or salt. <i>Kavourmas with blenta:</i> Put 4 spoons of <i>kavourmas</i> on a plate. Mix flour and water to make a firm dough, and add the <i>kavourmas</i> when the fat has melted. After baking the dough, it can be served on a plate.

Loukanika Minced pork meat Vinegar Salt Oregano Black pepper Cumin Bowel	Salt the minced meat well and add plenty of pepper, cumin, oregano and vinegar. Leave the intestine in vinegar to clean it, then stuff it with the meat filling with the help of a machine. Hang the sausages up in the chimney and burn straw, so that the sausages are smoked for a while. Let them cool down in the shadow.
(Choirino)²⁰ Pork fat Salt	After slaughtering a pig, cut its fat into stripes, which should be three to four fingers thick, and carve them with a knife. Add rough salt. Store the fat stripes in wooden boxes in a cool place. After some days, the stripes can be consumed either raw or grilled.
(Entera) Entrails (bowel, lung, sweetbread etc.) Vinegar Pork fat	Clean the bowel very well and put it in vinegar, also clean the lung, sweetbread and the rest. Cut it in small pieces and put it in a kettle. Stir with a wooden spoon. Add some pork fat and no water. When everything has roasted well, take the kettle off the heat and let it cool down. Afterwards, put it in small clay pots or glasses. It can be eaten on bread or used as a take away food, for example when working on the field.
Entera me Kremmydia 3 onions <i>Entera</i> (see recipe above)	Clean the onions and put them in water. Cut them in semicircular slices and roast them at medium heat. Shortly before they get some color, add bowel ad libitum. Stir for a little while and serve immediately.
Sykotaria Liver (goat, sheep)	Cut the liver either in small pieces and roast them in a pan or make <i>kokoretsi</i> (see 4.1.1.b) The liver of big animals is used for rice with liver: Clean the liver well and cut it in small pieces. Cut onions and roast them, add liver, rice and some water. Let cook until it is done.

²⁰ Recipes in brackets were those recipes, which were not included in the recipe investigation of this work, as they are rather preserving techniques than full dishes, or are used in other recipes as an ingredient.

Lagos Stifado 1 hare 1 kg small onions 1 glass of red wine 1 spoon of sugar 3 bay leaves 1 spoon of tomato purée 3 garlic cloves 2 teacups of olive oil 5-6 grains of allspice	Cut the hare in portions and wash it well. Put one cup of oil in a pot and roast the meat. Add the other ingredients (except onions) and let it cook. In the meantime, let the onions soak in a pot with water. In another pan, heat the other cup of oil and roast the onions for a while. When the meat is cooked well, add the onions and let it cook all together until all the water has evaporated.
Bekatses pilafi 5-6 small woodcocks 1,5 teacups of rice 4 tablespoons of butter 2 bay leaves 1 spoon of sugar Salt Pepper	Clean the birds. Warm two spoons of butter and roast the birds. Then put them in a pot together with the remaining ingredients and water. Let it cook slowly for about three hours. Add rice, afterwards melt the rest of the butter and pour it over the rice.
Saligkaria Stifado Snails 4-5 big onions Chive Fennel Mediterranean hartwort Olive oil for frying Salt Pepper Laurel	Put the snails in boiling water. If they are very big, remove their house. Keep the water. Clean the onions and cut them in slices. Roast them in olive oil until they get color. Add the snails, a bit of chive, fennel, hartwort, laurel, salt and pepper. Cover the snails with the water in which they have been cooked before. Let cook at low temperature until the juice thickens.
Saligkaria pilafi 20-30 snails 1 dried onion 1 teacup of rice 3 teacups of water Olive oil Salt Pepper Vinegar	Clean the snails well with vinegar and water, and put them in a pot with boiling water. Let them cook for a little while, then take them out, but keep the water. Cut the onions and roast them in olive oil. Add the snails and roast them too. Take out the snails and add the washed rice together with the water in which the snails have been cooked before. If necessary, add some more water. Let it cook for a while. In the end, add the snails and bring it to a boil, until the rice has absorbed all the water.

Peteinos Stifado 1 rooster, about 1-1,5kg 1 kg dried onions 2 bay leaves 1 glass of white wine 2-3 grains „round pepper“ 1/2 teaspoons of salt A bit of pepper Oil	Clean the onions and cut them in thin semicircular slices. Roast them in oil and add the rooster, bay leaves and pepper. Cover it with water and let cook for about 1,5 hours. 15 minutes before taking it off the heat, add the wine.
Kotopoulo Pilafi 1 chicken 1,5 teacups of rice Hot peppers Salt Pepper 1 medium-sized onion A bit of allspice 2-3 bay leaves Oil	Wash the chicken well and cut it into small pieces. Cut the onion and roast it in hot oil, then add the chicken. Put the chicken together with the remaining ingredients in a pot and cook it until it is well done. If necessary, add some hot water.

Omelettes

Omeleta me fresko Kolokythi 2 Zucchini 2-3 eggs Salt Pepper 2 table spoons of oil	Grind the zucchini and roast them in a pan until the liquid has evaporated. Add oil and roast them until they get color. Mingle the eggs and add them to the pan. Add salt and pepper and roast the omelette from both sides.
Omeleta me Ntomata 2-3 eggs 2-3 big ripe tomatoes Salt Pepper Oil	Similar to previous recipe
Omeleta me filla kremydiou 2-3 eggs 1 bunch of <i>kroumdóflides</i> (green part of spring onion) Oil Salt Pepper 2-3 Mediterranean hartwort A bit of fennel green	Similar to previous recipe
Omeleta me Sparaggia 2-3 eggs 1 bunch of asparagus (the soft tops) A bit of oil Salt Pepper	Put oil in a pan. Clean the asparagus, wash and dry it. Roast it in the pan until it gets dry, stir regularly. Mingle the eggs and add them to the pan. Let the omelette fry from one side, then turn.
Kavourmas me Avga 3 tablespoons of <i>kavourmá</i> (see recipe <i>Kavourmás</i>) 2 eggs	Melt 3 tablespoons of <i>kavourmá</i> in a pan, add the eggs, either mingled or whole. Mix everything, and serve immediately. If desired, add the green part of spring onions.

Fish recipes

Psari Plaki 1 kg fish 3 large onions, cut into slices 3 tomatoes 3 garlic cloves 1 teacup of olive oil A bit of fennel green	Grind the tomatoes, put them in a pot together with the remaining ingredients except the fish, and let cook until the sauce thickens. Add a teacup of water. When it boils, add the fish and let cook uncovered. In that way, also anchovies and eel can be prepared. Other fishes are preferably grilled, fried or baked in the oven.
Kakavia 2 kg fish 2 large onions A bit of olive oil Salt 1 coffee-cup of sour <i>trahanás</i>	Wash and clean the fish. Put them in a pot and cover it with water. Add the <i>trahaná</i> and the cleaned, washed and incised onions, salt and oil and let cook without covering.
Chtapodi Stifado 1 octopus 5 onions 1 teacup of olive oil 1 teacup of liquid from the cooked octopus 1 glass of red wine Pepper 2 bay leaves	Clean the octopus and cook it covered at low heat, without adding water. When it is soft, take it off the heat. Keep one glass of the liquid. Clean the onions and put them in a bowl with water. Heat the oil and roast the onions until they get color. Cut the octopus in big pieces and add it to the pot. Stir a little, and add wine, a bit of water, pepper and bay leaves. Let cook at low heat until the water is gone.
Chtapodi Pilafi 1 octopus (1 kg) 2 medium-sized tomatoes 1/2 kg onions, cut in slices 1 small cup of Oregano 3 cups of water 1 cup of rice Salt Pepper Oil	Clean the octopus and cut it into pieces. Put it in a pot together with onions, oil, oregano and half a cup of water. Let cook at low heat until it is soft. When it is almost finished, add tomatoes, remaining water, rice, salt and pepper and let cook slowly.

Chtapodi me Vourlies 1/2 kg octopus 1 bunch of <i>Vourlies</i> (type of <i>Chórta</i>) 2 large onion, chopped 1/2 cup of olive oil 1/2 glass of red wine Salt Pepper	Heat the octopus and keep the arising liquid. Cut it in small pieces. Clean the <i>vourlies</i> , remove the hard part at the bottom and wash it. Put it in boiling water, bring it to a boil and take it out with a sieving spoon. Roast the onions in olive oil and add the octopus, stir regularly. Add wine and a cup of water. Cover the pot and let cook slowly for about 45 minutes. Use a fork to try if the octopus is already soft. When it is almost done, add the <i>vourlies</i> , salt and pepper. Let cook alltogether for another little while without a cover.
Kalamaria Pilafi 1 kg squid 1 teacup of <i>krikout</i> or rice 1 teacup of olive oil 1 tomato 2 medium-sized onions Salt Pepper 2 hands full of wild <i>chórta</i> , preferably wild asparagus	Wash and clean the squid well, cut them in small pieces. In a low pan, heat the oil and add the finely chopped onions. In another pan, roast the calamari. When they are done, add the onion and the <i>krikout</i> , <i>chórta</i> , rice and the remaining ingredients together with a wineglass of water and let it cook. The calamari tastes very good if <i>pligouri</i> is used instead of rice.
Soupies Pilafi 1,5 teacups of <i>krikout</i> or rice 1 kg cuttlefish 2 medium-sized onions 1 level tablespoon of sugar 1 teacup of olive oil 3 teacups of water 2 hands full of wild spinach, finely chopped Tomatoes Salt Pepper	Clean the cuttlefish and cook them until they are soft. Cut the onions finely and roast them. When they get some color, add the cuttlefish, which has been cut in small pieces before. Roast it for a little while. Add rice, <i>chórta</i> , tomatoes, water, sugar, salt and pepper and let cook at low heat. If necessary, add some more water or oil.
Pasta	Salted little fish, like anchovies.

Pites

Manti 1-2 onions A bit of olive oil Salt Pepper Oregano Cumin (optional) 1 kg minced meat (half goat, half pork) 1 teacup of rice Bones and similar from goat to make a soup Flour	Roast the onions in oil for a bit, then add the minced meat and all spices and roast for a while. Let it cool down. Cook the rice in water for a short time, squeeze to get rid of the water and add it to the meat. Prepare a dough with oil, salt, water and flour and cut it lengthwise in stripes of 8 cm. Cut each stripe in squares of 8x8 cm. Fill each square with a tablespoon of the mixture and fold the edges. Put the <i>manti</i> on an oiled baking tray and brush them with oil. Bake them at 180°C for about 15 minutes. When they are ready, put them in a clay or glass pot. While the manti are prepared, cook a soup with the remaining parts of the goat, take out the meat and dunk the manti in the soup, with a perforated spoon. <i>Manti</i> is a dish which is described often in byzantine texts and was common at that time. <i>Manti</i> is always about a filled dough, but many varieties with regional ingredients were known.
Galatopita 1 kg milk 2 slices of cheese 4 eggs A bit of mint 1 cup of flour A bit of salt Honey Butter	Grind the cheese and put it in the milk together with the flour. Stir the eggs and mingle them with the milk-flour mixture. Add mint and salt and make a soft dough. Brush some butter on a tray and put the dough on the tray. Bake it in the oven at 180°C for about one hour. After baking, put some honey over the <i>pita</i>.

Pita Tyrinis 250 g rice 1,5 glasses of water 1/2 glass of milk 4 eggs A bit of mint Salt Pepper 3 layers of dough Optional: Sugar or honey Oil <i>Mizithra</i> Flour	Put a bit of oil on a baking tray and put the first layer of dough on the tray. Heat water in a pot, and add the rice when the water is boiling. Cook the rice until it is very soft and "melts". Grind the <i>mizithra</i> and mingle it with a bit of warm water. Add milk and mix it with rice, mingled eggs and mint. Stir it and add salt and pepper. Put half of the filling on the prepared dough and cover it with another layer of dough. Keep on layering like that. On top, put the last layer of dough and coat it with a bit of oil. Cut it in pieces and bake it at 180°C for about 45 minutes. When the <i>pita</i> is done, coat it with a bit of sugar or honey.
Saragli 150 g rice 1/2 glass of milk 1/2 kg <i>mizithra</i> 4 eggs A bit of mint 5 layers of dough Honey Oil or butter Flour Salt	Prepare similar to recipe <i>Pita Tyrinis</i> , but roll the dough to little spirals and fry them in a pan with oil or butter. When it gets color, it can also be put in an oven.
Kalampokopita 2 cups of corn flour 1,5 cups of oil Water Honey	Put the flour in a pot, make a hole in the centre and add oil and just as much water to make the dough soft. Put the dough on an oiled baking tray and cut it in pieces. Bake it at 180°C for about one hour. When it is finished, coat it with honey.

Kolokythopita 1 kg yellow zucchini 1 teacup of honey 2 teacups of olive oil Salt Cinnamon Mint 1 onion 1/2 teacup of rice Flour	Peel the zucchini and cut it in large chunks. Heat the zucchini with a bit of salt at low temperature without water. When the zucchini releases some juice, add the rice. Heat oil in a pan and roast the onion until it gets a little colour, then add the zucchini and mingle it with honey, cinnamon and mint. Instead of cooking the zucchini, it can also be grinded roughly and left overnight with a bit of salt, so that it releases some juice. Press and dry it and proceed as described above. Prepare four layers of <i>pita</i> dough and put some oil on a tray. Put the first layer of dough on the tray, brush it with oil and cover it with the zucchini filling. Put the next layer of dough on top, and proceed with that technique with the next dough layers. On top, put the last layer of dough, brush it with oil and honey and slice it. Bake at 200°C.
Z'maoupatou 1 kg grinded pumpkin 240 g flour 225 g olive oil 1 spoon of salt Mint Sugar or honey	Mix flour, oil, sugar, mint, salt and pumpkin in a pot and put the homogeneous mixture on an oiled baking tray. Bake at 200°C for about 30 minutes. Cut when it is finished.

Olives, *Toursia*, *Skordalia*

Tsakistes Green hard olives Salt	Use olives which are not ripe and still green and hard. Clean them. Take a clean stone from the sea and crush the olives on a wooden plate. They should crush, but the olive's stone should not brake. Put them in fresh water for three to four days and change the water every day. They are done when they are not bitter anymore. Finally, put them in boiling water for some minutes, dry them and salt them. In that way, they can be stored for a little while in a covered glass.
Charaktes Olives, almost ripe Salt Optional: lemon, bay leaves, oregano	Use olives, which are almost ripe. Carve the olives with a knife and put them in fresh water. Leave them in water for a few days until they are not bitter anymore, change the water every day. If desired, the olives can be put in limewater for about 5-6 hours. After that, rinse them well with water and dry them. Make a brine with seawater and salt. Test the brine with the help of an egg: if the egg floats on the brine, it is salty enough. Put the olives in a glass or a clay pot and cover them with the brine. If desired, add lemon, bay leaves or oregano.
Patites Black, ripe olives Salt	Use black ripe olives. Clean them well and put them in a cloth bag with rough salt. Store the bag in a place where the water can leak out. Mingle the olives regularly. They are done when they do not loose water anymore and they look wrinkled
Toursia	All vegetables, that are not ready until October, can be pickled. In general, these vegetables are green tomatoes, bell peppers, aubergines, green beans and zucchini. The leaves of rock samphire can also be used.

Skordalia 6 garlic cloves 5 tablespoons of flour 3 teacups of water Salt 1/2 teaspoon of sugar 2 tablespoons of oil Vinegar	Mingle flour and water well, until there are no more lumps, and cook it to congeal a little, so that it smells no longer like flour. Put the dough in a bowl and add pressed garlic, mingle everything and slowly add vinegar and oil.
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Sweets & Desserts

(Selection)

Chalvas 1 glass of olive oil 2 glasses of sugar 2,5 glasses of whole grain flour, grinded 4 glasses of water Cinnamon Some nuts	Bake the flour in the oven until it gets a little brown. Heat the olive oil and slowly add the flour, stir constantly with a wooden spoon. When it mingles, add nuts and cinnamon. For the syrup, put water in a pot and add the sugar when the water is boiling. Let cook for about 15 minutes, add it to the other pot and stir until it is a homogeneous mixture. Take it off the heat and let it cool down. With a tablespoon, take small parts from the mixture and press it with the hands to little balls.
Glyko Agriosyko 1 kg figs (about 80) 1,5 kg sugar 4 teacups of water lemon 4-5 cloves or vanilla Lemonade or lemon juice	Wash the figs and cook them up in a pot with water and copper sulfate until they soften. Afterwards, put them in cold water for 12 hours, and change the water four to five times. Put the figs on a towel to dry. Meanwhile, cook the sugar with water. When the syrup thickens, add the figs and cook a little longer.

6.3. Appendix 3: PREDIMED screener score questionnaire

Validated 14-item Questionnaire of Mediterranean diet adherence.

Questions	Criteria for 1 point
1. Do you use olive oil as main culinary fat?	Yes
2. How much olive oil do you consume in a given day (including oil used for frying, salads, out-of-house meals, etc.)?	≥4 tbsp
3. How many vegetable servings do you consume per day? (1 serving : 200 g [consider side dishes as half a serving])	≥2 (≥1 portion raw or as a salad)
4. How many fruit units (including natural fruit juices) do you consume per day?	≥3
5. How many servings of red meat, hamburger, or meat products (ham, sausage, etc.) do you consume per day? (1 serving: 100–150 g)	<1
6. How many servings of butter, margarine, or cream do you consume per day? (1 serving: 12 g)	<1
7. How many sweet or carbonated beverages do you drink per day?	<1
8. How much wine do you drink per week?	≥7 glasses
9. How many servings of legumes do you consume per week? (1 serving : 150 g)	≥3
10. How many servings of fish or shellfish do you consume per week? (1 serving 100–150 g of fish or 4–5 units or 200 g of shellfish)	≥3
11. How many times per week do you consume commercial sweets or pastries (not homemade), such as cakes, cookies, biscuits, or custard?	<3
12. How many servings of nuts (including peanuts) do you consume per week? (1 serving 30 g)	≥3
13. Do you preferentially consume chicken, turkey, or rabbit meat instead of veal, pork, hamburger, or sausage?	Yes
14. How many times per week do you consume vegetables, pasta, rice, or other dishes seasoned with sofrito (sauce made with tomato and onion, leek, or garlic and simmered with olive oil)?	≥2

[Martínez-González et al., 2012]

6.4. Appendix 4: Abstract in English and German

Abstract in English

The aim of this master's thesis was to investigate the nutrition transition within the concept of the Mediterranean diet, using the example of the Greek island of Samothraki. For this purpose, characteristics of the local traditional food culture were identified by qualitative interviews and the analysis of a cookbook. These outcomes were furthermore compared with secondary data of a recent nutrition survey and information obtained from interviews with restaurant owners. The adherence to a traditional Mediterranean dietary pattern in today's food culture was investigated, both in the individual and in the gastronomic sector. The transition from a self-sufficient, agricultural to an import-dependent, industrial tourism region is also noticeable in the culinary culture of the island. Despite changed conditions, a comparatively strong influence of traditional customs and preferences on different levels could be observed, which is worth to be maintained and developed in a cultural, health, ecological and economic sense.

Abstract in German

Ziel dieser Masterarbeit war es, die Veränderung der Ernährungs- und Kochkultur im Rahmen des Konzepts der mediterranen Diät am Beispiel der griechischen Insel Samothraki zu untersuchen. Dazu wurden Charakteristika der lokal-traditionellen Ernährungskultur vor Ort durch qualitative Interviews sowie der Analyse eines Kochbuchs herausgearbeitet und mit Sekundärdaten einer aktuellen Ernährungserhebung sowie durchgeführten Interviews mit Gastronomiebetrieben verglichen, um die Verbreitung und mögliche Veränderung traditionell mediterraner Ernährungskonzepte in der heutigen Ernährungskultur sowohl im individuellen als auch im gastronomischen Bereich auf der Insel Samothraki sichtbar zu machen.

Der Übergang von einer autarken, agrarischen hin zu einer importabhängigen, industriellen Tourismusregion ist auch in der Ernährungs- und Kochkultur der Insel spürbar. Trotz veränderter Bedingungen konnte ein vergleichsweise starker Einfluss von traditionellen Gepflogenheiten und Präferenzen auf verschiedenen Ebenen festgestellt werden, welcher sich lohnt, im kulturellen, gesundheitlichen, ökologischen und ökonomischen Sinne erhalten und ausgebaut zu werden.