educational material

Mediterranean Food

Michael Scoullos, Vasiliki Malotidi

Historical, Environmental, Health & Cultural dimensions

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Athens 2007

Mediterranean Information Office
for Environment, Culture
and Sustainable Development

Mediterranean Education Initiative
for Environment & Sustainability

Arab Office for Youth
and Environment

Association for the Protection
of Nature and Environment- Kairouan

Club Marocain d' Education
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EDUCATIONAL MATERIAL

Mediterranean Food

Historical, Environmental, Health & Cultural dimensions

to facilitate Education for Sustainable Development & promote Intercultural Dialogue

Michael Scoullos, Vasiliki Malotidi

Mediterranean Food, Historical, Environmental, Health & Cultural dimensions

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Message of the Anna Lindh Foundation (ALF)

I would like to express my deep appreciation to all bodies and institutions that have been working very hard during the past months to make this project possible. We realize that the "Mediterranean Food Educational Project" for stimulating and promoting intercultural dialogue, has required a major team effort involving so many experienced educators, teachers and experts from different countries in the Euro-Mediterranean region and we believe that it was a sensible decision to have selected this important project during the first Anna Lindh call for proposals in 2006 under the thematic priority: "EuroMed Schools Programme". I emphasize here the need for active efforts of civil society organizations and institutions to involve millions of young people in the process of experimentation and we are eager to learn more about the results and the tremendous effort response and interest in this project. Furthermore, in the countdown to 2008 dedicated to be the EU Year of Intercultural Dialogue, the Anna Lindh Foundation building on its unique role as a network of thirty-seven national networks of civil society organizations will launch a major international campaign: "1001 Actions for Dialogue" which sets out to mobilize people and groups across the region to implement activities under one common banner for the promotion of dialogue. While most of the actions are timed to take place at the beginning of May 2008, they will culminate in a high profile event held in synchronization across thirty-seven countries: "Dialogue Night". Our ultimate aim is thus to give visibility to dialogue actions within the Euro-Mediterranean region, believing that we can achieve much more if we act together.

In planning the future of this project, I wholeheartedly invite all of you to consider how best to contribute to the observance of the coming EU Year of Intercultural Dialogue. To us, this "Souvenir Educational Material on Mediterranean Food" is well presented and formulated and therefore constitutes a very strong step for developing activities under the campaign banner. I strongly encourage students and school teachers to benefit from its content and spirit as a perfect source of inspiration for gathering and making significant contributions to the "1001 Actions for Dialogue". Eventually, I would like to thank and commend all those who have shown such great dedication and drive in assisting in this project.

Ambassador Lucio Guerrato,
Executive Director of ALF

Message of the UN Environment Programme /Mediterranean Action Plan (UNEP/MAP)

During my travels abroad I very often come across restaurants promoting Mediterranean cuisine, not only in the Mediterranean region but also all over Europe. In some countries a Mediterranean Food Festival has become an annual event and is a major attraction not only to the locals but especially to tourists. This is because there exists a perception, and I would say it is true, that Mediterranean food is healthy. This is proof that there is added value in the Mediterranean ingredients and cooking. Mediterranean cuisine presents a long culinary tradition which should be preserved and promoted. By launching the Mediterranean Food Educational Project MIO-ECSDE is embarking on an original initiative which deserves support.

Dr Paul Mifsud, Coordinator of UNEP/MAP

Message of UNESCO

2007 is the third year of the UN Decade of Education for Sustainable Development (ESD), for which UNESCO is the lead agency. The Decade aims to integrate the values inherent in sustainable development into all aspects of learning to encourage changes in behaviour that allow for a more sustainable and just society for all.

UNESCO believes that ESD embraces a wide range of learning experiences and programmes such as the activities of the MEdIES Network of educators and the Mediterranean Food Educational Project. ESD is a dynamic concept that utilizes all aspects of public awareness-raising, education and training to enhance an understanding of sustainable development, and stimulate changes in behaviour. It will contribute to enabling citizens to face the challenges of the present and future, and leaders to make relevant decisions for a viable world.

We ask you to join us in promoting an education that is relevant to the key problems of living in the 21st century that empowers people of all ages to assume responsibility for creating and enjoying a sustainable future, and to encourage all institutions and individuals to promote development, which is socially desirable, economically viable and ecologically sustainable.

Dr Aline Borry-Adams, Chief of ESD Section of the Division for the Promotion of Quality Education, UNESCO

Message by the Chairman of MIO-ECSDE & MEdIES Coordinator

The theories about eventual cultural "clashes" and "gaps" particularly around the Mediterranean which is an active North-South, East-West interface, have been considered with great caution and skepticism in the Mediterranean countries, which despite their current cultural and socioeconomic differences, cooperate in a number of fields and strive to secure a peaceful coexistence and progress leading to the sustainable development of the entire region. The problems in the region are many and challenging in all components of sustainability; the degradation of the environment and the natural resources, exaggerated by rapid changes in the climate are closely interlinked with unsustainable patterns of production and consumption and serious social and economic problems.

Education is one of the most needed tools for the development of individuals and Mediterranean societies; an education which could promote at the same time sustainable development and better understanding and respect for the different cultures in the regions. In the present educational material, Mediterranean food and related topics – cuisine, diet, production and processing of basic foodstuffs, etc. are used as "vehicle" for stimulating Intercultural dialogue and promoting sustainable consumption and production within the framework of Education for Sustainable Development (ESD). Mediterranean food was selected as it is of direct interest, close to people, a living issue with old roots, admitted influences, loans and back-loans and with minimum ideological and religious "charges".

The material explores in a comprehensive way the linkages between cultural and biological diversity in the Mediterranean, the interrelationships between human productive activities, cultures, environment and natural resources. Topics such as modern consumers' choices, eating habits and current trends in purchasing food are compared, constructed or supplemented with traditional diets, the life-cycle of products and the consumers' responsibilities. Therefore, the material is also a valuable tool for Education for Sustainable Consumption activities and initiatives.

The material was developed by an interdisciplinary group of scientists and educators, formal and non formal, from seven Mediterranean countries, namely, Egypt, Greece, Italy, Jordan, Morocco, Portugal and Tunisia, in line with the principles and priorities of the UN Decade for ESD and the UNECE Strategy for ESD. It was supported by the Anna Lindh EuroMediterranean Foundation for the Dialogue between Cultures and is presented in its server for "Teaching and Learning Resources on Cultural Diversity and Religious Pluralism as "an original project that deserves attention-highly recommended".

Prof. Michael Scoullos

Mediterranean Information Office for Environment, Culture and Sustainable Development | MIO-ECSDE

The Mediterranean Information Office for Environment, Culture and Sustainable Development (MIO-ECSDE) is a Federation of Mediterranean Non Governmental Organizations (NGOs) for Environment and Development and acts as a technical and political platform for the intervention of NGOs in the Mediterranean scene. Since 1990 and in co-operation with Governments, International Organizations and other socio-economic partners MIO-ECSDE plays an active role for the protection of the environment and the promotion of sustainable development in the Mediterranean region and its countries. The mission of MIO-ECSDE is to protect the natural environment (flora and fauna, biodiversity, biotopes, forests, coasts, natural resources, climate) and the cultural heritage (archaeological monuments, traditional settlements, cultural diversity, cities, etc.), the areas of interaction between these two domains, in order to promote sustainable development in the Mediterranean.

In order to achieve its objectives the main fields of activities of MIO-ECSDE are:

- Networking and drafting, promoting and presenting common NGO policies and positions, with emphasis in integrating the Mediterranean dimension in the international policies at European and UN level

- Promoting partnerships and consensus building

- NGO capacity building through seminars and workshops, etc.

- Raising public awareness and participation through campaigns, mobile exhibitions, conferences and publications on sustainable development topics (water, waste, tourism, biodiversity, etc.)

- Promoting the cultural dimension of sustainable development

- Facilitation of Mediterranean stakeholder networks namely: COMJED: Circle of the Mediterranean Journalists for Environment & Sustainable Development and COMPSUD: Circle of the Mediterranean Parliamentarians for Sustainable Development

- Education for Sustainable Development (ESD) and the MEdIES Network

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The Mediterranean Education Initiative for Environment & Sustainability | MEdIES

MEdIES is a Type II Initiative on Education for Sustainable Development (ESD) that was launched during the World Summit on Sustainable Development (Johannesburg, 2002). The leading partners of the Initiative (Core Group) are: the Hellenic Ministry for the Environment, Physical Planning and Public Works, the Hellenic Ministry of National Education, the Italian Ministry for Environment, Territory and Sea, UNEP/MAP, UNESCO, GWP-Med and MIO-ECSDE.

MEdIES is a Network of educators in the Mediterranean working in common programmes of ESD. Main aim is to facilitate in a concrete and systematic way the educational community to contribute to the implementation of Agenda 21 and the MDGs through the effective implementation of common innovative educational programmes in the Mediterranean countries. Apart from individual educators and schools, also NGOs, pedagogical and environmental institutions and Ministries participate in the network as well.

Main fields of activities of the MEdIES network are:

- The development, implementation and evaluation of educational materials for ESD such as the materials "Water in the Mediterranean" (in English, French, Greek, Turkish, Croatian and Arabic) and "Waste in our life" (produced in Greek and English)

- The training of educators and trainers on ESD topics, methodologies, etc. through training seminars and workshops (so far in Greece, Italy, Morocco, Egypt, Turkey, Lebanon) as well as through publications such as the "Handbook on methods used in Environmental Education and Education for Sustainable Development" (produced in Arabic, English and French)

- The promotion of ICTs (Information & Communication Technologies) through the MEdIES webpage where the educators-members can download all publications, be informed on recent developments and events about EE and ESD, read and post articles, exchange views and activities, etc.

* More information at: www.medies.net
Email: info@medies.net or contact MIO-ECSDE

Contents

Activities

SECTION 1: TYPICAL MEDITERRANEAN FOODSTUFF

1.1 The precious olive oil
1.2 The daily bread
1.3 Meat in the diet
1.4 The poor man's meat: legumes
1.5 Fresh is best
1.6 Sweet as honey
1.7 All the salt of the earth
1.8 Fish in the water!
1.9 Vines around the Mediterranean
1.10 Water in food
1.11 Food resources
1.12 Working for food
1.13 The sustainable gardener

SECTION 2: THE MEDITERRANEAN CUISINE RITUAL

2.1 The Mediterranean diet through time
2.2 Is it only about food?
2.3 A food pot tells its story
2.4 Our Mediterranean cookbook

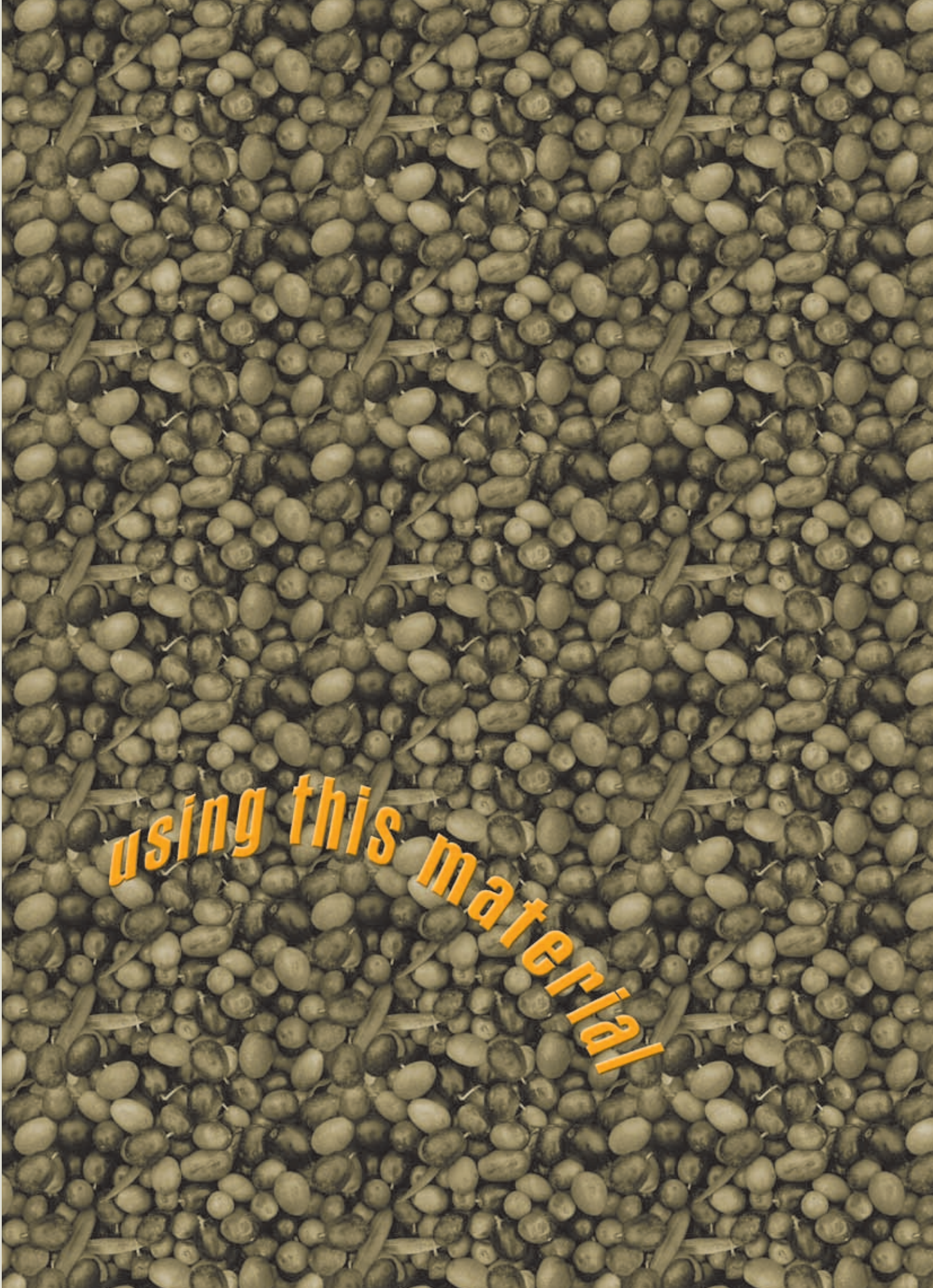
SECTION 3: THE MEDITERRANEAN DIET & MODERN CONSUMERS

3.1 Why so much fuss about the Mediterranean diet
3.2 We are what we eat
3.3. “Researching” food
3.4. Food waste
3.5 Food trade: fair or not
3.6. From field to fork
3.7 Food & health problems

Insets

Mediterranean recipes
Fair Trade Article
Glossary of typical Mediterranean food products & meals

Bibliography


using this material

USING THIS MATERIAL

A few notes for the educator

A. Food as a vehicle for intercultural dialogue within the UN Decade of ESD

The present material on "Mediterranean food" aims at stimulating the intercultural dialogue by raising awareness on "immaterial" cultural goods -customs and traditions, ethics and values, etc. related to "concrete" food topics - foodstuff, production, consumption, habits, etc., which are so similar and so diverse among Mediterranean people. Mediterranean food though distinctly different from country to country has an overall common character as a result of the use of similar ingredients, but mostly as a result of the active interchange among biodiversity, landscape and cultures, as well as a result of the historic evolution of the Mediterranean region. It is also noteworthy that food, cooking and related subjects have remained surprisingly outside the tensions that existed and still exist among some parts of the region. Food is an area where loans and back-loans are freely admitted and even commented with humor and openness. This particular characteristic of food in the Mediterranean is promoted as the vehicle, the basic cultural bridge, through this educational material.

Reduced to essentials the story of humankind revolves around the basic needs for survival. Any civilization which managed to survive had a huge appetite; it was thrust forward by the grumblings of the stomach, that basic impulse which organised entire cultures and societies. Yet food represents much more than that. It is the basis of any type of economy as well as of the political strategies of families, communities and nations. Food, moreover, is an incredible, fascinating storehouse of condensed social meanings and symbols, a repository of cultural heritage, a system of images and communication, a protocol of practices and behaviour in particular situations. Food techniques comprise a nation's experience, the accumulated wisdom of our ancestors and a reflection of their vicissitudes. Food is therefore, a tool through which we can examine and interpret a society, its culture and institutions, religious beliefs, social classes, personal and collective attitudes and identities (Gambin, 2005). Considering the social context of diet and nutrition it is evident that the cultural dimension influences food preferences and habits. Diet and its rituals are soaked in cultural elements and values. In this framework, it has been proposed that educational approaches, when it comes to food education projects, should be based or permeated by cultural perspectives (Hertzler, 1982).

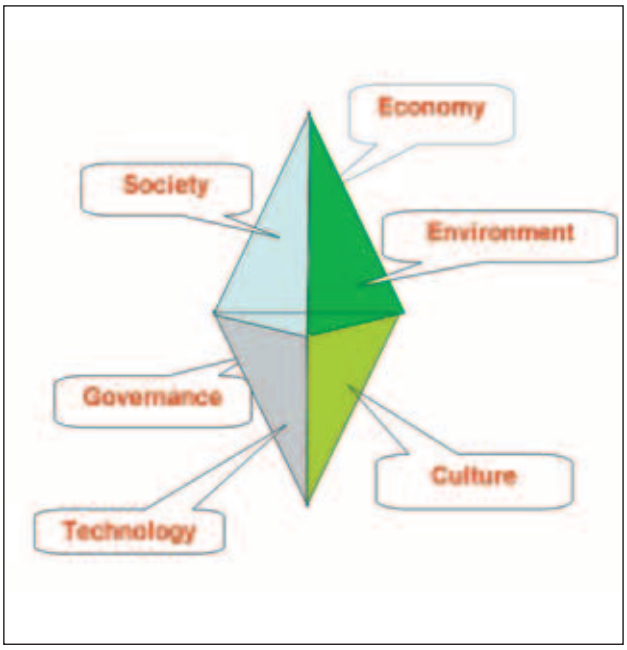
"Food" and "food security" are included in the major themes of Education for Sustainable Development (ESD) as presented in the "International Implementation Scheme of the UN Decade on ESD" and in the UNECE Strategy for ESD[1] . More particularly, food topics are identified among the cross-curricula topics of ESD together with the protection of the environment and natural resources, sustainable production and consumption patterns, poverty, health, citizenship, democracy, human rights, gender equity, cultural diversity (UNECE, 2005). The Decade of ESD was adopted in 2002 by the UN General Assembly and aims at promoting education as the basis of a sustainable society and integrating the principles of sustainable development in all forms of education (formal, non-formal and informal) and all educational systems. ESD is widely recognized as an evolving and dynamic concept that encompasses a new vision of education seeking to balance human and economic welfare with cultural traditions and respect for the environment and the earth's natural resources.

Regarding food in the "curricula" of the UN Decade on ESD emphasis is on the following points (UNESCO, 2005):

- ESD takes an integrated approach focusing on the environmental and socio-economical aspects of food, linking them with the sustainable management of natural resources (water, soil, biological diversity, energy), sustainable agriculture, poverty reduction and fair trade, etc.
- ESD addresses the cultural component of food to ensure the survival of proven traditional and indigenous food production systems and practices and the related cultural elements (customs, etc.) and traditional cuisines.

These basic aspects of food within ESD derive from the general elements and 'facets' of ESD, that could be graphically

[1] The UNECE is the "Economic & Social Commission for Europe" including all European countries, all the former Soviet Union Republics (also those of Central Asia) the USA, Canada, Israel and Turkey. The Mediterranean countries that participate in the UNECE and follow its processes, including the ESD Strategy, are: Albania, Bosnia and Herzegovina, Croatia, Cyprus, France, Greece, Israel, Italy, Malta, Monaco, Portugal, Spain, Serbia, Slovenia, and Turkey. The Strategy for ESD was adopted in the High-Level Meeting of the UNECE Ministries of Environment and Education (Vilnius, 2005).



represented on a double pyramid (Scoullos, 2004) in which the upper part has as facets the components of sustainable development, namely: society, economy and environment, while the lower part represents the prerequisites of its implementation and the areas that need "changes" for the achievement of sustainable development, namely: governance, technology and culture. Such a representation shows the interdependence and interrelationships between all basic pillars of sustainable development, including the fundamental ones Environment-Society-Economy. So, in order to apply ESD, appropriate learning environments should be created in order to teach various topics through all perspectives: environmental, social and cultural, economic, technological and governance and institutional perspectives. The position of the double pyramid's facets is random because all interlinkages are possible, real and important. So, in order to "teach" about sustainable development one should integrate all the related issues deriving from these sectors.

Apart from the environmental, historical and cultural dimensions of food that are explored in the present material to stimulate intercultural dialogue, food is of course used to promote the principles of the Mediterranean diet and healthy living. Further research is required on how to positively influence children's diets, particularly in European populations undergoing significant changes in their traditional food habits, such as those of Eastern Europe and the Mediterranean region (Majem, 2002). Research on early grade school students has shown that food choices are first shown to depend on personal and family factors, as well as the teachers' influence and later to depend on culture, economic concerns and agricultural conditions (UNESCO, 1983). A recent research in Greece (Loumakou, 2005) has shown that "teachers consider food education very important as a cross-curricula subject, having impact on students' academic progress and being a subject of interest for the students".

B. The Scope and the goals of the material

The "Mediterranean Food" educational project was developed to serve as a tool for Education for Sustainable Development (ESD) and thus, ESD basic goals shaped the learning objectives of the material, its content and approaches. ESD faces the challenge of raising peoples' awareness on environmental and socio-economic issues, encouraging them to adopt a sustainable lifestyle and developing their capacity to build a future based on ecologically, economically, socially and culturally sustainable solutions. ESD tries to inspire and promote the balance between human and economic welfare, cultural traditions and respect for the environment and the earth's natural resources (UNECE, 2005). It aims to develop and foster the skills of critical and creative thinking and encourage the solving and managing of problems that stand in the way of sustainable development (UNESCO, 2005). In parallel, an attempt was made for the present material to promote the cultural dimension of the topic (food), in order to be used as a vehicle for intercultural dialogue. Therefore, it adopted the basic goals of Intercultural Education that seeks:
a) Meeting and mutual influence of the various cultures.
b) Removal of the impediments placed in the way of such a meeting.
c) "Preparation" of the cultural exchanges and enrichment in the near future.

Though the material is not restricted to the framework of Nutrition Education it has taken into consideration its basic general objectives (UNESCO, 1988), related curricula, projects and materials, in order to instill the value of healthy eating and in particular, the Mediterranean pattern and to motivate students accordingly.

When "translating" the above mentioned general goals of ESD into learning objectives, the most commonly applied taxonomy classifies the objectives into (i) the cognitive domain: that involves knowledge and intellectual skills, from the simple acquisition of information to higher level cognitive skills and strategies (ii) the affective domain: including changing, ranking and adopting of behaviours, attitudes and values (iii) the psychomotor skills domain: including kinetic skills, physical tasks, etc. (Bloom, 1956). The cognitive domain (intellectual skills) tends to be emphasized within the related topics of ESD. The psychomotor domain is covered with activities that include various hands-on and kinetic tasks i.e. constructions, making of posters and drawings, presentations, performances, cooking, etc. However, within ESD and Intercultural Education the affective domain is of paramount importance and very often overlooked by curriculum developers and educators. The affective domain is essential because many problems (environmental, nutritional ones, etc.) are not due to lack of information but rather to a lack of personal conviction and commitment that a change in routine practices will af-

fect positively the quality of life (Gagné, 1967; UNESCO, 1988, 2002).

Translating the general educational goals that were previously mentioned in the particular educational objectives for the learners that will use this material, we come up with the following objectives:

- To enhance understanding on Mediterranean food products & diet and related topics, in regard with environmental, economic and social factors.
- To recognise agricultural activities as the basic and most important activity of the Mediterranean countries.
- To be aware of food sustainable production and realize its links with the traditional practices of food production (agriculture, fishing, livestock, etc.) around the Mediterranean basin.
- To become acquainted with the local and national natural and cultural heritage related to food.
- To explore cultures and traditions of other Mediterranean countries related to food production and cooking.
- To find out similarities and differences among Mediterranean countries' traditions and cultures related to food.
- To relate the diversity of landscapes and species to the diversity of the Mediterranean cuisines and related customs.
- To appreciate the importance of the Mediterranean diet to human health.
- To be aware of their role and responsibilities as consumers within the life-cycle of foodstuffs.
- To develop the skills of critical and creative thinking, communication and research, and the competences of solving and managing issues.
- To appreciate eating habits that are compatible to the Mediterranean diet principles.
- To adopt positive behaviour and attitudes towards the conservation of traditional food products & cuisine.
- To appreciate cultural differences and diversity and develop respect and tolerance.

C. Pedagogical approaches

The material is addressed to 11-15 years old students. However, it can be adjusted for students of primary school (9-12 years old) and lyceum-college students (15-18 years old), according to the abilities and needs of the class, the experience and skills of the educators, and finally the national and specific school curriculum applied in each case.

The present material was developed in line with the current trends in ESD curricula and materials. More particularly the material implies a learner-centred approach including active and experiential activities. Food is a topic that offers many opportunities to link education to the experiences of students and their every day lives, that is of critical importance of current educational practices. The material engages learners in experiential activities in which they learn together as much as possible in order to "translate" their learning into simple but effective behavioral practices. In other words, participatory teaching methods and group work, accompanied by simple and appropriate learning activities constitute the basis of the present material.

Furthermore, the material is constructivist oriented. The constructivism theory of learning supports that "learning is a personal construction of the individual, built on experience, created through the interaction of the individual with others and materials, the natural and social environment, and cannot be transmitted". Constructivism implies starting from what the learners already know, what their opinions and experiences are on the subject and to enable them to search for and together gain experiences and ideas that are compatible to the scientific ones and also applicable to their everyday lives. This method requires deep reflection on teaching practice in order to influence the behaviour of students and enhance their capability to handle the new knowledge (metacognitive skills).

An attempt was made to take into account the theory of Multiple Intelligences (Howard Gardner) according to which people use multiple intellectual capacities to approach problems and situations and create products. Every person possesses varying degrees of each of these intelligences, but the ways in which intelligences combine and blend are as varied as the faces and the personalities of individuals. Unfortunately, the majority of school systems still teach, test, reinforce and reward primarily only two kinds of intelligence: the verbal/linguistic and the logical/mathematical. Therefore, the activities included in the

[2] The total multiple intelligences and the related competences according to Gardner are the following: (1) Linguistic intelligence - using language skills (2) Logical-mathematical intelligence - making inductive and productive reasoning; using numbers and abstract concepts (3) Musical intelligence -reaction and sensitivity in rhythm, sounds and melodies (4) Spatial intelligence -visualization of objects, space and dimensions (5) Bodily kinesthetic intelligence - body expression, control and move (6) Interpersonal intelligence - communication and making relationships (7) Intrapersonal intelligence -self-knowledge and self-reflection (8) Naturalist intelligence -discrimination and recognition of common elements at a natural environment as well as among people and social groups (this type of intelligence was added later on).

material develop as much as possible students' competences, not only the linguistic and logical ones, but also the intrapersonal and interpersonal intelligences, the spatial and bodily intelligences and the ones related to arts and self-expression[2].

The role of the educators, when applying the material together with students considering the above mentioned pedagogical framework in their educational practice, can be outlined as follows:

- Educators should see themselves as an integral part of the group, as advisers and coordinators, helping students in their activities and trying to stimulate ideas and initiatives. They can also be approached as a "resource" guide providing information on where and how students can gather information for their research.
- Educators should keep in mind that the material does not present a 'rigid set of activities' on Mediterranean nutrition, but rather tries to make suggestions and offer ideas and stimuli for building a relevant curriculum, conveying the important concepts and social issues related to the topic.
- It is very important for educators to encourage and assist communication with schools of other Mediterranean countries to stimulate the intercultural dialogue.
- Each activity in fact can be implemented independently of the others or even in combination with others.

Educators may choose the activities to be implemented according to:

- The framework in which the material is implemented i.e. infused in the curricula subjects or as an independent project of ESD;
- The objectives they have set for their project i.e. they aim at focusing on the local food products of their area, the dietary habits of the citizens or the links between food and customs, traditions, etc.;
- Student groups' interests, preferences and cognitive level;
- Available equipment and timetable.

So, educators can adapt, revise, expand and modify the particular material, in order to use it as a flexile learning tool that can be used either way i.e. by integrating parts of it in relevant school subjects -infusion model- or working with it as a cross-curricula ESD project -interdisciplinary model- exploring e.g. linkages between cultural and biological diversity.

In particular, the present material can be used as a framework for developing knowledge and awareness in several curriculum subjects. The school subjects in which parts of the material could be integrated are the following:

- Social studies and History (related topics: demographics, economics, urban and rural issues, etc.)
- Earth Science: Geography, Geology and Ecology (landscape, biodiversity and natural resources, ec.)
- Science: Biology, Anthropology (diet), Chemistry and Biology
- Mathematics (graphing, Statistics, Algebra, etc.)
- Language: reading, writing (letters, reports, essays), debating and making dialogue, Foreign languages (e.g. in communication and exchange with schools in other Mediterranean countries), etc.
- Home Economics (related topics: cooking, food preparation and conserving, consumer choices, etc.)
- Art: in drawing, photography, poster making, performing arts, etc.

Furthermore, the material in its entity could be used in a project of Education for Sustainable Development, while many parts of it can be used in cross-curricula subjects such as Health education, Environmental Education, etc.

D. Description of contents

An interdisciplany approach was followed for the developmen of the material's content involving all related fields and their interelations (see the figure on the next page).The Background Documents provide information on the history of food production and dietary preferences in the region to contemporary topics and patterns of food production and consumption. The documents can be used to supplement the educators' work in a number of ways depending on which activities they are working on. In parallel, this information can be used by the students themselves as a first pool of information and bibliography resource. The chapters included are the following:

1. Evolution of food and nutrition in the Mediterranean: an overview from antiquity to our days. The first chapter provides an overview of the food and diet in the region throughout time, from Prehistoric times till modern times. It presents also the famous Mediterranean "triad" of the vine, olives and cereals existing already in antiquity, the various ancient civilizations that flourished in the region and their contribution to the formation of the Mediterranean nutrition.

2. Food, biodiversity and the Mediterranean landscapes. This chapter attempts to show the interaction between the characteristics of the region (natural resources, landscape, climate, etc.) and food production. Aspects of geomorphology, the Mediterranean climate, water resources, biodiversity, agriculture, livestock, fisheries, urbanisation and economic globalisation are presented in relation to their impact on food production and dietary habits.

3. The Mediterranean diet and modern consumers. The third chapter provides an overview of the basic elements of the Mediterranean diet, as well as the current trends in dietary preferences and relevant consumption habits of people in the region. Furthermore, topics related to food production and trade, as well as attitudes in regard to food purchase and consumption are also presented.

The Activities are divided in the following three sections:

1. Typical Mediterranean foodstuff. This section offers the opportunity to work and explore various topics related to the typical and common food products in Mediterranean countries such as olive oil, cereals, fish, etc. An activity about the professions of the food sector and their evolution through time is included. In addition, the concept of sustainable agriculture is explored in the last activity of the section.

2. The Mediterranean cuisine ritual. The second section attempts to stimulate interest and develop awareness on the traditional cuisines of the Mediterranean countries and the related cultural (customs, legends and myths, traditions, etc.) and religious elements (feasting, fasting, etc.)

3. The Mediterranean diet & modern consumers. This section includes activities about the importance of the Mediterranean diet and aims to stimulate appreciation of it taking into consideration its nutritional value, health issues, consumption choices and lifestyles, economic development and other related topics.

E. Structure of activities

Most activities actually have the format of a project suggesting and including various related tasks (sub-activities) aiming to provide a holistic approach to the activity's topic. There are also included activities with a simpler format containing one or two main tasks for students. In either case, each activity includes the following parts:

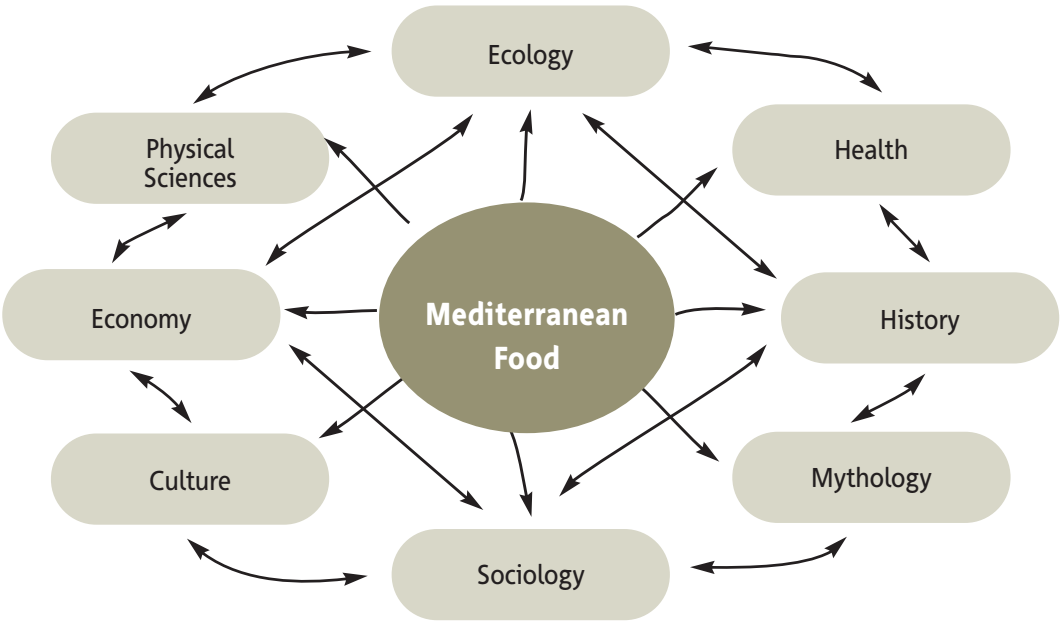
- "Title"
- "Learning Objectives" stating the desired learning outcomes as a result of the activity and based on the general goals of the material, as described previously.
- "Material & Equipment" needed for the implementation of the activity; in most cases they are very simple and easy to find.
- "Activity Plan" describing step-by-step the proposed task in a flexible way, open for suggestions and modifications by the group.
- "Texts" providing information, facts, etc. on the topic to stimulate interest, thinking and action, or documents on which students' task will be based on.

Portfolios

Another important task for students that is suggested in the framework of this material is to keep his/her portfolio from the beginning of the project. The portfolio may include the "products" of each activity, photos, sketches, conclusions, experiments' outcomes, reports, personal notes and a small personal diary recording not only tasks implemented but sentimental experiences and emotions as well.

The educator may also keep his/her portfolio in which the project's goals, the activities' objectives, useful bibliography, personal notes, observations during students' activities, recordings, photos of the students' work, etc. can be included.

Student and educator portfolios are very useful for the overall presentation of a project as well as for evaluation purposes.



background documents

1 ST CHAPTER

EVOLUTION OF FOOD & NUTRITION IN THE MEDITERRANEAN

AN OVERVIEW FROM ANTIQUITY TO OUR DAYS

A. Introduction

The use of food by Mediterranean peoples has been in a process of change, for ten thousand years and perhaps longer, yet it is still possible to trace similarities between modern meals and those of our prehistoric ancestors. This signifies the strength of tradition in the way that human beings behave; it is also proof of the richness of the Mediterranean region and its resources. Nowadays both the traditions and the natural resources are endangered: Mediterranean fisheries, agriculture and food production are all changing rapidly and their future is uncertain in response, on the one hand, to environmental pressures, and on the other, to new socio-economic conditions and new fashions.

Within this continuity, Mediterranean farmers have always been ready to try new ideas. Perhaps 5.000 years ago they began to grow grapes. 2.500 years ago they began to keep chickens which were originally native to India or Southeast Asia. Peaches, pistachios, rice, oranges, aubergines, chillies (red peppers), tomatoes and potatoes all came originally from different parts of the world and have reached the lands of the Mediterranean the last centuries.

At the same time, it has always been true that societies as a whole make choices about which foods to consume and when to eat them. Mediterranean countries display strong differences here, often for historical and cultural reasons. Grapes are grown in most Mediterranean countries, but while everyone eats grapes and raisins, not everyone drinks wine. Some peoples have a rule against eating pork; some have a dislike for rabbit, or for snails, or for certain kinds of seafood.

All through this long period, people have been experimenting with new food and also with new ways to prepare it. Three demands, sometimes conflicting with one another, have to be satisfied somehow:

1. If food supplies run down, there will be nothing to eat. How can we be sure of having enough food for the whole year?

2. Food doesn't just cure hunger: it ensures strength and health. What foods are most healthy and give us enough energy and nutrients?

3. Food has to taste good, or people won't want to eat it. How can we improve the flavour of food and the pleasure it gives?

Nowadays, with shops and supermarkets providing plenty of choice of local and imported foods, people may think these problems are easy to solve. In the past, it was often very difficult. A bad harvest meant that food supplies really did run out; malnutrition and famine really did cause sickness and death, in the Mediterranean as in other parts of the world. Even now it can be very easy for individuals to make the wrong choices, and that is often the case when people become sick or obese.

B. Prehistoric times

Ten thousand years ago, before farming began, people around the Mediterranean ate wild seeds, herbs and fruits that they could gather and animals and fish that they could catch. Their diet was very varied, but meat was probably a rarity and most of their time was spent on gathering their food. Wild animals, birds and large fish would have been a luxury; rare, too, would have been the wonderful sweet flavour of honey. Most of the time, "hunters" probably came home with cicadas, locusts, snails and shellfish. Gradually people learned that one could predict some of the movements of animals: there would be a lot of tuna in the migration season, and in the mountains there would be a time to trap goats and sheep as they moved from summer to winter pastures.

One way to ensure sufficient supplies of food has always been to salt or dry whatever you can't eat fresh. Perhaps salted tuna, and dried goat meat, were among the first such products that people around the Mediterranean tasted. How long ago did people learn to dry raisins and figs and to slice and dry apples?

Between nine and ten thousand years ago, in Syria and

Palestine, two new developments took place. People learned that you could have a steady supply of meat by keeping certain animals in farms, under human control, killing a certain number for meat, allowing others to breed, and using their milk. This worked best for sheep from the eastern Mediterranean countries and for goats, perhaps from south-eastern Europe. Meanwhile, other species, including cows from North Africa according to some people, camels, dogs, and later horses and buffaloes, were used as working animals; some of these also became sources of milk and meat. Pigs -perhaps originally from Anatolia- were another reliable source of meat for those peoples who chose to keep them.

Roughly at the same period, farmers in Syria began to sow the seeds from food plants and in this way to make sure that they grew in a chosen field the following year. This worked well with wheat and barley, with lentils, chick-peas, beans and peas. Probably what people first did with all these seeds was to make soups and porridges from them but, very soon, the first ovens were built and flat bread was being baked from wheat.

These great inventions - keeping and breeding animals, and sowing and harvesting food plants - were the beginning of farming. They made food gathering much more efficient and the food supply much more reliable.

But there were risks. People's diet was not so varied any more, and a bad harvest, or a disease among the stock, meant that suddenly food ran out. This is why the sea, the forests and mountains have always remained important for Mediterranean peoples. They are sources of extra food - wild animals, fish and shellfish, wild herbs and fruits - that enrich the diet and, in difficult years, may prevent starvation.

Through thousands of years the idea of farming spread from end to end in the Mediterranean. As it spread, farmers experimented with new species - some of the ones that had previously grown wild, on the mountains or on the edges of cultivated land. Vegetables like lettuce and cabbage, roots like garlic and onions, and, last of all, fruits like grapes, figs, pears and apples. In this way the diet became more varied again and there was less need for gathering foods from the wild. It was possible for the same land area to feed many more people, and the population of the Mediterranean continued to grow.

A last invention of this early period was beekeeping. Until then, honey had been stolen from wild bees; maybe 5.000 years ago, in Egypt, humans began to keep bees in hives and learned to take a share of their honey. When hard physical work meant high energy consumption, honey was the best available sweetener and an essential food; it taste good too.

Some fruits grown during this period originated far from the Mediterranean shores. The grape vine came from the Caucasus or western Iran. Melons and watermelons came from Africa, figs and dates perhaps from Arabia. No one knows exactly when or how they came; it must have been a slow, gradual process as seeds or cuttings were passed on from place to place and from one farmer to another.

THE HISTORY OF POTTERY

The development of potteries used as food reservoirs was one of the major inventions allowing people to carry and keep food relatively long periods far from the areas of collection of food. They also allowed larger numbers of people to live and eat together and therefore members of wider families and tribes could be fed and live together more easily. At the same time some of the first forms of art were developed with restricted variety of styles.

THE EGYPTIAN ART OF BEEKEEPING AND ITS LONG HISTORY

Beehives have been in use in Egypt for almost 5.000 years. This is an ancient method which has influenced the entire Mediterranean region, extending eastward to the Middle East and southward to tropical Africa. Methods used by ancient Egyptian beekeepers were adopted throughout these regions and honey is regarded as an important commodity in all Islamic countries. The Prophet Mohammed is quoted as saying: Honey is a remedy for every illness, as the Qur'an is a remedy for all illnesses of the mind.

Beehives were made of baked mud, or sometimes of fired clay. Hives used to be cylindrical with a hole at the front end for the bees to fly in and out. A detachable section at the back was used for harvesting the honeycombs. These hives were stacked horizontally. Ancient pictorial records show the beekeeper taking honey from the opened section at the back of the hive, while his assistant drives the bees to the front with puffs of smoke. Honey gathered by traditional methods may have a slightly smoky taste because of this. An Egyptian coloured wallpainting of bees and beekeepers decorates the tomb of Rekhmire at Luxor and dates from about 1800 BC. An even older carving from the sun temple of Pharaoh Ne-user-re, near the pyramid of Djoser and now on display in the Egyptian Museum in Berlin, also shows beekeeping: it dates from about 2500 BC. The size of those ancient hives is difficult to estimate, but ancient Roman writers tell us that the usual dimensions were about 90cm long and about 30cm across.

Time has brought very few changes to these traditional beekeeping methods. Methods were handed down from father to son. Since the bees and their sources of food did not change, the methods of keeping them did not need to change either. In several Mediterranean

countries, including Egypt, beekeepers use the same methods and the same style of hives that were used thousands of years ago.

C. The Mediterranean triad "the vine, olives and cereals" and other staple foods

Cereals, vines and olives, what the historian Ferband Braudel called the "eternal trinity" provided the basis of the traditional agricultural and dietary regime. As already mentioned, diet in the Mediterranean has not remained static, but starting from the ancient world Mediterranean diets, despite local variations and influences were by and large centred on cereals, the olive and the vine.

✻ The vine

The vine, first grown about 5.000 years ago, was especially important. It provided grapes, raisins and wine: a juicy fresh fruit, a reliable source of dietary sugar and a drink which in ancient times was used throughout Mediterranean lands. Wine was safer to drink than untreated water, and it was easy to keep, unlike milk which (before the days of refrigeration) was impossible to store. Milk was a good drink for farmers, but in those days people in cities needed wine. The vine's origins go back to central Asia, the southern area of the Black Sea and the Caspian Sea to the north-eastern area of Afghanistan. In a region between Georgia and Armenia there was viticulture, according to archaeologists and a primitive form of wine from the fermentation of grapes was discovered. This "primitive" wine was attributed a sacred character by the ancient Georgians (3000 AD) who used to place on the side of the deceased a small vine branch with its roots, kept in a silver purse, to be planted in the world of the dead. In the long journey of wine to reach the Mediterranean, Palestine was an important stop. References to vines and wine and its symbols are frequently mentioned in the Bible i.e. the marriage of Cannas. In ancient Egypt, the presence of various representations of viticulture and libation were very common in the tombs. A jar full of wine on which the date, specific vineyard and the producer's name were clearly mentioned accompanied the dead to his last trip. This culture is found also in ancient Greece (1000 AD); the Greeks and later on the Romans were the ones who diffused the viticulture and wine in the entire Mediterranean through their civilizations.

✻ The olive tree in the Mediterranean culture

The olive tree seems to be native to the eastern Mediterranean, because fossil olive leaves have been found in the caldera of Santorini dating about 50 or 60 thousand years ago. Soon olive oil had a major role in Mediterranean food and life. However, it is noteworthy that the olive tree would not grow everywhere and therefore other kinds of oil were produced as well, such as sesame oil in Egypt and parts of the Near East, argan oil in Morocco, etc. Oil was used for many purposes i.e. food, lighting, fuel, as a cosmetic. A storeroom full of wine and oil was a sign of prosperity in the Odyssey, the ancient Greek epic, just as it would have been elsewhere in the early Mediterranean. Thousands of years ago, people found ways to prepare and store olives for eating, by picking them (green or black) and conserving them in salt, in brine or in vinegar. There are many recipes for flavouring olives and adding to their health-giving qualities. Ancient Greeks liked unripe, green olives, broken and cured in salt; they also liked them black and wrinkled. Fennel was one of the herbs that was added to the brine. The Romans learned how to conserve olives from the Greeks and the Phoenicians: they also used fennel, as well as coriander, cumin, mastic, mint and rue. In the Maghreb olive oil was widely used to soothe skin irritation. Early Romans used olive oil with added aromatics, such as myrrh, to rub on their bodies as a kind of soap and as a perfume. In Greece, too, athletes prepared their bodies with olive oil before a contest. Romans believed that the mythical hero Hercules brought olives to Italy: they called him Hercules Olivarius the 'olive-grower'. In Greece it was said that the first olive tree was planted by the goddess Athena on the Acropolis of Athens to settle her quarrel with the sea-god Poseidon. It grew there for many centuries, behind the Erechtheon temple, as a symbol of peace, progress and wealth. In Jewish and Christian tradition the olive tree is a symbol of peace; it was an olive-branch that the dove brought to Noah as a sign that the Flood was receding. According to legend, Christ's cross was made of olive and cedar wood. In Islam, the olive tree is central, the "world axis", a symbol of universal man and the Prophet.

✻ The prominence of cereals

Cereals were not the same everywhere: "cereals" might mean barley, emmer, durum wheat or bread wheat, depending on climate and on local tradition. Bread is the famous product made of cereals that existed and exists in one variety or another in every culture and on every continent. Leavened bread in its whole variety - from dark rye bread to crusty white loaves - belongs to the Egyptian tradition: the first bread of modern type must have resulted from a mixture of yeast with wheat or rye flour (it has to be these, because they contain gluten) which was left to "rise" or ferment; and the technique originated with the ancient Egyptians, who began baking such bread 4.500 years ago, although they used a more primitive species of wheat (emmer) and their flour was not ground so finely as today. The ancient Egyptians were also the first to build

ovens; ancient papyri and wall paintings show that they produced about 50 types of bread and cakes with various added ingredients. Athens, the largest city in ancient Greece, was famous for its big bread ovens and for the many kinds of fresh bread sold at the agora (market place). Regardless of time and place, however, breads and grains have always been symbols of life and prosperity. For people of the ancient Mediterranean bread was a basic food, an essential; in fact "bread" was a synonym for "food", as in the Christian prayer: Give us this day our daily bread. The species of grain that is used may vary; the way it is cooked may differ; the time of day and the way we choose to eat it as well, but all through these 10.000 years people have continued to use cereals and to make bread.

CEREALS IN RELIGION & MYTHOLOGY

The prominence of cereals in religion and mythology is another pointer to the crucial role they play in our material and spiritual lives. Christian culture, too, gives bread a symbolic meaning. The Eucharist (Communion) is at one level a meal of wine and bread; at a deeper level, it involves the spiritual consumption of the flesh and blood of Christ. Cereal grains - usually emmer or barley - were part of religious ceremonial, always present at sacrifices, in ancient Greece and Rome. The Roman goddess of the grain harvest - Ceres - gave her name to the word for cereals in English and some other languages.

There is a strong case for expanding the triad to accommodate dry legumes, which as "the poor man's meat" have traditionally played a considerable role in the diet of Mediterranean people. The most significant of these for consumption, from the ancient times, were broad beans, chickpeas, lentils and peas that supplied the nutrients that cereals lack. Strangely, little is said about pulses in early records. They were truly "the poor man's meat" - and the lives of poorer people were not often recorded. But ancient Greek comedies are full of references to beans and their effect on the digestion ... And medieval texts about diet and nutrition - Arabic, Greek, Latin, Spanish, Italian - make it clear that everyone, even the rich, enjoyed beans and other pulses. They were grown by ordinary people in gardens and were also an important field crop for farmers.

As for meat and other animal products, in the context of the agricultural economy of the Mediterranean region, they were relatively speaking in short supply and therefore, of minor importance in the diets of the mass of the population. This is a matter of physical geography: The growing season for plant life in the Mediterranean is short. After the spring, drought quickly dries out the natural pastures, at any rate in the semi-arid regions. Grass and fodder were not plentiful there; nor for that matter was arable land, especially where population was relatively dense and land scarce as for example in Italy, during the classical period. Under these circumstances only the largest landowners could contemplate reducing their arable land in order to raise livestock on meadowland. Moreover, livestock raising is an uneconomical use of land; plants produce more food per unit area than animals do. Animals turn plants into meat but a lot of energy is lost in the process. It makes more sense for humans themselves to eat the plants. Under these conditions cattle-raising on a large scale was ruled out. There were oxen as work animals, kept neither for meat nor for dairy products. Sheep and goats were numerous but raised primarily for wool or hair, secondarily for cheese and skins. Pigs were used basically for meat by Greeks and Romans. Nomadic tribes in North Africa raised camels too.

D. Ancient civilizations of the Mediterranean

Each of the great civilizations of the Mediterranean had had its influence on food. Ancient Greece was the first region in which we can trace a tradition of gastronomy - of appreciating fine food and fine local products. The reason for this may be the strange geography of Greece, with its many islands, isolated valleys and numerous microclimates. In this way, the foods and wines of ancient Greek cities earned special reputation; sometimes they had State protection like modern *appellations contrôlèes*.

Greece has always appreciated fish - in Greek restaurants fresh fish is expensive but of good quality and diners choose it carefully. This was just the same 2.500 years ago, when the main part of a lavish meal might be the two seafood courses, first smaller fish and shellfish, then larger fish including tuna. According to the gastronomic poem by Archestratos (about 350 BC), each city had its own fish speciality. The supply of fresh fish is unpredictable. Salting extended the life of fish and the range of the fish trade in Greece. Greeks liked salted and pickled tuna, but they also invented another way of storing the food value of fish. This was fish sauce, called *garos* in Greek, which was made in Greek colonies in the Black Sea and in Greek and Carthaginian settlements at the far western end of the Mediterranean in southern Spain; in the Roman period fermented and salted fish products were prepared in quantity and extensively transported and traded for especially among urban consumers. The fish was salted and left in the sun to ferment, usually for several weeks. A strong-tasting, strong-smelling, very salty product like modern soy sauce, *garos* was popular in Greek and Roman cookery; it gave rise to a similar sauce, *muriyes*, which was later made in Egypt and Syria using fermented barley.

Meanwhile some major new foods were reaching the Mediterranean from the Persian Empire and further east: perhaps chickens were the most important of all, but

among others were peaches, apricots, citrons, and pistachios. The movement was not all one way: coriander, originally a Mediterranean herb, reached India about 400 BC, while the grape vine reached China following the way of the Silk Road, around 120 BC.

While Greek colonies spread along the northern shores of the Mediterranean, the Phoenicians, from the coast of modern Lebanon and Syria, colonized and farmed much of North Africa from their famous settlement at Carthage near modern Tunis. Their writings are lost, but their farming is known from archaeology and from Latin texts, because the Romans learnt many of their farming skills from the people of Carthage. The Phoenicians also introduced the olive tree in North Africa. Characteristically, history mentions that the Carthaginian General Hannibal, recalled back from Rome after the 2nd Punic War around the year 203 BC, settled with his army on the coast, in the Sahel region and ordered his soldiers to cultivate olive trees so as to avoid idleness.

Rome began as a country town and became the metropolis of an empire which ruled all the Mediterranean lands for four hundred years - the only such period in history. If one could afford it, one could choose and buy luxuries from anywhere in the Empire. Travel and trade were just as free as in modern times - even more so, since there were no national frontiers. But travel was slow: it was a five-month voyage from the Pillars of Hercules (Straits of Gibraltar) to Antioch in Syria. Only foods that were dried, pickled or salted, and only special wines would stand up to such a journey. Meanwhile, building on what they learned from Greeks and Carthaginians, Roman gardeners developed multiple varieties of vegetables and fruits, notably apples, pears and grapes. Alongside more familiar farm animals - cattle, sheep, goats, chickens- Romans took trouble with various other species from geese to snails, and added new ones including dormice, ducks and hares. They farmed many species of fish in inland pools and marine enclosures. And they imported spices from far beyond the region, including pepper, cinnamon, ginger, cloves and nutmeg from southern Asia and Indonesia. One more important food contribution of the Romans is the recipe book. There were written recipes in ancient Greece, possibly even earlier in Egypt and Syria, but the Latin text called Apicius, from the Roman Empire of the 4th century AD, is the only surviving recipe collection from the ancient world.

THE ROOTS OF THE ARABIC CUISINE

Originally Arabic food was the food of the desert nomads and therefore it was simple and portable. Nomadic tribes could use only transportable foods such as rice and dates, or ambulatory stock like sheep and camels. The main foodstuff that the Arab nomads consumed were:

- **Flat bread. It was made along the caravan routes and in the nomad camps. It is made from wheat flour, water, and a little salt. The dough can be flattened and shaped by hand like a tortilla and put on a flat pan over a fire.**
- **Dates coming from the date palm tree which grows in the hottest deserts near oases. Nomads in the south Morocco desert (El M'sid region) used to eat a particular variety of dates (*Mfasssas* dates) in small pieces, with "smen", that is butter made from goat or lamb milk and "tazouknnit", a desert herb that is like thyme; and they served it with mint tea.**
- **Sheep were the most important source of milk and meat for the nomads and lamb is perhaps the most popular meat in Arabic cuisine. They grilled the meat in a hole in the sand. Goats were also raised for meat and milk, as well as camels.**
- **Chickpeas, 'fava' beans and lentils were dried and carried along on nomad trips. The nomads traded these for beans and grains to add to their diet.**
- **Dried fruits such as raisins, apricots, figs, etc. and nuts were brought on trips. Olives were also taken along.**
- **Cheese made from goat milk. The nomads also got milk from camels and made camel cheese. Yogurt was also made from milk, originally by the Turks and Mongols.**

Nomads stopped in oases and in settled farming areas to trade for some of their food such as flour for bread, fruits and vegetables and spices.

- **Mint tea; Nomads used to drink tea all day to refresh themselves from the hot and dry desert weather. Traditionally served in small glasses the Nomads preferred their tea extremely sweet and strong (brown). The person who served the tea used to pour it from high up into the glasses, from glass to glass, so as to cool it, without stopping and create a bit of foam in each glass; that was the traditional way to serve tea.**

As the caravans journeyed throughout the Middle East, new seasonings and vegetables were discovered and added to the existing 'repertoire'. Each new food element was integrated into tribal diets in various ways depending on the tribe's preferences, needs, etc. The nomadic Bedouin cuisine was enriched with elements of other cuisines from the Arab world notably from Syria, Lebanon, Palestine and Egypt, resulting in a highly diverse cuisine.

E. Food in the Middle Ages

Warfare, instability and climate change had an effect on diet and there was also famine. The Byzantine empire lost its eastern territories in the 600s and suffered shortages of olive oil. But movements of peoples had some good effects on the diet too. People from Western Europe who came to

Syria and Palestine during the Crusades took back with them new ideas on cookery and new tastes for spices, which they learned from the Islamic culture. Christians, Muslims and Jews all had their different food rules. There were feasts, which even poorer people might have the opportunity to enjoy fine foods. There were also fasts, which sometimes were more difficult for the poor than for the rich, because rich people could afford the special foods allowed by the strict regulations.

The great majority of people in the Byzantine Empire were poor farmers and their diet was based on bread made of barley, vegetables and legumes, fruits, cheese and small salted fish and water in which they added wine (to keep the water safe from microbial infection). Bibliography mentions that in periods of starvation people shared the food (wheat grains, brans and oak-galls) with their animals. For the aristocrats and the owners of land things were completely different: they enjoyed rich meals based on fish, pork, bread, pulses and dried fruits, olives, etc. The Byzantines were fond of "garos" the fish sauce that also the Greeks and Romans preferred.

Spanish and Italian cookery manuscripts of the 13th and 14th centuries AD show that medieval Mediterranean cuisine was not so very different from that of the ancient Romans: there are recipes for pork with honey, duck with quince marmalade, giblets with grape syrup and vinegar. Onion soup and vegetable stew, beans and brown bread, were still the staple foods of the poor.

Thanks to the trade routes, new foods introduced to the Mediterranean in the Middle Ages included spinach, eggplants, lemons, bitter oranges and cane sugar. All these originated in Asia and spread from East to West and were spread along the North African shore and into Spain due to the Islamic expansion during the early Middle Ages of the 7th century AD and after. An exchange of foods from these vast territories was possible; no longer was "Arab" food only that of the desert nomads. It was during this period that lemons, bitter oranges, spinach and aubergines were introduced from the east to Mediterranean orchards and gardens. Sugar and rice, formerly expensive rarities, gradually became cheaper and commoner. The importation of sugar, a much more versatile ingredient than honey, led to the creation of jams, jellies, "spoon sweets" and sweetmeats. Eastern spices were difficult to get in medieval Western Europe, but Arab lands were closer to the sources of the spice trade, and westerners who tasted Arab food were sometimes overwhelmed by the flavours they encountered.

Turk greengrocer

Greek woman from Macedonia holding a loaf of bread
"Le Navigationi et Viaggi fatti nella Tvrchia", di Nicolo de' Nicolai (1580)

F. The global Mediterranean

In 1500 AD the Mediterranean diet was rather meager, especially for poor country people and islanders. A peasant meal might be a small piece of bread with onion, some olives or a bit of cheese or salted meat; fresh meat was for feast days. The preservation of food enabled people to have good food year round including pickled vegetables, smoked meat, dried pulses and sweets. It was at that time that Turkish (Ottoman Empire) and Arabic influences began to strongly be felt in the Northern shores of the Mediterranean. Fresh fish and seafood was available in the islands and along the coasts, but it wasn't cheap. Household ovens were rare, and many families baked "ash-bread" in the embers of the fireplace. But in the Near East and the eastern end of the Mediterranean there was a more complex culinary tradition.

The high cost of spices in Europe - at a period when pepper, ginger, cinnamon and nutmeg were thought of not just as flavourings but as essential to health - was one of the reasons why Columbus set out across the Atlantic. He hoped to find new routes to the sources of these spices. Instead, he found America with its chillies, allspice, vanilla and chocolate, its tomatoes, haricot beans, squashes, potatoes, maize and sunflowers. All these products have influenced the food of the Mediterranean. Some of them, when people learned to use them fully, were revolutionary: the tomato for its flavour and nutritional qualities, the chilli as an easily-grown flavouring to compete with black pepper, potatoes and maize as cheap staple foods, sunflower for its oil as a cheap alternative to olive oil.

Meanwhile the farm animals and plants that used to be typical of the Mediterranean are now farmed in many parts of America. Thus, from 1492 onwards a revolution took place in food habits. Food and food trade have gradually become global. New crops have continued to arrive, including sweet oranges, tangerines, grapefruit, maize and kiwi-fruit. Cheap international transport means that fruits that are not in season in the Mediterranean can be flown in from the southern hemisphere, and fruits that won't grow in the northern areas (such as the banana) can be imported in large quantities.

SPICES, GASTRONOMY & THE BIRTH OF FRENCH CUISINE

In Europe, in the period of the medieval years and the Renaissance, cooking spices played a key role in marking social difference. When, in the late 16th century following the discovery of the New World the bourgeoisie began to make ostentatious use of spices, which had become both less expensive and more commonplace, the cuisine of the aristocracy turned away from them. Abandoning the use of spices as a sign of disregard for such needs, sophisticated French gastronomes switched to taking an interest in the taste of food. In 1654 in a fundamental work "Les délices de la campagne", Nicolas de Bonnefons established a revolutionary concept: "Cabbage soup must taste of cabbage, leek soup of leek, and so on...And I intend what I say about soup to become a common perception applicable to all food". This laid down the basic principle of what was to become French gastronomy: A cuisine where the taste of food was masked by strongly flavoured secondary elements was replaced by a cuisine where the combination of ingredients became an art governed by rules very similar to that of musical harmony or pictorial balance.

MOROCCAN CUISINE: A CASE OF A HIGHLY DIVERSIFIED CUISINE

Moroccan cuisine is an example of a mosaic in which a number of different cultures and cuisines have been integrated in a very...delicious way. Being at the crossroads of many civilisations, the cuisine of Morocco has been influenced by the native Berber cuisine, the Arabic cuisine of Andalusia brought by the 'Moriscos' when they left Spain, the Turkish cuisine from the Turkish and Middle Eastern cuisines brought by the Arabs as well as the Jewish cuisine. The cooks in the royal kitchens of Fez, Meknes, Marrakech, Rabat and Tetouan refined Moroccan cuisine over the centuries and created the basis for what is known as Moroccan cuisine today.

In spite of all these novelties, the ancient Mediterranean staple foods still survive today:

- Wheat bread
- Olive oil and olives
- Broad beans and other pulses
- Grapes (and wine)
- Figs and dates
- Seafood of many kinds
- Milk and cheese
- Lamb, kid and other meats.

From the 1950s onwards, while there was still concern about nutritional deficiency in developing countries, in Western Europe and the USA industrial farming methods and the development of agri-business led to surplus production of almost every kind of food, especially cereals, dairy and meat products. Increasingly, Mediterranean countries feel the influence of this development. Processed food forms the major part of many people's diets with consequent increases in fat, sugar, and salt intake. Also, with worldwide transport, even foods that don't grow well in Mediterranean lands (such as bananas and other tropical fruits) are often easy to buy. Foods that aren't in season ar-

Map of the Mediterranean region during the Middle Ages by Felix Delamarche, published in 1829

rive by air or sea from producers in the southern hemisphere. There's plenty of choice, but, when choosing, it's easy to forget about a sensible and balanced nutrition. In this way, the modern diet brings new concerns about health and the ethics of production methods.

2nd CHAPTER

FOOD, BIODIVERSITY AND THE MEDITERRANEAN LANDSCAPES

A. The geomorphology of the Mediterranean basin

The term "Mediterranean" refers to the Mediterranean Sea, a sea surrounded by land and derives from the Latin "mediterraneus" which means "inland" (medius, middle & terra, land, earth). The formation of this enclosed sea has its roots in the distant past.

According to the fossil records and the geological theories it is suggested that about 1.1 billion years ago on the earth existed the ancestral super continent of Pangaea ("all earth") which was surrounded by a vast ocean named Panthalassa ("all sea"). About 250 - 180 million years before our days, Pangaea is believed to have broken up in parts, initially two, forming the super continents Laurasia to the north and Gondwana to the south. Due to the drifting apart of Laurasia and Gondwana, the Atlantic Ocean was formed and a sea between the two super continents was formed called Tethys Sea (the name of a Greek mythical godship). Laurasia included the lands that later became the continents of North America, Europe and Asia. Gondwana included South America, Africa, Arabia, India, Australia and Antarctica.

The relative positions of today's continents at that time is estimated based on information from three independent sources: a) data deriving from the ocean seabed, b) the very good matching of the continent contours and borders and c) paleomagnetic data. The process of seafloor spreading and the collision between the African and the Eurasian plates, stimulated orogeny in Europe and the Pyrenees, the Alps and the Balkans were formed. What was once the Tethys Sea shrunk and divided generating the Mediterranean, the Black, the Caspian and the Aral Seas. Later on, about 7 million years ago, the African plate connected with Europe to the west and "closed" the present day Strait of Gibraltar. It remained "closed" for approximately 2 million years. During that period the Mediterranean Sea evaporated and remained a deep dry basin as it is suggested by the salt deposits and strata found under the sea bottom, according to the results of the Deep Sea Drilling Program (1970). When the natural "sill" at the Strait of Gibraltar broke down about 5 million years ago, the water of the Atlantic Ocean filled the Mediterranean basin again. Such complete evaporation and refilling of the Mediterranean Sea must have happened several times since that period as the undersea bottom strata point to.

These geological changes in the Mediterranean basin went on for several millions of years and formed the environment within which human activities were developed. Although the Mediterranean has been inhabited for many millenia, sound historical records refer approximately to the last 12.000 years. Inhabitants of the Mediterranean area of various origin made the surrounding lands productive, adjusting at the same time their every day activities to the prevailing environmental conditions and creating some of the most admirable civilizations in human history.

In our days the geomorphology of the Mediterranean basin still keeps elements of its distant past and includes portions of the continents of Europe, Asia and Africa. Europe surrounds the Mediterranean from the north: the mountain chains of the Pyrenees, Alps, Dinaric Alps, the Balkan Mountains and Rhodope. To the East lies Asia and the basin's boundaries expand to the peninsula of Anatolia up to the mountains of central Anatolia. The Atlas Mountains and the Sahara desert are the region's southern boarders in Africa.

The Mediterranean Sea is an almost completely enclosed sea by the continents of Africa, Asia and Europe. It is connected to the Atlantic Ocean through the strait of Gibraltar (14 km wide and 300 m deep), covering an approximate area of 2,5 million km^2 with an east-west span of 3.900 km and a maximum width of 1.600 km. It is a very deep sea, with an average depth of 1.500 m reaching a maximum depth of 5.150 m off the southern coast of Greece (Ionian Sea). An undersea sill from Tunisia to Sicily divides the Mediterranean into eastern and western basins and another one between Spain and Morocco restricts the water's circulation through the narrow Strait of Gibraltar, thereby greatly reducing the tidal range of the sea. These

features combined with high rates of evaporation, makes the Mediterranean much saltier than the Atlantic Ocean.

Twenty-one countries have a coastline on the Mediterranean Sea. These are:

In the North, in Europe (from west to east): Spain, France, Monaco, Italy, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Albania, Greece, Turkey and the islands of Malta and Cyprus.

In the Middle East, in Asia (from north to south): Syria, Lebanon and Israel.

In the South, in Africa: (from east to west): Egypt, Libya, Tunisia, Algeria and Morocco.

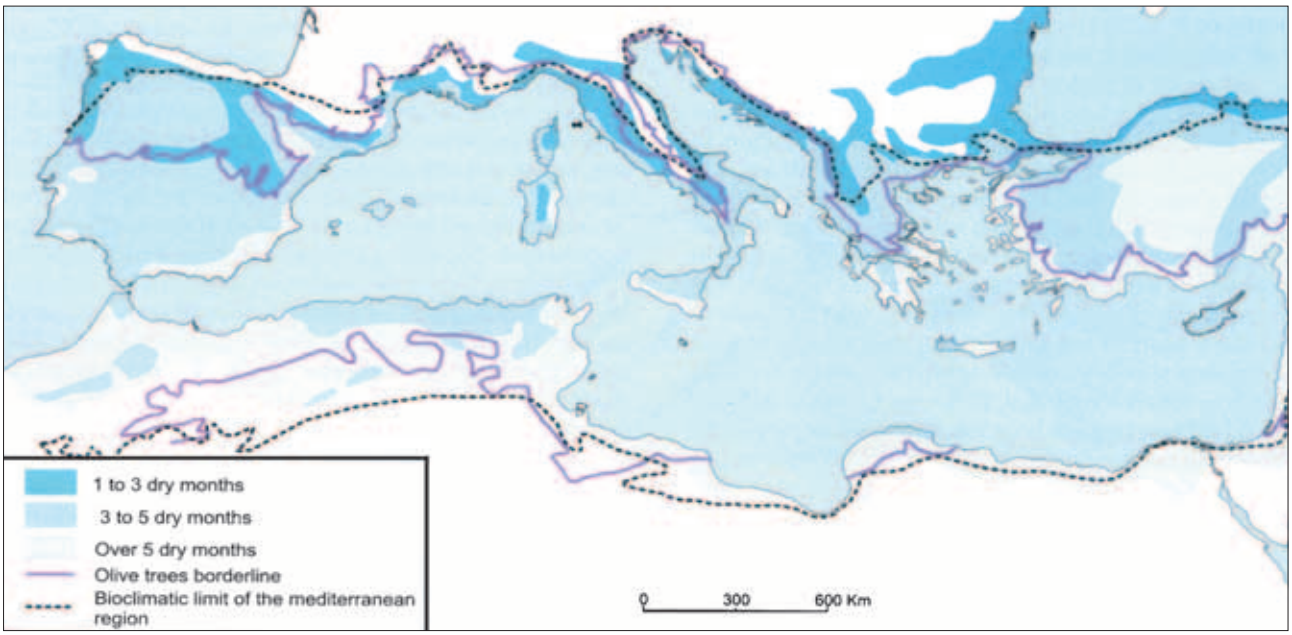
Four more countries have traditionally been considered Mediterranean, namely Portugal, Serbia, Jordan and Palestine due to their relevance in climate, fauna and flora and of course, due to the common historical background and cultural connection with the rest of the countries of the region.

B. The Mediterranean climate

The Mediterranean Sea is the only sea which gave its name to a certain type of climate which occurs in the entire region around it: the Mediterranean climate. It is characterized by hot and dry summers and a rainy mild winter season with a lot of wind while the transitional periods between the seasons are very short. It is also known as *etesian* climate from the Greek word "etesia" that means every year, annually. This is the "opposite" of a monsoon climate. The Mediterranean climate zone is delineated from the temperate climate of Western and Central Europe by the system of the folded mountains of Europe, Asia and North Africa. Every summer the hot winds from the Sahara cover the Mediterranean and reach the northern coasts. The barometric high pressure belts, known as the "Azores's anticyclone" expand and cover the region protecting it from the moist winds coming from the Atlantic Ocean. Thereby, the summer is characterised by clear skies and high temperatures due to north-eastern winds that blow during the summer, reducing to some extent high temperatures, cooling down the warm air and drifting out moisture. Limited rainfall occurs during summer and the average temperatures vary between 28^0 C and 33^0 C.

From the autumn equinox to the spring, the Atlantic Ocean affects the climate of the region. The fast anticyclone movement from west to east causes sadden changes to the winter climate and results in rainfall which continues till the end of April. During winter there is heavy rainfall in the northern areas (up to 3.000 mm) accompanied eventually by snowfall and more than 65% of the annual precipitation (rainfall) takes place during this time of the year. In very few parts of the Mediterranean the rainy period last longer, exceeding 100 days per year. However, in some eastern and coastal places precipitation is less than 100 mm of rainfall annually. The average winter temperature is 4^0 - 7^0 C but in some Northern areas it may be significantly lower.

It is obvious from the aforementioned that there are inherent difficulties in accurately defining the Mediterranean climate. It may be considered as a transition climate between the temperate, continental one which prevails in the north and the warm, dry climate prevailing in the southern zone. Typical Mediterranean climate is found between 30^0 and 45^0 latitude and reaches 600 m above the sea level; in fact it is the olive tree zone.



The bio-climatic features of the Mediterranean (Blue Plan, 2005)

CHANGES IN THE LANDSCAPE

As deforestation became widespread around the Mediterranean the microclimate began to be affected. Rain that had been stored by the forests now runs off, removing the soil. Streams, lakes and lagoons were filled up with silt and then dried out. Many fields were washed away. Cities that once had been surrounded by fertile fields and forests are today surrounded by desert or eroded mountains. In many places (e.g. northern Syria) archaeological evidence indicates that up to two meters of top soil has been removed while in Libya the desert has "eaten" the fertile coastal zone and reached the sea. All along the southern shore of the Mediterranean, the fertile lands that once existed have been replaced by desert. It is believed that the landscape degradation and general desiccation of the Mediterranean region and the subsequent impact on food production is not a consequence of adverse climatic conditions alone but a result of unsustainable human activities.

C. Water Resources

The Mediterranean is one of the most water scarse areas on Earth. The natural availability of water is unequally distributed geographically between the North (72%), East (23%) and South (5%). It is also unequally distributed seasonally and geographically, between countries and populations. The short and intense rainfalls often ending up in floods, cause serious problems in cities due to inadequate urban planning and also cause soil erosion and land degradation. The water availability fluctuation is greatly influenced by periodic droughts; every 10 years a high dry period is observed and the natural availability of water may be reduced to 1/3 of the regular.

Over 500 rivers flow into the Mediterranean from which about 30 may be considered as big rivers such as the Ebro in Spain, the Rhone in France, the Po in Italy, the Nile in Egypt and others. The Nile is the longest river that flows from the mountains of Central Africa through many countries and finally through Egypt into the Mediterranean. It creates a great delta in north-eastern Egypt. The Rhone River also creates an analogous delta in the southern coast of France. Due to many dams in the rivers which flow into the Mediterranean there is a significant reduction of water flow and sediment supply with great impact on the coastal ecosystems and the overall fish production i.e. after the construction of the Aswan dam sardine catches were reduced significantly near the delta of the Nile.

The intensification of human activities along the coasts inflicts great pressure on water resources and affects water quantity and quality. In many countries e.g. in Egypt groundwater abstraction has exceeded the sustainable limit of 50%; Israel reaches 90%; Libya exceeds 400% including abstractions from the fossil water aquifers through the so-called: "great man-made river". The over abstraction of groundwater in some areas has caused the sea water intrusion into the groundwater layer and the disturbance of the fresh-salt water ratio which is, in most cases, non reversible.

Irrigated agriculture is the main water consumer in almost all Mediterranean countries; an average of 80% of available freshwater is consumed in agriculture and this proportion reaches 90% in some parts. In general, water demand increases during summer when water availability is limited due also to tourism.

The greenhouse effect and the subsequent mean temperature increase is expected to have serious impacts on the region's water availability by reducing precipitation and increasing its variability, extending drought periods and aggravating the risk for desertification.

SUSTAINABLE WATER MANAGEMENT

The main sustainable solution for water in the Mediterranean can be found in the principles and concepts of the Integrated Water Resources Management (IWRM) approach. IWRM aims at ensuring the coordinated management of water, land and related resources by maximizing economic and social welfare without compromising the sustainability of vital environmental ecosystems. In this framework the basic guidelines are:

- **Employing new and traditional irrigation methods adapted to the prevailing climatic and landscape conditions.**
- **Using and reusing treated wastewater properly (already taking place in some countries e.g. Israel, Cyprus, etc).**
- **Water management based on a participatory approach involving users, planners and policy makers at all levels.**

Water consumption may be reduced significantly in the next 25 years by managing water demand and rationalizing water consumption in agriculture, especially during the long dry summers.

D. Biodiversity in the Mediterranean

As already mentioned, the Mediterranean is located at the intersection of three continents and in fact between two major landmasses, Eurasia and Africa which are quite different. The region is surrounded by many mountains, some

as high as 4.500 meters. Hills, forests, rivers, plains, peninsulas, wetlands, the great Sahara desert and around five thousand islands are all present in the Mediterranean. Its Eastern part is full of small islands and has a long fragmented coastline. All these elements combined with the locally modified climate from place to place contribute and result in a spectacular variety of landscapes and biotopes that host a very rich biodiversity.

MEDITERRANEAN BIODIVERSITY AS THE BASE OF THE MEDITERRANEAN CULINARY CULTURE

Mediterranean biodiversity represents the most varied and therefore the most valuable biodiversity of Europe. This biodiversity enters everyday life through its edible and medicinal part: in markets, fish markets, pharmacies, etc. Mediterranean nutrition is inseparable from the biological diversity which has for centuries supported the livelihood of Mediterranean peoples. It is perhaps most obvious when it comes to the variety of marine fish species, to «sardele», anchovies and mackerels, crustaceans, shellfish and cephalopoda which have traditionally been used in the Mediterranean diet, as well as the wealth of freshwater fish and shellfish species. The interrelationship and dependency becomes even more evident when turning to vegetation: vegetables, fruits, cereals, legumes, olive trees and vines, spices and aromatic herbs.

The connection between the African and Eurasian plates about 15 million years ago, and the African plate with Europe 7 million years before our time, allowed many species to migrate from Africa to Europe and Asia and vice versa. Many of the first domesticated and cultivated species initially spread throughout the whole of Eurasia and Africa are found in the Mediterranean region. A significant part of the Mediterranean basin was once covered by evergreen oak forests, deciduous and conifer forests. However, over 10.000 years of human settlement and activity has distinctly altered this original vegetation. Some components of the current Mediterranean vegetation (species of the genra *arbutus, calluna, ceratonia* and *chamaerops*) are relics of ancient forests. Today, the most widespread vegetation type is the hard-leafed or sclerophyllus shrublands called "maquis" which includes representatives from the plant "genera"; genera includes species closely linked to the Mediterranean diet such as *juniperus, myrtus, olea, phillyrea, pistacia,* and *quercus*. Many plants in order to survive during the long and dry Mediterranean summer have developed particular mechanisms such as shortening their active life, e.g. poppies, chamomile, daisies, etc., or producing long-living seeds. Other plants e.g. cyclamens, crocuses, orchids, etc. survive the summer through their bulbs and root system. In general, Mediterranean flora has a limited visible growth but a developed and extended root system (in seach of soil and humidity). Furthermore, the region is characterised by frequent forest fires occurring mainly during summer; most plants present a remarkable ability to adapt to these conditions and grow again using their bulbs and radical system that remain alive e.g. hollies, arbutus, heaths, lentisk, etc. or begin a "new life" thanks to their long-living seeds e.g. thyme, brooms, pines, etc.

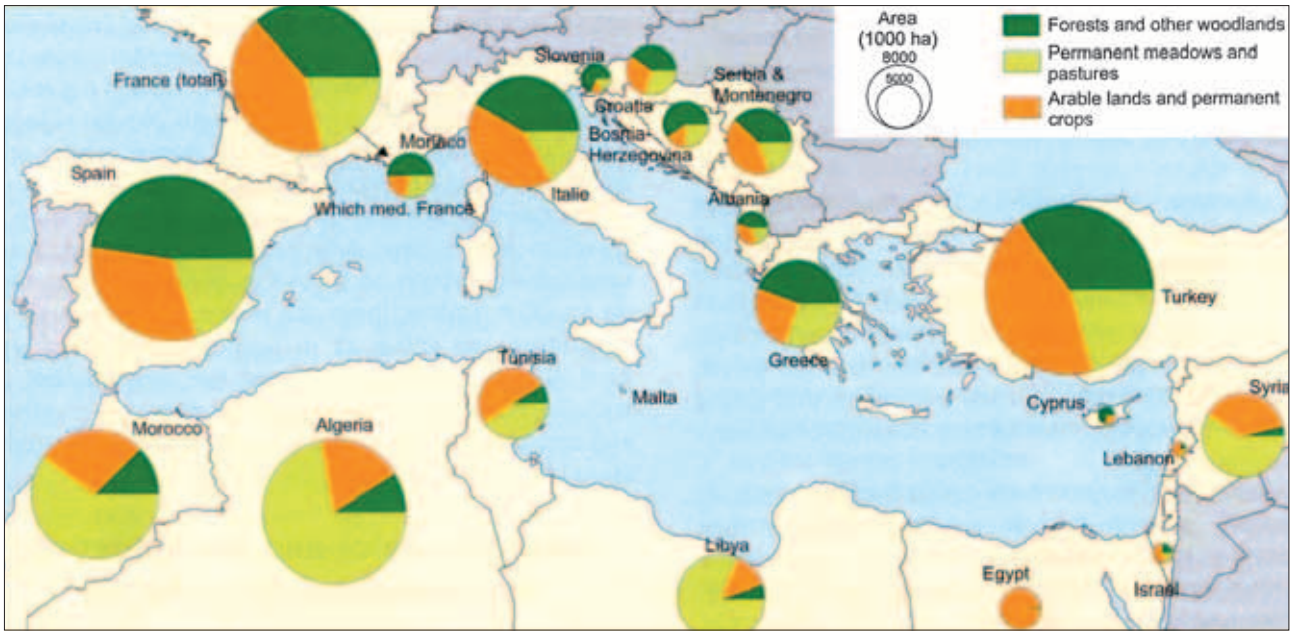
E. Agriculture in the Mediterranean

Some of the most important plants for human feeding were first cultivated in the Mediterranean region, such as wheat, oats, peas, lentils, barley, beans and broad beans, grapes and olives; agricultural settlements and their cultivation methods spread out to the whole region from the Middle East. By the copper era, the cultivation of cereals, the olive tree and grapes/vines started spreading westwards and agriculture flourished especially around the Aegean Sea, contributing to the development of trade and significant economic growth. The mountainous zone surrounding the Mediterranean basin was where several tribes lived cultivating olives and vines on the mountainous and hilly areas. These same areas provided enough pasturelands to feed sheep and goats, producing meat, milk, cheese, wool and horns and abundant hunting, timber from the woods and fresh water from the springs and headstreams.

Continuous efforts through thousands of years has created a particular landscape and an elaborate system of stave structures throughout the mountainous areas of the Mediterranean region able to sustain agriculture in small scale "mosaic" forms. The light wooden plough was used to plough the relatively thin surface soil; stone walls and terraces were constructed in order to protect the precious top soil and collect it from sudden rainfalls or/and strong winds. Traditional Mediterranean nutrition is firmly rooted in traditional Mediterranean farming and organic agricultural production. To adapt to constrains the rural agricultural areas have managed to invent and develop local agricultural practices, among them the most common and characteristic ones being:

- Terracing of slopes and planting terrace crops that need the least possible watering
- Small water works
- Dry farming
- Crops rotation
- Manure use for fertilization
- Traditional ploughing using animals.

In ancient times, farmers used big animals such as cows and in the Middle Ages they started using horses for agricultural purposes. Several devices such as harnesses, horse-



The relative percentage of forest, cultivated land and pasturelands (Blue Plan, 2005)

shoes, hooks, etc. were invented and used; they built water and wind mills for grinding cereals most of which are of great cultural importance nowadays throughout the region. Nevertheless, agriculture could never provide enough goods, especially in the islands. Soon people turned to the sea for travelling and trading, they discovered new lands and established colonies or communities within existing cities. Due to the great need of timber for ship construction and for energy production in metallurgy, etc. many woodlands of the region were deforested altering dramatically the landscape and the microclimate of the region. Sometimes "controlled" forest fires for agricultural purposes also converted forests to croplands but in the long term caused soil erosion. Furthermore, uncontrolled livestock activities completed soil degradation by destroying the plant cover and obstructing natural reforestation.

Farming in the Mediterranean demands a lot of effort and many times the earnings are not satisfactory. Harvesting is often affected by unstable climatic conditions e.g. cropping of wheat depends on rainfalls and suitable wind. Until recently, most of the farmers in Mediterranean mountainous areas or in the islands had to face in the same "primitive" way identical problems as their ancestors did regarding unpredicted weather changes, difficulties in the maintenance and expansion of terrace cultivation and suitable mechanical equipment needed. Many people throughout the millennia searched for work in other places or they migrated because life was so hard.

By the middle of the 20th century the use of machines for agricultural purposes became widespread and revolutionised farming. The mountain slopes which were cultivated for millennia were at least partly abandoned. People were forced to find new agricultural lands that could be accessed by heavy equipment (e.g. tractors, etc). The use of fertilizers and pesticides has intensified to maximize production with less effort and less risk. Additionally, the selection of specific species for cultivation with higher yields and fewer risks from disease, extreme weather conditions, etc., led to a certain extent, to changes of the dietary habits, deterioration of the traditional varieties and of the natural biodiversity in the region. Intensification of agriculture and population growth brought on the draining of many wetlands throughout the Mediterranean basin. This caused a dramatic reduction in biodiversity and a significant threat or even extinction of many species, mainly birds and mammals.

In most cases throughout the Mediterranean, water for agriculture was obtained almost exclusively by rain. The hilly land was terraced to retain water and soil in order to increase its vegetation.

The ancient Egyptians had managed to control the Nile's flood by conveying the water with the silt it contained to the neighboring fields by conduits. The benefits were twofold: the silt enriched the land and improved its fertility; the water irrigated the soil. When it was absorbed, the farmers could proceed with planting or sowing their crops.

Farmers correspond to 45% of the global population, 60% of the working population of Southeast Asia and 64% of Africa.

OLIVE OIL PRODUCTION

Olive groves are a major element of the identity, landscape and biodiversity of the Mediterranean region and have contributed substantially to the region's history. The cultivation of olives also has a strong socio-economic component since labor costs represent about 80% of the oil's production costs. In 2003, 95% of the world oil production (more than 2.5 million tons) took place in the Mediterranean. However, the continuous increase in production can have serious impacts on the environment: soil erosion in olive orchards, over-consumption of water in irrigated olive groves, the continued use of fertilizers and pesticides that alter soil and water quality and deterioration of river water quality, due to "black liquor" wastewater from the oil production process. Promoting technology for black wastewater treatment is needed to reduce its very negative impact on rivers and downstream users. For example, lagooning made it possible to considerably improve the water quality of the polluted Sebou wadi in Fes, in Morocco. Research projects are underway in several countries to perfect new techniques i.e. biological treatment, electro-coagulation, bio-methane processing, etc. that will make it possible to recover biogas (methane) and upgrade sludge to compost or cattle fodder. Research and promotion of the two-step oil extraction process -instead of three- is to be encouraged. This will make it possible to reduce the production of black wastewater by half and significantly limit the amount of water used.

THE MEDITERRANEAN LAND SUFFERS...

⊙ Erosion and desertification of land are a serious threat in the Mediterranean region. According to estimates of the early 1990s, 80% of arid and semi-arid areas in the southeastern Mediterranean countries are affected. In these areas, pastureland (84%), and rain-fed arable land (74%) are the most affected, but also irrigated land especially due to salinisation. Desertification damages 63% of Mediterranean Europe (Spain, Italy and Greece). Water and wind soil erosion are the most serious related risks. The main causes of such soil degradation are: deforestation, overgrazing, massive cultivation, industrialized agriculture and public works.

⊙ Rural Mediterranean areas are fragile landscapes vulnerable to many pressures and risks. Such risks include: water erosion of shallow soils occurring on steep slopes; wind erosion in semi arid and arid areas; serious droughts because of the climate's inter-annual variability; flooding (torrential rains); salinisation of irrigated soils when they are poorly drained and mix with saline water; and, forest fires.

F. Fishing & aquaculture in the Mediterranean

Fishing in the Mediterranean provided food since as early as the Paleolithic era. The Mediterranean Sea is poor in nutrients and therefore the fish deposits are relatively limited. There are only a few areas where fish catches are significant such as the Bosporus straits, which connect the Mediterranean with the Black Sea. The absence of riffles and other suitable places for large-scale reproduction of submarine fauna, on the one hand, and over-fishing on the other, has resulted in biological impoverishment of the Mediterranean. The average fish production reaches 1,4 tons per km^2 which corresponds to almost 1/3 of that of the North Sea and 1/2 of that of the Baltic sea.

Up till the middle of the 18th century fishing was carried out exclusively near the coast. Fishing boats were powered for millennia by man (row boats) and wind (sail boats) power. The invention and use of steam engines and later on of diesel/crude oil engines, allowed boats to become bigger and safer for travelling far away from the coast in the open sea, under various weather conditions using improved, sophisticated fishing machinery and refrigeration and thus, catching and storing more fish. Furthermore, the evolution of technology in telecommunication, navigation and the use of electronic devices (radars, sonars, etc.) greatly increased the efficiency to identify fish stocks. In the beginning of the 1900s, the annual catch was about 8-10 million tons of fish in the Mediterranean. This became 100 million tons in the beginning of the 1990s. This dramatic increase reflects the great pressure exerted on the limited fish stocks of the Mediterranean which, in addition, suffer from widespread marine pollution and reduction of suitable habitats for reproduction.

Aquaculture or fish farming is the cultivation of the natural produce of water such as fish or shellfish and other aquatic organisms. The technique of catching fish by trapping them in parts of shallow lagoons (*vivaria*), eventually feed them and keep them in captivity for using them at any desired time, has been known since antiquity. The Greeks and the Romans used this technique in order to have fresh fish for their wealthy symposia. The technique is still applied in parts of the Mediterranean even today. Population growth, the popularity of fish dishes and the restricted fish stocks stimulated the development of aquaculture throughout the Mediterranean that became one of the most important economic activities in some countries such as Greece, Turkey, Italy, Spain, etc. till our days. Fish farming is the fastest growing sector of the world food production; in 1995 it produced about 1/3 of the world fish and shellfish production in terms of value.

In the year 2000, the combined Mediterranean fish farming production of European sea bass and gilthead sea bream was 130.000 tons out of which 70.000 tons (more than 50%) was produced in Greece. Significant was the production in Turkey with 20% (28.500 tons), Italy with 12% (17.000 tons) and Spain with 10% (14.140 tons). Smaller productions were those of Cyprus (1.681 tons) and of some countries of the Middle East and North Africa such as Israel (1.673 tons), Egypt (810 tons) and Morocco (724 tons).

Even in antiquity the Mediterranean delicacy of "fish eggs" was produced from sea bass trapped and fed naturally for some time in captivity in wetlands, lagoons and river deltas. It is still produced in the same way today, salted, dried (sometimes slightly smoked) and covered in bees wax to be preserved for a long time. Freshwater aquaculture also existed and still exists in the Mediterranean mainly for trout, to be consumed fresh or smoked.

Fish farming provides a relatively inexpensive, fresh and quality source of highly important fish protein to large groups of consumers but it is not environmentally neutral. It exerts considerable pressure on ecosystems by increasing the organic (carbon) load discharged in water and sediments of the surrounding area. Fish farming consumes oxygen and increases to a certain extent the nutrient load deriving from the decomposition of the organic matter from fish pellets and unused fish food accumulated in the sea bed. The various antibiotics and other chemicals used may find their way to the table of the consumer if not carefully controlled.

G. Globalisation, urbanisation and the impacts on dietary habits

The wealth of the Mediterranean was based for centuries on extensive and strong trade activities of all kinds of goods all across its coasts. The main ports were critical for the economy but also for cultural interactions; they were also the places receiving travellers, refugees, immigrants and thus the gates for foodstuff and dishes of other cultures. The globalization of economy triggers radical socio-economic changes and makes transport of goods and communication faster, cheaper and more effective. It is synergetic to urbanization and litoralisation but increases the gap between the rich and the poor. By 2025 the Mediterranean coasts are predicted to have a population of 300 million people from 150 million in the 1990s.

As urbanization increases, changes happen faster, increased flows of goods and services take place. The speed of change varies with diverse impact on food systems, health and the nutritional status of populations in different socio-economic groups not only among different countries but even in different regions within the same country. Consequently food choices multiply and particularly in the wealthier Mediterranean societies which can afford more "exotic" and luxury foods, wines and beverages than in the past. Although a wider variety of food is accessible in the cities, food consumption in these areas is not necessarily of superior nutritional quality and food safety is a growing concern in many urban environments (see also Chapter 3).

Contrary to what it expected, urbanization and litoralisation reduces people's leisure time. Refrigerators in super markets, in grocery shops and in every household allow for storage of food which was not the case in the past. At the same time working conditions for men and women drastically reduce the time for cooking for many Mediterraneans who rely either on precooked refrigerated food or on food prepared outside the home such as home delivered food, fast food, etc. The social changes in the Mediterranean, followed by the changes in food trends and the availability of comparatively much cheaper food than in the past (fresh and deep frozen) of all kinds, have resulted in a gradual shift from the typical Mediterranean diet.

The economic growth of the northern (European) Mediterranean countries enhances the differences with the countries of the South. 90% of the gross national product (GNP) is produced in five countries of the Mediterranean north (e.g. the per capita income in France is 30 times over the one of Egypt). The rapid economic changes and regional initiatives such as the Euromediterranean Free Trade Area (to be in place in the next decade) will undoubtedly affect not only trade modes but also production and consumption patterns and in turn agriculture and the prevailing products of the countries. These changes are expected to have an impact also on food towards a still unknown direction.

In the ancient and medieval periods the Mediterranean was used as a transportation highway for trade and cultural exchange between Mesopotamians, Egyptians, Persians, Greeks, Phoenicians, Romans as well as Arabs, Slavs, Ottomans and Iberians. In modern times, migration to the northern European coast from densely populated countries (e.g. Egypt, Turkey, Morocco, etc.) continues. This migration may affect the nutritional habits of the immigrants and of the recipient countries.

In order to produce greater quantities of food to feed the increasing urban population, the use of mechanized agriculture became widespread followed by the excessive use of agro-chemicals with serious effects on the land, the quality of the food and the health of the consumers. Today, two tendencies occur (i) Trade,

search for work, but also wars, resulted in considerable movements of population and migration, (ii) Quality and luxury foodstuff of great variety is available at very high prices, whereas the limited variety of the produced cheep foodstuff dominates the market and reduces culinary choices.

H. Tourism in the Mediterranean

Since the 1960s the Mediterranean has become the main tourist destination in the world, preferred by almost one third of global tourists. This number is now stable or slightly increasing annually. Tourism is one of the major economic activities for most of the Mediterranean countries such as Cyprus (22% of the gross national product) and Malta (24%). In 2000 tourists of the coastal zone were about 200 million and they could double by 2025. Tourism activity peaks in summer, coinciding with the time when natural water availability is at its lowest level. Population density in some tourist spots is about 2.000 persons per hectare and water consumption varies between 300 and 2.000 litres per person per day.

In many cases pressures from tourism include degradation and destruction of water ecosystems, pollution and diminishing groundwater levels and drying out of wetlands.

Hosting, feeding and entertaining the increasing number of tourists along the limited space of the Mediterranean coast, if done without proper planning, may push urban boundaries, on the one hand, into the sea with extended land reclamation programmes and, on the other, further inland exerting pressures upon terrestrial biodiversity of the remaining precious ecosystems. The latter, by the way, are among the main attractions people come to see in the Mediterranean.

However, tourism is also an important source of income and an engine for a series of other productive activities. It is less damaging than other "industries" and has the potential of becoming "green", a source of revenue for the protection of landscapes, natural parks and monuments integrated in its "market cycle". Furthermore, storing water in small-scale dams, desalination and reuse of wastewater could be solutions in addressing high water demand due to tourism. Finally tourism offers the opportunity to introduce people to local cuisines.

The link between tourism and Mediterranean dietary habits is twofold; on the one hand, people are attracted to the region in order to experience the Mediterranean way of living and taste its food in the authentic Mediterranean environment. On the other, tourists may bring with them their own dietary habits. In many cases tourist enterprises offer meals like those their customers have in their home countries. An additional phenomenon linked with mass tourism is the rapid expansion of low-priced fast food places in all major tourist destinations, a feature common throughout the world even in the absence of tourism.

3rd CHAPTER

THE MEDITERRANEAN DIET AND MODERN CONSUMERS

A. A diet for a healthy living

A healthy nutritional "strategy" as it is presented by the Harvard Medical School (Willett, 2001) should include the following main elements:

- Maintaining a stable and healthy weight and exercising frequently.
- Replacing saturated -whole milk and red meat- and trans fats, some found in margarines, with mono-unsaturated and poly-unsaturated fats found in olive oil, fatty fish (sardines, mackerel, etc.) nuts, whole grains, etc.
- Substituting refined-grain carbohydrates (white bread, white rice and frequent intake of baked potatoes) with whole-grain carbohydrates. Carbohydrates from whole wheat pasta or bread or rice need longer to digest by the human body and they have a slow and steady effect on blood sugar and insulin levels that protects against heart disease and diabetes. They also provide important fiber plus vitamins and minerals.
- Choosing healthier sources of proteins by trading red meat for nuts, beans, chicken, fish, which have advantages over animal sources of proteins: they provide fibers, vitamins, minerals and healthy unsaturated fats. Red meat is the "worst" package of proteins because of cholesterol and saturated fats.
- Eating plenty of vegetables and fruits that lower blood pressure, decrease chances of having serious diseases (heart attach, cancer, etc.) and provide plenty of vitamins and minerals.
- Taking a daily multivitamin for specific population groups i.e. pregnant women, elders, athletes, etc.

The human body needs on a daily basis the following substances found in food:
— 60% carbohydrates,
— 20-25% fats,
— 10-15% proteins and,
vitamins, trace metals and a lot of water.
Many dieticians suggest that the minimum daily food quantities - that must not be decreased- for an adult organism are:

- **three servings of vegetables and two of fruit**
- **a quarter of a liter (250mL) of milk or 1 yogurt**
- **70-80g of bread, pasta or rice (cereals)**
- **150-170g of meat, fish, or legumes**
- **3-4 spoons of oil**
- **1,5-2 litres of water**
- **3-4 eggs per week are also recommended.**

A fruit serving corresponds to a glass of fruit juice, a whole fruit, a quarter of a little bowl of dried fruit or a half a bowl of cut fresh fruit. A vegetable serving corresponds to at least half a small bowl (250mL) of raw/cooked vegetables or to a small bowl of salad.
So, the human body takes from food all the basic substances that it is unable to produce itself such as vitamins, essential amino acids (that form proteins), essential fatty acids, trace elements, etc.

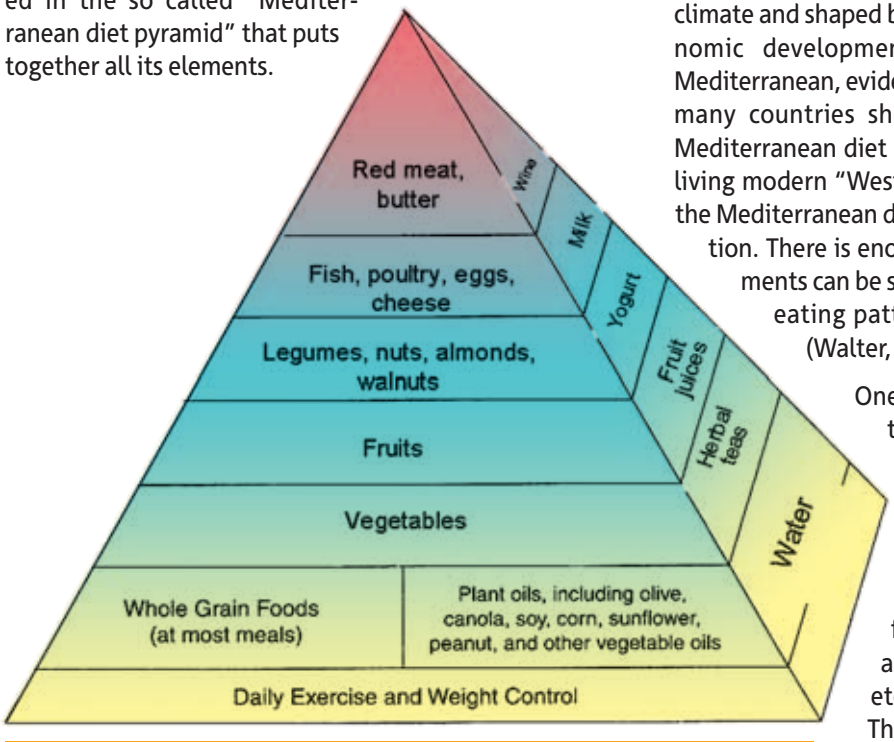
B. The Mediterranean diet

In the 1950s and 60s the nutrition researcher Ancel Keys and his team looked at dietary patterns in sixteen different populations in seven countries. This landmark work, known as the 'Seven Countries Study' was the first major investigation of the link between diet and heart disease; one of the most intriguing findings was that people living in Crete and other parts of Greece and southern Italy had very high adult life expectancies and very low rates of heart disease and some cancers, all in spite of relatively limited medical systems. Keys concluded that the Mediterranean diet was an important reason for the research findings. At that time, people followed the traditional Mediterranean diet that is characterized by:

- Use of olive oil as the main source of dietary fat.
- A high consumption of highly varied plant products i.e. cereals and breads, leguminous plants, vegetables and fruits (fresh and dried);
- Low and regular consumption of dairy products, mostly milk, yogurt and fresh cheese
- Consumption of fish, poultry and red meat (especially bovine meat, goat and sheep) on special occasions and not as part of the daily fare.

- Extensive use of aromatic herbs, spices, lemon, and vinegar;
- Moderate consumption of wine during meals.

Of course, the benefits of the Mediterranean diet are enhanced when combined with a physically active lifestyle and controled weight. The Mediterranean diet is illustrated in the so called "Mediterranean diet pyramid" that puts together all its elements.



The Mediterranean Diet Pyramid (Serman, 2006)

FLUIDS IN THE DIET

Nowadays, in the Mediterranean diet pyramid fluid intake is considered to be of high importance in the overall diet. Large and frequent consumption of water, fruit juices, teas and other natural beverages is an integral part of the nutritional culture around the Mediterranean basin.

Many detailed studies have since shown that the Mediterranean diet is connected with lower risks of many diseases. In recent papers which evaluated the evidence accumulated over the last three decades, it was concluded that the traditional Mediterranean diet meets several important criteria for a healthy diet. An attempt to conceptualise and operationalise the proper diet has been made and a score has been developed and evaluated (Trichopoulou, 2002). Studies among elderly in Greece, Denmark, Australia and Spain have shown that the overall Mediterranean dietary pattern was more important for longevity than individual nutrition components. So, we can conclude that a diet that adheres to the principles of the traditional Mediterranean one is associated with longer life. Nevertheless, there are two questions to address: Is the Mediterranean diet an integral entity or the sum of identifiable components that can and should be separately considered in the development of dietary guidelines? Is the Mediterranean diet and its major components transferable to populations living far from the region?

Although the Mediterranean diet evolved mainly out of agricultural necessities imposed by a warm and semi-dry climate and shaped by the landscape, the culture and economic development of the various parts of the Mediterranean, evidence from different types of studies in many countries shows that the components of the Mediterranean diet offer major benefits even for people living modern "Western" lifestyles. Taking advantage of the Mediterranean diet is not an "all or nothing" proposition. There is enough evidence to be sure that its elements can be safely and fruitfully incorporated into eating patterns of other cultures and peoples (Walter, 2001).

One could believe that, to a certain extent, the Mediterranean cuisine is led towards a "global cuisine". In fact there are two parallel processes where the Mediterranean cuisine(s) is involved: a) The "globalisation" of people's taste and therefore their daily "cuisine" e.g. by adding olive oil or balsamic-vinegar, etc. to salads throughout the world b) The familiarisation of many more people to "local cuisines". Mediterranean cuisine in particular is appreciated widely as both tasty and healthy and therefore "preserved" even with some "creative amendments" (see e.g. popularity of Italian, Greek, Lebanese restaurants, recipe books, etc.). Mediterranean people need to appreciate and treasure it as a living common cultural heritage and as one of their dynamics for continuous peaceful interaction, inspiration and satisfaction.

C. The contemporary profile of Mediterranean dietary patterns

In the countries of the northern shore of the Mediterranean: France, Greece, Italy, Spain, Portugal, the Mediterranean diet model has been replaced by a model of excess in calories, with animal products (22-38% of energy intake in 1995 compared with 13-30% in 1960) and fat (32-40% in 1998 compared with 20-30% in 1960). The shift from a "biological rationale" to an "economic rationale" in agricultural production has also encouraged the introduction of food and practices foreign to the Mediterranean culture. At the same time lifestyles have changed remarkably with accelerated urbanization. The above could explain why the difference is gradually disappearing between the originally lower mortality rate from

heart diseases and cancers, obesity rates and longer life expectancy of the residents of France's Lannguedoc - Roussillon region and the higher figures in the rest of France.

In the countries of the southeastern shore, improvements supported by pro-active health and food policies, have made it possible to meet some of the dietary deficits of the 1960s. Yet, despite progress, food intake remains far from the accepted standards as defined by international dietary standards. Even in the absence of recent surveys, a deterioration of the dietary situation cannot by excluded after the structural adjustments and privatisations of the 1990s which led to some disarrangement by states and a marginalization of parts of the population. Furthermore, lifestyles and consumption patterns that are foreign to the region are to some extent imitated. This is expressed in Tunisia, for example, by the sharp decrease in durum wheat consumption in favour of soft wheat (doubled in 1968-1995) and the large increase in the number of overweight people.

According to a recent research in Greece (KEPKA, 2006) on Greeks dietary habits, it was found that an important shift away from Mediterranean diet patterns has taken place, and in particular, the Greeks consume in a week:

- **vegetables, bread and fruits: Daily**
- **sweets: Very often**
- **milk: Several times**
- **meat: Often**
- **fish, legumes and eggs: A few times a month.**

However, 51,8% has stated that they have changed their dietary habits due to e.g. health reasons (41.7%), work schedules (15.2%), etc.
They have kept the tradition of having lunch at home; though they often skip other meals.

The eastern Adriatic shows disparities that are increasing in several countries when comparing 1963 with 2000. Poverty-related food insecurity is still a basic problem in several regions. For example, the rural poor in Albania spend the greatest part of their household budget on food (66%) and less for non-food products (21,2%) as compared respectively to those of 48% and 25% of the relatively wealthy in Tirana, the capital.

Noteworthy mentioning is the latest "Special Eurobarometer 186" on the subject of 'Health, Food and Alcohol and Safety" (EC, 2003) about the profile of dietary changes of the EU population, which showed that nearly one third (29%) of EU citizens have changed what they eat or drink in the past three years. Regarding this one third of the population the following were recorded:
1. The major changes were the addition of more fruit and vegetables (61.1%), eating less fat (61,0%), drinking more water (50.0%) and taking fewer calories (42,8%). Other significant changes were eating less sugar (41.0%), less salt (32.2%), less meat (37.4%) and less alcohol (34.1%).
2. The four biggest changes were made more often by women, by those who are older and by persons with more education.
3. The reasons for making such dietary changes were "to stay healthy" (33.9%), "to lose weight" (30.1%) and "because of a health problem".
4. Spain (21,2%) and Portugal (21.3%) have changed their eating habits the least of all Europeans.

Although most European Mediterranean children appear to be well nourished, the risk of nutritional inadequacy, particularly for certain vitamins, is significant. A varied and balanced diet should provide adequate amounts of all nutrients. The intake of nutrients among population groups typically varies widely and will range from "low and inadequate", "sufficient or optimal" and beyond to "high and possibly excessive" intakes (which does not necessarily mean toxicity). The results of some dietary surveys conducted in Europe suggest that adolescents are probably one of the population groups at highest risk of nutritional deficiencies, and despite their higher caloric intake as compared with adults, teenagers are more at risk of suffering inadequate intakes of iron, vitamin C, E, D, folic acid and B6. On the other hand, it might be said that food fortification has reduced the seriousness of the nutritional problems from a public health perspective, having positively contributed to increasing folic acid, iron and other vitamin intakes and nutritional status in infant and adolescent populations in France and Spain.

D. The environmental impact of our eating choices

"Feed the world without starving the planet" is the moto of the United Nations Environment Programme (UNEP) regarding the environmental impacts of the food industry (Resource Kit on sustainable consumption and production, 2004). Between the two extremes of obesity in developed countries and undernourishment of 13% of the world's population lie increasingly industrialized food production, market-led strategies and developing countries dealing with famine because their farmers produce more for export than to cover their needs. On the other hand, *"Reduce by half the proportion of people who suffer from hunger"* is one of the Millennium Development Goals (MDGs) that the UN has to meet by 2015.

Faced with such expanding needs, agriculture, livestock production and fishing unfortunately keep on turning towards more intensive methods. An obvious consequence of this "productivity race" is the overexploitation of natural resources. Science and technology are working all out to develop new techniques and increase production and

yield. Fertilisers, pesticides and genetic manipulations are becoming the everyday tool of agriculture. The agri-food business is a veritable industry which produces, processes and markets 70% of foodstuffs and has a large share of responsibility for environmental damage. Furthermore, whether for processing or transportation/distribution the agri-food business consumes up to 15% of all the energy produced in industrialised countries.

Apart from the huge impact on the fertility and erosion of land due to the over-consumption of fertilisers and pesticides, unsuitable machinery, over-exploitation of water resources and the absence of crop rotation, another significant impact of "modern agriculture" is the threat it poses on biodiversity. The increase in farmland to the detriment of grassland, forests and meadows has drastically reduced biodiversity. According to Birdlife International, 1 in 8 of the world's bird species is threatened with extinction as a result of uncontrolled agricultural expansion and deforestation. On the other hand, pollution from agricultural activity and the use of various pesticides have repercussions on health, including intoxication, toxic effects, allergies and other. Each year over 4 million tons of chemical products find their way in nature, and while some countries regulate their application, elsewhere fertiliser and pesticide use continues uncontrolled. Very often, vegetables contain record concentrations of chemical products (e.g. nitrates).

⊙ It takes approximately 1.000 L of water to produce 1 Kg of wheat, over two and a half times that to produce 1 Kg of eggs, and a massive 13 and a half times that amount of water to produce 1 Kg of beef. - 1.5 million litres of water are needed to produce 300.000L of soda.
⊙ One person following a meat-free diet or with very restricted amounts prevents more than 4.000m² of trees being destroyed per year.
⊙ 4-6 Kg of wild fish are ground into meal to produce 1 Kg of farmed fish.
⊙ 20% of the world's wheat production is used in livestock (fodder)
⊙ 25-35 Kg of cereals are needed to produce 1 Kg of red meat.
⊙ In 1995, 16.500 tons of undesirable or banned pesticides were inventoried in 49 African and Middle-Eastern countries.
⊙ Earth loses fertile land each year equal to the size of Ireland.
⊙ If the entire global population were to adopt a western-style diet, about 75% more water would be needed for food production.

However, over recent years and parallel to the industrialized logic of massive food production, initiatives are springing up such as:

⊙ "Greener" and organic farming, respecting ecological balance and the farmer's autonomy; It implies the absence of synthetic chemical products, recycling of organic substances, crop rotation, biological control of pests and diseases.
⊙ Livestock production, extensive rather than intensive, making use of alternative veterinary treatments and respecting animal welfare.
⊙ Respecting and protecting biodiversity.
⊙ Revival of ancestral techniques.
⊙ Sustainable food consumption oriented to the Mediterranean diet components;
⊙ Community supported agriculture: consumer groups, agricultural organizations and associations, environmental groups and elected representatives work hand-in-hand to promote quality products and the development of environmentally friendly agriculture. Such schemes often include projects to assist persons in difficulty and bring them back into the community. One noteworthy initiative invites farmers to place advance orders for produce; so they no longer produce surplus to requirements.
⊙ Fair trade of food products (see also paragraph G).
⊙ Implementation of Life-Cycle Assessments also in the agri-food industry.

E. Sustainable practices in food processing & production

The food industry puts substantial pressure on Earth's resources because it involves increasingly complex processes. The over-consumption of agro-chemicals, energy and water, the development of food conservation processes and the multiple stages in processing food strikes a serious blow to environment. These conditions led the international community to adopt and promote at the Rio Earth Summit (1992) the concept of 'eco-design' as an international concept expressing the culmination of a holistic, conscious and proactive approach, when designing a product or a service, so as to minimise its impacts on the environment, to produce it using the minimum amount of possible natural resources and generating the least possible waste. Eco-design can be applied in all stages during a product's life. Life Cycle Assessment (LCA) is a process that puts in practice and evaluates eco-design concepts. LCA examines inputs (materials extraction, resources and energy consumption) and outputs (emissions to air and water, waste produced) during every stage in a product's life-cycle in order to quantify its impacts. LCAs aim to conserve non-renewable resources, including energy; to ensure that every effort is made to protect ecological systems, especially areas subject to critical balance of supplies; to develop alternatives to maximise the recycling and reuse of materials and waste; apply the most appropriate pollu-

tion, prevention and/or abatement techniques.

Examining the ways to apply the concepts and principles of eco-design in product lifecycle to minimise environmental impacts during all the basic steps of production we come up with the following:

- Raw material extraction: extracting and processing the raw materials consumes natural resources, uses energy and is a source of pollution. Sustainable practices could be to choose the most appropriate material; reduce quantities; "transform" waste into raw materials (through recycling); prefer renewable materials and products that use only one type of material (so its recyclability, after its use is high).
- Production: manufacturing tends to consume large amounts of energy and water. Therefore, optimisation of the production processes, assembling products so they are easily separated into their different components for repair or recycling can be applied.
- Packaging: bottles, boxes, cans, wrapping and other packaging currently account for over half the of volume of household waste in developed countries. Concentrating products, reducing the amount and volume of packaging can make savings along the chain, from manufacturing to waste disposal.
- Transportation/Distribution: products usually travel thousands of kilometres before being used. Choosing manufacturing sites according to the products' final destination, using combined transport and alternative fuels and optimising loads can minimise impacts from transports.
- Use & Disposal: 25% of food worldwide is thrown away without being eaten. In many Mediterranean countries this amount is even higher. These amounts need to be reduced through awareness and the leftover food could be used in making compost.
- Recovery & Recycling: Worn-out or damaged products may be difficult or easy to recycle. The multiple components, alloys and other combinations of materials from which they are made render disassembling and processing a complex and costly procedure. Developing reusable or recyclable products and components can provide sustainable alternatives.

In the above mentioned framework, "Geographic Indicators" (GIs) are a sustainable approach to agri-food production. GIs is a term used to describe an agri-product produced as a result of an interaction between the agro-ecological characteristics of a region, its people and their culture. In other words, it is a product with specificity related to its origin that differentiates it from other similar ones. The added value for products made according to traditional practices promotes the agricultural heritage of the country and preservation of cultural traditions and encourages biodiversity. GIs significantly promote products by being a verified "passport" for export and raising the market profile of high quality goods, highlighting the authentic image of a defined region or locality of origin. Furthermore, GIs protect the producer from counterfeiting and the consumer from fraud. This is because they provide the consumer with more detailed information on the place of origin and quality of the product, process and verifications carried out, ensuring that the product is traceable. They are a tool for economic justice by spreading wealth equally, north and south, big international firms and poor farmers. Some Mediterranean products based on GIs approach are the following: Argan oil from Morocco; Sfax olive oil and Sidi Bouzid Mutton from Tunisia; Teruel Ham, Turron de Jijona from Spain; Feta Cheese from Greece; Pruneaux d'Agen from France; Parmiggiano Reggiano and Prosciutto di Parma from Italy; Medjool Date from Jordan, etc.

CONSUMERS COULD:

- **Prefer local traders**
- **Support fair trade initiatives**
- **Buy produce in season**
- **Choose products with the least packaging**
- **Buy no more than needed**
- **Study labels and check the product's origin**
- **Adopt a healthy diet based on the Mediterranean pattern**

F. Sustainable patterns of agriculture

According to UNEP (2004) "sustainable agriculture is a productive, competitive and efficient way to produce agricultural products, while at the same time protecting and improving the natural environment and socio-economic conditions of local communities". In other words, agriculture is sustainable when it leads to:

- Farm profitability
- Improvements in the quality of life of the farming families
- Rural communities villages and small town vitality
- Protection and conservation of the environment and its resources
- Considerations and perspectives for the future include the wisdom of the past.

A holistic approach to agriculture recognises the linkages between soil, vegetation, air and water and the ways these influence each other and are influenced also by the farmers' beliefs, perceptions, ambitions, skills and knowledge as well as by the socio-economic, political and cultural systems within which the farm operates (UNESCO, 2002). In practice, a holistic, integrated approach in agriculture includes:

a. Organic farming that respects the ecological balance and the farmer's autonomy. It implies the absence of

synthetic chemical products, the recycling of organic substances, crop rotation and biological control of pests and diseases.

b. Use and management of pesticides in a way that minimizes economic, health and environmental risks.

c. Taking animals out to pastures to provide high-quality forage and reduced feed costs while avoiding manure build-up in barns.

d. Soil conservation methods, such as: strip cropping, reducing or avoiding, if possible, tillage with heavy machinery, use of terraces.

e. Water conservation methods are of major importance; drip irrigation is recommended.

f. Cover crops: growing plants such as rye or clover in the off season after harvesting a grain or vegetable crop provides benefits including weed control, erosion control and improved soil nutrients and soil quality.

g. Crop and landscape diversity conservation.

h. Nutrient management: increased use of on-farm nutrient sources such as manure and leguminous cover crops and reduced use of chemical fertilizer.

i. Agroforestry covers a range of tree uses on farms including inter-planting trees with crops or pasture, better managing woodlots and using trees and shrubs along streams as riparian buffer strips.

j. Marketing: direct marketing of agricultural goods to consumers such as farmers' markets, roadside stands and community supported agriculture is becoming much more common.

ORGANIC FARMING

Organic farming is a form of agriculture which avoids or largely excludes the use of synthetic fertilizers and pesticides, plant growth regulators, and livestock feed additives. As far as possible organic farmers rely on crop rotation, crop residues, animal manures and mechanical cultivation to maintain soil productivity and tilth, to supply plant nutrients, and to control weeds, insects and other pests.

Organic farming involves fostering natural processes, often over extended periods of time and what advocates describe as a holistic, enhancing soil health is the cornerstone of organic farming. This is a biological process, driven by microorganisms, that allows the natural production of nutrients in the soil throughout the growing season, and has been referred to as feeding the soil to feed the plant . A variety of methods are employed, including crop rotation, green manure, cover cropping, application of compost and mulching. Organic farmers also use processed natural fertilizers such as seed meal and various mineral powders such as rock phosphate and greensand, a naturally occurring form of potash.

Differing approaches to pest control are equally notable. In conventional farming, a specific insecticide may be used against a particular insect pest. Chemical controls can dramatically reduce pest populations for the short term, yet by unavoidably killing (or starving) natural predator insects and animals, can cause an ultimate increase in the pest population. Repeated use of insecticides and herbicides and other pesticides can encourage natural selection of resistant insects, plants and other organisms.

Pest control targets animal pests (including insects), weeds and disease. Organic pest control involves the cumulative effect of many techniques, including, allowing for an acceptable level of pest damage, encouraging or even introducing beneficial organisms, careful crop selection and crop rotation, and mechanical controls such as row covers and traps. These techniques generally provide benefits in addition to pest control-soil protection and improvement, fertilization, pollination, water conservation, season extension, etc.-and these benefits are both complementary and cumulative in their overall effect on farm health. Effective organic pest control requires a thorough understanding of pest life cycles and interactions.

ORGANIC AGRICULTURE IN EGYPT

Egypt offers a success story in organic agriculture: the "Sekem group". The Sekem Group was founded in 1977 on a 70-hectere desert area near Cairo. It is specialized in bio-dynamic agriculture (agro-drugs derived from plants, fruits and vegetables, cotton); it is an example of a social and environmental project based on north/south knowledge and partnerships (investment, certification, fair trade). Today it is a network of strong companies with 2000 employees, active in, among other things, agriculture, production, craftsmanship, pharmaceuticals. It has its own nurseries, schools and apprentice workshops. A pioneer in producing organic cotton (since 1990) Sekem is behind the founding of the Egyptian Bio-dynamic Association that promotes the development of organic agriculture on nearly 4000 hectares throughout the country on over 400 small and medium-sized farms.

G. Fair food Trade

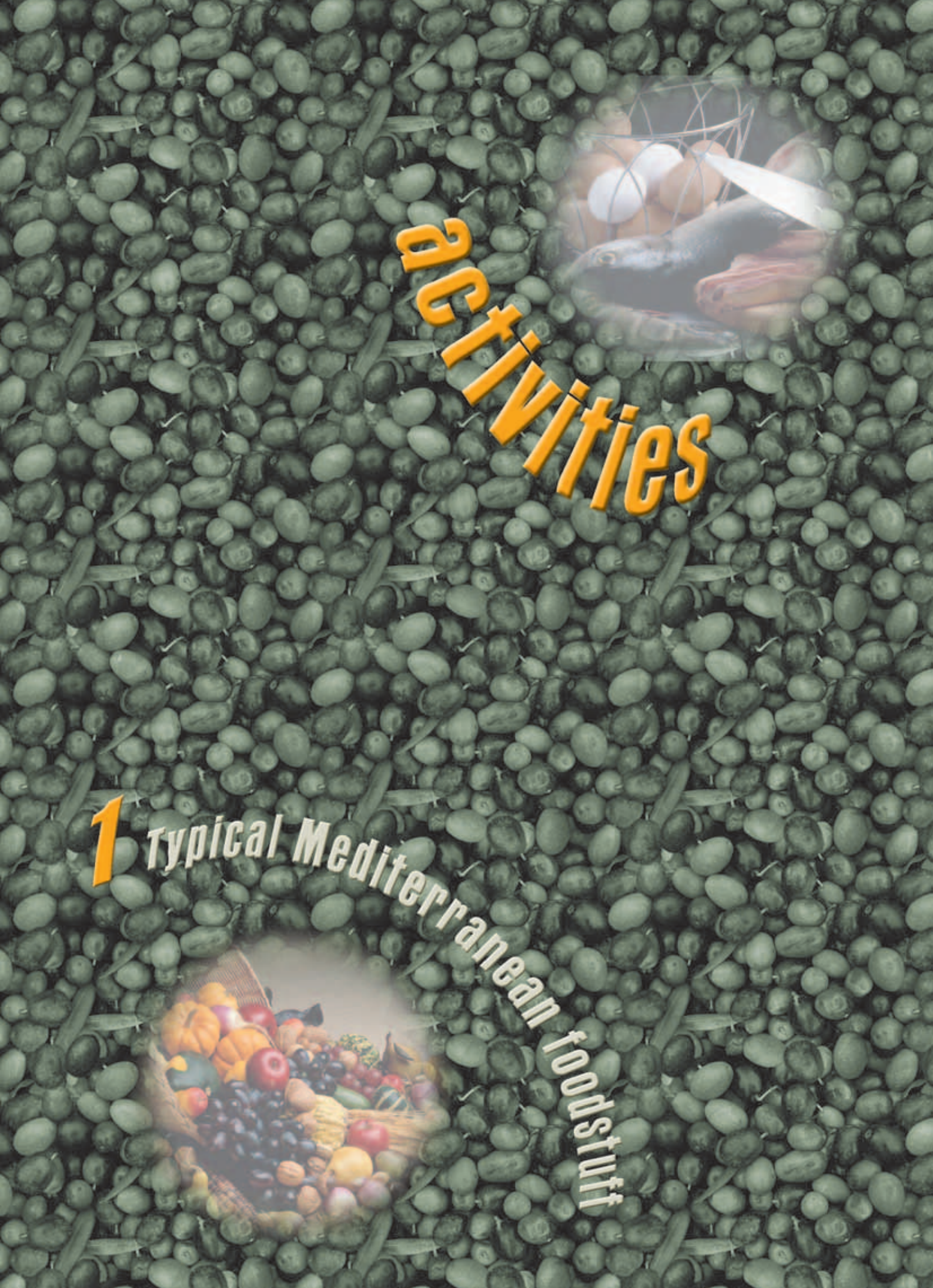
Fair trade encourages people to buy foods (and other goods) whose producers have been given a fair price. Such a price covers the cost of production, a social premium for producer groups to invest in business or community de-

«The Clean Monday meal», Vassiliou S., oil painting

velopment, longer-term relationships and advance payments.

The fair trade concept has been developing in western nations throughout the past 30 years, in response to a growing recognition of the inequalities existing in trade relationships between developed and developing nations, and under the impetus of NGOs. The objective of fair trade is to ensure that producers receive a "fair" price, a price which reflects an adequate return on their input of skill, labour and resources and a share of the total profit commensurate with their input. Fair trade recognises that production systems which meet specified social and environmental standards, and therefore provide better conditions for farmers and workers, are likely to have higher costs, for example in terms of wages, social costs and environmental protection. It provides a financial return to the producer which helps cover the cost of these improved standards. It also aims at re-establishing the balance between the North and South in the long-term.

Fair trade labels are awarded to goods imported from developing countries which have been produced according to social and environmental criteria based on international instruments such as the International Labour Organisation (ILO) Conventions and the UN Agenda 21 recommendations. The criteria cover i.e. employment conditions, controls to prevent pesticides from contaminating rivers and drinking water and the protection of natural ecosystems. Appropriate criteria are established for each product by international organisations such as the Fair Trade Labelling Organisation (FLO), who are also responsible for monitoring and control of producers and traders applying to use fair trade labels to ensure that the conditions are strictly respected.


activities
1 Typical Mediterranean foodstuff

1.1 The precious olive oil

The olive needs a dry season in which to develop its oil content and a cool winter in which to rest. It does not tolerate frost and is normally unsuccessful above about 800m. In the northern parts of the Mediterranean the olive line follows the sea coast, penetrating a bit inland except in Italy and Spain. In the Balkan Peninsula, the olive is not found further north than the Macedonian plain, Chalcidice and southern Thrace in Greece. In Italy, it grows on the foothills of the Central Apennines but no higher nor further north, except in Venice at the head of the Adriatic. In Spain it reaches the southern edge of the Central Cordillera and penetrates the Ebro valley. In short, away from the coast and river valleys, and in upland regions, olive oil was an item of import, that had to be paid for or exchanged, in so far as it was not displaced by animal products which served similar functions and were more readily available.

Objectives

- To identify elements of the olive tree morphology and cultivation
- To search for various oil production processes
- To distinguish the various uses of the olive tree and oil
- To develop self-expression and communication skills
- To appreciate the importance of olives to human health and culture
- To acknowledge the role of the olive tree and oil in economy and culture.

Activity plan

Make a field visit to an olive grove to observe the trees. Use all your senses; observe the leaves and the olives; see the colors and sizes; try to smell and taste the fruits. Look for dry stone walls in the grove: observe the organisms living in the cracks. Upon your return add the selected olive leaves to your herbarium. Search for various types of olive trees and olives.

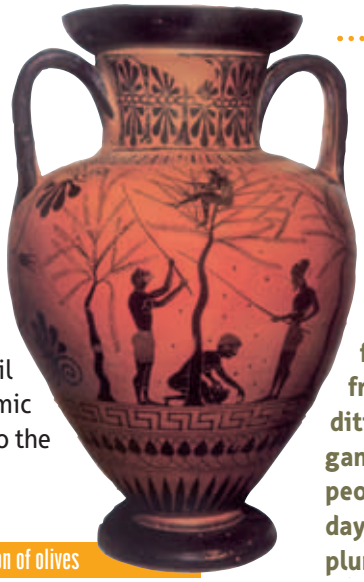
Read the introductory text. Find more information about the kinds of climate, soil and landscape that favour olive tree cultivation. What are the tree's needs in terms of demand in natural resources? Collect information on olive cultivation and oil production in your country as well as in other Mediterranean countries. Illustrate your results on a map!

The words presented in the table below describe the various steps of olive oil production. Collect related information and illustrations and try to put them in the right order.

Oil standardization	Oil extraction from olive pulp
Taking off olive leaves	Crushing and milling
Washing	Final treatment
Transport to the oil press	Weight

Alternatively, you could organize two visits: to a modern oil-factory and to a traditional oil mill, if any exists in your area, to compare the steps of oil production process of the present and the past.
Observe and record the steps followed, the purpose and environmental impacts of each one.
What is the scale of production?
What is the role of the specific plant in the local economy?
What is the type of oil that is produced? What are its characteristics i.e. color, smell, taste?
Try to find and present customs and traditions of your home place related to olive collection and oil production.

Split into small groups and visit the city's various museums i.e. the Archaeological, the Middle Ages, the Folklore and Traditional Art ones, etc. Look for art objects and representations (images) related to the olive tree and oil. Keep notes and /or make a simple sketch of them or take pictures (if you are allowed to).
What is the period of time they belong to?
What is the period of time they are referring to?
What is their origin?
Is there any object similar to the old one you have found, used today for similar purposes?
Make a small exhibition in your school with your photos, texts and sketches trying to illustrate the role of the olive tree and oil production in the socio-economic life of the past and compare it to the present.



Ancient Greek pot showing the collection of olives

It is not known when proper soap was first produced. However, soap was known before the Roman era. A material resembling soap was found in a clay vase during excavations in ancient Babylon; this is proof that the production of soap was already known in 2500 BC. Some decades ago, in many Mediterranean countries households that produced their own oil produced their own soap as well, from the olive's 40 residues during the oil extraction. These residues were boiled with soda or even ash! The product was left to dry and then it was cut into pieces.
Look for other uses of oil e.g. in art, medicine and cosmetics, etc.

The nutritional value of olive oil

Olive oil contains important acids that the human body cannot produce. These fatty acids (linelaic, a-linolenic, elaic) are extremely important for the function of the cell membrane and they contribute also to the balanced production of a particular type of hormones. Elaic acid contributes to the development of bones. Furthermore, olive oil contains vitamins E and C and pro-vitamin A as well as some enzymes.

The most precious oil is the extra-virgin oil obtained from the first pressing. When olive oil remains unfiltered it must be consumed within three months; otherwise, it can be conserved for maximum one year.
The "acidity" value must not exceed 1% (meaning that 100g of oil shouldn't contain more than 1g of elaic acid).

OTHER MEDITERRANEAN OILS THE CASE OF THE ARGAN OIL

The "argan tree" (*Argania spinosa*) is indigenous in Morocco. It lives for 150-200 years and plays a remarkable role in ecosystems' balance as well as in Morocco's economy. Every part of the tree can be used: the wood is used for fuel, the leaves and the fruits can be used as fodder and the oil extracted from the kernel is used in food preparation and in traditional medicine and cosmetology. In this way, the argan tree ensures the subsistence of some three million people and its cultivation offers over 20 million work days. Oil is the most valuable product of this tree. The plum-sized fruit contains one to three kernels with an oil content exceeding 50%. Extraction of oil for the family was traditionally the responsibility of the Berber housewife, who is bonded for life in a love-hate relationship with the tree. The procedure is tedious: the dried flesh is separated from the nut, the seeds are lightly roasted, ground and mixed with warm water. Subsequent rinsing separates the floating oil. Approximately 100 Kg of seed yield 1-2 Kg of oil and 2 Kg of pressed "cake" - a buttery by-product - plus 25 Kg of dried husk. The brownish, peanut-butter-flavored "cake," called "amlu" is frequently sweetened and eaten during breakfast. Recently, mechanical presses have been introduced to extract higher percentages of argan oil. Using this technique, mixing of the dough and water is unnecessary and the dough can be directly pressed. All other steps remaining unchanged, the oil is obtained in about 43% yield (calculated from the kernels) and only two hours are needed to get one litre of oil.
Did you know that sesame oil was used widely, competing with olive oil in ancient Egypt and in parts of the Near East?

What about your country and/or home place: Is there any other kind of oil that you use, apart from olive oil? If yes, to what extent and for which purposes?

1.2 The daily bread

Bread exists in one variety or another in every culture and on every continent. Its history dates back at least 10.000 years. One of the signs of the beginning of settled life, in Neolithic times, is that people began to plant cereals, producing grain which could be stored and used in food - in porridges, gruels or flat breads.

Materials

Bowls (large ones), oven, water, flour, salt, sugar, fresh yeast

Activity plan

Making bread with yeast

a. Add very warm liquid (water or milk) in a bowl and sprinkle fresh yeast over the water. Wait for about 3-5 minutes until the yeast dissolves.

The type of liquid used will affect the final bread loaf. Breads made with water generally have crisper, thicker crusts, such as baguettes or French bread. Those made with milk have a softer crust.

b. Gradually mix in sugar, fats, salt and flour stirring well with a big wooden spoon. If using a food processor, it is best to add these while the machine is running at low speed. If using an electric mixer, add these ingredients in small doses.

Sugars are the fuel that «feed» yeast and make it ferment, producing carbon dioxide that makes the bread rise; granulated sugar, brown sugar, honey or even molasses can be used depending on your recipe. Some bread recipes don't use sugar as they depend on sugars in the flour to provide "food" for the yeast. Fats such as butter or oil add flavor and tenderness; they can be left out of some bread recipes without compromising the final product e.g. some French breads (baguettes) have no fat. Salt is necessary not only for flavor but also to help yeast development preventing the bread from over rising; this results in bread with better texture. Not all breads contain eggs, but those that do are generally very fluffy and have a rich golden color.

c. Kneading is a very important step in order to develop the gluten. If you use a food processor or an electric mixer with a dough hook, the machine will do this for you. All you need to do is let the machine keep running for about 5-7 minutes after the dough is mixed. If you're doing everything by hand, which is the traditional way of making bread, follow these steps:

Gather your dough into a ball. Using your fists press down on the dough. Pull up the part of the dough that was flattened by your hands and fold it back over on itself. Keep repeating the process, turning the dough periodically. Your dough is properly kneaded when it is very smooth and elastic.

d. Place your kneaded dough into a greased or oiled bowl. Cover the bowl with a clean kitchen towel and place it in a warm and dry place to rise. Allow the dough to rise until it is double in size. This usually takes 1-2 hours depending on the type of bread you are making.

Why does the dough rise?

e. Test the dough. Your dough has risen enough when you can press two fingertips lightly into the dough and have

Objectives

- **To become acquainted with the importance of cereals in agricultural production**
- **To comprehend the nutritional value of wholewheat bread and pastries**
- **To appreciate the role of cereals and bread in the diet**
- **To practice in making bread**
- **To discover the role of bread and cereals in peoples' habits, customs and traditions**

the indentation remain.

f. Punch down the dough. After the dough has risen, push your fist into the center of it. Pull the edges toward the center, turn the dough out onto a lightly floured surface and knead a few times in order to remove all the air bubbles.

g. Shape the bread, in the manner you desire. If you're making rustic loaves, divide the dough into the amount of loaves you wish and shape them on a well greased baking sheet. If you're using baking pans, make sure they are well greased and shape the dough into the loaf pans. Once your loaves are shaped, cover them again with a clean kitchen towel and leave them in a warm, dry place to rise until doubled again.
Dough will rise more quickly each successive time it is punched down.

h. Glaze the bread (optional). Some bread recipes will call for a "glaze" or "wash", which gives the finished bread a special finish. Glazes include beaten eggs (either whole or just whites or yolks), water, cream or milk. Your recipe will specify if a glaze is necessary.

i. Pre-heat the oven. Bake the bread for the amount of time specified in your recipe. When baked, remove pans to a wire cooling rack.

The above mentioned bread-making instructions are rather general. You may search for a traditional bread recipe in your hometown or village. Ask bakers, citizens and elders and collect information such as:

- What is the basic ingredient of "your" bread?
- Is it made only from wheat or from other cereals too (e.g. barley, rye, maize)?
- Is your bread with or without yeast?
- Are there any other different ingredients you use? Which ones? Why?
- Do you follow the same steps? If not, which steps are different and how?
- What are the particular characteristics of your local bread i.e. taste, smell, touch.
- What is the history of your local bread? Does your family make bread?

Traditional bread-making using a particular tool called "saj"; the bread produced is called "markoul" in Lebanon

Typical Mediterranean foodstuff

⊙ Are local bakeries still making traditional bread(s)?
⊙ Search for customs, traditions and proverbs of your hometown related to bread-making.

Compare labels from several varieties of packaged bread.
⊙ Are there any additives that are not found typically in traditional bread?
⊙ What kind of additives? Search for the reasons of using such additives.
⊙ What is the potential impact of bread additives to our health.

1 slice of... contains ...	White bread	Brown bread
Energy (cal)	81	73
Proteins (g/100cal)	3	4
Carbohydrates (g/100cal)	15	13
Starch (g)	13	10
Fibres (g)	0.8	2.4

Look at the table above. Cereals are good sources of many vital nutrients including carbohydrates, proteins, B vitamins: thiamin and niacin and vitamin E; they contain adequate quantities of calcium and iron and are good sources of fibers. B vitamins and fibers are found mostly in their husk. Whole-wheat provides per 100g of edible portion: 36mg of calcium (72-90% of the requirements of a moderately active man) and 4mg of iron.
⊙ How often do you consume cereals?
⊙ What kind of cereals?
⊙ Do you prefer whole-grain products or the refined "white" ones?
⊙ Do you know the differences between white and whole-wheat bread and other cereals in terms of nutritional value and calories?
⊙ Do you consider cereals as important elements of your diet and why?

In some countries, bread and cereals constitute one-half of a person's daily food intake! Wheat, rice, and maize as well as potatoes feed 80% of the world's population.

Cereal	Origin
Rice	Southeast Asia
Wheat	Asia Minor and Middle East
Maize	North America, Mexico and Guatemala
Rye	Eastern Turkey and Armenia
Barley	Middle East

For all Mediterranean people bread has a unique place; it is synonymous to life and good living. Poverty is defined as "not having bread to eat" by Greek people. Bread is closely linked with typical manifestations and social feasts in Greek traditions. A variety of traditional breads are made throughout the country for weddings and funerals.

Galanis , woodcut (1938)

1.3 Meat in the diet

Materials

Notebooks, pens

Activity plan

Livestock activities are identified as a major economic activity in Mediterranean countries. They are of two different types: open, free grazing of sheep and goats and pig, poultry and cow raising in various types of farms.

Find information about livestock activities in your country and /or your hometown:

- The prevailing type of livestock activities
- The main products from animals: meat, dairy products, skins and wool, etc.
- Which of these meat products are exported and which ones are imported.
- How strong is the impact of livestock on the economy and development, at present and some decades ago.
- What is the impact of livestock activities on the environment?
- Does your area face overgrazing problems?

Present your findings on a concept map!

Find information about the legal framework for hunting in your country.

- Are there any particular provisions for the protection of certain species against extinction?
- Do people hunt in your area? If yes, what kind of species and what period of the year?
- Are there any restrictions?
- Are you aware of any illegal hunting taking place?
- What is the impact of illegal hunting?

Present your findings in a poster or leaflet!

Try to raise awareness of the local society on illegal hunting organizing a special event in your school and inviting: ecologists, veterinarians, biologists, hunters, people working in the tourist sector (if any), citizens of the area, etc.

Investigate the importance of meat in various Mediterranean peoples' diet. If you wish, you may work on a particular country or sub-region of the Mediterranean. Focus on topics such as:

- What kind of meat is consumed?
- On what occasions?
- Is there any traditional meal based on meat linked to exceptional social or religious events?
- Is there any kind of meat that is forbidden? Why?
- What about dietary habits regarding meat in your country or home place. What is the place of meat in the diet?

Objectives

- To be aware of the role of livestock breeding in the economy
- To discover the links between a particular type of food (meat) and people's ethics
- To be aware of the species under extinction due to illegal hunting
- To practice in collecting, interpreting and presenting information
- To appreciate nature as a provider of livestock, a major source of food for humans

Galanis , woodcut (1938)

Typical Mediterranean foodstuff

Livestock in a mountainous region of Eastern Turkey: the traditional livestock sector contributes significantly to the Turkish economy

What kind of meat is preferred? Go back "in time" to find the roots of such food habits.

Though in the Middle East and throughout the Arab world the consumption of pork is strictly forbidden (probably due to efforts to reduce health risks related to food and particularly in animal breeding under poorly controlled conditions) in Christian countries of the region it is widespread. In fact, in many countries the typical winter menu (including that of Christmas) is based on pork. This tradition is continuous from the Middle Ages through to the Renaissance till today. Lorna Saas in her book "Christmas feasts" suggests that this dietary habit goes all the way back to the Roman period.

"Foie gras", one of the most well known French delicacies, which is actually goose liver, has a history of almost 4500 years, dating from the ancient Egyptians, Greeks and Romans.

1.4 The poor man's meat: legumes

THE BEANS THAT SAVED THE WORLD

According to the writer and semiologist Huberto Eco "without legumes Europe would not have overcome the 'dark' Middle Ages". Eco considers that the Middle Ages (5th -14th century AD) were indeed dark ages but not only due to human rights violation, public executions and prejudices, given that these situations continued till the 18th century AD. During the 'dark ages' people of Europe faced death every day: frequent and destructive barbarian invasions, famine and disease. The European population was very weak and decreased at that period by around 14-17 million. However, somewhere between the 11th and 13th century AD the situation changed; the system of three year rotational cultivation of legumes started to be applied systematically, making soil more fertile; the political reforms of Charlemagne favoured the farmers; the plough started to be in wide use throughout Europe. Such measures, according to Eco, promoted legume yields. Consumption of beans, lentils, chickpeas, that are rich in proteins strengthened the poor people's health in the rural areas; people became stronger and healthier thanks to the widespread cultivation of legumes throughout Europe.

Objectives

- **To know the nutritional value of legumes**
- **To observe and experiment with seed growth**
- **To appreciate nature as a major "feeder" of humans**
- **To practice in collecting, analyzing and synthesizing information**

Materials

Jar, cardboard, tissue paper, pulses' seeds, growth medium, water, notebook and pens

Activity plan

- How often do you eat legumes?
- What kind?
- Is it a common food in your local society?
- Ask elders how they cooked them in the past rather than today.
- What is the most commonly used recipe for cooking legumes or a meal based on legumes of your family?
- Is it an old recipe or a traditional one of your place?
- Find out about its nutritional value (proteins, vitamins, calories, etc.)

Prepare small posters about your recipe, including photos, info on the nutritional value, ways of cooking, historical and traditional tips related to this dish, etc. Present your poster to the class.

You may also work in small groups (3-4 students) if you have chosen common recipes.

Have you ever tried to plant legumes? The following guidelines will help you to observe the process of germination - the plant's growth- and test some of the factors that affect it.

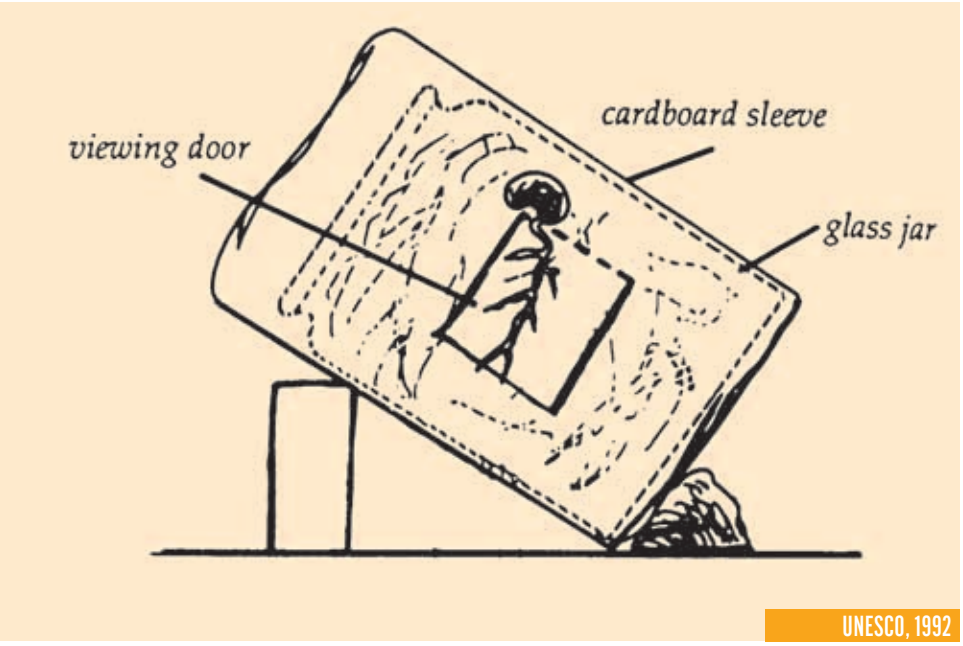
Fill a glass jar with tissue paper and place some bean seeds (or lentil) between the paper and the side of the jar. Cover the jar with a cardboard sleeve with a "viewing window" to monitor seed germination. Keep the paper moist.

1. Place this plant grower at an angle (see picture). Monitor the roots' growth. Observe the plant growth.

As roots respond to gravity they will grow downwards!

2. This time cover the jar with a cardboard box leaving only a slit at the one end to allow a little light. Ensure the joints of the box are sealed so that the only light source is through the slit. Monitor the roots' growth. Observe the plant's growth.

Most plants can grow with little or no light as food stored in the seeds provide energy. Light is needed after germination for photosynthesis!



UNESCO, 1992

3. Now add to the jar a growth medium and make sure that the cardboard has a door on it. Add the seeds to the jar and let them grow. Take care not to over-water as there is no drainage. Observe the growth once again.

Compare the plant's growth rate, the size of the plant in each of the three cases.

What did you observe?

What were the different factors in these three cases?

SOME WELL-KNOWN LEGUMES...

Beans are a source of Niacin, Thiamin, Riboflavin, B6 vitamins and many other nutrients as well. They are also rich in complex carbohydrates and fiber. All of these nutrients are necessary for normal growth and for the building of body tissues. Beans are high in potassium which is required for the normal functioning of nerves and muscles. In fact, beans have more calcium and iron per cup than 90g of cooked meat but contain no cholesterol and with fewer calories.

Lentils have a high nutritional value second only to soy beans in protein content. They make a great soup all by themselves and can also be ground and made into patties. Lentils sprout in two days and being crisp and sweet, they are a great addition to salads.

Chickpeas, in ancient Rome, were so highly valued that one leader (Cicero) was proud to claim his family name came from the Latin term for it, *Cicer arietinum*. Chickpeas, which grow on a plant native to the Middle East, are popular throughout India, North Africa, Spain, and southern France. They are excellent sources of Folate, Vitamin B6 and C, Zinc and fibers.

Cooked chickpeas are the main ingredient, along with sesame paste, in hummus, the popular Middle Eastern spread.

1.5 Fresh is best

FRUITS & VEGETABLES IN THE DAILY DIET

Fruits and vegetables provide carbohydrates and important vitamins, mainly A and C, that protect human health, shield against illnesses and help in healing. Fruits with deep orange, yellow and green colors are rich in vitamin A and the citrus fruit, strawberries, kiwis and many vegetables -tomatoes, onions, peppers, spinach, broccoli, cabbages, etc. are rich in vitamin C. However, vitamin C is very sensitive to temperature and can be inactivated during cooking and industrial food processing. Furthermore, fruits and vegetables provide potassium, are low in fat and sodium and of course, contain significant amounts of fibers. Fibers help digestion. Foods that contain fiber are usually low in calories. Only foods that come from plants contain fibers. Other plant foods that provide fiber are whole-grain cereals, dry beans, dry peas, nuts and seeds. Fruits and vegetables are clearly an important part of a balanced diet. Nevertheless, no single fruit or vegetable could provide all the nutrients and elements we need to be healthy; the key lies in the variety and combination of different fruits and vegetables and their balance with other foodstuffs.

Objectives

- **To appreciate the nutritional value of fruits and vegetables**
- **To learn the basic processes within photosynthesis**
- **To explore the different meanings that the same word might have in scientific and everyday language**
- **To develop body expression**
- **To adopt a positive attitude towards including fruits and vegetables in one's daily diet**

Materials

Cards, string, pens, colors, notebook

Activity plan

The words "fruits" and "vegetables" have different meanings in the kitchen, in everyday life than those they have in Biology. In Biology, "fruit" means a "fertilized ovary", "seeds" reside inside the fruit body and a "vegetable" is any other part of a plant used for food.

Based on these definitions, have a look at the table on the next page, with various vegetables, fruits and seeds and check in which of the categories they belong. Write down also the part of the plant from which they came.

Find recipes for traditional salads using local fresh seasonal vegetables and fruits. Prepare your salads and bring them to class.

Make a competition and vote for the best salad.

Use all your senses in choosing the best one: flavor, colors, taste, even texture and touch.

Nowadays, there are frequently suspicions about residual pesticides and fertilizers in vegetables and fruits. In foods of plant origin that are intensively fertilized and sprayed with pesticides or grown in polluted areas, near busy roads or close to industrial centres, several substances can be found including:

- excessive levels of fertilizers and pesticides that cannot be decomposed
- various chemical preservatives
- heavy metals, which may have been taken up by the plants from polluted soil.

Search for information about chemical substances used in agriculture (agrochemicals) and relevant tests used to

		Scientific classification			"Kitchen" classification		
	part of the plant	vegetable	fruit	seed	vegetable	fruit	seed
Tomato							
Cucumber							
Potato							
Onion							
Plum							
Apple							
Carrot							
Melon							
Coconut							
Hazel nut							
Runner bean							
Sweet corn							
Cauliflower							

monitor their presence in plants and fruits as well as for related legislation. You may address local authorities, the state laboratory, consumers associations, producers unions, farmers and other relevant stakeholders.

The photosynthesis game*

Photosynthesis is one of the most important natural processes. It is a sun-powered reaction that enables plant leaves or other green parts of plants to make "food" (organic matter - carbohydrates) by combining the simple inorganic materials of carbon dioxide (CO_2) and water. Nevertheless, it is a very complex and "delicate" bio-chemical process. Photosynthesis is the basis of the food chains since plants create the necessary "fuels" (carbohydrates) and oils. Plants are valuable to cell growth and in turn, provide nutritional energy when they are eaten. Furthermore, they absorb CO_2 and create O_2 contributing in an essential way to the balance of the atmosphere's composition.

A. Preparation

⊙ Make cards for each member of the group. Write on half of the cards "carbon dioxide" (CO_2), on the other half write "water" (H_2O).

⊙ Attach string to your cards tying it securely.

⊙ Make some green coloured sheets, big enough for two people to stand on and scatter them on the floor

... to represent chlorophyll in the leaf

⊙ Choose a room that has e.g. curtains on the windows, in order to be able to darken it.

... the room is the inside of a leaf

⊙ Place in one corner the light source e.g. a lamp

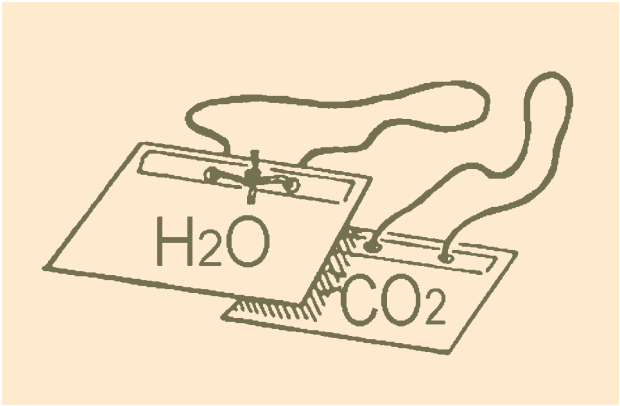
.... which will represent the sun

B. The scenario & playground

When the sun comes out (the lamp is switched on) photosynthesis takes place. Then the "factory" is able to com-

* Adapted from UNESCO-UNEP IEEP No 21, 1992; a simple kinetic game that can be used in a science class on photosynthesis to introduce students to the subject in an amusing way.

bine water and carbon dioxide to form sugar ("food") and oxygen. A chosen point of the leaf, a corner of the room is the "exit" where the molecules of sugar go. This corner represents the *phloem* corner -*phloem* is the system of tubes in plant tissues which help to distribute food to the rest of the plant's parts.



C. Playtime - Instructions for the students

⊙ Enter the room wearing your card. Check what you are: "water" or "carbon dioxide".

⊙ Find a partner. Remember CO_2 needs H_2O and vice versa.

⊙ Every couple stands on a green sheet that inactivates the reaction.

⊙ Only one couple can stand on one green chlorophyll sheet.

⊙ When the sugar molecules are formed they can move to their "exit", the *phloem* corner.

⊙ It is dark and then, … the teacher turns the lights on! Photosynthesis starts!

⊙ The teacher keeps turning the lights on and off.

D. Playing with more roles

You can make cards on which the reverse of the CO_2 will be "sugar" and the H_2O card will have on its reverse side "oxygen". The oxygen exits to an "atmosphere" corner of the room. Oxygen cards when exiting can be swapped for "caterpillar" cards and "pesticides" cards. The "sugars" and "pesticides" labels are kept hidden from the caterpillars. When the light comes on, caterpillars get energy by eating sugar cards. If however, a caterpillar has collected two pesticide cards, it dies!

Did you know that tomatoes originated in the Andes, in South America, but were first cultivated by the Aztecs in Mexico? They were introduced to Spain before 1550, but at first they were mostly admired as shiny, beautiful garden fruits. European and Mediterranean people were slow to learn that tomatoes were good to eat. The earliest known recipe for using tomatoes appeared in Italy in 1692.

Galanis , woodcut (1938)

1.6 Sweet as honey

Bees play an important role in agriculture considering they manufacture honey and beeswax and pollinate cultivated plants*. The ecosystem also benefits from bees, as they contribute to the reproduction of a great number of plants and add to natural biodiversity through pollination, being an indispensable part of the natural cycle. A regular bee colony always keeps approx. 7-45 Kg of honey in reserve. Honey consists mainly of sugar and pollen and is rich in fats and proteins, as well as in vitamins and enzymes. Apart from honey, bees also produce propolis, a kind of natural glue, a resinous and soluble mass that is used as a natural antibiotic and elastic. Propolis is used for the treatment of surface wounds, bruises, burns, insect bites, etc.

Materials

Notebook and pens

Objectives

- To be aware of the beehive's role in the natural ecosystem and in the (local) economy
- To understand how the beehive functions as a society
- To develop comparative and critical thinking skills

THE BEEHIVE SOCIETY

There are three kinds of bees living together in the bee hive:

⊙ THE QUEEN: Her life purpose is to give eggs; she is the principle female ✶ each bee-hive has only one queen ✶ the insemination period is during February-March ✶ she lives for 5-6 years ✶ when the bee-hive gets over-crowded, the queen leaves the hive, taking with her half of the population and leading them to a new habitat ✶ a new queen takes the "throne" in the old hive, who has been brought up by the workers in the same way as the first queen.

⊙ THE WORKERS: They are barren females ✶ they spend all their lives working non stop ✶ they produce honey as the main food during winter ✶they leave the hive to gather nectar from the plants and harvest the pollen ✶ approximately 40.000 workers live in a big hive ✶ the life-span of a worker is roughly six months ✶when a bee dies in the hive it is considered as just another alien body: they drag it to the exit and is thrown away by one of them to a considerable distance from the hive.

⊙ THE DRONE: They are the males ✶ there are some hundreds to some thousands of them living in the bee-hive ✶ they do not work ✶ their purpose is to inseminate the queen ✶ after the queen's insemination; they are killed by the bees because they are worthless and would consume honey for nothing.

Activity plan

Bees are famous for being organized, clean, courageous and incredibly active. Read in small groups the text about the beehive's social structure. Discuss in your groups about the role of each type of bee in the society of the beehive. Reflect on their rights, responsibilities and position in the bee-hive.

⊙ What would a queen, a drone and a worker say about their life if they could speak to you?

⊙ Would they be satisfied and happy or not? Why?

⊙ Can you think of any social group of your society that could be similar in any way to any of the beehive's social

Traditional bee keeping in the Croatian countryside

groups? In which way?

Sugar was once a rare and valuable spice and honey was the everyday sweetener in Mediterranean countries until the 18th century AD. Then the price of sugar fell. But honey is still used in a huge variety of sweets and other foods, especially in Mediterranean cooking. What about in the cooking of your home town? How do you use honey? Find local traditional recipes that contain honey as a basic ingredient or as a sweetener.

⊙ Does your region produce any honey and other beehive products? Is it important for the local economy? In which way? Support your answer based on statistical data, graphs, reports, press articles, etc.

Did you know that the bee is the only insect that made its way onto the heraldic coats of European noble families? Napoleon Bonaparte bestowed an even higher honor on the insect by including a bee on the Emperor's coat of arms.

* Bees and other related insects contributed to roughly one-third of the US total annual agricultural production (1984); the value of products harvested as a result of crop pollination was more than 140 times greater than the amount taken in by beekeepers from honey and beeswax sales. Figures from Canada and Europe were similar: bees contributed by 2 billion and 4.7 billion respectively, to the agricultural economy, meaning 12 times the value of honey products.

1.7 All the salt of the earth

Materials

Glass beaker, water, gas burner, notebook, pens

Objectives

- To explore the biological, economic and cultural significance of salt
- To practice working in groups
- To develop the skills of collecting, elaborating and presenting information
- To practise in executing simple experiments
- To understand the importance of conserving the Mediterranean salt pans

Activity plan

Can you think of how to make salt in a way that is analogous to how it is formed in salt pans (salinas)? If not, the experiment that follows might help you. Half-fill a beaker with water and leave it in a sunny place. Wait until the water evaporates. Alternatively, you may heat up the beaker using the gas burner. After the water evaporates what do you observe on the bottom and/or the inner sides of the beaker?

Divide into four groups. Each group will be given one of the following cards: yellow, orange, green and pink. Read the text of each card and discuss on the given questions. You should prepare your group's answers and present the group's position to the rest. All groups should work on all the cards.
At the end, the groups should compare their conclusions, categorise and rank them in order to prepare a common poster showing the importance of salt through various perspectives. If you prefer, you may focus on topics with particular importance in your area.

SALT IN HISTORY

Salt was needed by human beings long before history began to be recorded. The methods used to gather salt from salt pans are shown in Egyptian art from as long ago as 1450 BC. Ancient Greeks considered people who did not use salt as barbarians. The Romans, following the Egyptian example, developed salt pans and salteries in many parts of their Empire around the Mediterranean shores. One of the Roman roads of Italy was called Via Salaria, the "Salt Way", because salt was transported to the people of central Italy, far from the sea and the salt pans, along this road. Roman soldiers were once paid partly in flour to make bread and partly in money so that they could buy salt and other foods. The money was called salarium "for salt" (another theory is that the soldiers were long ago paid in salt). This same word appears in modern languages - French *salaire*, Italian *salario*, and in many others - but nowadays it means simply "salary", and people have forgotten its historic connection with salt. The Ottomans collected the "salt tax" from the salt producers. The Venetians used to heavily punish "contrabando", meaning salt smuggling.

Questions

a. Do you think that salt was important in human fields of activities in the past? How can you support your answer based on the information of the text?

b. In which way is the importance of salt depicted in the history of your country? Is it similar and/or different to the information presented in the text?

A small investigation about salt in your country's history might help in this question.

c. Are there any customs and traditions or other cultural elements of your country or hometown related to salt?

SALT & LANGUAGE

The fact is that throughout history, salt has been such an important element of life that it has been the subject of many stories, myths, folk tales and fairy tales. Some cultures attribute magical powers to salt. Charles Dickens penned a Victorian era Ghost Story entitled "To Be Taken With A Grain of Salt". Salt so infuses our culture that there are innumerable quotes and proverbs drawing on salt. The word for "salt" in Arabic (milh), in French (sel) and in Albanian (kripë) - also means "wit, humour, intelligence" because these qualities add flavour to conversation, just as salt adds flavour to the diet. The words salad, sauce and sausage - found in many languages - begin with sa- or sal- because salt was an essential ingredient when these foods were prepared. Sausages were made with salted meat; sauces were flavoured with salt; salads were served with a dressing that included salt. The word "salt" is very similar in many Mediterranean languages. It is an important vocabulary item, and it helps to show the relationships among these languages. Romanian *sare*, Italian *sale*, French *sel*, Portuguese and Spanish *sal* all come from the Latin word *sal*. This Latin word, the modern Greek *ales*, the Croatian *so* and Bulgarian *sol*, all derive from a word in the prehistoric Indo-European language, spoken about five thousand years ago (the word was probably *sali*). The initial "s" has disappeared in Greek, and the "l" has disappeared in Croatian, but all the words still have a resemblance. Meanwhile, across the Mediterranean, Arabic *milh* and Hebrew *melach* are also related: they both come from a word in the prehistoric Semitic language.

Offering bread and salt to visitors, in many cultures is traditional. Salt has played a vital part in religious ritual in many cultures. There are more than 30 references to salt in the Bible and also the Talmud contains insights into salt's cultural significance in Jewish society.

Questions

a. In your opinion, why and how has salt had an impact on language and culture?
b. Are there any characteristic phrases, proverbs, etc. in your national language that include the word salt?
c. What do you think might be the symbolism of salt in religion?

THE MEDITERRANEAN SALT PANS

Salt extraction has been established since ancient times as an important economic activity of Mediterranean coastal cities. Since ancient times, hundreds of salt pans (salinas) have operated in the Mediterranean coastal line. Considering only the non-primitive coastal ones, 170 of them are recognizable today: 90 are still working, whereas the rest are inactive or transformed. 77% of the active ones are located in the northern European coast, the rest in Turkey, Tunisia, Algeria, Lebanon, Israel, Egypt and Morocco. The majority of them are usually coastal and man-made. Salt-making techniques came to a standstill with the method of successive evaporation basins. The basics of this technique remain the same until today. Many varieties of salt-making adapted to the particularities of the local conditions i.e. geology, climate, etc. resulting in a great diversity of devices. Apart from the natural landscape, a saline landscape embraces also the specific architectural and technical achievements including devices, equipment, tools, etc. Salt pans are among the most important non-polluting production and economic activities. Their importance was more pronounced in the past when salt was a vital commodity at least for food preservation. At that time, those who controlled salt production and trade also had political power.

Salt pans are important wetland sites, given the presence of uncommon salinity tolerant species, unicellular organisms, some of them interfering with the quality of salt (*Aphanotheca, Dunaliella salina, Halobacterium*) and of interesting *halophilous* flora, aquatic and terrestrial, the latter pollinated by a specialized wasp fauna. There are also diverse salinity tolerant aquatic invertebrates and a few fish, in general. Additionally, a considerably high diversity of water birds use them for breeding -often in large colonies- or as wintering and refuelling sites during their transcontinental stopovers.

However, nowadays, salt pans face many pressures and threats given the conversion from low intensity to mechanized and intense salt production. Worst is the transformation to high salinity brining salt pans of almost non-biological value. Many salt pans have been abandoned or converted to other uses, such as ports and airports, aquaculture farms, industrial, urban or tourist zones due to large demand. All these have great impacts on their role as cultural landscapes and places where sustainable salt production and biodiversity coexist.

Typical Mediterranean foodstuff

THE PATHWAYS OF SALT

Salt served as money at various times and places, and it has been the cause of bitter warfare. While there are records of the importance of salt in commerce in medieval times and earlier, in some places like the Sahara and Nepal, salt trading today gives a glimpse of what life may have been like centuries ago.

Medieval European records document salt making technologies and concessions; Venice rose to economic greatness through its salt monopoly.

Salt making was important in the Adriatic and Balkan region as well -the present border between Slovenia and Croatia- where Tuzla in Bosnia-Herzegovina is actually named for *tuz*, the Turkish word for salt.

The grand plans of Philip II of Spain came undone through the Dutch Revolt at the end of the 16th century; one of the keys, according to Montesquieu, was the successful Dutch blockade of Iberian saltworks which led directly to Spanish bankruptcy.

France has always been a major producer of salt, on its Atlantic coasts and having in fact a "salt road" along its Mediterranean coast. Any discussion of salt making and distribution in France includes discussion of the "*gabelle*", the salt tax which was a significant cause of the French Revolution.

In Spain, while Basque salt involvement is usually thought of as their being intrepid cod-fisherman on the Grand Banks, salting their catch for European markets, Basque country also has its own salt route.

Questions

a. Are there any traditional professions relating to salt in your country? Describe them.
b. Which of them have ceased to exist and why? What are the related prevailing ones today?
c. How different is the economic value of salt now and in the past? In your opinion, what do you thing has changed?

SALT IN COOKING

Salt is an essential element in the diet not only of humans but of animals and even of many plants. It is one of the most effective and most widely used of all food preservatives. Apart from its value in nutrition and cooking, salt is also used as:

Preservative: Salt preserves foods by creating a hostile environment for certain microorganisms. In the periods when there was no fridge, salting was the basic method to preserve food, absorbing humidity and preventing decay.

Texture aid: Salt strengthens gluten in bread dough, providing uniform grain, texture and dough strength. With salt present, gluten holds more water and carbon dioxide, allowing the dough to expand without tearing. Salt improves the tenderness in cured meats such as ham by promoting the binding of water by protein. It also gives a smooth, firm texture to processed meats. Salt develops the characteristic rind hardness in cheese and helps produce the desirable, even consistency in cheese and other foods such as sauerkraut.

Binder: Salt helps extract the proteins in processed and formed meats, providing binding strength between adjacent pieces of meat.

Fermentation control: In baked products, salt controls fermentation by retarding and controlling its rate which is important in making a uniform product. During pickle making, salt brine is gradually increased in concentration, reducing the fermentation rate as the process proceeds to completion. Salt is also used to control fermentation in making cheese, sauerkraut and sausage.

Colour developer: Salt promotes the development of colour in various food products e.g. ham, bacon, sauerkraut, etc.

Questions

a. How similar or different are the uses of salt in your local traditional cuisine and cooking practices with the ones presented in the text? Are there any other uses?
b. Try to find local or national and traditional recipes in which salt has a "central" role.

Organise a field visit to the nearest salt pan and search for information about its present and past situation. Observe the area and take photos and notes about the biodiversity (flora and fauna), the geomorphology and other special characteristics of the area. What about the current human interventions in the salt pan. What kind of interventions are taking place, if any, and what is the impact? Take interviews and look for information about the state of the salt pan a few decades ago in terms of the ecosystem's situation, people working in the area, the nearby settlements, etc.

Try to find literature and historical evidence i.e. references, monuments, etc. associated to the salt pan.

Upon your return, synthesize your findings and present them in a brochure or a poster including the history, the current state, eventual problems and solutions for the salt pan. Try also to include some proposals to protect and preserve the salina.

1.8 Fish in the water!

Materials

Notebook, pens and markers, flipchart

Activity plan

Split into three groups: A, B and C. Each group will be given a card. Read the text on your card and discuss the questions put forth. Write a few "messages" or bullet points based on your answers to the questions and prepare your group's position (15min).

Repeat with each card and prepare your group's position. All groups should work on rotation on all three cards!

Make a concept map on the topic "Fishing in Mediterranean waters" integrating the key results of your groups' discussion. Present the concept maps to the rest of the groups. How similar and how different are your concept maps?

Card A

Fishing is an important activity for Mediterranean people. Although it accounts for only a relatively small quantity of produce on the market, compared to the existing demand, it is a significant component of the Mediterranean identity and employment. It accounts for 420.000 jobs, 280.000 of which are fishermen. The sustainability of fish resources depends on:

- the diversity in sea depth
- the presence of "refugee" zones for spawning,
- the scale and intensity of fishing. Small-scale fishing produces high commercial value fish and is a source of many jobs .

Small-scale fishing involves more than 85% of a country's fishing boats, which sometimes are not motorized (e.g. 4.000 out of a total of 13.700 in Tunisia). Many fishermen rely on other types of employment as well (e.g. 80% in Malta, 92% in Syria). The percentage of inshore fishing varies between countries in the region e.g. Syria 87%, Cyprus 58%, Greece 56%, Tunisia 44%, Italy 41%, Israel 39% and Slovenia 10%. The industrial fleet is concentrated mainly in the European part of the Mediterranean accounting for 57% of the total. Sport fishing accounts for 10% of the total catch, which is a lot.

What are the current trends in fishing today?

Why do you think the wide diversity in depth and the refugee zones are important factors for the sustainability of the fish resources?

When comparing the percentages of fishing in the various countries what preliminary conclusions could you make?

Objectives

- **To acknowledge the social and economic importance of fishing in the region**
- **To explore the main causes and impacts of intensive and unsustainable fishing on the marine ecosystem and human society**
- **To become familiar with the principles of sustainable fishing**
- **To compare traditional fishing practices to sustainable fishing in the Mediterranean**

Card B

The fishing sector is undergoing worrying changes. Fishing activity has increased in general; for example, the number of boats with engines and more power and trawl nets have increased. Industrial fishing practices have also changed; they exploit all fish resources up to 800m depth. However, increased catches are accompanied with a drop in yield, a sign of stocks quality degradation. This is clearly the case where industrial fishing occurs, such as in the Adriatic and around Sardinia, which used to be the most productive areas. For some species the overall catch per fishing unit is

60% less today compared with about 20 years ago. The total catch has fallen in several countries, particularly in Italy, the leading producer in the Mediterranean. The current state of several stocks and spawning of commercially valuable species confirms the degradation in fish resources. Shrimp catches increased from 10.000 to 25.000 tons between 1980 and 1990 to fall back to 14.000 tons by 2001. Without strengthening coastal protection and changes in fishery management, current trends imply a risk of increasing loss of fish resources and corresponding employment. In 2000, 8.000 Italian fishermen lost their jobs, 16% of the total number of jobs in the sector.

What are the main threats for the fishing sector today?

What are the causes behind these problems?

Do you face such problems in your area? (if you have local fishing activities)

Card C

Passed on, adapted and perfected from generation to generation, most traditional fishing techniques have proved their sustainability. Several are still used, for example the "charfias" permanent fishery beds built from palm leaves, one of the main fishing techniques used in the shallow waters of the Kerkennah, Chebba and Djerba Islands of Tunisia; "felucca" fishing under sail in the Burullus lagoon in Egypt; In the same way the "tuna nets", permanent fisheries built on the migration routes of the red tuna were the main techniques for catching the red tuna until about 30 years ago; "Pyrofani" is a traditional way of fishing in Greece taking place during the nights with no moon and when the sea is absolutely calm. The fishermen use a fish-spear, a strong lamp, a mirror. It is still used in various parts of Greece.

Many experts claim that seeking sustainability in the Mediterranean fishing industry, a "Mediterranean fishing model" is required, based on small-scale fishing units, banning periods, protected zones, responsible fishing, participatory local and national management approaches and a strong socio-cultural dimension. Some of the measures that countries have taken to manage fishing resources are: monitoring of the number of new boats; prohibition of fishing in special areas; limitation of catch per boat; limitation in the use of tools and methods; regulations in the width of net's nooses, etc.

How do traditional practices contribute to sustainable fishing and why?

What could be the solutions to the problem of intensive fishing in the Mediterranean?

What are the factors influencing "solutions" for fisheries at local level?

Find information about the traditional ways of fishing in your home town or in the wider area - prefecture where you live.

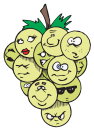
Are they still in use? What other practices are in use? What are the impacts on the marine environment?

Since 1950 big fish such as cod, swordfish and tuna have decreased considerably worldwide. In 1998, the Council of Ministers of the European Union prohibited the use of trawling nets by European fishing ships in the Mediterranean and the Atlantic Ocean. Trawling nets cause huge environmental damage while they drift by the currents, trapping and killing many non-commercial species of marine animals and fish such as: dolphins, whales, turtles, even sea birds when they drift on the surface.

The "gaeta" turns from sailboat to finishing boat upon removal of the upper sideboard, beach of Palagruza (Croatia). The gaeta has a unique naval architecture combining two boats in one

1.9 Vines around the Mediterranean

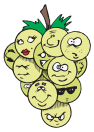
Activity plan



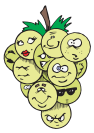
Split into small groups and study the figure below. Discuss the following subjects:

Does your region have vineyards? If yes, what do you produce from them, e.g. grapes, resins, vine leaves, wine, vinegar, spirits?

Are vineyards important in the economic development of your region and why?



Depending on your interests, choose one or more topic(s) related to the vine, either presented in the figure below or another one you might think of. Start your "investigation" collecting information on your topic at local level i.e. your town, or at national level.



When you are ready, combine your findings on a cardboard creating a poster. Your poster may include short texts, photos, sketches, etc. all created by you!

Think of a way to present your work e.g. during a school celebration or in a public place, after having communicated with the relevant local authorities.

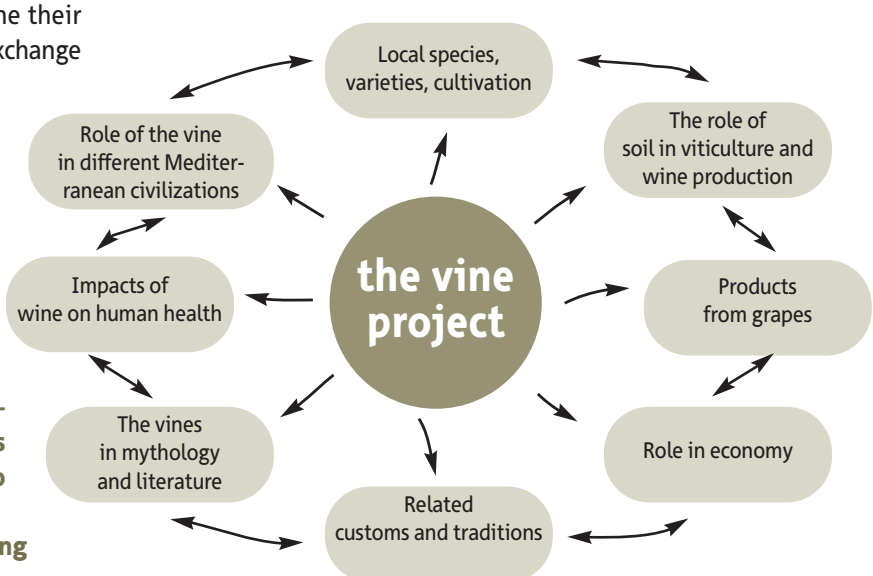
While the groups are still working on their vine-topics they have to be in contact with each other to combine their findings when it comes to relevant subjects or to exchange information. The teacher should help to coordinate your work.

Objectives

- To explore the role of the vineyard in socio-economic and cultural aspects of the region
- To practice in interpreting, elaborating and presenting information
- To be aware of the impact of alcohol on human health

FOOD FOR THOUGHT: HEALTH & ALCOHOL

Wine and all spirits contain ethyl alcohol known as alcohol. When somebody drinks wine or spirits alcohol is absorbed by the stomach but mostly, by the small intestine. In this way it enters the blood circulation and goes to all of the body's organs.
Moderate wine consumption by adults (meaning less than an optimum of 15-40g /day for men and 10-30g/day for women) contributes to good heart function because it reduces the fat that accumulates in arteries. However, excess in alcohol consumption causes serious health problems regardless of what the type of the drink is: it weakens memory and reduces attention and concentration, thus causing accidents. It also contributes to increased weight; the long-term consumption of alcohol might lead to damage of the liver and alcoholism.



1.10 Water in food

More than half of the human body weight is made up of a briny fluid that is much like the oceans that nurtured primordial life. This fluid bathes, cushions and lubricates cells, tissues and organs. On the microscopic level, this fluid gives cells their shape and provides their substance; on the macroscopic level, it forms the watery highways that transport nutrients, wastes, hormones and other substances throughout the body. We need to drink about 8 glasses of water a day in addition to whatever other fluids we drink. Water is precious: it flushes away toxic metabolites and other wastes, maintains blood volume, prevents body salts from getting too concentrated, replenishes whatever water the body loses and is needed for the hydration of the skin and other body organs (Millet, 2000).

Objectives

- To discover the presence of water in food
- To develop the skill of taking weight measurements using a scale
- To practice in working out data and reaching conclusions
- To relate water to diet and health

Materials

Scale, metal or ceramic tray, oven, vegetables, fruits or legumes (orange, celery stalk, onion, grapes, banana, pea pods, beans, etc.), notebook and pens

Activity plan*

Divide into small groups. Each group will experiment with a particular food product aiming at measuring its water percentage. All groups should follow the steps described below.

a. Weigh the fresh product and note down its mass in the table below.

b. Place the product in a tray and oven-dry at low temperature. You should observe it and take measurements every 15 minutes.

c. When the item is totally dry, i.e. the measurements are the same each time, weigh its remaining bulk. Note down its mass in the table.

d. Calculate the mass of the water lost. Calculate also the percentage of water in the item.

TABLE 1

weight before drying (g)	m_1
weight after drying (g)	m_2
water quantity (g)	m_1-m_2
water percentage (%)	$100 \times [(m_1-m_2)/m_1]$

Compare the percentages of water in the various foodstuffs. Can you explain why they differ? You may also describe the change in their appearance, colour, etc. Can you explain the differences?

Compare your results to the data in table 2 on the next page.

* Adapted from the "Water in the Mediterranean" (Scoullos M. et al., 2002)

TABLE 2

Animal products	g water/100g of product
Beef	56
Lamb	55
Pork	47
Codfish	81
Herring	66
Sardines (tinned)	50
Poultry	64
Egg yolk	45-51
Egg white	85-90
Cows milk	77
Goat milk	77
Sheep milk	66
Butter	<18
Cheese	30-45
Cream cheese	45-80

Plant products	g water/100g of product
Asparagus	92
Green beans	69
Soya	73
Cabbage	92
Carrot	89
Celery	95
Cucumber	96
Garlic	61
Mushrooms	92
Pepper	93
Onion	92
Potato	78
Spinach	90
Tomato	94
Pea	79

Watermills: the traditional way of benefiting from water power for grinding harvested crops of cereals, etc. (Kroussia, Northern Greece)

1.11 Food resources

If we ascribe human characteristics to ingredients used in dishes, as it sometimes happens in fairy tales, then a dish can unerringly describe
the people who prepare it and eat it,
the geography of the area they inhabit,
the breath of the mountain and the speech of the river,
the silence of the plain and the freshness of the forest,
the glow of the sun, the bite of winter, the sound of rain (Nemad Janovic)

Objectives

- **To study the food production sector of a particular area (agriculture, livestock breeding, fishing)**
- **To relate the landscape and natural resources to food production and local development**
- **To be acquainted with the main problems caused by non-sustainable agricultural practices**
- **To develop skills in collecting, analyzing and synthesizing information.**
- **To develop mapping skills**
- **To appreciate nature as the "feeder of humans"**

Materials

Notebook, pencils, tape recorder (for the interviews)

Activity plan

Split into small groups and find information about the food resources of the prefecture or region in which your town or village belongs. Your investigation should be focused on the region's capacity to cover part of its food demand. Find out what the food production is, food exports and imports. Look for the local factors that have an impact on food production and availability. You may focus on the following:

- *What is the geomorphology and landscape?*
- *How would you characterize the local climate? What about the impact of the local climate on food production and vice versa (i.e. greenhouse effect, desertification, etc.)*
- *What are the main natural resources i.e. biodiversity (flora & fauna), water resources, energy sources, fish stocks, woodlands, any other?*
- *Does your region produce any food products? What kind? At what amounts?*
- *How do the above mentioned characteristics of the region (geomorphology, climate, natural resources) influence the type, quality and quantity of food produced? Answer based on particular examples.*
- *In which way do the above mentioned characteristics of the region influence the local cuisine? Answer based on particular examples.*
- *Does your region import food? What kind? At what amount or proportion of the demand?*
- *Does your region export any foodstuffs? Which ones?*
- *What is the level of economic development of the region, e.g. rate of employment/unemployment; the average economic situation; how many homeless people exist; is there any public provision for the homeless, etc.*
- *What is the contribution of farming and food production to the economy? Compare with the overall situation (previous question).*
- *Social context: demographic data (farmers, etc.); historical background and traditions related to food professions, food consumption per capita and its evolution through time, etc.*

Your research may include bibliographic and Internet resources, data from the Statistical Service and other relevant public or private institutions.You may also visit local food production sites: vegetable farms, poultry and animal farms, oil production plants, fish farms, food processing units, canneries, etc. and take your own interviews

from the producers to enrich you investigation.

Present your findings on a map of your region (like the one below). Your map could be two-dimensional or three-dimensional! You are free to use any material you wish: cardboard or plywood (for the base), paper, plastic items, clay, colors, cloths, …

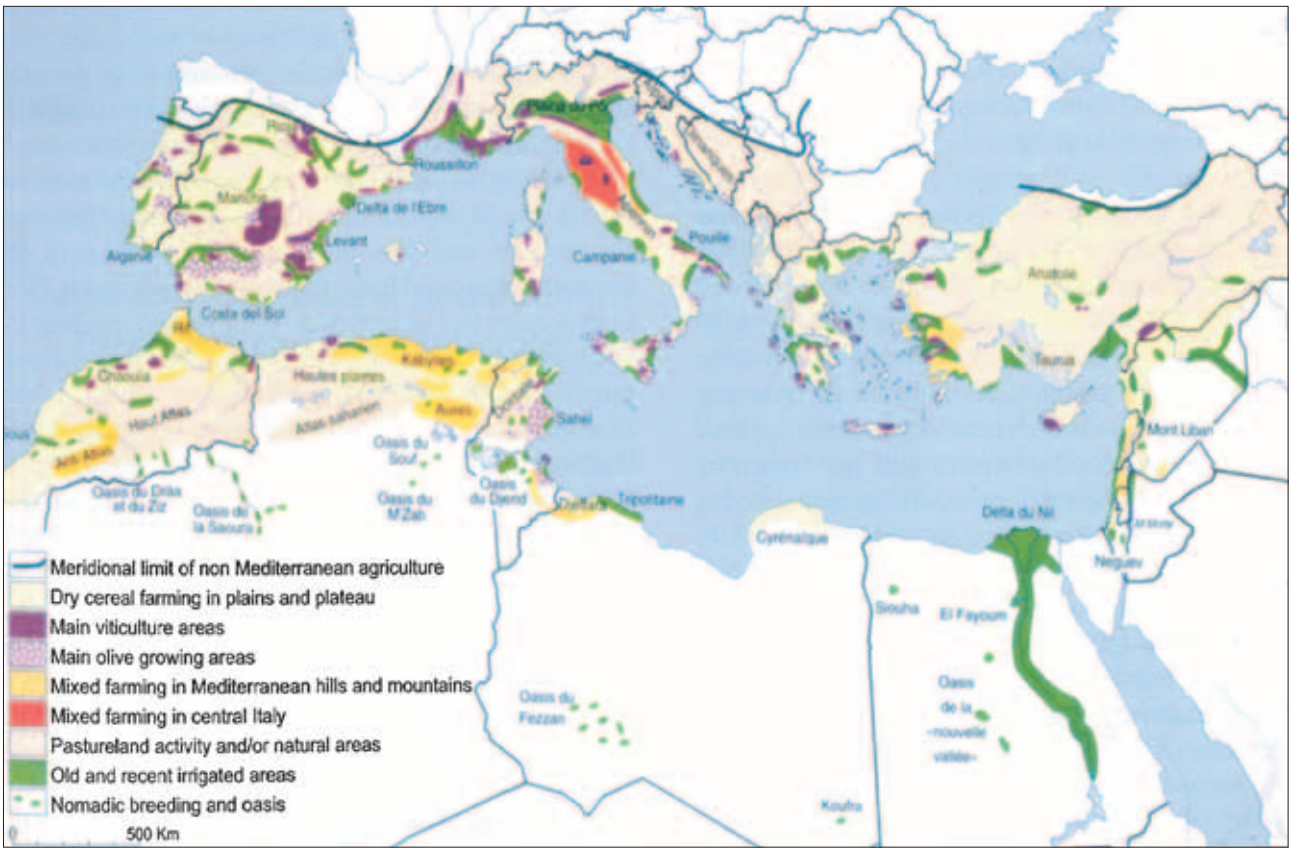
FOOD RESOURCES, LANDSCAPE AND INFLUENCES BY OTHER CULTURES IN SPAIN

Spain has great geographical diversity and wealth, containing the largest number of animal species in Europe. The country's many mountains and plains create microclimates that yield excellent crops and special ways of preparing food, such as the stuffed pork sausages or *embutidos* typical of the very dry areas. Meanwhile Spain's maritime heritage has made fish a regular part of its diet. Each region boasts its own dishes, traditions and local produce as well as imported products that have taken root in the country.

The strategic location of the Iberian Peninsula has meant that Spain, together with Portugal, has been visited by countless peoples and cultures. Iberians and Celts were joined by Phoenicians, Greeks, Romans, Carthaginians and several tribes of Goths, various contingents of Muslims, Jews and pilgrims who followed the Santiago de Compostella pilgrim route.

From Persia the Arabs brought the oranges Valencia is now famous for, just as they brought apricots and other fruits that remind people of their origin by their names (Spanish words for many fruits begin with the Arabic article "al"). Other culinary contributions from the Arabs include sugar, syrup and almond pastries. From the opposite direction (America) came other foodstuff that have become mainstays of the Spanish cuisine such as tomatoes and potatoes which were dispersed from Spain throughout Europe. All these factors have contributed to the great variety of cuisine in Spain.

So, it's true to say that food production and culinary practices are not shaped only by the "natural ID" of a place (landscape, resources, climate, geomorphology, etc.) but also by the people who passed by and lived in that region for a while, bringing their own food habits and cooking styles along with other customs (Culinary practices of Europe, 2005) .



The Mediterranean's main agricultural & natural system (BLUE PLAN 2005)

1.12 Working for food

Materials

Notebook, cardboard, pens, markers

Objectives

- To explore the jobs related to food
- To explain the reasons why professions might disappear over time and the consequences to the local society and economy
- To relate various fields of economic activity with food production
- To express oneself through performance arts
- To develop communication and language skills

Activity plan

Work in small groups and think about jobs that are related to food production, processing and trade. Your teacher will gather all ideas in a list.

Study the table opposite: the red row lists four major fields of activity related to food. The orange one professions related to food and the blue one presents jobs related to food that no longer exist in many countries.

(i) In your groups, put the red-row words in a "logical" order. Write this sequence on a large piece of paper. Explain why you chose the particular order.

(ii Add all jobs beneath their corresponding fields of activity.

If you think of some other jobs in each "category" you may add them.

(iii) Present your table to the other groups. How different are your tables? Discuss these differences.

(iv) Start a discussion about jobs related to food that have vanished through time in your area (town, village). Are any in the blue line? Try to explore the reasons why they disappeared. In your opinion, what were the consequences on the local society and economy?

(v) What about the words in the green row of the table? Where could they be added in your table? What do you think is their role in the table?

Work in small groups. Read the text below describing the life of a farmer in ancient Greece. Choose a job related to food and find out how it was in the past, centuries or decades ago. Look for songs related to the job (i.e. songs about the harvest), related traditions and customs, proverbs, even myths and other references.

Write a small scenario, a short story about it, entitled e.g. "Snapshots from a farmer's life in the past".

Improvise, prepare your material and present your story in a theatrical perfomance.

FARMERS IN ANCIENT GREECE

Few farmers in ancient Greece owned farms; most of them rented farms of 4-5 hectares. In Athens, those who worked in such farms earned one drachma per day, while the few rich farmers made 30.000 drachmas annually. Generally, farmers strived for their survival given the unfavourable weather conditions, i.e. low-level rainfalls, poor soil fertility, etc. It is estimated that the wheat harvest in early Greece failed one year out of every four. Therefore, from the beginning of the 6th century BC the governorate leaders encouraged the cultivation of land i.e. they rewarded farmers who planted new olive trees. However, citizens in the urban areas did not always treat farmers with respect and they refered to them with contempt. Athens, in ancient Greece, was one of the cities that rewarded farmers for planting new olive trees, which would produce olives and oil for future genera-

FOOD / JOB TABLE			
Trade & Consumption	**Live-stock & Fishing**	**Processing & Packaging**	**Crop production**
Veterinarian Cook/Chef Agronomist	Worker Farmer Advertiser	Biologist / Chemist Fisherman Nutritionist	Seller Engineer Breeder
Milkman Miller	Water vendor Beekeeper	Mule-driver Potter	Shepherd
Health protection	Ecosystem & resources conservation	Economic development & reduction of unemployment	Cultural sustainability

tions even if the farmer himself would not live long enough to gain the full benefits.

GUILDS RELATED TO FOOD PRODUCTION AND CUISINE IN THE OTTOMAN EMPIRE

Guilds played an important role in the development and endurance of Turkish cuisine. Guilds included hunters, water vendors, gardeners, fishermen, cooks, kebab cooks, bakers, butchers, cheese makers, yogurt merchants, etc. All of the principal food trades were believed to be sacred and each guild traced its patronage to the holy men. The guilds set price and quality controls. On special occasions such as the circumcision festivities for the crown prince or religious holidays they displayed their products and talents in spectacular parades through the streets of Istanbul.

Old ice factory and ice vendors in Greece in 1951

1.13 The sustainable gardener

Materials

Hoe, watering can, notebook, pens

Objectives

- To be involved in gardening activities and develop relevant skills
- To appreciate the role of agriculture in food security and economic development
- To be aware about the practices of sustainable agriculture
- To comprehend the impacts of non-sustainable agricultural practices

Activity plan

Split in small groups and collect information about the most appropriate place in your school yard for a vegetable garden. Keep in mind that a garden needs:

- available water in close proximity
- preparation of the soil for the "new" seeds or plants
- fertilization, preferring natural ways i.e. using manure.

Bring to class your group's findings. Then, decide jointly which place is the most appropriate one for your garden.

Consult experts -invite them to the school or visit them in their workplaces- about what kind of plants and vegetables are suitable for your garden. Your teacher could help in approaching relevant experts e.g. gardeners, agronomists, agriculturalists, farmers, local authorities, etc. Collect the seeds of the plants from plant nurseries, friends and relatives, etc. Collect also information about how to cultivate the selected vegetables and plants and how to maintain your garden.

Begin by setting the garden's boundaries using poles and a rope. Prepare the soil with the hoe and remove weeds or other remaining plants. Keep them for the preparation of your fertilizer at a later stage. Dig the soil, plant the seeds and water them.

Make a list of all tasks involving everybody in keeping the garden and following the advice of the experts. Such tasks might be:

- Watering - use a watering can and try to use just enough water.
- Removing weeds
- Digging
- Fertilizing e.g. using the compost you have made (see activity 3.4) or manure, etc.

Keep a "garden diary" taking notes on:

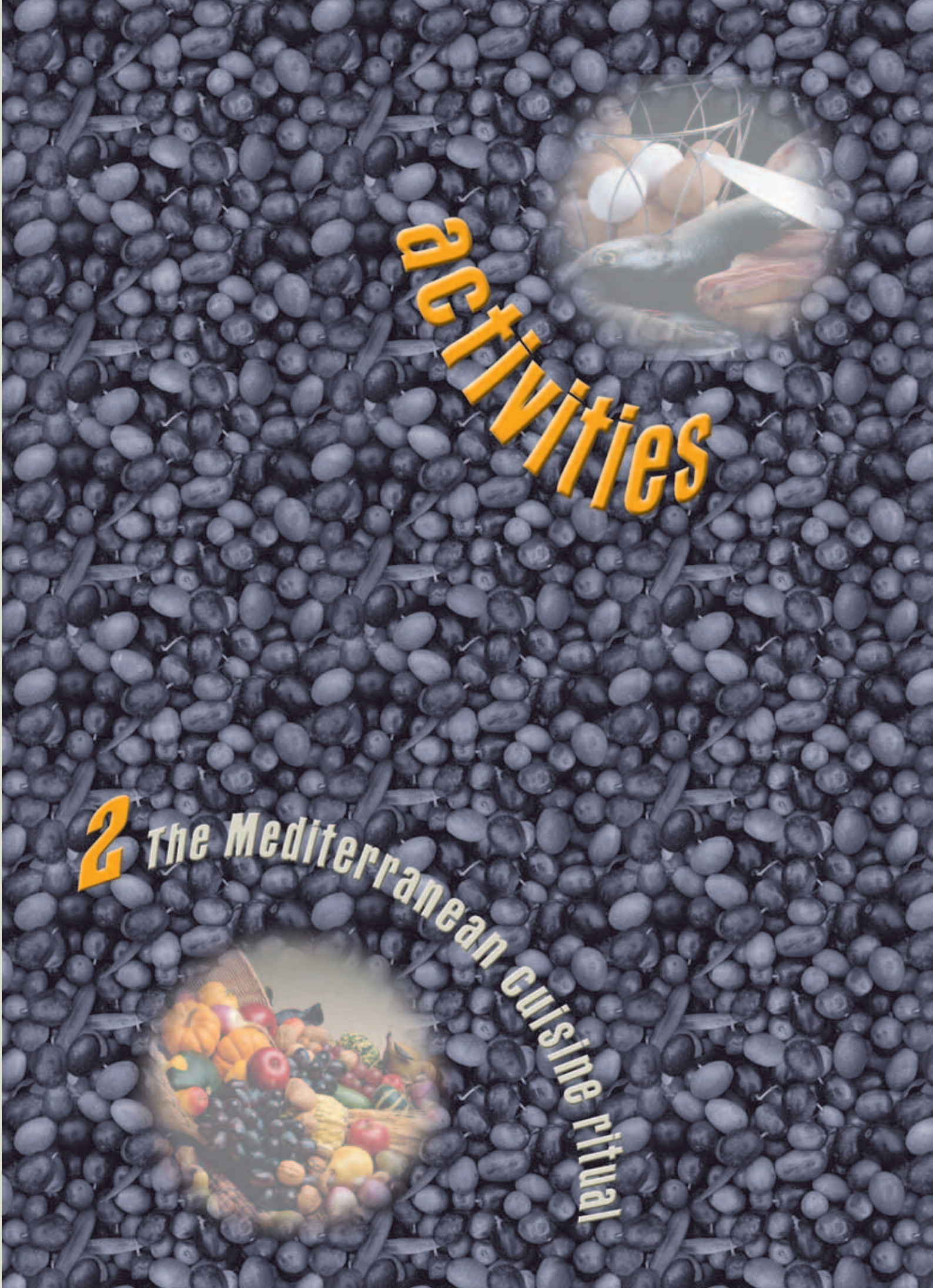
- The dates of the seeding
- The growth of the plants every week
- The time it takes each vegetable and plant to mature, become edible or give fruits.
- Any other information you would like to record.

Look for information about modern and traditional agricultural practices that Mediterranean people applied, in general and the particular ones applied in your country and/or your region (the relevant paragraphs in the background documents 2 and 3 might help you). Identify any similarities and differences between the agricultural methods of the past and of today regarding: fertilization, watering -irrigation, harvesting, ploughing, livestock activities, etc. Try to reach conclusions in regard to environmental impacts and eco-

Soil ploughing using animals: a primitive agricultural practice that is still in use in the peri-urban areas of south Lebanon

nomic and social development, focusing on the advantages and disadvantages of each method.

Soil is composed of rock and mineral particles, decaying plants and animals, living plants and animals, water and air. Plant roots work their way between the soil particles binding and aerating the soil. Soil forms slowly, taking from 50 to more than 1000 years to build up a thin layer. The process of soil destruction as a result of misuse or erosion is much quicker; once completely destroyed, soil is for all practical purposes lost for ever.


activities
2 the Mediterranean cuisine ritual

2.1 The Mediterranean diet through time

Materials

Notebook, pens, photos, markers, glue

Objectives

- To study the factors that influence people's nutritional habits over time
- To use and interpret maps
- To appreciate the diversity and nutritional value of the Mediterranean diet
- To develop information analysis and synthesis skills

Activity plan

⊙ Study the map of the Mediterranean region.

⊙ Choose one part of the Mediterranean map e.g. your country or another one, or a sub-region e.g. Eastern Mediterranean (Middle East).

⊙ Find out about the staple food products and diet of this part of the Mediterranean over time exploring the main time periods: Ancient times, Middle Ages and Modern times. You may look for information in encyclopedias, history books, newspapers, the Internet, museums, etc. You may also use information from this book.

(!) ***During your research, try to include all major civilizations that have flourished in the area you are working on, and their influences on local food production and diet.***
(!) ***Identify positive and negative elements of the diet of the people living in the study area in the various time periods.***

⊙ Present your findings on a timeline about the food and diet of the place you studied. Your timeline might include simple texts -like the one about the Greek diet on the next page - cards, sketches & drawings, photos, etc.

The Mediterranean diet has not remained static. There have been many "new arrivals" through the centuries: peaches and oranges from the East; maize, potatoes and tomatoes from the New World; sugar and bananas from the tropics. The "traditional Mediterranean diet" has always been changing (Garnsey, 1999).

Ancient times

Prehistoric, Classic and Hellenistic eras, Roman

A frugal diet , Symposia, "eating together" value

- A lot of cereals, bread and pies
- Fish, the favorite meal
- Legumes, the main protein source
- Vinegar, oil, sea salt, spices, onion and garlic
- Meat: only during feasts
- Honey & figs: in sweets & deserts
- Wine: daily consumption

Byzantine

Medieval, Greek and Roman

Strong influence of biological & cultural diversity on the Byzantine diet; Strong environmental variations among the different regions of the empire, influences & exchanges with other cultures.

Byzantine people's diet depends heavily on the social class they belonged to; the region of the empire where they lived; and religion.

- A lot of meat & hunting
- Pulses, bread, dairy
- Eggs & fish
- Olive oil: restricted use

Modern times

Renaissance to modern world

Intrusion of tomatoes, potatoes, eggplants, etc. middle 19th AD

This pattern continued after the 15th AD up till the middle of the 20th AD

- Oven in the house
- A lot of bread, onions and olive oil
- Meat during feasts
- Cuisine of island and coastal areas based on seafood (fish, shell fish, etc.)

Strong influences from the southern and eastern coast of the Mediterranean
Meals had always a strong social character and importance
Almost every meal icludes bread and olive oil

2.2 Is it only about food?

What do you think the writer is trying to say? Do you agree? Think of examples and experiences that illustrate the relationship between diet and socio-cultural systems.

Work in groups for 15min and make a chart on the topic of: "Food and Culture". The opposite chart could give you some ideas.

"... Diet is profoundly influenced by the traditional practices and norms of the particular society -and not just diet, what we eat, but also how the food is obtained, who prepares it, where, when and with whom it is eaten. Some anthropologists have argued that the cultural system is and always has been the main influence in food habits" (Gamsey, 1999).

Activity plan

Have you ever thought about the diversity of food depending on the occasions for which we prepare, cook and eat it? Just think of how many different food and meals are related directly or indirectly to religious holidays and feasts, traditions, social events, etc.

Look for the links between local traditional meals of your hometown and cultural aspects. You may look for traditional meals, cooking practices and various foods used during social and cultural events such as: births, weddings, funerals, local and national feasts and festivals, during religious holidays & periods such as Christmas, Ramadan, Easter, etc. For example, foodstuff and meals are very often linked to customs, traditions, music, songs, dances, old tales, etc.

Choose one case from the ones you found, e.g. a wedding or a local event of particular importance and prepare a theatrical event, some scenes or even a whole play, in which you present the particular event. Put emphasis on its "food" part e.g. "The wedding supper", "The ritual of food preparation during the feast of ..."

Contact schools in other Mediterranean countries and compare your "food cultures". Try to find similarities and variations i.e. during the major religious periods, "global" social events such as weddings, funerals, etc. How similar or different are they from the ones in your country? Try to explain the presence of common elements among them as well as the reasons behind the differences.

Objectives

- To discover the importance of food in social life
- To link food habits to cultural elements - religion, tradition, social events
- To find out about cultural events and traditions and the related food of one's home place
- To search for similarities and differences among Mediterranean cultures having as a starting point the cultural aspects of food
- To appreciate the role of traditional foods and meals in the cultural wealth of a country/region

FUNERAL CUSTOMS

During the *prothesis* (laying out of the dead) in ancient Greece people brought pomegranates and baskets of eggs. These were normally symbols of life and fertility, and alongside apples they were used symbolically in

weddings. In the funerary context, however, they were food for the dead, suggesting that there was life beyond the grave. Pomegranates were associated with Persephone, the queen of the Underworld. Nowadays, throughout Greece, *kollyva*: boiled whole wheat, with pomenegrate seeds, raisins and currants, white almonds, sesame and spices are prepared and served after the funeral.
For many Mediterranean people the meal after the funeral excludes meat; fish and soup are served instead.

ITALIAN CARNIVAL

"Zuppa alla canavesana" was a typical soup, made with cabbage, sausage, meat broth, toasted sliced bread, and grated Parmiggiano (Parmesan cheese) during the traditional pre-Easter carnival in northern Italy. The last day of the carnival in Verona is called Venerdi Gnoccolar: "gnocchi Friday". Nowadays it is the day of the carnival parade, but it used to be the day that every household and family made their own gnocchi, a round pasta containing wheat, eggs, potatoes, salt and pepper and served with sauce. This tradition goes back to 1530 when Verona was hit by a great famine.

THE JEWISH FIRSTBORN

On the first Friday after the birth of the first son, Jewish families cook "nahit arbis", sweet chickpeas. The chickpeas are cooked and dusted with sugar or coated in honey.

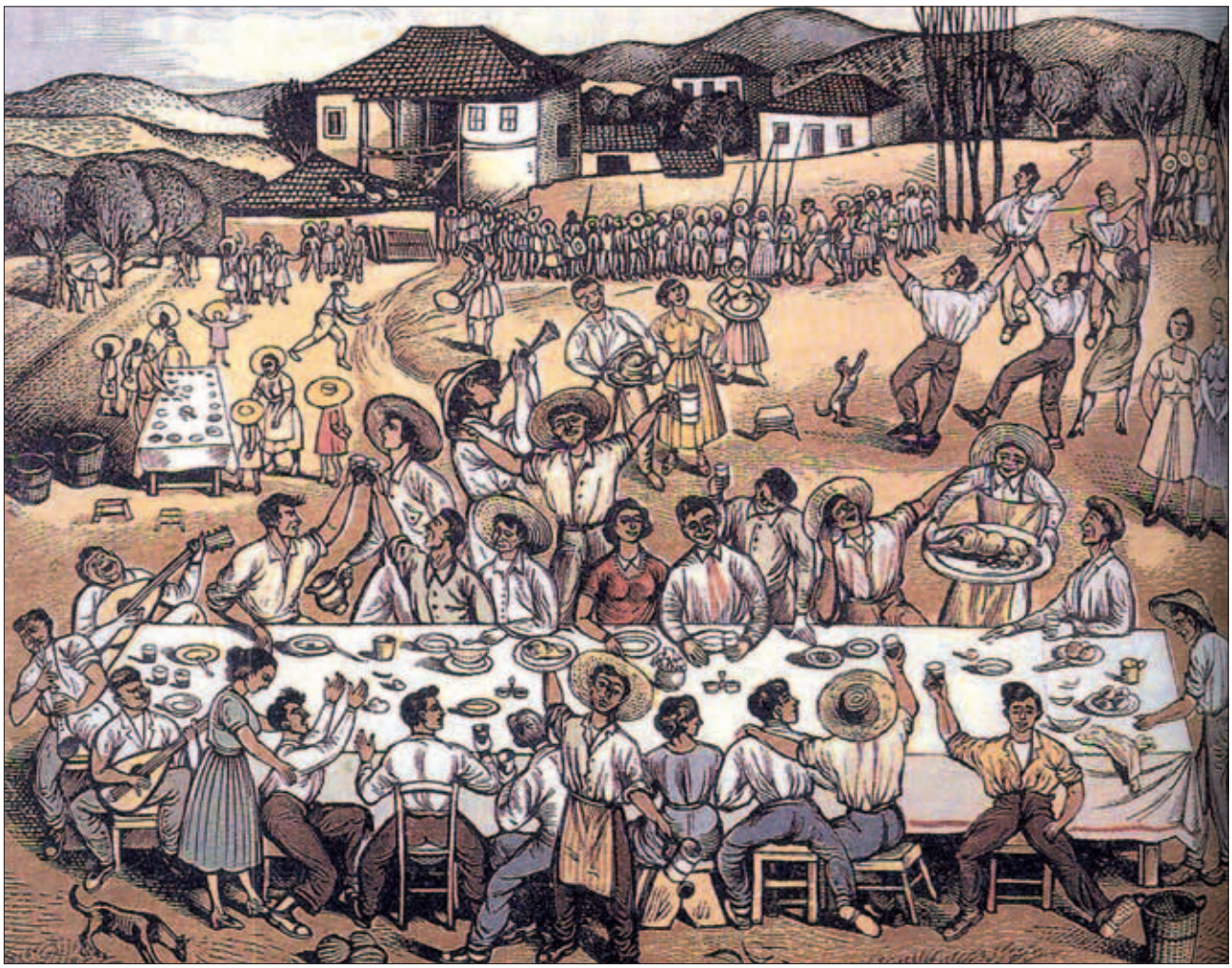
A TUNISIAN FOOD PROVERB

Unlike some other North African cuisines, Tunisian food is quite spicy hot. There is an old wives' tale that says: A husband can judge his wife's affections by the amount of chillie peppers she uses when preparing his food. If the food has a mild taste, the man may conclude that his wife no longer loves him.

THE CALENDAR OF CYPRIOT CUISINE

In the Cypriot cuisine as also in the Greek one, the annual cycle of seasonal dietary custom is strongly connected to Christian fasting. Furthermore, feasts are linked to archaic Mediterranean customs and flavours and to ancient dishes spiced with special symbolism. The seasonal and Orthodox diet is still fundamentally Neolithic: cereals, nuts and greens, honey, fruits and herbs, milk and eggs, meat, and Mediterranean: bread, oil and wine.
New Year's Day: "vasilopitta" is made, a special cake where a coin or jewel is inserted during its preparation; when it is cut whoever finds the coin in the slice is assured with luck in the coming year.
Cheese week: is the last week of the carnival; it ends with *Clean Monday* the 1st day of Lent when Cypriots pack a picnic and head for the countryside, where they eat pickled vegetables, olives, bread, "tarama" salad (made with fish eggs), "lagana" (unleavened bread) and sea food.
Lent: no meat, fish or dairy products are consumed during this period - 40 days prior to Easter. Pulses, vegetables, a variety of pies including "kolokithopitta" (made with pumpkin, raisins and cracked wheat), "tahinopitta" (made with tahini: sesame seed paste), and spinach pies are widely consumed.
Easter: the major religious celebration when all family members come together to celebrate. "Avgolemono" soup (egg and lemon broth) is traditional Easter fare as are "flaunes", savory Easter tarts baked in every household. People crack eggs one against the other as they proclaim "Christ is risen"; this ritual cracking symbolizes the breaking open of the tomb and the crushing of death *via* the Resurrection. The main Easter dish is large chunks of lamb threaded onto skewers and grilled and served with potatoes and salad (*souvla*). Singing, traditional dancing, cracking eggs and roasting the Easter lamb on the spit are all parts of the celebration.

The Mediterranean cuisine ritual



Greek peasant wedding where "gamopilafo" is traditionally served from the wedding pot. Chicken, goat or kid meat or all three together are slaughtered to "bloody the marriage" and are boiled with rice (A. Tassos, Peasant wedding, woodcut)

Harvest **begins in late August with almonds, wine grapes and olives. Cypriots celebrate the harvest with grape festivals, preparing "souzoukos" and "palouzzes" (pudding made from the juice of unfermented grapes). After the carob harvest people enjoy "pasteli" a honey-based sweet with sesame seeds or nuts and syrup made from boiled carob pods which is spread on slices of fresh bread. The new wine is made; "koumantaria" is one of the oldest known wines in the world.**

ISLAMIC FASTING AND FEASTING

⊙ One of the Pillars of Islam is the fast during the month of Ramadan. During this holy month eating or drinking from sunrise to sunset is forbidden; people can eat and drink during the nighttime hours. However, there are some Muslims who are not required to fast: pregnant women, nursing mothers, travelers, young children and others are excluded from the fast.

⊙ There are two important feast days for Muslims. One is "Eid Al-Fitr" following the long fast of Ramadan and "Eid Al-Adha", a four day celebration when Muslims from all over the world offer a sacrifice by slaughtering a sheep, cow or goat following the traditional Islamic customs. It is also called the "Festival of Sacrifice". It commemorates Abraham's readiness to sacrifice his son Ishmael in the name of God. The act of sacrificing an animal, most likely a sheep, represents repentance and a solemn promise to do good on earth. The meat is shared with neighbours and sent to the needy.

2.3 A food pot tells its story

Materials

Notebook, cartons, pens, photo camera

Activity plan

Do you consider the daily "rituals" related to food such as preparing and sharing meals important?

- Is cooking a way to express yourself?
- Is it a way to learn your culture and eventually, other cultures?
- Is there any traditional dish that you like to have from time to time?
- Do you have in your home or town a particular way of eating? Is it a custom linked to religion? For example, a traditional way of eating for Muslims is to use their right hand, sitting around a big pot with food.

MOROCCAN TAJINES

Tajines are uniquely shaped ceramic pots used in Moroccan cooking. Traditionally they were used for cooking the food over a hot charcoal brazier. They can also be used over a gas flame. There are also modern looking tajines which have a cleaner finish and some simple decoration. Both types are available in various sizes starting from 20cm for an individual serving, up to 40cm for large gatherings.

Find information, pictures, photos, etc. about traditional culinary practices of your hometown or village focusing on:

Kitchen devices, equipment, pots, drinking vessels, saucepans, utensils

Energy sources used in cooking in the past

Ways of conservation and storage of food in the past

The historical uses of utensils in your region i.e. what kind of utensils were used in ancient times? When did the spoon, knife and fork appear? Why? For example, was it because of another civilization?

You may find information through bibliographic references and the Internet as well as from Museums, your grandparents and other elders, interviews that you may take from elders e.g. on the ways of food conservation and storage, energy sources that were used for cooking, ways on setting the table, utensils used, etc.

Present your findings on a poster. Compare your findings about the past with the present situation. What remained similar and what has changed? Why?

Look for old pots for food storage and transport that you may have in various places in your home as well as in other homes. Try to interview the owners on the following:

- How old is the pot?

Objectives

- To explore the variety and the art of Mediterranean food pots
- To discover the everyday uses of pots in the past and the present
- To recognise food pots as components of cultural heritage and tradition in all Mediterranean countries
- To adopt a positive attitude against the illegal trade of old objects
- To practice in collecting historical information
- To gain experience in setting up exhibitions
- To appreciate the place of cooking and pottery in the Mediterranean cultural heritage

- Does it have any particular shape, size and color? Describe it.
- Does it have any particular local name?
- How was it made and of what material?
- What is its origin?
- What was its original use?
- How did they end up with it?
- What are its present uses?
- Is it expensive? How it is compared with its original price?
- How is it compared to similar ancient vessels?

If possible, borrow and bring the pots with great care -otherwise take good photographs of them- in a particular space in your school to set up an exhibition presenting them. Prepare explanatory notes and cards about them based on your research findings. Take some photos of the exhibition.

Communicate with schools in other Mediterranean countries about cooking vessels and pots. How different and/or similar are the pots from other regions or countries? Exchange photos and information with them.

A well documented problem in the Mediterranean is the illegal trade of objects of archaeological value e.g. ancient amphoras, pots, etc. One of the ways to counter this threat is the production of museum quality, technologically authentic and archaeologically documented ceramic artifacts, allowing access to a wider clientele. Such a practice is promoted through the "CERAMED Project" in which Greece, Jordan, Morocco, Spain and Turkey participate. For example, in the framework of this project, the Ministry of Culture of Greece organises exhibitions promoting regional history based on high quality reproductions of local archaeological finds[1].

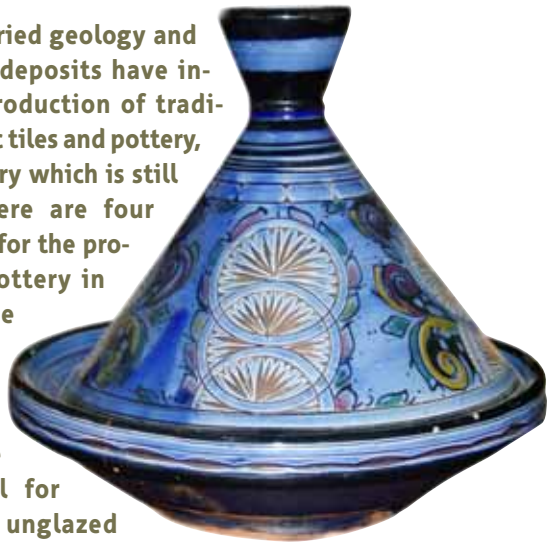
Find more information about illegal trade of old and ancient pots and vessels.

Is it a big problem in your country?

Try to raise awareness of the local society on this matter, starting with the visitors of your exhibition!

[1] More information about the CERAMED project can be found at http://www.cera-med.net/

MOROCCAN POTTERY



Morocco's varied geology and rich mineral deposits have inspired the production of traditional ceramic tiles and pottery, a craft industry which is still thriving. There are four main centres for the production of pottery in Morocco. The rich red soil of Wadi Lan in the far north is the raw material for the region's unglazed terracotta pottery, and the prolific pots produced here are much used by the local people as oil lamps, charcoal burners and cooking utensils. The pottery is inexpensive and simple in style, yet completely ovenproof and large quantities are to be seen on display in tourist areas.

There is a large colony of potters living on the banks of the River Abu Reg in the Rabat region. These potters produce a wide variety of glazed and unglazed ware, from enormous ornamental garden urns to dinner services and coffee sets. Rabat pottery is greatly influenced in style by the French colonists and this has resulted in a decline in traditional Islamic designs and shapes, in favour of a more contemporary look.

The Atlantic coastal region is known as Al Jorfal Asfar, "the Yellow Coast", because of the yellowish clay found there. This is used to make distinctive pottery at Safi, where large quantities of bowls and dishes are produced. Decorations are also distinctive -graceful, curving black lines, with a greenish-blue over-glaze named "turquoise" by the French.

Fez is famous for the production of its typical blue pottery, known as Fakhari by the locals and "Bleu de Fez" by the French. Fez is situated in a steep-sided valley and its geological setting provides the basic materials for its ceramics industry. The local clay is quarried from the hills at Bin Jelleih, 12km east of Fez. Two different kinds of clay are yielded here. The creamy-yellow clay from the upper strata is used mostly for unglazed pottery, such as storage jars and water cups. Pottery made from the lower-strata clay, however, is first left to dry in the sun before being "biscuit fired" in the kilns. The firing process turns the clay white, and it is then ready for decoration.

A typical example of larger vessels is the *jebana* traditionally a storage container for cheese, which gets its name from the local soft white cheese known as "*j'bna*". Modern refrigeration has superseded the original use for the jebana, and this dome-lidded vessel has now become a soup tureen, often sold as a set with accompanying small bowls, known as *zalafa*. During the month of Ramadan, hot soup known as *haria* is served in these tureens and bowls at sunset, and is used to break the fast.

Food vessels and pots from Northern Greece (4th -6th century AD) (Museum of Byzantine Culture, Thessaloniki)

Cooking pots from the ancient Greek Classical period (6th - 4th BC) (Museum of Stoa of Attalos, Athens)

2.4 Our Mediterranean cookbook

The importance of culinary art to the Ottoman sultans was crucial; the sultans' huge kitchens were housed in several buildings under ten domes. By the 17th century AD some 1.300 kitchen staff lived in the palace; hundreds of cooks, specialized in different categories, such as soups, pilafs, kebabs, vegetables, fish, breads, pastries, beverages, candy and halva, etc. fed as many as 10.000 people a day and additional trays of food were sent to other city dwellers as a royal favour.

Materials

Notebook, photo camera, kitchen apron and … kitchen equipment to cook your recipes!

Objectives

- **To be acquainted with traditional culinary practices**
- **To develop cooking skills**
- **To develop skills in creative thinking, synthesizing and analyzing information skills**
- **To appreciate the diversity and nutritional value of Mediterranean cuisine**

Activity plan

Working in groups, create your "Mediterranean cookbook" in which you will include dishes that are first and foremost rare and forgotten, and secondly, typical (traditional) of a particular place.

Furthermore, you may also include recipes that are balanced regarding their nutritional value and prepared by easily obtainable ingredients, preferably, seasonally available and as fresh as possible.

- You may even propose your own meals and recipes.
- Illustrate your cookbook with sketches, photos, etc.
- Share your cookbook with other classes and the local community.

You may even expand your cookbook to include recipes from other Mediterranean countries.

You may find some recipes and related information about typical Mediterranean dishes in the Insets.

"SUSTAINABILITY TIPS" WHEN PREPARING FOOD:

- Prefer organic products.
- Buy products in season.
- Prefer locally produced food.
- Use water with care, not only during cooking but also when washing the dishes; find ways to reuse waste water from dish washing, e.g. in the toilet bowl.
- Cook with the "appropriate" or most efficient appliances possible, e.g. charcoal barbeques for grilled foods; microwaves consume less energy compared to regular ovens; convection ovens are more energy-efficient because they cook up to 30% faster than a regular oven.
- Refrain from constantly opening and shutting the refrigerator door.
- Avoid waste of ingredients and materials: cook as much as you need. Keep the food left over in the refrigerator for another meal. Try to reuse the food left over e.g. by making compost or feeding domestic animals.

ARABIC DISHES

Arabic dishes are influenced by the Mediterranean and "desert" experiences of the peoples of North Africa and the Middle East. They are basically prepared with little water so that the meat and vegetables boil in their own juices; few other spices are added. The diet consists mainly of vegetables such as spinach, eggplants,

courgettes, tomato, peppers, legumes (chickpeas), and rice. It is also rich in dairy products -clotted and sour cream, milk and yogurt. Dishes often contain onion, legumes, butter and cooked tomatoes. Broths containing one or more types of vegetables along with legumes or grains, meat and parsley are characteristic and they may constitute an entire meal. Meat is roasted and usually stuffed with vegetables or grilled. There are also several types of pies. Because it is felt that all dishes should be juicy and tender, milk, butter or sour cream is frequently used. One special group of foods is "meze" served with drinks (not alcohol) most often during Ramadan. These consist of some simple raw foods, soups, or more complicated dishes. The most frequently served dish is "halva" made of stir - fried flour over which "sherbet" (caramelized sugar with water) is poured. Oriental sweets such as "baklava","tulumba", "kadaif" and "tufahija" are the most typical ones, found all over North Africa, Middle East, Turkey, Greece and the Balkans. Their origin is lost in history; some are similar to the recipes of the Byzantine, Roman or even ancient Greek, Egyptian and Mesopotamian period.

JORDANIAN DISHES

The national dish is known as "mansaf"; this is a whole stewed lamb, cooked in a yoghurt sauce and served on a bed of rice. "Maglouba" is a meat, fish or vegetable stew served with rice and "musakhan" is a chicken dish, cooked with onions, olive oil and pine seeds. This is baked in the oven on a thick loaf of Arabic bread. Also popular is the famous Middle Eastern "sheish kebab", consisting of chunks of lamb or marinated chicken speared on a wooden stick and cooked over a charcoal fire with tomatoes and onions.

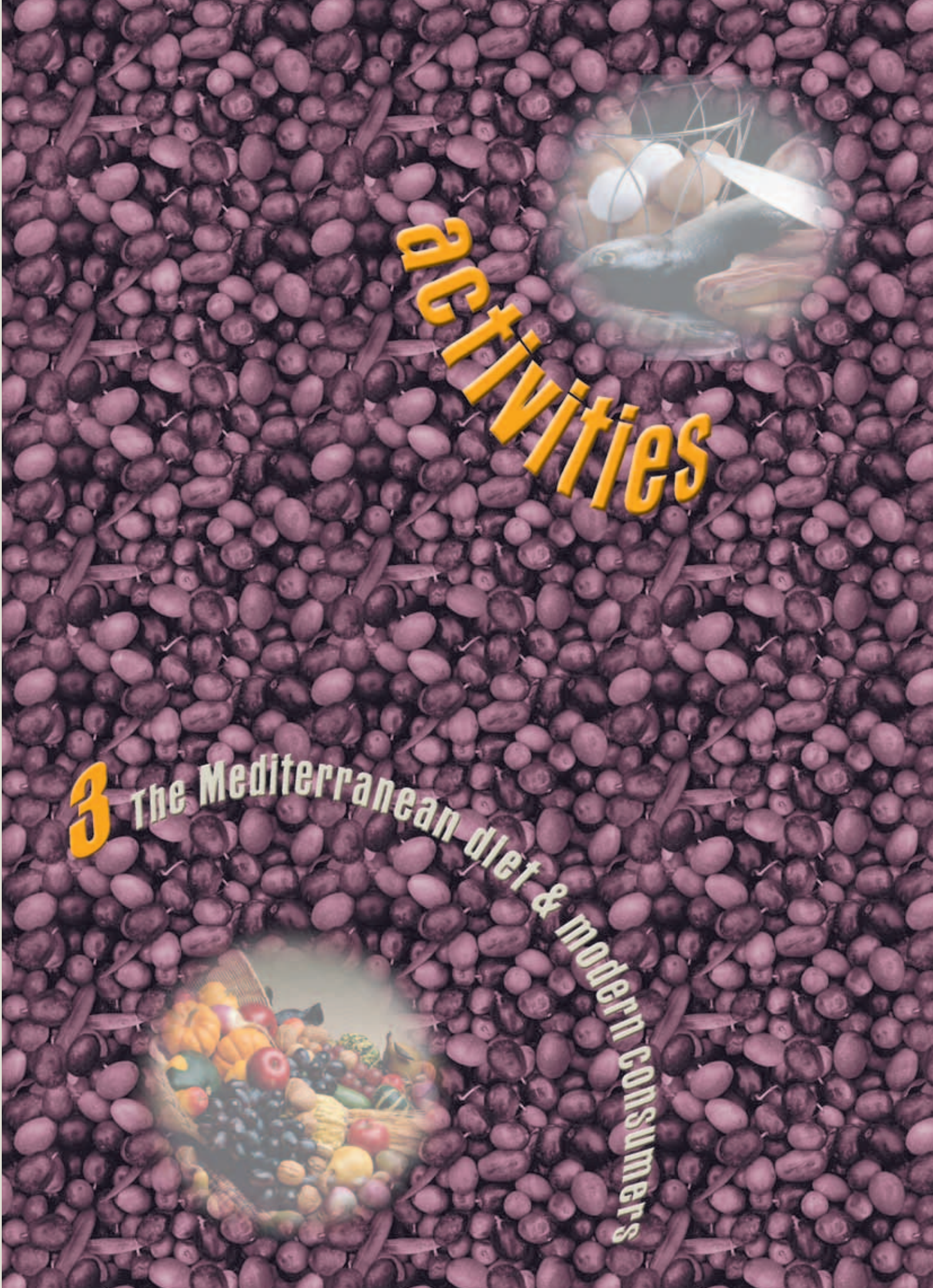
COUSCOUS

Couscous is the basis of the typical dishes of the Maghreb, the Mediterranean countries of North West Africa. Elsewhere in Arabic-speaking countries it may be called Mughrabiyyah, "the Maghreb dish". It is usually made from wheat flour, but barley, maize, acorn and millet flour are all sometimes used in different regions. Couscous is a pasta-like product but made in a different way. It consists of tiny balls of dough (in various sizes which have different names) which are steamed and served, rather like rice, as a base for meat and chicken as well as vegetables and potatoes. It can even be prepared for dessert with syrup, cinnamon, dates and raisins. Couscous will keep for months and even years without spoiling, a great advantage in countries where the harvest may sometimes fail due to the frequent periods of low and inadequate rainfalls.

Serving traditional Egyptian food

MOROCCAN CUISINE

Moroccan food is marked by the medley of spices found in its dishes: cumin, black pepper, paprika, saffron, turmeric, cinnamon, ginger, sesame, etc. Among the most famous dishes are: "Couscous", "Bastilla", "Tajine", "Mechoui", "Kabab", "Harira soupe". The meal usually begins with a series of hot and cold salads which are followed by a tagine, or stew. The main plate, often a lamb or chicken dish is followed by a heaping plate of couscous with meats and vegetables on the top. It is common for Moroccans to eat with their fingers and use bread as a "utensil ".
The most popular drink is mint tea, one of the important rituals of the day, always accompanied with dry fruits, cakes and a pastry made of almond paste and sugar.


activities
3 The Mediterranean diet & modern consumers

3.1 Why so much fuss about the Mediterranean diet?

No particular food contains all necessary substances and in the adequate proportions. Consequently it is necessary to vary our diet as much as possible to avoid lack of some nutrients essential to our organism. "The more we have the same diet the more our organism loses its adaptability. Biodiversity in diet is a pleasure in taste and a way to improve health and welfare" (Oliviero Osculati, Italian dietician)

Materials

Cards, crayons, notebook, pencils, photos, coloured cloths

Objectives

- **To become familiar with the Mediterranean diet**
- **To appreciate the nutritional value of the Mediterranean diet**
- **To recognise the link between local food products and good health**
- **To organize an awareness raising campaign on the value of the Mediterranean diet**
- **To adopt a positive attitude towards the Mediterranean diet and related habits**

Activity plan

Read in groups the paragraphs in the Background Document 3 on the food for maintaining one's good health .

How do you understand the phrase: "Biodiversity in diet is a pleasure in taste and a way to improve health and welfare"? Try to link it with local recipes and food traditions.

Make a bibliographic investigation in order to complete the following table including the major food groups and their nutrient value in terms of proteins, carbohydrates, fats, vitamins, trace metals, water. You may also add quantitative information (per 100g of food product).

Using as a starting point paragraph 3B of the third Background Document look for the benefits of the Mediterranean diet to human health.

Create your own Mediterranean diet pyramid using various materials: photos, sketches - drawings, paper, colors, clay or plasticine, lyrics and proverbs, etc. and present your findings.

Divide into the food groups according to the table. Several students should participate in each group. E.g. Yellow group: meat & legumes White group: milk and dairy products, Orange: bread & grains, Green: fruits & vegetables, Blue: water and fluids, Brown: oil & fats.

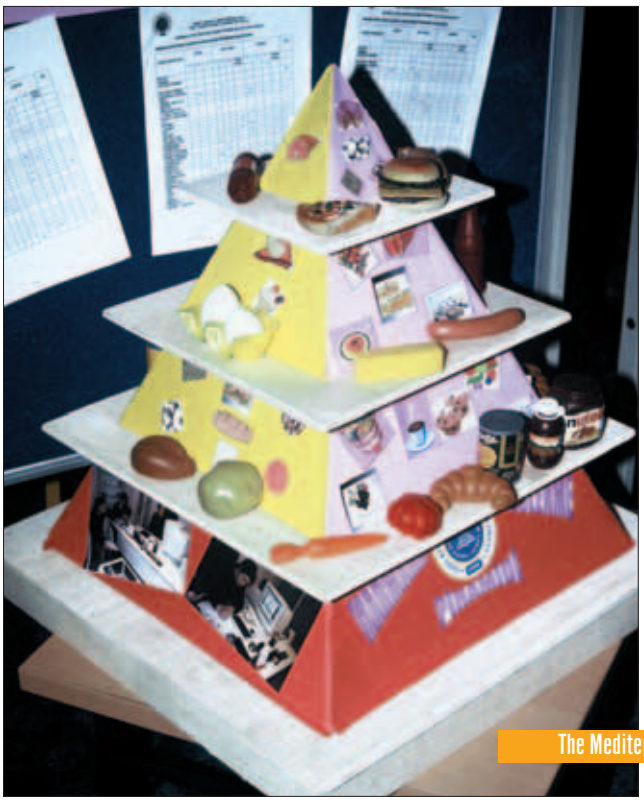
With the help of your teacher, prepare and perform a theatrical play about:

"...Various typical Mediterranean foodstuffs "arguing" about their nutritional value, their importance to health, their taste..."

Organise an awareness raising event in your school about the Mediterranean diet highlighting its nutritional value as well as its impacts to the conservation of the biological and cultural diversity of your home town/region.

You may include in the event the data from the table, the pyramid you have prepared, your theatrical play, etc.

	Carbohydrates	Proteins	Fats	Vitamins	Trace metals	Water
Meat						
Fish						
Poultry						
Eggs						
Legumes/pulses						
Milk						
Cheese						
Yogurt						
Bread & various cereals (pasta, rice, etc.)						
Roots (potatoes, etc.)						
Fruits						
Vegetables						
Water						
Hot drinks (tea, etc.)						
Olive oil						
Fats						
Sweets						



The Mediterranean diet pyramid prepared by high-school students in Istanbul (SEMEP Project)

3.2 We are what we eat

If the eyes are the windows of the soul, then the food people eat is an image of their character. There are dishes that fill our stomachs but do not satisfy our hunger and those that satisfy our hunger but do not overly fill our stomachs. There are also dishes that fill our soul and those that make us happy. And if, in most cases character is destiny, then the cuisine of people tell us the true history of its creators (Nenad Tanovic in the "Culinary cultures of Europe", 2005).

Materials

Notebook, pencils

Objectives

- To identify one's dietary habits
- To practice in conducting surveys using questionnaires
- To collect, analyse and present information
- To link daily eating habits to health
- To learn just how healthy a diet can be if based on the priciples of the Mediterranean diet
- To explore the causes of shifts in the dietary habits of the region's people from the Mediterranean diet and the consequences on health, economy and cultural diversity

Activity plan

Note down for a period of a week whatever foodstuff you have daily for breakfast, lunch, dinner and snacks. At the end of the week, try to reach some conclusions about your dietary habits. You can answer some of the following "Sample questions" in order to report better the food you consume in terms of quality, quantity, frequency and also manner.

- Can you think about the impact of your dietary habits on your health?
- What could the impact on the family's "wallet" be?
- Try to present your dietary habits in a pyramid and compare it with that of the Mediterranean diet.
- Compare your findings to those of your classmates.
- How different are your diets?

Expand your survey on the dietary habits and attitudes of people to your neighborhood or town. Make a questionnaire for this purpose. You may include in your questionnaire some of the following "sample questions" and even make your own questions, as well.

- Compare your findings with the basic elements of the Mediterranean diet.
- What divergencies do you observe? Try to give reasons.
- Present your research findings on a poster or a brochure and use it to inform the local society, trying to raise awareness about the Mediterranean diet.

Contact students and schools in other Mediterranean countries and try to find out what their diet habits are and start a discussion. Look for similarities and differences in your dietary habits.

Split in two groups. The first one will bring traditional home-cooked meals and the second one fast food meals. Compare them in terms of flavor, price (cost), nutritional value, calories, etc. Rate each food item according to a scale from 0 to 10.

Read carefully paragraph 3C in the third Background Document about the dietary preferences and profiles of people in the various parts and countries of the Mediterranean.

Sample questions[1]	
A. How many meals do you have during a day: 1, 2, 3 or more?	
B. During a week…	
1.	How often do you have breakfast? never; 1-2 times; 3-4 times; daily
2.	How often do you drink milk? never; 1-2 times; 3-4 times; daily
3.	How often do you eat fish? never; 1-2times; 3-4times; daily
4.	How often do you eat chicken? never; 1-2times; 3-4times; daily
5.	How often do you eat (red) meat? Never; 1-2times; 3-4times; daily
6.	How often do you eat legumes? never; 1-2times; 3-4times; daily
7.	How often do you eat fruits? never; 1-2times; 3-4times; daily
8.	How often do you eat cereals? never; 1-2times; 3-4times; daily
9.	How often does your family eat together? never; 1-2times; 3-4times; daily
10.	Do the meals in your family include a salad? never; 1-2times; 3-4times; daily
11.	Are the meals in your family cooked/served with olive oil? never; 1-2times; 3-4 times; daily
12.	How often do you drink refreshments such as cola? never; 1-2times; 3-4times; daily
13.	How often do you take food or drinks from home to school? never; 1-2times; 3-4times; daily
14.	During a school day do you buy food/drinks e.g. from the school canteen?
	never; 1-2times; 3-4times; daily
15.	What does your breakfast usually include?
16.	What is your favorite food & what kind of food is it?
17.	What kind of food do you dislike? Why?

Discuss in groups about the dietary models of the Mediterranean people nowadays.

Compare them with your survey findings. Discuss in class and try to reach some general conclusions and make comments about people's dietary habits today.

[1] Note: "never" also has the meaning of "seldom"

3.3 "Researching" food

When purchasing food, two out of five Europeans guide their choice by the quality (42%) and the price (40%) of food. Around a quarter are guided by the appearance/freshness (23%) of food, followed by taste (17%), health benefits (14%) and family preferences (11%). At a lower percentage come habit (9%), food safety (8%) and production methods-organic, free range, etc. (8%) (Special Eurobarometer 238, "Risk issues").

Material

Notebook and pens, various packaged foodstuff

Objectives

- To practice in collecting and analyzing data
- To interpret information given on labels
- To be aware of what influences our choices as consumers when it comes to food products
- To adopt positive attitudes towards healthy and environment friendly food products

Activity Plan

Conduct a survey in your neighborhood on peoples' attitudes regarding eating out and purchasing food. Prepare a questionnaire that might include some of the questions below.

1. How often in a month do you eat out: never; 1-2 times; 3-4 times; daily
2. What things do you consider before choosing a restaurant?
3. What do you consider before ordering at a restaurant?
4. Rank the following data in order of importance to you when buying a food product (from most to less important) *Origin – Ingredients– Date of production – Brand – Price – Production methods (organic, etc.) – Taste – Habit – Season – Any other, please specify*
5. How do the elements in the table below influence your eating habits and your choices before buying food? Check the appropriate box.

Work in pairs on specific packaged foodstuff. Carefully read and analyse the information extracted from the labels - the table on the next page will help you.

Present the information to the class.

Discuss in pairs and then with the class about the best and the worst product. Explain your choices.

...influences my eating habits ...	**not at all**	**a little**	**partly**	**enough**	**very much**
Family					
Friends					
Fashion					
Religion					
Tradition					
Economic situation/prices					
Season					
Advertisements. Please specify in which kind of media: press, radio, TV, Internet, etc.					
Any other …					

Label information	
Ingredients:	nutrient facts - proportions - preservatives - etc.
Production:	made in - imported by - farming conditions - type of process - brand info - logo - claims, etc.
Instructions for use:	packaged/expiry date - cooking time - pre/half cooked - tips for storage - recipes, etc.
Product credibility:	certification - organic food - fair trade - ethical label - GMO free - supported by - designation of origin
Packaging:	materials made of - recyclable - etc.

List the recurring brands in your nutrition habits (breakfast, lunch and dinner). Describe their particularities and report them in class.

READING FOOD LABELS

Labels of food products play an important role in informing consumers about what they eat, influencing their consumption choices and protecting their health. To address such concerns of citizens, public authorities in several countries have enforced strict foodstuff, labeling regulations e.g. the 2002 European Commission measures. At the same time, besides health concerns, consumers are becoming more interested to know about the environmental and social impacts of food production and consumption choices. Ethical, "fair trade" and environmentally friendly labels have grown in number in some countries while many companies have agreed to voluntary commitments for more responsible production patterns. However, in some cases, some enterprises have adopted "green-washing" strategies aimed at inducing consumers to associate a product with some generic and barely verifiable feature; that it is "eco", "bio", "nature friendly", etc. without proper commitment for improved products. Learning to read labels has become a fundamental step to caring for ourselves, caring for other people and caring for the planet.

A recent research in Greece on adolescents showed that three out of ten Greek adolescents pay attention to the information presented on the labels of food products (e.g. salt and sugar proportion, preservatives, etc.) when purchasing food, though the majority pays attention mainly to production and expiry dates.

Shop in local market (*medina*) in Rabat, Morocco

3.4 Food waste

Food waste can be used for the production of compost. Proper biodegradation of waste that contains organic material may lead to a stabilized product usually called "compost", similar to the natural organic component of soil. Compost may be used as a natural supplement to fertilisers, as it enhances the fertility of soils by increasing their ability to retain oxygen and water, contributing to crops of good quality. Garden and kitchen leftovers are ideal foodstuff for bacteria, fungus, earthworms and other small insects taking part in the composting process. It is estimated that kitchen vegetal leftovers constitute 30% of the total household waste volume. In order to make compost, one should start with sorting wastes.

Objectives

- **To identify the advantages of using food waste for composting**
- **To practise in making compost**
- **To be involved in environment friendly activities**
- **To appreciate the value of waste if managed in a sustainable way**

Materials

Organic waste: kitchen and garden leftovers (see below)
Compost bin or silo: wooden or plastic boxes with many gaps in their sides in order to permit enough air supply to their content.

Waste materials to be used for composting:
- Raw and cooked food (greens, vegetables, fruits)
- Vegetable peelings
- Crushed egg shells
- Tea bags, coffee filters, coffee sediment

Campaign for collection and recycling of biodegradable material in the Baix Camp near Tarragona (Spain) running since 1997

- Kitchen paper
- Ash (from the fireplace)
- Small leaves and flowers
- Soil, manure

Waste materials must not include:
- Meat and animal products
- Plastic, metals, glass: you can recycle them instead!

Activity Plan*

1. Place the compost bin at a corner in your garden, yard or balcony that is flat and protected from rain. Place it on a grid or a solid base with drainage gaps.

2. Cut the waste collected into small pieces - as small as possible - and wet them with water.

3. Line the compost bin with newspaper; this way mois-

* Adapted from "Waste in our life" (Scoullos M. & D. Papadopoulos, 2003)

ture is soaked up and it is easier to empty the bin.

4. Apply a layer of waste in the bin.

5. Cover the first layer of waste with a thin layer of soil.

6. Continue to apply alternatively layers of waste and soil until there is nothing left and cover the bin.

7. Measure the heap's temperature every day:

You will find out that during the first days the temperature will rise rapidly and later on, it will remain stable for a while. Can you explain why?

8. Water the heap regularly to keep it moist by pouring a relatively small quantity of water.

9. When the heap's temperature starts to decrease you should take the material out of the bin, water it and stir it to allow sufficient air supply.

10. Place the material in the bin again and take temperature measurements.

In the following days the temperature will increase again and then it will eventually stabilise.

11. Repeat steps (9) and (10) when the temperature starts to decrease again.

Generally your compost will be ready in approximately 7-8 months. The final compost looks like a rich crumbly soil without a trace of its original contents. If small pieces of material remain you can use a sieve to improve its appearance.

Typical compost bin

12. You should not use the compost produced immediately: wait for a couple of weeks or up to three months.

13. Use the compost you produced in your house or your school garden.

Try to contact environmental organisations that have implemented composting activities and relevant campaigns in order to find out about their experiences (results, obstacles, etc). In cooperation with them, explore ways to initiate such a campaign involving your school and the local community.

SOME IMPORTANT TIPS

- **In order to speed up the process you may use a particular mixture that facilitates the fermentation. You can find such a mix in nurseries.**
- **Make sure that your mixture is aired and watered regularly.**
- **The initial waste material should be cut into very small pieces.**
- **If your compost bin smells bad add crumpled cardboard and paper; this reduces humidity and allows aerobic decomposition as opposed to anaerobic, which produces smelly gases.**

The majority of Mediterranean countries do not have sufficient provisions or incentives for reusing organic waste. In most cases, composting facilities and projects are run at local level i.e. voluntary initiatives rather than within a planned national strategy. Egypt, Lebanon and Malta run national programmes for composting and the agricultural use of compost. At local level, compost producing initiatives are common in many countries including Tunisia, Algeria, Albania, and Slovenia; in Spain household waste is partially composted; in Italy, the quality characteristics and rules for the use of compost are defined in a particular regulation (27/07/84).

3.5 Food trade: fair or not

Material

Notebook, cards, pencils, markers

Objectives

- To find out about the concept of fair trade
- To explore the impacts of fair trade on producers and local development
- To develop skills of inquiry and communication
- To be aware of how linked we are to people in other parts of the world through the goods we buy
- To be aware of the impact of consumption choices

Activity plan

Start by reading the related paragraph of the third Background Document and the article by Peter Hulm (Insets) about fair trade. Have you heard about fair trade?

- Are there any stores promoting food labeled as products of fair trade in your town?
- Have you ever bought such a product?
- What do you think the advantages and disadvantages of fair trade are?

Read the questions in the following table and choose a number from 1 to 5 representing your agreement or disagreement.

With the help of your teacher, discuss your answers in the class. Express what your answers reveal to you and why. How do the rankings differ?

Role play

Six of you are going to play food producers who will share their stories with the audience (class).

The audience will keep notes during the presentations.

The goal is to identify differences between the producers who practise fair trade and those who did not.

For the students who will make the presentations as the producers: You may use the information provided in the following cards and/or find more information. For your presentation, try to be as persuasive as you can, e.g. you may be dressed according to your role, show pictures, use body movements, music, etc.

1: I don't agree 2: a bit 3: partly 4: I quite agree 5: completely	1	2	3	4	5
a. When I peel a banana or eat a bar of chocolate or drink a cup of tea I don't think about the person who grew it.					
b. Life is hard for all of us; I don't think that producers' problems have anything to do with me.					
c. What I choose to shop has an impact on my life, as well as on the life of others					
d. Let's be realistic: if I pay more for a fair-trade labeled product I won't save the poor people of the world.					
e. My choices as consumer can make a difference e.g. in improving the quality of life of poor producers.					
f. Our collective choices as consumers can make a difference e.g. in improving the life of poor producers					

Producers' stories*

BANANA PRODUCER A

I grow bananas on a large scale plantation in Central America. Our pay is very low. Pesticides sprayed on the bananas can have terrible side effects, they can make men sterile. Women in the banana packing sheds suffer double the normal rate of leukemia. Babies are born deformed. We don't have any land of our own, so working on the plantation is the only way we can make a living.

BANANA PRODUCER B

I grow bananas on a plantation in Costa Rica. Since we joined Fairtrade our pay has increased. This means life is much better for us; we can afford running water and electricity.
The environment has been improved too. Plastic waste is recycled and you can walk around the banana plantation without smelling chemicals. This means our health has improved. Weeds are pulled up by hand, instead of using harmful herbicides, and workers have been sent on training courses. Fairtrade has given us the opportunity to help ourselves - we can look forward to the future, instead of wondering how we'll survive.

TEA GROWER A

I work on a large tea estate in India. It is back breaking work, but our pay is very low. This means that, as we earn so little, our children have to work too. They don't go to school.
Our houses are in a terrible condition but if we complain to the estate manager we risk losing our jobs. Any shelter is better than none.

TEA GROWER B

I also work on a large tea estate in India. It is very hard work, but in the last few years life has taken a turn for the better. Our estate now sells tea through Fairtrade. We have used some of the extra money from Fairtrade to buy an ambulance. The biggest difference the money has made is in providing electricity to the workers' houses. This means women now have more time - they don't have to collect firewood and the houses are smoke-free which is healthier for us all. Before we had electricity many people had breathing problems, more women had miscarriages and birth complications. Another advantage is that children have light to study at night.

Fair trade encourages people to buy foods whose producers have been given a fair price. Such a price covers the cost of production, a social premium for producer groups to invest in business or community development, longer-term relationships and advance payments.

COCOA GROWER A

When cocoa prices fall, we have to make difficult decisions. We may have to put off sending our children to school, and we can only afford to buy medicines for members of the family who have paid work. It's not just the people who get ill - insects such as mealy bugs can destroy much of the cocoa crop each year, if we're not able to look after the plants properly.
Another problem is traders who rip us off - they don't always weigh our cocoa beans fairly, or pay us cash. We can't grow anything else - we wouldn't be able to market it.

COCOA GROWER B

Things are really looking up for us since we've been selling our cocoa through Fairtrade. We have a long-term contract with a chocolate company, so our hard work pays off. Farmers who had to leave their farms to look for paid work have returned to their villages to grow cocoa. Communities are back together again. We've used some of the extra money from Fairtrade to make a concrete floor in our house - before we just had a dirt floor. We can now afford to send our children to secondary school, as well as buy them schoolbooks and shoes. We've also planted more cocoa because of our confidence in Fairtrade - it gives us a good price. Fairtrade really does make a difference.

* Resource: Fairtrade in your school ED1, April 2005, The Fairtrade Foundation.

3.6 From field to fork

Just as living things are born, get older, and die, products also have a life cycle. Each stage of a product's development affects the environment in different ways - from the way we use products to the quantities of products we buy, to what we do with a product when we are finished with it. By looking at a product's life cycle: from the extraction and processing of raw material, to manufacturing and distribution, to the product's final use by consumers, recyclers and disposers, we can better understand the connection between Earth's resources, energy use, waste and wider challenges like e.g. climate change. Thinking about a product's life cycle is a really useful way to help us decide which products have less impact on the environment, on our wallet and on the welfare of the local society.

Objectives

- To study the basic general processes within a food product's life-cycle
- To be aware of the environmental and economic impacts of food production
- To conceptualise the importance of reuse and recycle in the life-cycle of a product
- To adopt a positive attitude towards purchasing products that follow eco-design principles

Food products have also a life-cycle made up of a series of stages: production, processing, packaging, storage, transport and waste of the food. People buy food products for a range of reasons and often without thinking about where the food has come from and how far it has been transported (see Act.3.3).

Activity Plan

Let's investigate the life cycle of the school lunch/snacks.

⊙ Fill in the life cycle table. List what you usually eat during the breaks/lunch at school, usually buy from the canteen or bring from home, including drinks as well.

⊙ For each food and drink item write down the stages of the life cycle. Find information (qualitative and if possible, quantitative data) about the main environmental impacts in each stage: use of land, water and energy as well as emissions and waste. Use bibliographic references, surf the internet, interview manufacturers, traders and users, experts, etc.

⊙ Compare the life cycles of your snacks with the ones of your classmates. Which ones have the minimum environmental impact? Why?

⊙ Think about what a "low environmental impact" lunch would have in it. Write down the items you would have in such a lunch.

In groups, work on your favorite food products: milk, potato chips, ice cream, etc. to better understand its life cycle. You should investigate each one of the four key stages of the product's life cycle based on the following questions.

Raw materials & Production

⊙ What is the place of (i) raw material production/extraction (ii) final product's manufacture?

⊙ What laws does the country of origin have regarding the use of pesticides, safety regulations for workers, wages and conditions for workers and farmers?

⊙ What raw materials and energy resources are used for its large scale production?

⊙ What are the processes the raw materials go through in order to produce the particular product? Do these processes pollute the natural resources: land, water, air? E.g. what chemicals are used in the manufacturing or growing of the product or its container?

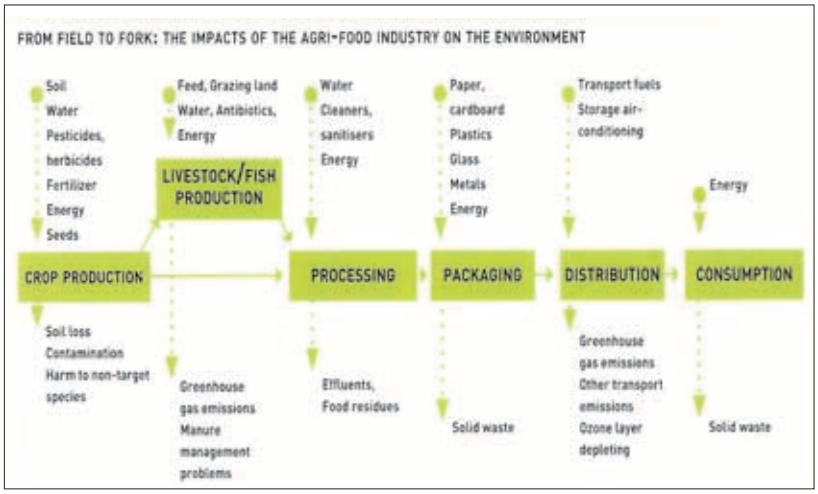
⊙ If it is an animal product, are animals well cared of?

Transport & Retailing

- How far did the product travel from the place of production to the retail outlet? By which means of transportation?
- How far do you travel to the retail outlet?
- Can you take your own bags and containers with you and buy in bulk rather than pre-packaged?

Consumption & Use

- Is the product fresh or processed?
- Is this food product necessary for you? Why?
- Is it a cheap or expensive product? Why?
- Is it a popular product?



The impacts of food industry on the environment (UNEP, 2004)

Disposal & Waste

- How is the particular product packaged? What materials are used for?
- Is the product and the packaging able to be re-used, composted or recycled?
- If the product (or its left over) goes to the drainage system will it eventually harm the waterways?
- Will the packaging be harmful to animals or the environment if thrown away?

Based on your findings draw the life-cycle of the product and present it in the class. You may also set up an exhibition with all your posters to inform all students in your school, teachers, parents, etc.

Emissions from livestock, agricultural production and industry in water, soil and air; intensive commercial fishing; increased transport of food; and waste from production processes, in particular organic waste and packaging are significant environmental impact related to food and drink production & processing.

FOOD AND DRINK DURING LUNCH/BREAKS AT SCHOOL		PRODUCTION		TRANSPORT & RETAILING	CONSUMPTION & USE	WASTE & DISPOSAL
ITEM	PARTS OF ITEM	RAW INGREDIENTS	PROCESSING			
Bread roll with cheese	Bread roll	Wheat crop, grown at a farm	Wheat into flour at mill. Flour into bread at bakery.	Wheat from farm to mill , to bakery to shop	From home to the market and home again	Bread roll leftovers (if any), packaging
Environmental Impact	Cheese Margarine Packaging	Land area … Water use … Energy use … Emissions / Waste	Land area … Water use … Energy use … Emissions / Waste	Energy use … (Petrol)… Means of transportation … Distances Emissions / Waste	Energy use … … Means of transportation … Distances Emissions / Waste	Land area (if ending to the landfill) … Means of transportation Emissions / Waste

3.7 Food and health problems

SOME SAD FACTS ...

(!) 800 million people (more than one out of eight on the planet) do not get enough food to live a normal, healthy and active life.

Objectives

- To be aware of the major health problems related to food
- To realize one's attitude towards the problems of malnutrition/undernourishment
- To be sensitized on how interlinked health security, environmental protection and sustainable development patterns are

(!) 11 million children under five, die every year from hunger or diseases related to food. Food borne diseases are common in many countries and children are frequent victims, experiencing diarrhea leading to high levels of child mortality.
(!) It has been said that Europe and the West have experienced recently so many health and life-threatening conditions related to industrial food production, intensive farming, food marketing and supply, and nutritional practices and models, dominated so strongly by commercial interests of industrial agriculture and multinationals, that the time is ripe for re-evaluation of these harmful and dangerous practices.
(!) In many countries, health problems related to dietary excess is an ever-increasing threat. Obesity in childhood and adolescence is associated with various health problems, and its persistence into adulthood leads to health effects ranging from an increased risk of premature death to several non-fatal but debilitating conditions that affect productivity. These emerging problems are not just limited to developed populations; an increasing number of developing countries are confronted with the double burden of undernutrition and chronic diet-related disease.

Activity plan

- Search for health problems related to food e.g. diseases that are caused by inappropriate food, undernourishment or malnutrition, obesity, etc. Focus on the Mediterranean region.

1: I don't agree 2: a bit 3: partly 4: I quite agree 5: completely	1	2	3	4	5
a. The world's population is growing so fast; farmers just cannot grow enough food.					
b. Undernourishment or malnutrition can be tackled with updating of farming methods in developing countries.					
c. The real question is: who controls the distribution and sale of food and not just who grows it.					
d. If people on the planet had fewer children they would be wealthier and able to afford all the food they need.					
e. The food crisis should be solved by international emergency food "banks" and food aid.					
f. There is enough food for everyone: the rich have to live more simply so that the poor can simply live.					

✻ Read carefully the statements in the previous page. Rank your personal agreement to each one choosing the appropriate number.

⊙ Discuss your answers with other members of your group. How different are they?

⊙ Try to understand what is behind each answer. Do not rush to conclusions easily and do not forget that there are no right or wrong answers.

⊙ *With the help of your teacher elaborate and classify your answers in a diagram presenting the main causes of undernourishment & malnutrition.*

⊙ Brainstorm with your group for possible ways of tackling food security issues, including problems such as: malnutrition, inappropriate food and food-borne diseases.

How could citizens -individually- and communities contribute to this purpose?
Read the following text presenting the main strategies of FAO for improving food security.

FAO STRATEGIES FOR IMPROVING FOOD SECURITY

FAIR TRADE

The terms of international trade favour the North. The rich world keeps the South wedded to commodity production by putting up tariff barriers to manufactured goods. Barriers to textiles and clothing alone cost poor countries $53 billion a year in lost trade - this equals the total of all Western aid to the South. Ironically, maintaining poverty in the South means poor countries can buy less of the manufactured goods the rich are so eager to supply.

There is no such thing as a 'free' market; what we have to strive for is one that is fair. The first step is to become informed and make wise decisions as consumers and investors. As citizens we can oppose unfair trade and voice that opposition to our political leaders.

ENVIRONMENTAL PROTECTION

Over-population in the South has often been blamed for ecological catastrophe. In fact, poor people have more at stake in preserving the resources they depend on. It is short-sighted commercial exploitation by a few companies which is levelling the world's forests for commercial products such as timber, furniture and paper, or for conversion of the land for growing commodities, plantation crops, or for running livestock. Such practices supply the countries of the North with consumer goods while leaving all the environmental and social costs in the South.

To preserve a common future the environment must take priority. We can help by encouraging environmentally sensitive commodity production and questioning our own consumption.

APPROPRIATE AGRICULTURE

There is no quick fix for areas with food shortages - the answers for each region are specific to it. The Green Revolution was often hijacked by rich elites who priced small farmers out of the market. In many countries commercial farming, propped up with subsidies, continues apace with its arsenal of polluting chemicals, its pesticide-resistant pests and declining yields. The real answers lie elsewhere, with the farmers who make the best use of their lands, fighting pests with natural biological control methods, growing a variety of crops to keep the soil fertile, and by saving the best seeds for future crops. In order for their efforts to succeed they must be able to make their own decisions. Too often governments, agribusiness companies and policy makers, on the other side of the globe, control the agriculture agenda.

EQUAL RIGHTS FOR WOMEN

Women inherit every disadvantage and none of the power. Yet, they do most of the farming in many parts of the world. They work more hours than men - yet 70% of the world's adult poor are women. Four hundred million women of child-bearing age weigh less than 45 kilograms - their poor health is a major contributing factor in the health problems suffered by their children. The best way to attack women's hunger is by improving access to fairly-paid work and to land. In 'developed' countries many women earn half as much as men. Often their work may not even be counted as work. Women produce half the world's food but own only 1% of its farmland. Education also improves women's control over their fertility, health and standard of living.

LAND REFORM

A billion people living in the villages of the South have no land of their own to farm. Two-thirds of them live in India and Bangladesh. In Guatemala and Peru 85% of rural workers are landless. Wherever the problem exists there

is usually a history of unsuccessful land-reform movements - thwarted by the landowning elites with political power and connections. Giving land to poor farmers so they can grow their own food would not be successful on its own. Redistribution of land would have to be implemented alongside improved access to credit and the means of production, like machinery. But land reform could create the jobs which poor people from rural areas seek in city slums.

PEACE

War causes hunger. Conflict robs people of homes and livelihoods - refugees have no land to grow food and no work to enable them to buy it. In 1994 the total world military budget was $767 billion - more than the total income of the poorest 45% of the world's population. The 'peace dividend' has yielded $935 billion since 1987 through reduced arms spending, but very little of it has gone towards international development aid - which is constantly falling as a percentage of GDP. Countries' leaders should work for peace and to use its dividends wisely. Greater stability would give poorer nations the opportunity to reduce their own military expenditure.

SHARING THE WEALTH

More than a billion people live on less than a dollar a day. The wealthiest one-fifth of the world's people control about 86% of the money, the poorest fifth about 1.4%. Free markets and free trade cannot create opportunities for poor people when the real need is for fair trade and fair markets. Super-rich individuals apart, the politics of greed makes no economic sense for the wealthy countries that pursue it. Economic success in the South would mean increased trade and more, rather than less, jobs in the North. By sharing wealth we could actually be safeguarding it.

BUILDING COMMUNITY

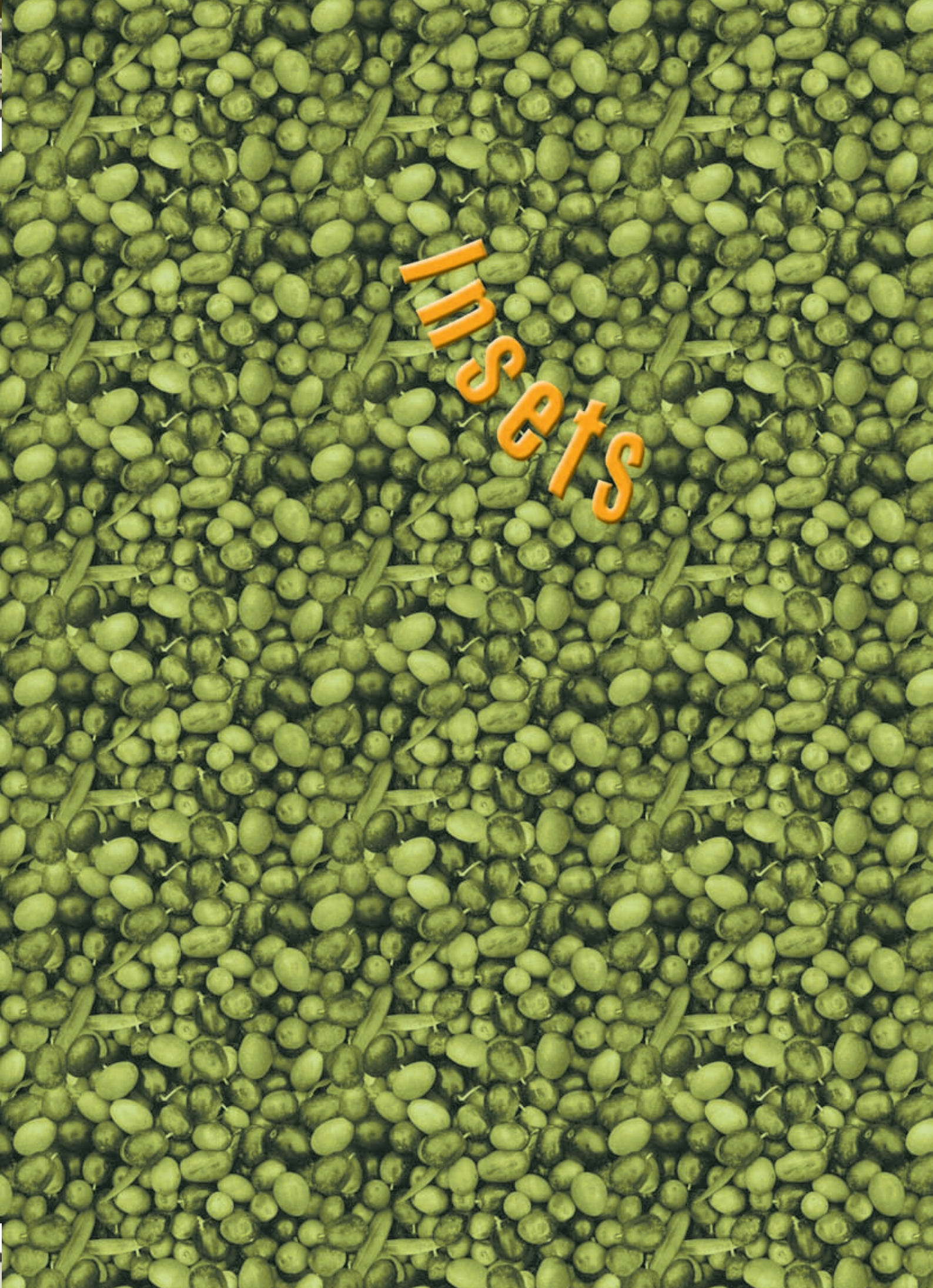
Inequality is not just about economics, it is about moral choice. We need to replace the harmful myth of the importance of individual financial success - so important to modern imperialism - with the idea of the individual within a community. People aware of their connectedness with other people, species and environments can build both compassion and strength. Many poor communities with little to spare are working towards this ideal - whether it's poor women running communal soup kitchens in Peru and Bolivia, or farmers across Latin America involved in a programme to share their knowledge with each other.

REDISCOVERING TRADITIONAL FOODS

Another way to help make up for food shortages is to recognise the wisdom of traditional peoples and their knowledge of locally available food resources. Amaranths and quinoa, two crops traditionally grown in Peru and Mexico are examples. Both grains are versatile, well adapted to local soils and climatic conditions, and provide more high-quality protein than most commercial grains, including rice, wheat and corn.

A 'BLUE REVOLUTION'

The world needs a 'blue revolution'. The World Commission on Rivers reported in 1999 that more than half the world's major rivers are going dry or are severely polluted. Contamination of rivers and river basins displaced 25 million environmental refugees in 1998 - for the first time exceeding the 21 million refugees from armed conflicts around the world. Based upon United Nations projections, 4 billion people will be affected by water shortages by 2050. By then, Nigeria, for example, will have only about 900 m^3 of water per person compared with 3.200 m^3 per person in 1990 (nearly a 75% reduction in available water). Governments and communities need to develop plans for managing rivers at the catchment or watershed scale and involve local people in their and implementation.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Mediterranean Recipes

PASTA ALLA SORRENTINA

Pasta has a very ancient history, beginning about 2.000 years ago somewhere in the Mediterranean. People used to say that Marco Polo brought back the idea of pasta from China, but it isn't true. Tria or trii is a type of pasta that is well known in modern Sicily; it was known from the antiquity even before Marco Polo's time. In 1154, the Arab geographer Al-Idrisi already mentions a pasta called triya made in Palermo. It seems to be even older, however. Triya comes from the historic Greek word itria, the name of a cereal product that became familiar in the entire Roman Empire. So, was the ancient Greek-Roman itria already a kind of pasta? Most probably yes, of course with all the evolution expected.

Ingredients

- 400 gr Pasta (Spaghetti)
- Tomatoes
- 300 gr mozzarella (Italian typical cheese)
- Basil leaves
- Olive oil
- A clove of garlic
- Salt and pepper

Preparation

Boil some water in a large pot. Add some salt. In the meantime cut the tomatoes in small pieces and put them in a frying pan where you have already put the oil and the garlic. Let them cook, until they become a sauce. Put the spaghetti in the boiling water. Cut the mozzarella in small pieces and add it to the sauce. After about 12 minutes strain the pasta and put it in a bowl. Add the sauce and mix in. Then, if you would like, add a little bit of chilli or pepper. Finally, add some fresh basil leaves.

Mozzarella: a diminutive of the original name mozza, which simply meant "a piece cut off". Its history goes back to the 15th century, and in 1570 it is mentioned in a recipe book from the Papal court. Mozzarella was originally made from buffalo milk, but cows' milk is used today, filtered, pasteurized and curdled with rennet.

Basil is commonly used in Italian dishes, especially in sauces, but in some other Mediterranean coutries people grow basil as a decorative and aromatic plant and /or use it also in food. The basil plant is of Indian origin. It was known to the ancient Romans, but it is rarely found in ancient Roman recipes.

BACALHAU Y BRAZ

Portugal has contributed both to the introduction of a wonderful exoticism into Europe and to the spread of European cultural identity to far-off continents changing the course of history. Portuguese culture mixed with other cultures in a wide variety of fields, including cuisine and tastes. The well-known "bacalhau" the salt cod so prized in other culinary cultures is a part of this adventure-filled past that can still be found on Portuguese tables today. Although salt cod is found in many other national cuisines, few of those call it their "faithful friend". The Portuguese take pride in the fact that they have as many recipes for salt cod as there are days in a year. What is noteworthy in this case is that the cod was not even a product that existed in Portugal at the time it became a culinary tradition (approx. 15th century AD). Actually, cod is a basic element of the Mediterranean diet since the 10th century AD. There is a rich variety in cod recipes in the Northern shore of the Mediterranean. In Greece they have cod (with garlic) as the typical dish of the double celebration of the National 25th of March Day and Annunciation Day. Even today with small changes in the medieval recipe, cods is still salted. Nowadays, Norway covers almost 75% of the global cod market.

Ingredients

- 1,5 Kg of codfish (smoked or salted)
- 4 big onions
- 12 garlic cloves
- 2 dl olive oil
- 2 packets of potato chip sticks
- 12 eggs
- 4 spoons of chopped parsley
- black olives

Preparation

If the cod is salty: Soak the cod in water for at least 24 hours, changing the water 3 to 4 times.

Place the cod in the pot with water and boil it.

Remove the skins and the spines and unweave it. In a wide pan fry the chopped onions and the garlic in olive oil. Add the cod and leave it to absorb the oil. Add the potato chip sticks stirring well.

While still hot, add eggs beaten previously with the pep-

per and salt. Stir well, moving costantly with a wooden spoon until the eggs start to clot. Remove the mixture and place it in large bowl. Decorate with chopped parsley and black olives.

PAELLA

There are many cooks who claim that "paella" is the most "misused" Mediterranean dish. The main reason is that the rice usually used has nothing to do with the Spanish *calas-para* (meloso rice) but is a parboiled American rice. Actually, paella is very similar to a good quality typical Italian "risotto". As is the case of risotto, it needs to be prepared and served immediately. In Valencia, it is a custom for men to cook paella in the garden every Sunday. Paella took its name from the particular two-handled pan in which it is cooked and is present in every Spanish household. There is however a theory that its name came from the Arabic meaning for food leftovers that may be used for a new dish.

Usually, the meat or fish included in the paella are half-cooked before, so as to use their broth to cook the rice. The rice should be cooked in the pan trying to reach up to 1,5-2 cm and not more; if guests are more, you may need to prepare two different paellas. Typical paella does not necessarily contain sea food. The traditional recipe is made with rabbit, chicken, snails and seasonal vegetables. Paella with fish food is called "caldero" and served with "alioli", a spicy sauce containing: garlic, salt and oil. Paella is served hot in the pan in which it has been cooked.

THE "BOUILLABAISSE"

The french word "bouillabaisse" comes from the verb "bouillir" (boil) and "abaisser" (reduce) and means the liquor of fish as it boils and gets more concentrated. The recipe for bouillabaisse is found for the first time in a 1790 cookery book as the poor fishermen' soup, for which they used the fish they couldn't sell.

Nowadays, there are as many recipes of bouillabaisse as there are cooks! However, the important thing when cooking it, is to prepare a delicious broth from various fishes.

Some French chefs suggest smashing the cooked fish and keeping the broth prepared for some days in the refrigerator.

Some orange peels or even saffron could be added in the broth and cooked for a few minutes to enrich the flavor. Olive oil is an essential ingredient . The final boiling needs to be done at a high temperature.

In the fish broth potatoes and various vegetables are eventually added such as: celery, onion, and sometimes tomato. Before serving the boulliabaisse you may add a slice of bread fried in oil and powdered with garlic. Finally, the soup is served together with fish and a spicy sauce called "roille" containing garlic and red chilly peppers.

Galanis , woodcut (1938)

Fair Trade Article

"Fair Trade" By Peter Hulm, International Trade Forum - Issue 2/2006

What does "fair trade" mean? You won't find one single answer. Here we look at the market profile of fair trade - the players, controversies, benefits and drawbacks.

Fair trade in international commerce has two distinct meanings. In trade negotiations, the term is used broadly to argue that subsidies and disguised barriers skew the global trade system against developing countries and commodity producers. Former World Bank chief economist and Nobel Prize winner Joseph Stiglitz, for example, argues for "fair trade for all" in the context of the latest WTO round of trade liberalization, the Doha Development Agenda.

SMALL SHARE, BIG VOICE

Meanwhile, small farmers in developing countries who produce some of the world's favourite fruit and beverages still find themselves getting pennies for products that sell for several dollars in the rich world's supermarkets. Even worse, their income fluctuates violently from season to season, sometimes from day to day, depending on commodity prices. Striving against other producers to keep up their revenues when prices are dropping can lead to collective impoverishment across the globe. This is where the other, more famous fair trade movement comes in. Unofficially reaching the age of 60 this year, this labelling, marketing and advocacy initiative seeks to ensure that producers in developing countries receive more of the profits from the price paid by consumers. This article tries to put the alternative fair trade movement into its trade development context.

Fair trade often pays the producers one-quarter to one-third more than they can get on the open market. But only Fairtrade-labelled products - that is, those certified by Fairtrade Labelling Organizations (FLO) International - imply agreement on a minimum price. Most alternative fair trade agreements speak only of giving producers an unspecified "fair price" for their products to provide a living wage and sustainable costs of production (Fair Trade in Europe 2005). Sales through this new channel still represent less than 0.1% of all goods traded internationally, according to the United States-based Fair Trade Federation. So can this trade have a major impact? Will it survive competition from bigger players? The European-centred FLO points out: "Fair trade products i.e., from all the alternative fair trade bodies can now be found in 55.000 supermarkets all over Europe and the market share has become significant in some countries: 47% of all bananas, 28% of the flowers and 9% of the sugar sold in Switzerland are Fair Trade labelled. In the UK, a market with eight times the population of Switzerland, labelled products have achieved a 5% market share of tea, a 5.5% share of bananas and a 20% share of ground coffee."

While market share may be very small, sales are growing fast. "Fair Trade sales in Europe have been growing at an average 20% per year since 2000. The annual net retail value of Fair Trade products sold in Europe now exceeds 660 million euros. This is more than double the figure five years ago," notes FLO. Fair trade labelling initiatives are under way in 15 European countries, while fair trade producers are organized into some 3.000 grassroots organizations, with umbrella structures present in over 50 developing countries. Apart from coffee, bananas and some other fruits and vegetables, fair trade producers also include handicraft. Europe represents most of the fair trade market (60-70%). The trade importing organizations say 26% of their sales come from Africa, 40% from Asia and 34% from Latin America.

Critics of fair trade probably would not agree that it is an efficient tool to reduce poverty for any but a small number of producers. For the exporters, though, alternative fair trade represents a market niche opportunity. For trade development professionals, fair-traders represent potential partners in building the skills exporters need for world markets, such as those related to standards. Policy-makers must take notice, too. Fair-traders are a political force that have a much louder voice than their position in international trade statistics might lead you to believe. Their campaigns often highlight the social and environmental costs that anti-globalization advocates see in open markets. In this way, the fair trade movement ties in with the protests during WTO ministerial meetings at the way current trade negotiations are developing. Nevertheless, many fair-traders fully accept market realities and oppose all forms of disguised protectionism.

HOW FAIR TRADE WORKS

Fair trade organizations use five tools to contribute to development:

(i) Price premiums. Fair trade products are sometimes priced higher than others. Part of the difference is ploughed back into producer communities in order to improve working conditions.

(ii) Certification and labelling. Standards aim to improve product quality, working conditions, environmental sustainability, business development and training. Labels in Europe (Max Havelaar, TransFair, Fairtrade Mark and Rättvisemärkt) are coordinated by FLO.

(iii) Micro credit helps small-scale producers get started on fair trade projects.

(iv) Technical support includes business development, trade information, advice on quality standards, training in new techniques, etc.

(v) Advocacy is an important element in fair trade marketing, with the branding and fair trade message found on virtually every package. But not only fair trade organizations benefit. Supermarkets find the fair trade label useful for marketing to niche consumers who are willing to pay extra for coffee that guarantees producers a fair price, for example.

The appeal is not just to charity. Some fair-traders advocate strongly for fair trade as a business model, using environmental quality as the selling point, often at the same price as conventionally marketed products.

PROS AND CONS

Fair-traders point out these development advantages:

⊙ Producers get a decent living; gain necessary skills and knowledge; obtain access to credit; find technical assistance and market information; learn about trade and acquire experience in exporting.

⊙ Better prices for farmers do not increase consumer costs, since the fair trade organizations cut out intermediaries by handling all the operations between production and retailing themselves.

⊙ Consumers are taking part in promoting thoughtful consumerism.

Critics sometimes treat fair trade as if it were offering a comprehensive solution to development problems. This can mislead strategists who are considering whether fair-traders will make good partners for their development efforts. However, this much is admitted:

⊙ Market share is much too small to have a major impact on general living standards in developing countries. Even if it expands significantly, only 20% of consumers at a maximum seem ready to pay more for fair trade products. This limits possible expansion.

⊙ Producing more low-priced commodities for over-supplied markets postpones what is really needed for development: diversifying exports and adding value, rather than depending on commodities and crafts. Or finding new social solutions for upland communities whose economic viability remains in doubt.

⊙ Rich markets can do more for poor countries by allowing bigger quantities of normally priced products in their markets.

⊙ Labelling organizations may cut out middle traders, but they may not return the full savings back to the farmers. Fair trade is an expensive niche market to maintain, because it needs constant promotion and requires educated consumers. High marketing costs are one reason why all those fair trade premiums don't make it back to the producers.

⊙ There are many different standards and criteria, and little discussion outside the organizations themselves. So consumers cannot decide whether the trade really is fair. Not all fair-traders are members of FLO, e.g., Rugmark and the Clean Clothes Campaign. The standards themselves can cover working conditions and environmental measures (or not) as well as stable pricing.

CHALLENGES FOR FAIR-TRADERS

As for the alternative fair-traders themselves, they see a bright future but agree there are lots of improvements to make. Fair trade organizations need to identify further sources of growth, gain credibility with consumers through better quality monitoring and find the balance between business and advocacy in their operations. Importing organizations need to build greater brand loyalty in the face of competition, identify new sources of growth outside the supermarkets and cooperate more with each other.

Labelling organizations need to manage their fast growth, since this is likely to continue. They need to find innovative ways to cooperate with multinationals, in view of these companies' close interest in fair trade labelling, while remaining critical of standard trading practices. They also need to find a balance between standardization and over-regulation by fair trade's official bodies.

GLOSSARY OF TYPICAL MEDITERRANEAN FOOD PRODUCTS & MEALS

Albanian	Arabic	Croatian	French	Greek	Hebrew	Italian	Maltese	Portuguese	Serbian	Slovene	Spanish	Turkish	English
													general
ushqim	ta'am	hrana	nourriture	trofi fagito	ohel	cibo alimento	ikel	alimento comida	hrana	hrana	alimento comida	yiyecek	food
uji	maun	voda	eau	neró	mayim	acqua	ilma	água	voda	voda	agua	su	water
vakt	wajba	obrok jelo	repas	gevma	aruhah	pasto	ikla	refeição	obrok jelo	obrok	comida	yemek	meal
mëngjes	futur	doručak	petit déjeuner	progevma	aruhat boqer	prima colazione	fatra	pequeno- almoço	doručak	zajtrk	desayuno	kahvaltı	breakfast
dreka çaj	ghidaun	ručak čaj	déjeuner	gevma	aruhat tzohorayim, aruhat arba	seconda colazione		almoço	ručak	kosilo	almuerzo merienda	öğle yemeği	lunch tea
ha drake ha darkë	ishaun	glavni obrok večera	dîner souper	dipno	aruhat erev	pranzo cena	ikla	jantar ceia	večera	večerja	cena	akşam yemeği	dinner supper
Meze e lehtë	wajba saria	zalogaj nešto prigristi pojesti laki obrok marenda	casse- croûte	kolatsio	nishnush, aruhah qalah	spuntino	ikla żgħira	petisco mata-bicho	užina	prigrizek	bocado tentempié piscolabis	atıştırmalık	snack
sanduiç	shatira	sendvič	sandwich		qarikh	tramezzino sandwich		sanduíche sandes	sendvič	sendvič	sándwich	sandviç	sandwich
sheqerkë e ëmbël	halwa	slastica bombon	bonbon	glyko	suqariyah	caramella bonbon	ħelu	caramelo bombom	bombona	sladica bonbon	caramelo	tatli şekerleme	sweet candy
													dishes
meze	muqabilat	meze predjelo		orektika mezés	manah rishonah	antipasto	antipast	acepipe aperitivo	predjelo meze	predjed	tapas	meze	hors d'oeuvres
supë	shurba	juha	soupe potage	soupa	maraq	zuppa brodo minestra	soppa	sopa	supa	juha	sopa	çorba	soup
mish i shterur	mazij	varivo gulaš žgvacet buzara (scamp) žgvacet	ragoût civet	mageirefto	tavshil, hamin, nezid, cholent, tfina goolash	stufato umido	stuffat	guisado estufado	gulaš	dušena jed obara	estofado guisado	güveç	stew
salcë me lëng mishi	salsa	šalša sos umok šug	sauce	saltsa	rotev	salsa sugo ragù	zalza	salsa refogado	sos	omaka	salsa	sos	sauce gravy

Albanian	Arabic	Croatian	French	Greek	Hebrew	Italian	Maltese	Portuguese	Serbian	Slovene	Spanish	Turkish	English
sallatë	salata	salata	salade	salata	salat		insalata	salada	salata	solata	ensalada	salata	salad
ëmbëlsirë buding	halawiyat	desert puding	dessert	epidorpio	qinu'ah	dolce dessert	dežerta	sobremesa	desert poslastica	desert puding	postre	tatlı puding	dessert pudding
lugë me reçel e ëmbël pelte marmalatë	murabba	džem kompot slatko žele marmelada	confiture gelée	marmelada, glyko koutaliou, zele	ribah, qonfiturah	marmellata confettura		compota geleia marmelada	slatko džem pekmez marmelada kompot	marmelada žele	mermelada	reçel	jam spoon sweet jelly marmalade
													cereal foods
drithë	hubub	žitarice žitne pahuljice	céréale	dimitriako	daiyssah	cereale	ċereali	cereal	žitarice	žitarice	cereal	tahıl	cereal
grurë	qamh	pšenica	blé	sitari	hitah	grano frumento	qamħ	trigo fermento	pšenica	pšenica	trigo	buğday	wheat
milingonë			blé amidonnier			farro		trigo amido	žito	dvozrnica	farro	gernik	emmer
elb	sha'ir	ječam	orge	krithari	se'orah	orzo	xgħir	cevada	ječam	ječmen	cebada	arpa	barley
oriz	orz	riža	riz	ryzi	orez	riso	ross	arroz	pirinač	riž	arroz	pirinç	rice
miser drithëra drithëra të ëmbla drithëra indiane	sha'ir dura dura halwa dura hindi	kukuruz zrno slatki kukuruz palenta pura	maïs	kalampoki	tiras	mais granturco frumentone	qamħirrun	milho	kukuruz	koruza sladka ko-ruza	maíz	mısır tatlı mısır	maize corn sweetcorn Indian corn
thekër	khurdal	raž	seigle	sikali	shiffon	segale		centeio	raž	rž	centeno	cavdar	rye
miell	daqiq	brašno	farine	alevri	qemah	farina	dqiq	farinha	brašno	moka	harina	un	flour
brumë	'ajin	tijesto valjušak	pâte	zymi	batzeq	pasta	għaġina	massa	testo	testo	masa	hamur	dough
bukë	khubz	kruh	pain	psomi	lehem	pane	ħobż	pão	hleb	kruh	pan	ekmek	bread
pite bukë petashuqe	khubz bila khamira	lepinja soman pogača pita pizza		pita	pita fooqatziah	focaccia	ftira	pão-pita	pogača lepinja somun pita pica	pita, lepinja		pide	pita flat bread
bukë e bardhë	khubz abiyad	bijeli kruh		aspro psomi	lehem lavan	pane bianco	ħobż abjad	pão branco	beli hleb	beli kruh	pan blanco	beyaz ekmek	white bread
kek majhosh	ka'aka	kolač voćni kolač	gâteau	keik, tarta	oogah, tort pashteda	torta dolce	kejk	bolo torta	kolač torta	torta	tarta	kek turta	cake tart

Albanian	Arabic	Croatian	French	Greek	Hebrew	Italian	Maltese	Portuguese	Serbian	Slovene	Spanish	Turkish	English
biskota ëmbëlsira	biskuit muhala	keks čajni kolačić biskvit baškot mornarski dvopek	galette biscuit	biscotto	oogiyah, vaffel, bisqvit	biscotto galletta	gallettina	bolacha biscoito	keks čajni kolačić biskvit piškota	piškot keks	bizcocho galleta	bisküvi kurabiye	biscuit cookie
kek paste	fatair halwa makhbuzat	torta kolači fritule	gâteau pâtisserie	keik, pasta, glikisma	oogah, ma'afeh	pasta pasticcino	għaġina tal-ħelu	doces pastelaria	torta kolač poslastica	torta, slaščica	pastel	kek pasta	cake pastry
makarona	'ajain	tjestenina	pâtes	zymariko	pasta, itriyot	pasta	għaġin		testenina	testenine	pastas	makarna	pasta
													meat
mish	lahm	meso	viande	kreas	basar	carne	laħam	carne	meso	meso	carne	et	meat
dhjamë	shahm dihn	mast	graisse	lipos	shooman	grasso	xaħam	gordura banha	mast	maščoba	grasa gordo	yağ	fat
llukanik sallam	naqaniq	kobase salame pršut	saucisse saucisson boudin	loukaniko, salami	naqniq, salami, pastrami, auffschnit	salsiccia salame	zalzett	salsicha enchido	kobasica salama	klobasa, salama	salchicha salchichón embutido	sosis salam	sausage salami
mish lope	lahm baqari	govedina	boeuf	vodino	baqar	manzo carne di bue	ċanga	carne de vaca	junetina govedina teletina	govedina	carne de vaca	sigir eti	beef
mish qengji	hamal da'in	janjetina	agneau	arni	qeves	agnello	ħaruf	cordeiro borrego	jagnjetina	ovčetina	cordero	kuzu eti	lamb
mish keci	jadiun	jaretina	chevreau	katsiki	basar eizim	capretto		cabrito	jaretina	kozletina	cabrito	keçi oglak	kid
mish derri	khanzir	svinjetina	porc	chirino	hazir, basar lavan	maiale porco	majjal	carne de porco	svinjetina prasetina	svinjina	cerdo	domuz eti	pork
mish pule	dajaj	kokoš pile piletina	poulet	kotopoulo	off, tarnegolet, pargit	pollo	tigieg	carne de frango	piletina pile	piščanec	pollo	tavuk	chicken
													seafood
peshku	samak	riba	poisson	psari	dag	pesce	ħut	peixe	riba	riba	pez pescado	balık	fish
ton	tun tuna	tunj tuna trup prugavac	thon bonite	tonnos, palamida	toona	tonno palamita	tonn	atum	tunjevina palamida	tuna	atún bonito	orkinos torik palamut	tunny tuna bonito
peshku shpatë	samak abu sif	jaglun	espadon	xifias		pesce spada	pixxispad	espadarte peixe-espada	sabljarka	mečarica	pez espada	kılıç balığı	swordfish
skumbri	samak bahri	plavica skuša lokarda	maquereau	skoumpri kolios	qolias squmbran	scombro lanzardo	kavall	cavala	skuša	skuša	caballa estornino	uskumru kolyoz	mackerel

Albanian	Arabic	Croatian	French	Greek	Hebrew	Italian	Maltese	Portuguese	Serbian	Slovene	Spanish	Turkish	English
sardele	sardin	sardela srdela srdjela	sardine	sardella	sardin, tarit	sarda sardina	sardin	sardinha	sardela	sardela	sardina	sardalya	pilchard sardine
bakalaro	al-qad	bakalar	cabillaud morue	mpakaliaros	baqala	merluzzo stoccafisso baccalà	bakkaljaw	bacalhau	bakalar	polenovka	bacalao	morina	cod
oktapod	al-ikhtabut	hobotnica	poulpe	chtapodi	tamnoon	polpo	qarnita	polvo	hobotnica	hobotnica	pulpo	ahtapot	octopus
kallamar	sabadig	lignja	encornet calmar	kalamari	diyunon	calamaro	siċċa	lula	lignja	ligenj	calamar	kalamar	squid
sepia	sabadig	sipa	seiche	soupia	sevida, diyunon	seppia		lula choco	sipa	sipa	jibia chipirón	supya	cuttlefish
karavidhe karkalec deti gafore	jarad al-bahr gambari	jastog hlap kozica škamp	langoustine crevette bouquet	karavida garida garidaki	hasilon	scampo gambero gamberetto mazzancolla	gamblu	camarão gamba lagostim carabineiro	jastog škamp	kozica rak jastog	langostino camarón gamba cigala quisquilla	kerevit karides	langoustine crayfish prawn shrimp
													pulses
fasule e madhe fasule pllaqi	ful akhdar	bob	fève	koukki fava	ful	fava		fava	bob	bob	faves haba laba major pacae	bakla	broad bean fava bean
fasule	fasulya mujafafa	grah fažol bažul	haricot	fasouli fasoli	shu'it	fagiolo borlotti cannellini	fażola	feijão feijão catarino feijoca	pasulj	fižol	poroto fríjol judia	fasülye	haricot bean kidney bean
barbunje	fasulya khadra	mahune fažolet trešnjevac šareni grah zeleni grah	haricot d'Espagne	fasoli, ampelofa- soulo, prasino fasoli, freska fasolakia	shu'it yeruqah	fagiolino fagiolo di Spagna		vagem feijão-flor feijão-de- espanha	boranija	stročji fižol	fríjol ayocote judia escarlata	ateş otu	runner bean string bean green bean snap bean
qiqër	humus	čič čičvara naut	pois chiche etc.	revithi	humus	cecio	ċicra	grão-de- bico	leblebija	čičerka	garbanzo	nohut	chickpea garbanzo bean
bathë	julban al-hindi	leblebija egipatski grah	pois indien	louvio	lubyah	fagiolo d' Egitto		labe-labe	indijski pasulj		poroto de Egipto chivata	mısır börülcesi	lablab bean bonavist bean
fasule qore	lubya	crni grah	mongette cornille	mavroma- tiko	shu'it shehorah	fagiolo dall' occhio		feijão-de- corda feijão- miúdo	crni pasulj	črni grah	fríjol negro caupí chicharo de vaca	börülce	black-eyed pea cowpea calavance
bizele	bazila	grašak	pois petits pois	mpizeli	afunah	piselli	piżella	ervilha	grašak	grah	guisante arvejita chicharo	bezelye	pea

Albanian	Arabic	Croatian	French	Greek	Hebrew	Italian	Maltese	Portuguese	Serbian	Slovene	Spanish	Turkish	English
thierza	'adas tirmis	leća vučika	lentille lupin	faki loupino	adashim turmus	lenticchia lupino	għazza	lentilha tremoço	sočivo obrnika	leča volčin	lenteja altramuz chocho	mercimek acı bakla	lentil lupin
													vegetables
patate	batata batatis	krumpir	pomme de terre patate	patata geomilo	tapu'ah adamah, tapud	patata	patata	batata	krompir	krompir	papas patata	patates	potato
karrota	jazar	mrkva	carotte	Karoto	gezer	carota	zunnarija karrotta	cenoura	šargarepa	korenje	zanahoria	havuç	carrot
panxhar	chamandar	blitva repa cikla	bette blette betterave	kokkinogoul i pantzari	seleq	barbabietola	pitrava	beterraba	blitva repa cvekla	rdeča pesa	betabel betteraga remolacha	pancar	chard beet beetroot
domate	tamatim	rajčica pomidor paradajz	tomate	ntomata	agvaniah	pomodoro	tadama	tomate	paradajz	paradižnik	tomate	domates	tomato
patëllxhan	bazinjan	patlidžan melancana balancana	aubergine	melitzana	hatzil	melanzana	brunġiela	beringela	plavi paradajz patlidžan	jajčevec	berenjena	patlican	aubergine eggplant
sallatë jeshile marule	khus	zelena salata salata glavatica salata ledenka	laitue salade	marouli	hasah	lattuga	ħass	alface	zelena salata	zelena solata	lechuga	marul	lettuce
lakër e bardhë	malfuf al-akhdar	kupus zelje raštika	chou	lachano	kruv	cavolo	kaboċċa	repolho	kupus	zelje	col	lahana	cabbage
brokoli	sabanikh qarnabit	prokula brokula	brocoli	brokolo	broccoli	broccolo	brokkli	brócolos	prokelj brokula	brokoli	brécol bróculi	brokkoli	broccoli calabrese
lule lakre	malfuf al-abyad	karfiol cvjetača kavul	chou-fleur	kounoupidi	keruvit	cavolfiore	pastarda	couve-flor	karfiol	karfijola	coliflor	karnıbahar	cauliflower
spinaq	isfanakh	špinat	épinard	spanaki	tered	spinacio	spinaċi	espinafre	spanać	špinača	espinaca	ispanak	spinach
kungull	khiyar	krastavac	concombre	aggouri	melafefon	cetriolo	ħjara	pepino	krastavac	kumara	pepino	hıyar	cucumber
qepë	basal	crveni luk kapula ljutika	oignon	kremmydi	batzal	cipolla	basla	cebola	crni luk crveni luk	čebula	cebolla	soğan	onion
hudhër	tum	bijeli luk češnjak	ail	skordo	shum	aglio	tewm	alho	beli luk	česen	ajo	sarmısak	garlic
													fruits
frut	fakiha	voće	fruit	frouto	peyrot	frutto	frott	fruto	voće	sadje	fruta	meyva	fruit
ulli	zaytun	maslina	olive	elia	zayit	oliva	żebbuġ	azeitona	maslina maslinka	oliva	oliva	zeytin	olive
rrush	inab	grožđe	raisin	stafyli	anav	uva	għeneb	uva	grožđe	grozdje	uva	üzüm	grape
fiku	tin	smokva	figue	syko	te'ena	fico	tin	figo	smokva	figa	higo	incir	fig

Albanian	Arabic	Croatian	French	Greek	Hebrew	Italian	Maltese	Portuguese	Serbian	Slovene	Spanish	Turkish	English
hurma	tamr	datulja	datte	chourmas	tamar	dattero	tamal	tâmara	urma datula	datelj	dátil	hurma	date
portokalli	burtuqal	naranča narandža	orange	portokali nerantzi	tapu'ah zahav, tapuz	arancia	laringa	laranja	pomo-randža narandža	pomaranča	naranja china	portakal turunç	orange
limoni	laimun	limun	citron	lemoni	limon	limone	lumija	limão	limun	limona	limón	limon	lemon
pjeshka	duraq khukh	breskva	pêche	rodakino	afarseq	pesca	ħawħa	pêssego	breskva	breskev	alberchigo melocotón	şeftali	peach
molla	tuffah	jabuka	pomme	milo	tapu'ah	mela	tiffieħa	macã	jabuka	jabolko	manzana	elma	apple
dardha	ijas kumithra	kruška	poire	achladi apidi	agas	pera	langasa	pera	kruška	hruška	pera	armut	pear
kajsia	mishmish	kajsija marelica	abricot	verikokko	mishmish	albicocca	berquq	alperce damasco	kajsija	marelica	albaricoque damasco	kayısı zerdali	apricot
kumbulla	barquq	šljiva	prune mirabelle	damaskino koromilo	shezif	prugna susina	pruna	ameixa	šljiva	sliva	ciruela	erik	plum
qershia vishnja	karaz	višnja trešnja maraska	cerise griotte	kerasi vyssino	duvdevan	ciliegia	ċirasa	cereja	višnja trešnja	češnja višnja	cereza	kiraz vişne	cherry
arra e kokosit	jauz al-hind	kokosov orah	noix de coco	indiko karyo	qoqus	noce di cocco	ġewż tal-indi	coco	kokosov orah	kokos	nuez de coco	Hindistan cevizi	coconut
pjepri	shamam	dinja	melon	peponi	milon	melone popone	bettieħa	melão	dinja	melona	melón	kavun	melon
shalqin	batigh al-ahmar	lubenica	pastèque melon d'eau	karpouzi	avati'ah	cocomero	dulliegħa	melancia	lubenica bostan	lubenica	sandía	karpuz	watermelon
banana	muz	banana	banane	mpanana	bananah	banana	banana	banana	banana	banana	banana	muz	banana
													dried fruits, nuts
stafidhe	zibib	grožđica rozina	raisin sec	stafida	tzimuq	uva passa	żbib	uva passa	suvo grožđe	rozine	pasa	kuru üzüm	raisin
arra	jauz	orah	noix	karydi	egoz melekh	noce	ġewż	noz	orah	oreh	nuez juvia nuez de nogal	ceviz	walnut
bajame	luz	badem mandula	amande	amygdalo	shaqed	mandorla	lewż	amendoim	badem	mandelj	almendra	badem	almond
fistik	fustuq	pistacija pistač tršlja	pistache	fistiki	fistuq	pistacchio	pistaċċa	pistácio	pistaćo	pistacija	alfóncigo	antep fıstığı	pistachio
lajthia	bunduq	lješnjak	noisette	foundouki	luz	nocciola	ġellewż	avelã	lešnik	lešnik	avellana	fındık	hazelnut
	kharub	rogač	caroube	charoupi	haruv	carruba	ħarrub	alfarroba	rogač	rožič	algarroba	keçi boynuzu	carob locust bean

Albanian	Arabic	Croatian	French	Greek	Hebrew	Italian	Maltese	Portuguese	Serbian	Slovene	Spanish	Turkish	English
													products, drinks
vaj ulliri	zit al-zaitun	maslinovo ulje	huile d'olive	eleolado, ladi	shemen zayit	olio d'oliva	żejt taż-żebbuġa	azeite	maslinovo ulje	oljčno olje	aceite de oliva	zeytinyağ	olive oil
Vaj luledielli	dawar al-shams	suncokret	tournesol	helielaio	hamaniah	girasole		girassol	suncokret	sončnica	girasol	ayçiçekyağ	sunflower
qumështi	halib laban	mlijeko	lait	gala	halav	latte	ħalib	leite	mleko	mleko	leche	süt	milk
gjalpi	zubda	maslac	beurre	voutyro	hemah	burro	butir	manteiga	puter	maslo	manteca	tereyağ	butter
djathi	jubn	sir	fromage	tyri	gevinah	cacio formaggio	ġobon	queijo	sir	sir	queso	peynir	cheese
kosi	laban al-raib zabadi	jogurt	yaourt	giaourti	yogurt, leben, eshel	yogurt		iogurte	jogurt	jogurt	yogur	yogurt	yogurt
veza	baid	jaje	oeuf	avgo	beitzah	uovo	bajda	ovo	jaje	jajce	huevo	yumurta	egg
mjalti	'asal	med	miel	meli	dvash	miele	għasel	mel	med	med	miel	bal	honey
lëng frutash	'asir (fawaki)	sok	jus	chymos	mitz	succo	meraq	sumo	sok	sok	zumo	şurup	juice
verë	khamr nabiz	vino	vin	krasi	yayin	vino	inbid	vinho	vino	vino	vino	şarap	wine
birra	bira ju'a	pivo	bière	byra	beerah	birra	birra	cerveja	pivo	pivo	cerveza	bira	beer
sheqer	sukkar	šećer	sucre	zachari	suqar	zucchero	zokkor	açúcar	šećer	sladkor	azúcar	seker	sugar
çokollatë	shukulata	čokolada	chocolat	sokolata	shokoladah	cioccolata	ċikkulata	chocolate	čokolada	čokolada	chocolate	cikolata	chocolate
kafe	kahwa	kava	café	kafes	qafeih	caffè	café	café	kafa	kava	café	kahve	coffee
çaj	shai	čaj	thé	tsai	teih	tè	te	chá	čaj	čaj	té	çay	tea
													flavours, spices
kripë	melh	sol	sel	alati	melah	sale	melħ	sal	so	sol	sal	tuz	salt
piper	fulful al-aswad	papar	poivre	piperi	pilpel	pepe	bżar	pimenta	biber	poper	pimienta	biber	pepper
kanella arre moskati	qarfa jauz al-tib	cimet Muškatni orah	cannelle noix muscade	kanela moschokary do	qinnamon egoz musqat	cannella noce moscata	kannella noċemuskat a	canela noz moscada	cimet muskatno orašče	cimet muškatni orešček	canela nuez moscata	tarcin muskat hint cevizi	cinnamon nutmeg
susam	simsim	sezam	sésame	sousami	sumsum	sesamo	ġunġlien	sésamo	susam	sezam	sésamo ajonjolí	susam	sesame
piper i kuq piper jegës	fulful al-sudani harr	feferon čili crvena paprika ljuta paprika	piment fort chili	piperia kokino piperi kaftero piperi	pilpel harif	peperoncino	bżar aħmar	pimentão	ljuta papričica	čili, pekoča paprika	pimiento rojo chile ají	kırmızı biber	chilli red pepper hot pepper

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