



ATLAS

# *Medi*TERRA

MEDITERRANEAN AGRICULTURE, FOOD, FISHERIES & THE RURAL WORLD

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# PREFACE

**T**he rapid developments, numerous problems and grave uncertainties in the agricultural and rural worlds are increasingly becoming the focus of the strategy debates of an international community that is anxious as to the starkly contrasting food security prospects for the planet. And as awareness of the interdependencies and vulnerabilities of this world increases, public opinions also seem to be taking a growing interest in agricultural issues. This is no doubt partly due to the awareness in the media and the political movement that are now under way and are calling for the millions of consumers to be included in the agricultural debate. For food concerns the daily lives of men and women, who are invited to improve their understanding of the complex but decisive itinerary from the farm to the consumer's plate.

In this context, the publication of scientific works on agriculture that are accessible to a non-specialised readership is proving to be extremely beneficial. *Mediterra*, the CIHEAM's twelfth annual report, which is a follow-up to the previous editions, is nonetheless original, since it is presented in the form of an atlas. It is intended as learning material for all, which is designed to facilitate comprehension of the Mediterranean region through the variables of agriculture, the rural world, food and fisheries. It also aims to illustrate the diversity and complexity of this Mediterranean, which has still to find identities on which to structure its future. The *Mediterra Atlas* is much more than a series of static photographs of these fields; with its maps, charts and synthetic analyses it seeks above all to

reveal the geo-economic, social, regional and political trends under way in a region of the world where the challenges posed by the nutritional health of the population, rural development and the responsible management of natural resources are most acute.

The authors have constantly borne in mind that agriculture is the core subject of this report and, by proposing pluridisciplinary and multidimensional material on Mediterranean agriculture, have produced an invaluable medium for underlining that regional complementarities can be stimulated if care is taken to make food security for the peoples of the Mediterranean the core objective of multilateral cooperation.

This atlas, which was launched in 2008, is the fruit of work involving several CIHEAM researchers, who have pooled their knowledge and opinions on complementary topics which converge – but are by no means similar – through efficient editorial and technical cooperation. By publishing this atlas in 2010, a year that brings new hope that the spirit of Mediterranean cooperation will prosper, the CIHEAM clearly intends to play its role as facilitator of the regional political debate and to constantly underline that there can be no development or stability in the Mediterranean unless there is agricultural and nutritional solidarity amongst the countries of the region.

**Francisco Mombiela**  
CIHEAM Secretary General

## ▶ IMPROVING KNOWLEDGE FOR CONSTRUCTIVE ACTION

**T**he history of the peoples of the Mediterranean through the ages reflects the reciprocal fascination between the northern and southern shores. Throughout history, many conquerors quenched their thirst for land and riches by territorial thrusts to gain much-coveted prizes in this region of the world. The European Orientalists of the 19<sup>th</sup> century unceasingly described the Levantine shores, so enchanting because so different.

This craving for discovery is no doubt related to the emergence of cartography in ancient times in this region of the world. The first maps of the region were probably drawn up between the 6<sup>th</sup> and 4<sup>th</sup> century B.C. by cultured Greeks who were in contact with both the western and the eastern Mediterranean. The Hellenic geographers needed of course to represent this “national” area combining sea and land as part of a vast empire.

### **AN ATLAS FOR IMPROVING KNOWLEDGE AND ACQUAINTANCE**

As science has progressed, the representation of space has become more precise and less arbitrary. Once places have been located and named, regions have been topographised, rivers have been placed and underground resources recorded, one might imagine that this is the end of geography, which is thus reduced to a discipline describing physical space. This geography, which was also a basis for justifying war, since it could be a tool for inspiring strategies, was completely transformed in the second half of the 20<sup>th</sup> century. What is more, the description of political, economic, social and geopolitical phenomena has brought

new impetus to the discipline, whose essential tools are cartography and computer graphics.

The success of atlases with which one can apprehend a world where issues overlap as the world changes is no doubt due to the fact that maps and other illustrations provide a means of grasping in a moment a reality which would not be revealed as immediately or with the same acuity by a series of statistics. The Mediterranean lends itself particularly well to contemporary cartography, given the significance of the geopolitical developments in the region. Although the demographic and geo-economic centres of gravity in the world have moved between the American and Asian continents, it has to be admitted that world stability is still very much conditioned by the stability of the Mediterranean region. Even from the demographic point of view it is impossible to disregard this region, and, more broadly the Euro-Mediterranean region, which will have a population of one billion people by 2025; nor can its economic significance be ignored, since it creates 30% of global wealth each year.

In this major epicentre of world developments, the agricultural and rural worlds and the food issue have too long been excluded from the representation of human phenomena – yet they play a part in the developments that are taking place in the Mediterranean basin, also from the geopolitical point of view. The food crisis in 2007 and 2008 shook certain regions in the basin, revealing the crucial role of food in political stability. Similarly, the land and water question, both scarce resources, is also a determining factor in the political and social balance

of the countries in the region. Furthermore, this field is a patent illustration of the new trends under way and of the ongoing recomposition of the global geo-economy.

### **AN ATLAS IN THE SERVICE OF COOPERATION**

These phenomena – decisive factors for the future of the region and indeed of the world – merited representation that was as exhaustive as possible. At a moment in history when globalisation is coupled with the development of more or less integrated regions, the Mediterranean zone – with albeit variable contours – is one of those regions, and one that is both ancient and re-emerging. For although the shores of the Mediterranean are linked by age-old economic and human bonds, the cooperation processes that are under way are binding the peoples of the region in progressive solidarity. Agriculture, food, and fisheries – all essential sectors in the Mediterranean – are a potential field of tangible solidarity. In this context, the present Atlas, which aims to illustrate the dynamics of these sectors at the level of the basin, and indeed of the Euro-Mediterranean region, as a whole, is intended not only as a tool for knowledge and understanding but also as an aid for reflection on policy. By describing phenomena and showing where they converge, but also by identifying the threats they entail, it can foster reflection with a view to joint action.

It was with these purposes in mind that the CIHEAM, which has been involved in studying agricultural, food-related, rural and environmental issues for fifty years, convened researchers from its four institutes to design this atlas. The result is thus a collective work, the researchers mobilising their resources to present this region of agriculture and fisheries, this Mediterranean that is very much alive and creative, that is suffering yet progressing. The knowledge that has thus been collected better reveals the face of a Mediterranean that is developing its land and water resources in an effort to feed its people and often to gladden their eyes. It is the CIHEAM's ambition to know, comprehend, and improve this portrait with a view to

promoting agricultural cooperation in the Mediterranean region through research, training and political dialogue.

### **BUILDING THE IMAGE OF THE CONTEMPORARY MEDITERRANEAN**

Precedence was given to the State level in the design of the atlas, since many trends need to be evaluated on that scale. Larger scales are nevertheless used regularly in order to apprehend a particular ongoing phenomenon with greater precision. This focusing on a particular region does not concern isolated phenomena or minor details, however; it aims to explain processes which are also occurring elsewhere. The atlas does, of course, use smaller scales in order to examine current trends on a global scale. A wide variety of spatial areas has been included, but also of time bands. Since the degrees of phenomena are measured over long periods, the time variable is essential for understanding them. And when time is combined with space, the resulting movement is more readily apprehended.

The image is of course revealed progressively. It was considered essential to approach the topic through Mediterranean societies, for, as an integral part of those societies, the agricultural and rural worlds are undergoing profound transformation. Demographic upheavals take on different forms from one region of the basin to another: a population that is increasing and growing richer on the whole means that food demand is exploding. The same is true of the economic trends and changes which are taking place in the region and to which special attention is devoted.

The agricultural and rural worlds, although rooted in very ancient history, are conditioned by recent demographic and economic trends. A digression proved necessary, given that the relics of that history still pervade the daily diet and farming practices of a region where one of the first seats of agriculture emerged. And although the Mediterranean has been a zone where peoples have peregrinated, intermingled, rivalled and traded, and despite the current geopolitical convulsions, it

# INTRODUCTION

is the scene of innumerable arenas of dialogue and cooperation. All of these initiatives tend to draw the changing contours of a Mediterranean which is still in the making.

That cooperation, particularly in the field of agriculture, is all the more desirable since the Mediterranean shores are so close yet so unequally endowed with water and land resources. There is no doubt that that land and water imbalance will grow as the result of major climate changes and demographic upheavals, increasing the need for solidarity on the resources issue, which is amply illustrated in this atlas.

Many farmers whose roots are in these Mediterranean lands and who often have to contend with aridity work the land with techniques that have been handed down by their forbears as well as innovations, which seem to be accelerating. It is important to convey the vast number of farmers as well as the wide variety of farms and to depict the agro-food and distribution sectors with which farming activities in the various product lines are now closely interlinked.

Like the actors of the Mediterranean basin, the agricultural products of the region are not only extremely varied but are regarded by many as veritable branders of “Mediterranean-ness”; the olive tree even serves to define the bioclimatic boundary of the region. The maps and illustrations in this atlas are designed to inform the reader about the main attributes of these products, which nourish the population and colour the rural areas.

Although these lands can be enchanting, some zones are nonetheless greatly disadvantaged. The gap between the coastal cities and certain rural enclaves is very real. This reality, which attracts little media attention, thus merited a special place, since it concerns the hard lives of women and men who are still only too often missed out. However, rural development policies have managed here and there to revive certain deprived regions. Given the importance of these policies and the hope they bring for those who have been left out of the development process, it was essential to outline the main objectives.

The illustration of rural and agricultural realities must not detract attention from another source of food in the Mediterranean region. In addition to the land, the sea has always offered Mediterraneans the treasures of its depths. In a world where anthropic pressure is growing, seafood products are all the more important since they form the core of the world-renowned Mediterranean or Cretan diet. Like agriculture, the fisheries sector is developing, and the atlas endeavours to illustrate the changes that are taking place.

Seafood and the produce of the land are combined in the consumer’s plate – but does this guarantee food security for all Mediterraneans? The answer to this question is twofold: food security does of course concern the quantity of calories that people can consume, but it is also a question of daily intake and food quality. Although this atlas demonstrates that the security of supplies is relatively well guaranteed in the Mediterranean, the fact remains that the region is still very dependent on external supplies. The picture thus would not have been complete without reference to the role played by the major external actors, whose food power enables them to become established in the Mediterranean for commercial purposes but also, in some cases, with geostrategic intentions.

There is thus external dependence in the Mediterranean, but the dependence is also internal: trade in agricultural commodities and agro-foodstuffs flows mainly from Europe to the countries in the south and east of the region. At a time when trade negotiations on agricultural commodities are continuing and, more broadly, a framework for cooperation amongst the various shores of the Mediterranean basin is being constructed, the agricultural relations that are taking shape merited description. Their presentation at the end of the atlas is also intended as an invitation to concerted action.

Knowledge for better understanding, understanding for better reflection, reflection on the Mediterranean in order to work together – such are the ambitions of this atlas.

**Pierre Blanc**





# POPULATIONS AND ECONOMIES

The Mediterranean region is undergoing a demographic transformation unprecedented in its history. There have never been so many people in the zone, nor has the population growth rate ever been so high, despite the slowdown since 2000. Rather than adopt the Malthusian approach, which has long been challenged, this rapid population growth must be seen as reflecting the real progress that has been made in food supply and health systems. Demographic transition is clearly a sign of human development. But this general increase in population numbers cannot mask the different trends with which it is accompanied and which are reflected in starkly contrasting developments amongst the countries around the Mediterranean. The increase in older populations in the North, the arrival of numerous age groups on the labour market in the South and East, urbanisation and the concentration of the population in coastal areas are the most salient features of the current demographic situation. There will soon be 500 million people living in the Mediterranean region, and the Euro-Mediterranean zone will have a population of 1 billion by 2025.

16th century philosopher and political theorist Jean Bodin argued that a country's wealth lies in its population numbers. Although this aphorism is still relevant to some extent today, there is nothing automatic about the economic dynamism that comes of people and innovation, and the economic and social divide between the two

shores would seem to challenge it, since it is more where populations are stagnating that economies are flourishing. But although this observation does not suffice to disprove the theory, it shows that other factors such as the weight of history and the environment are also relevant.

The geography of development thus reveals a clear-cut gap between the two shores, but this does not mean that the South and East of the basin have entered a prolonged stagnation process, and it certainly does not imply that the situation is inevitable. The economies of these countries have registered very definite periods of economic growth – at least until the recent financial crisis –, but in some cases the growth rate still depends too much on the situation on the oil market. In the North, economic dynamism is waning, at least in terms of growth rate, but the capital (technical and human capital, etc.) that has accumulated provides economic and social “rent”; reforms or even complete shifts in policy will be imperative, however, if it is to be renewed.

And finally, tourism is one of the most structuring sectors in all of the Mediterranean economies, in view of the region's many assets: its millennial history, its climate and landscape whose beauty has been extolled from time immemorial, and which are now the chosen destination of tourists from all over the world. It was thus a must to focus on this sector so typical of the Mediterranean.

# DEMOGRAPHIC TRANSITIONS AND CONTRASTS

The Mediterranean region is one of marked social, ethnic and cultural diversity. As regards demography, the countries of the Mediterranean basin form a very heterogeneous group, and population dynamics differ from one shore, sub-region and region to another. The aggregate population of the Mediterranean countries was almost 485 million in 2008, i.e. almost 7% of the world population. It is estimated that the region will have a total of 555 million inhabitants by 2025, and by 2050 it is expected to have a population of some 600 million people in a world with a total of 9.3 billion inhabitants; this means that, compared to the 285 million inhabitants recorded in the region in 1975, the population will have doubled in fifty years.

## POPULATION CONTRASTS

The population trends are progressing at different paces, however. There has been practically no population growth in the European countries on the northern shores since the 1970s, and it is only through immigration that several of these countries (Italy and Greece, for example) manage to offset the decrease in their populations. In the southern and eastern Mediterranean countries, on the other hand, high population growth rates have been recorded over the past three decades with natural growth peaks of 3% and more (compared to 1% in Europe at the peak of its long population transition). Profiles vary widely, however. Population growth in the Maghreb countries is controlled as the result of a steep decline in fertility rate: this is the case in Tunisia, whose population has grown from 5 million in 1970 to 10 million at the present time but should not exceed 15 million by 2050. Paradoxically, unlike the trends observed elsewhere, the population trends in the Maghreb countries are fairly similar, despite the fact that the socio-

economic conditions in these countries differ to quite a large extent.

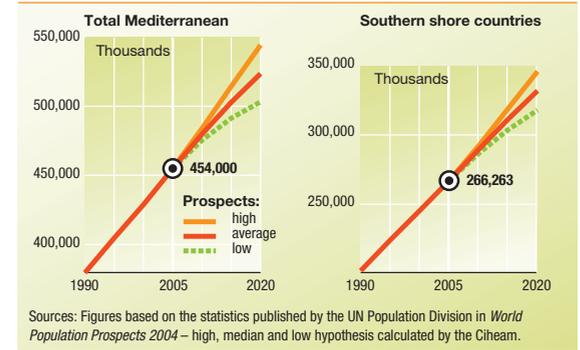
Population growth is still buoyant in most of the countries in the Near East. In Syria, Jordan, Egypt and the Palestinian Territories the annual growth rate is still around 2%. Egypt, for example, which had a population of 35 million in 1970, now has some 75 million inhabitants, and the figure could rise to almost 120 million by 2050. In the Near East, population trends are very correlated to socio-economic disparities: the demographic and socio-economic profile of Lebanon, for instance, is far removed from that of Syria.

These contrasting trends explain why the age pyramid configurations in Italy, Tunisia and Egypt, for instance, are so dissimilar, quite apart from the fact that they become distorted over time. In broad terms, over and above all of the sub-regional differences, the Mediterranean presents a contrast between a North where the population has virtually ceased to grow and a South where the population is likely to reach the 330 million mark by 2020, i.e. to increase by 65 million compared to the figure for 2005. Two out of three Mediterranean people thus now live in the south and east of the region. And 65% of the total Mediterranean population is concentrated in the five most populated countries in the region (Egypt, Spain, France, Italy and Turkey). The Mediterranean zone is thus characterised by diversified population growth rates and spatial concentration.

## RAPID AND PROFOUND UPHEAVALS

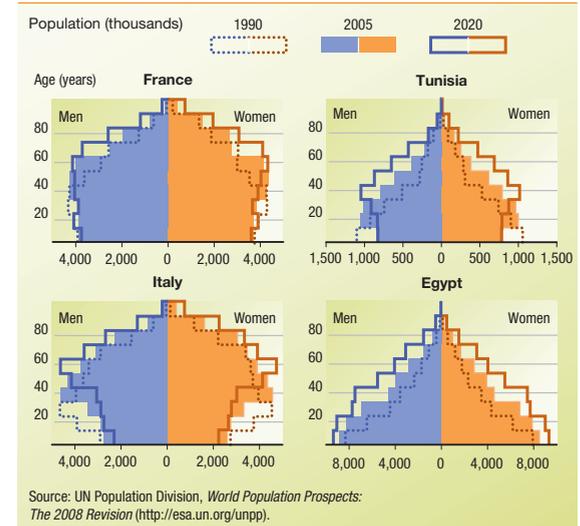
Within this demographic variable, the rapidity of transition is a further striking feature in the case of the southern and eastern Mediterranean countries. The main trends observed in these countries are the decline in infantile mortality, the rise in life expectancy, and the steep drop in fertility rates.

## TOTAL POPULATIONS, 1990-2020



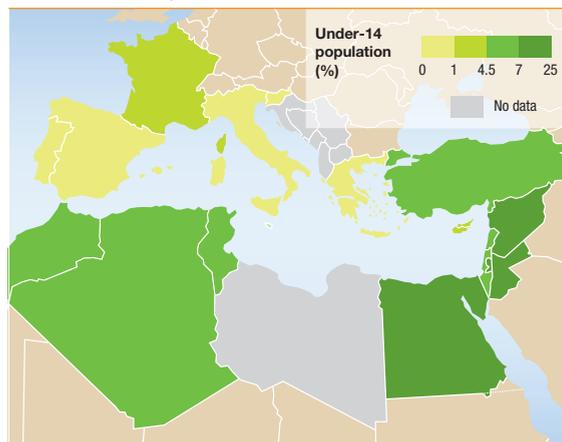
Atelier de cartographie de Sciences Po, 2009

## POPULATIONS BY AGE GROUP, 1990-2020

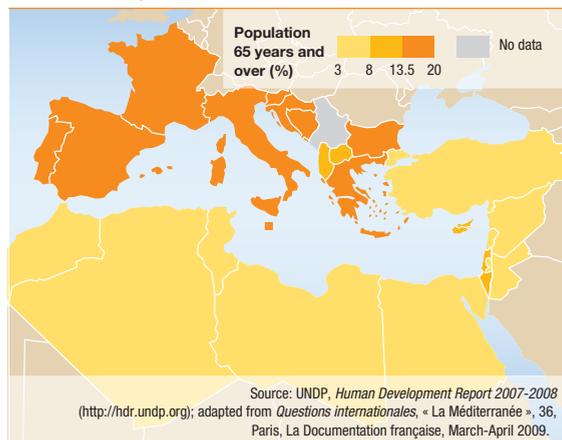


Atelier de cartographie de Sciences Po, 2009

## YOUNG PEOPLE, 2007



## OLD PEOPLE, 2007

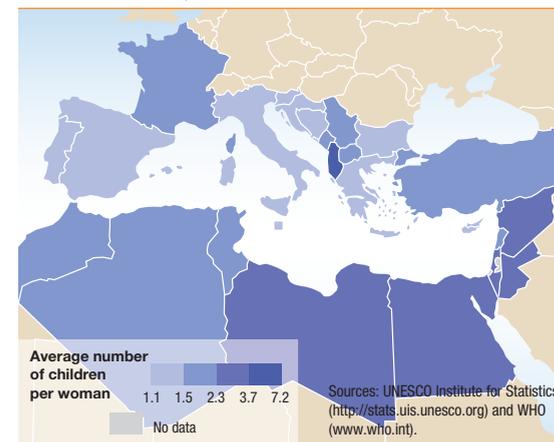


The demographic transition in these countries has admittedly lagged behind the changes elsewhere, but it is now progressing at an unprecedented pace. And whereas the proportion of senior citizens in the northern Mediterranean region is rising (an average of 15% to 20% of inhabitants are over 65 years of age) in contrast to the South, where young people still predominate (30% to 35% of the population on average are under 15 years of age), one of the surprising consequences of this accelerated demographic transition is that the populations are ageing – a phenomenon which is observed world-wide but which is taking place at a faster pace in the southern and eastern Mediterranean countries than in most of the other regions in the world. In the Maghreb, for instance, the average age, which was 19 in 1990, is forecast to be 31 by 2020. This could be a veritable godsend for several decades if the employment situation improves, for with a very large labour force it could be easier to establish efficient pension systems.

Given the magnitude of this demographic transition process, adaptive capacities, particularly at the socio-economic level, remain one of the major challenges for the countries in the southern and eastern Mediterranean. For family structures, intergenerational solidarity, medical expenses and thus life styles and human behaviour as a whole could well gradually change in the years that lie ahead.

In these countries where the socio-demographic context is changing, the role and position of women is also liable to be remoulded. It is furthermore urgently necessary to provide a more promising future for young people, who, despite their steadily rising level of education, are the main victims of insecurity and malaise. Unless this is achieved, there will be as many candidates for emigration as there

## FERTILITY RATE, 2006



are for university degrees. In this context it is indeed difficult to disregard the migration question, which pervades the development issue in the Mediterranean countries, and the kaleidoscope of situations causing this mobility: family constraints, economic frustration, political tension or the welcome solution of exile. Whereas migration is often from the South to the North, the fact that South-South migration trends are emerging should be underlined, as should the arrival of growing sub-Saharan population groups in the North African countries. And finally, although only a minority of the Mediterranean population is affected by extreme poverty, there is still unfortunately a very large number of people whose living conditions are marked by persistent instability and whose major concerns are still access to food, employment and health care. ■

# URBAN AND RURAL WORLDS

**T**he environments of the peoples of the Mediterranean, and indeed elsewhere, have been undergoing tremendous upheaval for the last fifty years. Whereas in 2007 the majority of the world's population was urban for the first time in history, in the Mediterranean countries there were more people living in towns and cities than in rural areas as early as the 1960s.

## MASSIVE URBANISATION

The urbanisation of space is an age-old phenomenon, as is evidenced by the countless vestiges of history so typical of Mediterranean cities. These cities sometimes have the dimensions of globalised conurbations, where development and modernity are concentrated on coastal waterfronts geared to foreign trade that is backed by competitive port and airport logistics. It is said that there are over thirty cities in the Mediterranean region with a population of over 1 million inhabitants, i.e. three times as many as there were fifty years ago. Two-thirds of the Mediterranean population, i.e. some 320 million people, now live in an urban environment. The most spectacular urban growth is observed in the countries of the southern and eastern Mediterranean, where the number of city dwellers will have doubled by 2020 compared to the figures for 1990. Urban explosion, however, sometimes entails the corollary effects of poverty, unemployment, violence or slums. Only too often, urbanisation is to the detriment of the natural environment and agricultural land, which is generally situated in the fertile areas of a coast that is often sacrificed on the tourism and residential development altar.

## RURAL AREAS AND PEOPLES

Yet rural areas, on the whole, are not becoming depopulated. In the North, there is constant longing for the countryside,

despite the global urban trend. Several sub-regional dynamics are combined. There has been a steep decline in the rural population in most European countries, in both absolute and relative values, but 25% of the population (in France and Spain) to 40% (in Portugal and Greece) still live in rural areas. In the Balkans, half of the population on average is still rural. As for the southern and eastern shores of the Mediterranean, whereas the relative share of the rural population is decreasing in absolute terms as a necessary corollary of galloping urbanisation, rural areas have never been so populated, particularly in the countries of the Near East and in Egypt, where the rural population is still larger than the urban population – a rare occurrence in the Mediterranean region. In the Maghreb, rural population stagnation is a very recent phenomenon. In the Mediterranean region as a whole, one-third of the total population is rural. To disregard the rural world would thus amount to excluding 165 million people from the development of the region.

There are three determining factors in the complex equation of Mediterranean rural areas:

1. A factor constantly observed – growing regional distortion between coastal cities that have opened up to the world and benefit from both public policies and private structuring investments on the one hand and rural areas on the other, which are often enclaved and do not feature in national development priorities. This gap between urban and rural worlds cannot be conducive to development or stability in the Mediterranean basin.

2. A challenge – that of rural regions, where farming is still the primary activity. It is thus absolutely imperative to optimise agricultural performance in terms of both productivity and sustainability. But the agricultural sector alone will not suffice to boost rural development in Mediterranean countries;

progress must be made in terms of diversifying jobs and sources of income.

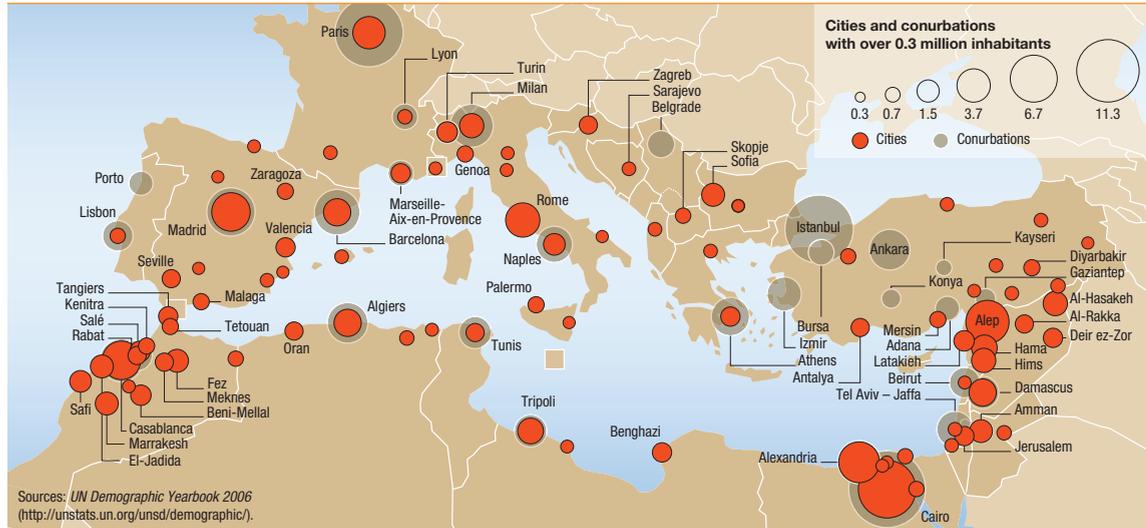
3. An unknown factor – that of the geographical direction of migratory flows. In a context where living conditions in cities are becoming harder and many believers in the urban mirage have been disappointed, the circumstances conditioning rural-urban migration are gradually evolving. An inversion of migratory flows is not to be excluded, especially if the professions of the future that are emerging in the rural world are promoted and developed. ■

## ISTANBUL, A MEDITERRANEAN MEGALOPOLIS

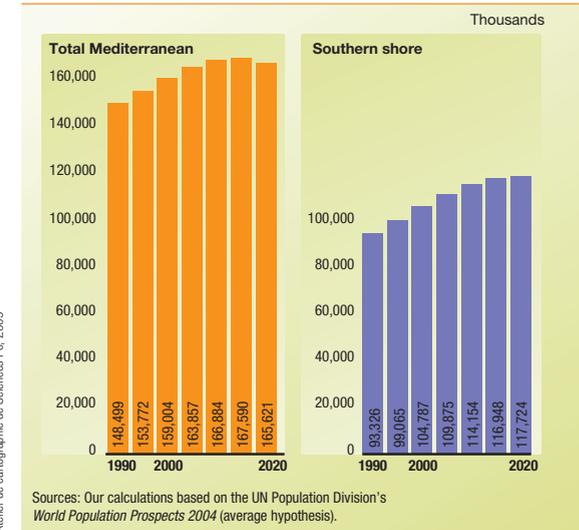
With over 11 million inhabitants, Istanbul is the Mediterranean megalopolis par excellence. The development of the former Ottoman capital was not affected when Ankara was made the capital of the new Turkish Republic in 1923. The city has expanded tremendously over the past few decades, particularly as the result of internal migratory pressures. There is also considerable external migratory pressure: the fall of the Iron Curtain accelerated the exodus of Central Asian populations to Istanbul; the geopolitical developments in the Balkans and in the Middle East, particularly in Iraq, have had similar effects, making the city a place of transit or permanent settlement.

The expansion that has resulted from this population growth poses obvious problems as regards facilities and has also caused encroachment on land to the detriment of certain agricultural areas.

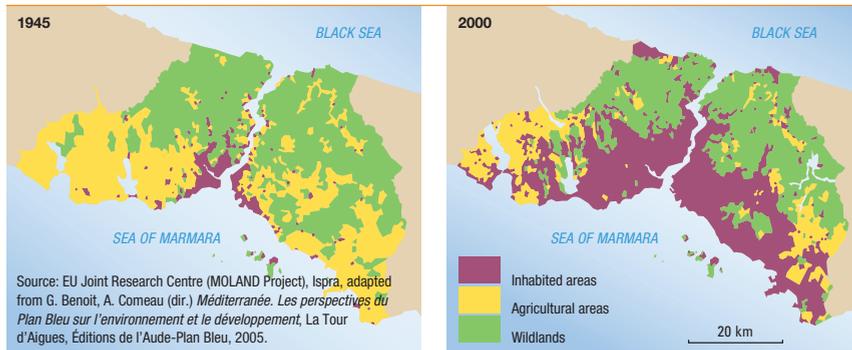
CITIES AND CONURBATIONS, 2006



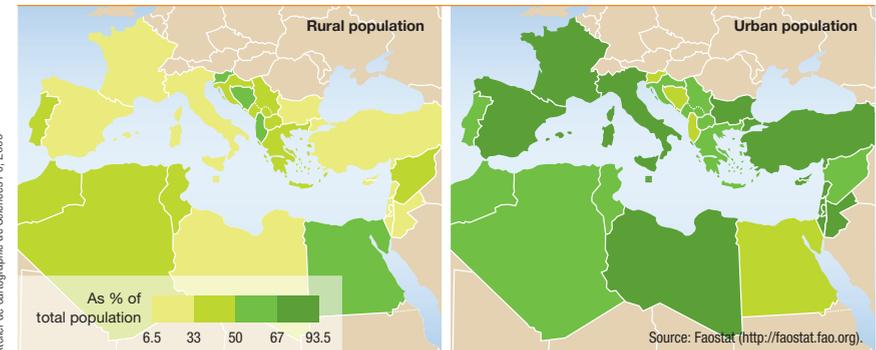
RURAL POPULATION, 2005



ISTANBUL, 1945-2000



URBAN AND RURAL POPULATIONS, 2005



# BLUE TOURISM, GREEN TOURISM

**T**he tourist industry is a sector that is developing rapidly: the number of foreign tourists increased from 25 million in 1950 to 924 million in 2008 (WTO figures). And revenue from international tourism is so substantial that the industry now ranks fourth in export revenue after the oil, chemical and automobile industries, quite apart from the fact that it has become a mainspring of economic and social development. The Mediterranean basin illustrates this global growth. Whereas 4 million tourists visited Turkey in 1990, there were over 20 million in 2007. Croatia, which hosted 1.5 million tourists in 1995, registered 9 million in 2007.

## SUN, SEA AND HERITAGE

As the low-cost destination closest to Europe (accounting for 50% of international departures) but where tourists are staying for shorter and shorter periods, the Mediterranean is still the world's leading tourist region, accounting for one-third of world tourism. Its share in world tourism has been decreasing since 2003 (- 3%), however, in view of competition from other destinations such as Asia. It is mainly the countries on the northern shores that are concerned by this drop: their share in the world market decreased by 5% between 2000 and 2008. The countries in the southern and eastern Mediterranean, on the other hand, registered a 3-point progression over the same period, accounting for just over 8% of the world market. Despite the decrease that France, Spain and Italy have been registering since 2000, these three countries still attract the main tourist flows and have been accounting for the highest revenues from tourism in the region since 1990, revenue (expressed as a ratio of per capita GDP and in terms of per capita income) being higher in Spain than in France and Italy. Tourism is vital for Cyprus, Croatia, Lebanon and Tunisia and is rapidly developing in Algeria and Libya.

The appeal of the Mediterranean basin is to be explained by the favourable climate, the beauty and diversity of landscapes, the charm of the sea, and the region's cultural wealth in terms of both history (there are almost 300 UNESCO World Heritage Sites in the region) and gastronomy (it has been proposed that Mediterranean gastronomy be added to the list of the Intangible Cultural Heritage of Humanity). Since most of the tourists stay on the coasts, the coastal population density can increase considerably in some countries (such as Malta, Cyprus, Spain and France). This influx inevitably has repercussions – urbanisation, pollution, overtapping of natural resources, all factors that have adverse effects on ecosystems and can mean that tourism is doomed in the long term. What is more, while seaside resort tourism creates job opportunities, the bulk of the profits goes to foreign chains (as far as transport, hotel accommodation and tour operators are concerned), with the exception of the

## DAR ZAGHOUAN FARM, TUNISIA

Dar Zaghuan Farm is a large agricultural estate south of Tunis and west of Hammamet, which hosts tourists for stays focusing on "rural activities, rural humanity and a countryside retreat". Apart from the leisure activities offered, the ecotourism philosophy pervades even the farm amenities – the accommodation facilities are built with recycled materials, and a miniature aqueduct supplies the swimming pool with water from a natural spring. Visitors take part in farm life, harvesting olives, gathering honey from the beehives, making cheese from milk that comes straight from the cow, and so on. An awareness-raising approach that is both modern and, it would seem, authentic for a country where rural tourism is in its infancy. Source: [www.darzaghouane.com](http://www.darzaghouane.com)

catering trade. In the long term the region is liable to lose its specificity and to be shunned by tourists. The Spanish archipelago of the Balearic Isles is a typical example of the unsustainable nature of this kind of seaside leisure tourism. On all three islands, Mallorca, Minorca and Ibiza, tourism has been outpacing traditional activities such as farming and fishing since the 1970s. But environmental degradation and competition from other cheaper destinations are now jeopardising the industry. It is essential that policies for the sustainable development of tourism through which the natural coastal heritage can be safeguarded be devised and implemented as well as policies for diversifying activities, particularly by promoting other forms of tourism.

## AFTER THE SEA, THE FIELDS

Rural tourism has become popular and is gradually developing in the northern Mediterranean countries. Ecotourism, which is one of the labels of this green tourism, participates in local development. It is in its infancy in the southern and eastern Mediterranean countries and is also developing in the north. In Italy, (and particularly in Tuscany), the supply is distributed over 12,000 accommodation facilities with activities ranging from discovering the natural heritage to equestrian pursuits, etc. In France, farmers propose accommodation (on the farm or in self-catering facilities), board (dinner for residents) as well as farm visits, demonstration farms, etc. Although only 2% of farms are involved in the rural tourism industry, the future seems promising, since a growing number of city dwellers are opting for this type of holiday. Tourism amenities of this nature provide a means of diversifying activities in rural areas and promoting local and traditional products. Efforts to enhance the quality of supply should obviously now take precedence over efforts to multiply arrivals. ■

**TOURISM AND THE COASTAL REGIONS, 2000-2025**

**Impact of tourism on the coastal regions**

**Population density (including tourists) in the coastal regions in the peak season (1 month) (inhabitants per km<sup>2</sup>)**

**Population density in the Mediterranean coastal regions (annual average) (inhabitants per km<sup>2</sup>)**

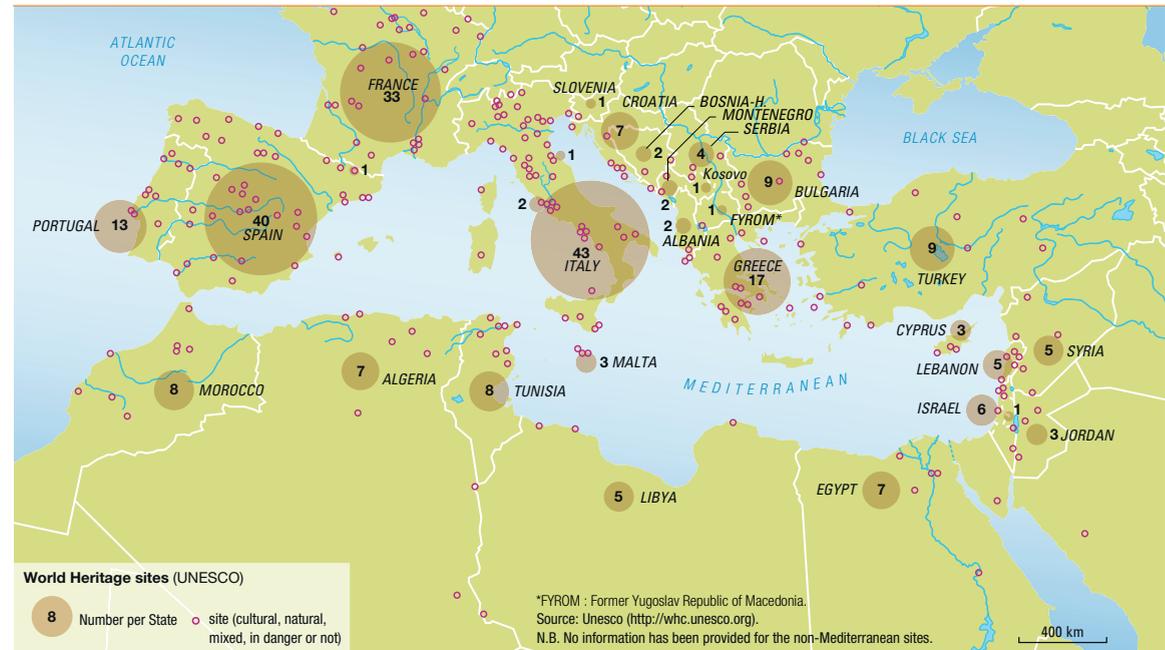
N.B.: the grey circles represent the projections for 2025.

	2000	2025	2000	2025
Libya	19	32	19	28
Croatia	106	150	58	57
Morocco	117	173	159	226
<b>SEMC</b>	122	188	114	162
Greece	126	140	94	93
Turkey	133	225	112	159
Cyprus	150	204	85	97
Albania	154	201	152	187
<b>TOTAL</b>	158	209	128	156
Tunisia	177	264	148	200
Egypt	205	302	200	284
<b>NMC</b>	209	240	148	147
France	234	293	135	155
Spain	250	315	163	172
Italy	257	263	198	183
Algeria	275	402	261	376
Syria	396	661	366	487
Lebanon	645	993	594	770
Malta	2,099	2,798	1,231	1,361

Sources: WTO; Blue Plan, 2003; I. Altané & Y. Courbage, *La Démographie en Méditerranée - situation et projection*, Paris, Economica, coll. « Les Fascicules du Plan Bleu », 11, 2001; « Géopolis » in G. Benoit & A. Comeau (dir.), *Méditerranée. Les perspectives du Plan Bleu sur l'environnement et le développement*, la Tour d'Aigues, Édition de l'Aube-Plan Bleu, 2005.

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**UNESCO LISTED SITES, 2008**



**World Heritage sites (UNESCO)**  
 8 Number per State  
 site (cultural, natural, mixed, in danger or not)

\*FYROM : Former Yugoslav Republic of Macedonia.  
 Source: Unesco (<http://whc.unesco.org>).  
 N.B. No information has been provided for the non-Mediterranean sites.

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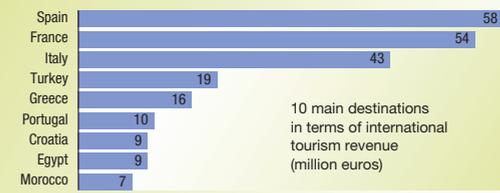
**DESTINATIONS, 2007**



10 main destinations in terms of number of arrivals (millions)

Source: WTO *Highlights 2008*, October 2008.

**REVENUE, 2007**



10 main destinations in terms of international tourism revenue (million euros)

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# SOCIO-ECONOMIC REALITIES

## THE MARK OF INEQUALITY

**W**ith around 30% of world GDP on average over the last few years, the Euro-Mediterranean hub plays a pivotal role in the global economy. But this aggregation of national GDPs hardly disguises the profound economic imbalance between the northern and the southern shores of the Mediterranean. The world GDP share of the European Union alone is close to 28%, a fact which relegating the southern shores to the background. Whereas the geographical distance between Spain and Morocco is minimal, for instance, per capita GDP in Spain is five times higher than in Morocco.

More refined observation also reveals that there is a “South” in the North – Albania in particular – and a “North” in the South – Israel in this case. It is observed furthermore that there are considerable inequalities in Mediterranean societies on the whole, with the exception of France. But despite the obvious socio-economic differences, it must be pointed out that growth has been more buoyant in the countries in the south and east than in the northern Mediterranean countries in the period from 2000 to 2009. Many years of higher growth would be needed, however, for these countries to make any significant headway in closing the gap with the North, quite apart from the fact that that growth would have to be more self-sustained and thus less sensitive to external hazards. The gap seems to be narrower when it comes to human development indicators (HDI): Europe has been optimising its performance in the social and health fields for quite some time, while the southern and eastern Mediterranean countries are making significant progress.

### LOW FDI

The gap in foreign direct investment (FDI), which is both a symptom and a cause of these disparities, is a concrete

expression of the economic gulf between the northern and southern shores of the Mediterranean. Europe attracted some 46% of global FDI in 2007, whereas the southern and eastern Mediterranean countries hosted 3%, which was just slightly higher than the figure for sub-Saharan Africa. This is due partly to a climate that is inconducive to business in the South and East, where geopolitical obstacles persist, particularly in the Near East. Although Turkey and Israel are in that region, these two countries host the bulk of the FDI of the southern and eastern shores. In the other countries, FDI is often limited to the traditional rent sectors (real estate, hydrocarbons and tourism). This is the case in Lebanon and Egypt in particular, where FDI is progressing substantially. The fact that so little FDI is attracted to industry unfortunately is not compensated by local investments, since savings tend to leave the countries, as does the labour that is not absorbed by a system where jobs are lacking.

The wide diversification of the countries of origin of FDI in the last few years must further be underlined. Whereas European countries are still the main investors in the southern and eastern Mediterranean countries, the Gulf States have stepped up their investments and US investments are still substantial. European commitment is low, however, when compared to US and Japanese FDI in countries in their immediate vicinity. Whereas less than 1% of European FDI is effected in the southern and eastern Mediterranean, 17% of US FDI was effected in South and Central America in 2007, while 20% of Japanese FDI was effected in Japan's Asian periphery.

And finally, the larger share of the gross agricultural product (GAP) in total GDP, which is a further expression of the gulf between the two shores, highlights not so much the dynamism of the agricultural economies in the southern and eastern

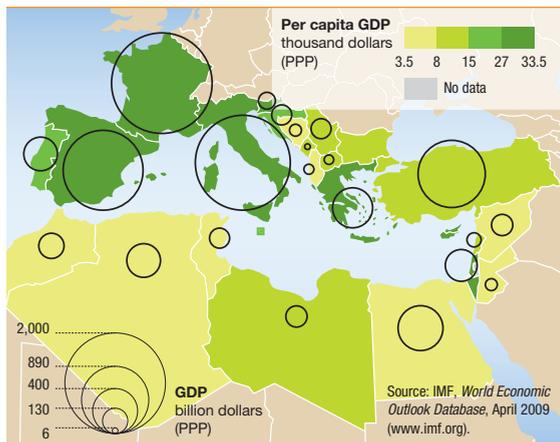
Mediterranean countries as the relative anaemia of the other sectors. Nor does this analysis of the gross agricultural product mean that agricultural activities are not important in the Mediterranean countries in the European Union. The added value that this activity creates is still significant in absolute terms. Furthermore, the farming sector contributes considerably to the agro-food industries, which are veritable flagship sectors of these countries' economies, while it has become a major consumer of industrial products.

### THE KNOWLEDGE ECONOMY – A WIDENING GULF?

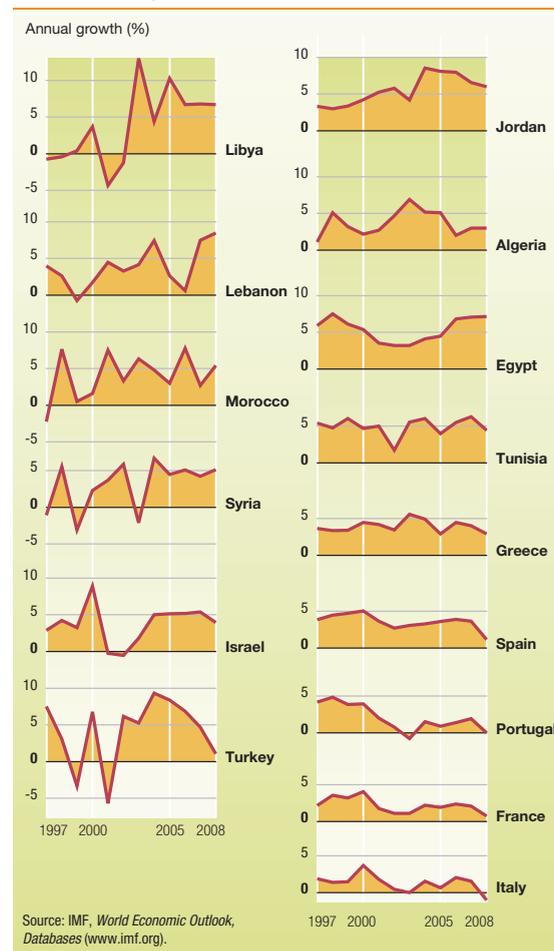
Knowledge and innovation are now more central to production processes than ever before – to the extent that one refers nowadays to the knowledge-based economy. Here again, there is a marked gulf between North and South, development in this field being uncertain and variable in the South. Given that the technologies involved, and the knowledge-based economy as a whole, are central to production, processing and distribution processes, the North-South development gap could widen.

The Knowledge Economy Index defined by the World Bank is a valuable tool for evaluating how that economy is developing. It is actually measured on the basis of a database containing 80 structural and qualitative variables for 128 countries that are grouped in four main components: innovation, human capital, ICT and economic incentives. The index is the simple average of the values of the four knowledge-based economy components and reveals access potential to that economy, i.e. a country's ability to generate, adopt and disseminate knowledge as it develops. In the present case it confirms the North-South gap as regards access to the knowledge-based economy. It also provides a means of measuring recognised differences amongst the

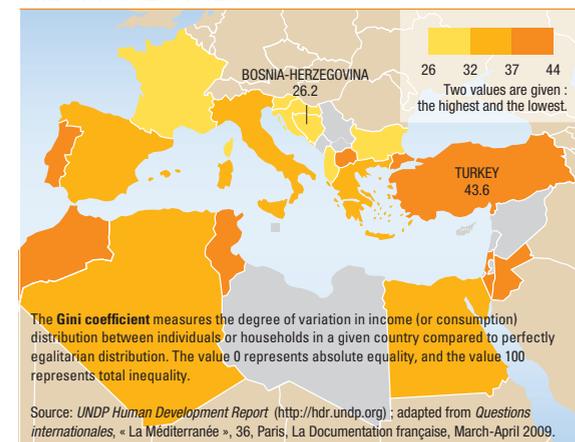
GDP, 2007



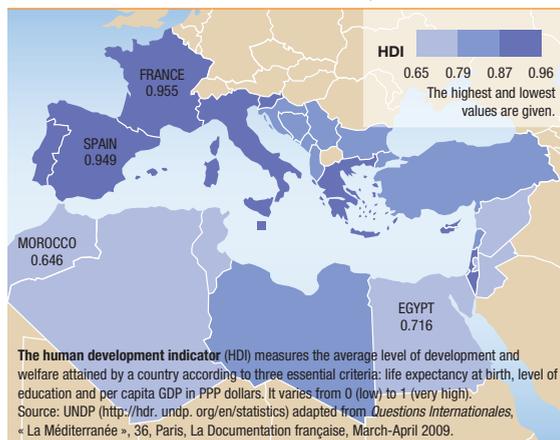
GDP GROWTH, 1997-2008



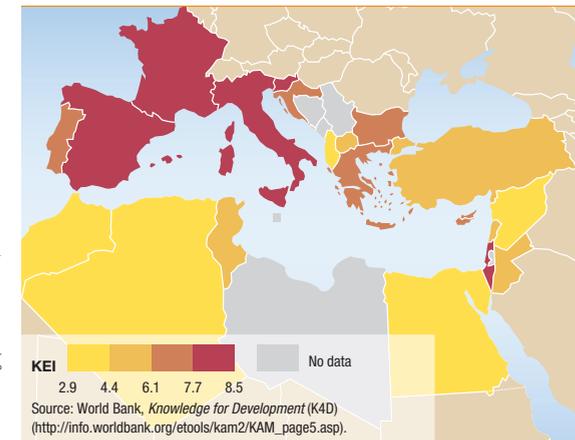
THE GINI COEFFICIENT



HUMAN DEVELOPMENT INDICATOR, 2006



STATUS OF KNOWLEDGE, 2008



## SOCIO-ECONOMIC REALITIES THE MARK OF INEQUALITY

southern and eastern Mediterranean countries: whereas in Syria and Algeria performance is compromised by a veritable lack of incentives, in Albania it is the innovation mechanism that is lacking.

### SHORES DRIFTING APART: A LOOK AT HISTORY

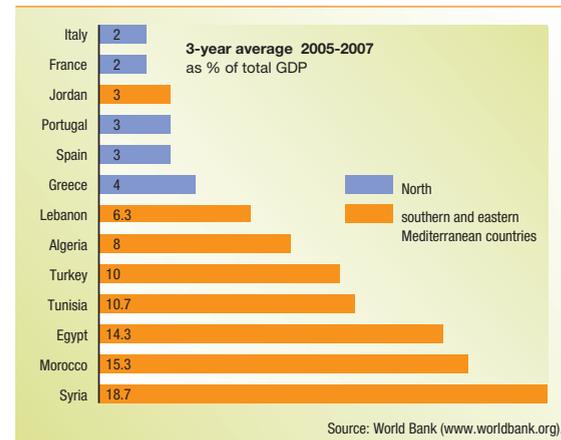
The acceleration in development in the northern Mediterranean countries, many of which were already industrialised, is a recent phenomenon. It began after World War II in a context of reconstruction, which was facilitated in particular by the implementation of a social market economy. It began later, but the graph was steeper, in Spain, Portugal and Greece, boosted in part by integration into Europe, where redistribution policy was all the more effective since it was implemented in regions that were already developing.

In contrast to this economic takeoff, most of the southern and eastern Mediterranean countries seem to be struggling to overcome their underdevelopment. The fact that these countries are not overendowed with production inputs in the form of land and water may have impaired their economic performance. In particular, the development avenues for which they opted in the 1950s and 1960s, when the economies in the North were taking off, did not achieve the expected results: the recovery in the agricultural sector, which was often based on agrarian reforms combined with large-scale hydraulic engineering projects, had mixed results, while in the industrial sector the models chosen, whether based on import substitution or industrialising industries, failed. There was thus no, or practically no, resurgence and diversification of branches of industry that were in a position to broaden the industrial fabric and to focus on products with higher value added. Since production inputs,

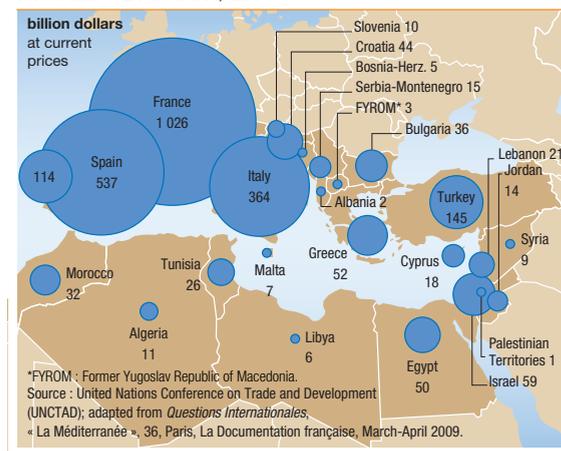
which were financed through oil exports in the 1970s and 1980s or through loans contracted with banks that were bulging with petrodollars at the time due to the rise in oil prices, were not sufficiently developed, they did not provide the means of repaying a debt that had become too heavy. In order to obtain the foreign exchange needed for repayments, these countries thus had to accept structural adjustment programmes from the second half of the 1980s onwards, whose short-term effects brought a decrease in public expenditure, which was supposed to slow down demand and thus imports. Unfortunately, this State divestment came about at a time when rapid population growth would have required sustained efforts to provide facilities and services, quite apart from the fact that mass unemployment – particularly amongst young people – which the private sector was unable to contain, could no doubt have been prevented through job development in the public sector.

The economic problem today lies less in the investment capacities of the countries concerned – which have often had balance of payments surpluses since the structural adjustment plans have been implemented – than in the confidence of economic actors. The challenge that most southern and eastern Mediterranean countries face is thus to create that confidence, which is conducive to investment, and to improve redistribution policies. Cooperation with the countries on the northern shores and thus with the European Union serves as a catalyst for development in these countries. But while Europe can offer them investments and markets, the countries in the south and east themselves are not devoid of assets for a Europe that is seeking market outlets and labour. It is indeed imperative that a sphere of Mediterranean co-prosperity be created in the context of globalisation that is tending to shape major economic regions. ■

### AGRICULTURE IN GDP FORMATION



### INWARD FDI STOCK, 2007

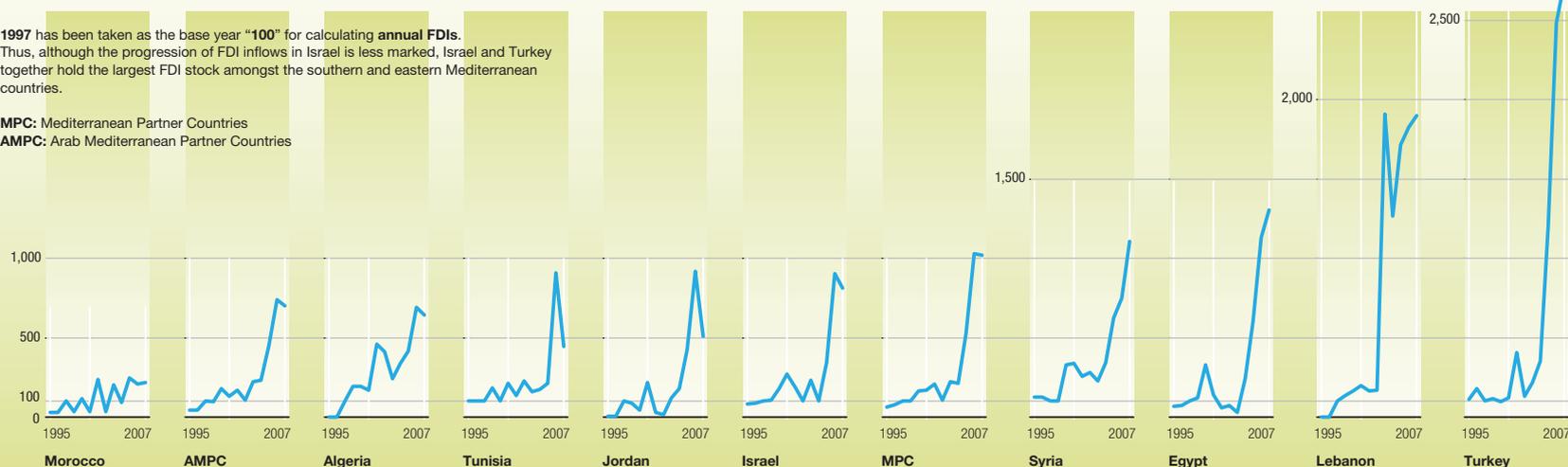


## GROWTH IN INWARD FDI STOCK BY COUNTRY, 1995-2007

Source: Unctad (<http://stats.unctad.org>)

1997 has been taken as the base year "100" for calculating annual FDIs. Thus, although the progression of FDI inflows in Israel is less marked, Israel and Turkey together hold the largest FDI stock amongst the southern and eastern Mediterranean countries.

**MPC:** Mediterranean Partner Countries  
**AMPC:** Arab Mediterranean Partner Countries



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## HIDDEN ECONOMIC GAPS: THE CASE OF LEBANON

As in many countries in the region, socio-economic development in Lebanon is extremely uneven. In 2002, the United Nations Development Programme (UNDP) published very interesting statistics on the subject including the human development indicator (HDI), which is measured for the various Lebanese governorates (muhafazats).

The figures clearly illustrate that only the governorates of Mount Lebanon and Beirut have indicators higher than the figures for Lebanon as a whole (they both have an

indicator of 0.74), whereas the governorates of North Lebanon (0.64) and South Lebanon (0.68), Nabatieh (0.66) and Bekaa (0.66) are below the average indicator, which is estimated at 0.71. The poverty indicators show a similar trend, ranging from 14.3 in North Lebanon to 6.3 in Beirut.

This imbalance has historical, economic and geopolitical causes: Beirut, which was established as the decision-making centre (and thus the economic capital) at the end of the 19th century, and the adjacent Mount Lebanon

region had access to education, which was provided by missionaries, earlier than the other regions. Feudalism continued to prevail in the peripheral regions in the first half of the 20th century, with a very unfavourable system of share cropping. After independence in 1943, the liberalism that prevailed in Lebanon followed by the civil war tended to sacrifice the productive sectors (agriculture and industry), which were established mainly in the peripheral regions, and this further exacerbated the gap between Beirut and the peripheral regions.



## FACETS OF THE MEDITERRANEAN

There are several mediterranean seas in different regions of the world – the American Mediterranean Sea, the Asian Mediterranean Sea, and so on, and, of course, the Mediterranean itself. These “seas” form “fluid” areas of the global ocean that are certainly large but virtually isolated. Like bridges linking continents, they are arenas travelled by men, ideas and goods. They are the origin of elements that form a converging composite identity and also of recurrent rivalries. The Mediterranean Sea, the eponym of a geographical concept arising in the 19th century, illustrates these very specific maritime zones, which are arenas of intense trading and sporadic tensions. The land was just as frequent a theatre of trading and conflict as the sea, however, if not more so. It is thus more the geo-history of the Mediterranean region than the Mediterranean Sea that interests us here, particularly when it comes to agriculture and food production.

The very word “Mediterranean” immediately conjures up the flavours of everyday life, which, unless we are historians or other enthusiasts of ancient history, we are unable to relate to the history of these lands that are linked by “the Sea”. Yet what would Mediterranean cuisine be without the Ottomans and the Arabs? What would wine-growing be without the Europeans’ contribution? Would the

olive tree be as emblematic had it not been for the Roman Empire?

To understand agriculture and food in the Mediterranean is to look back to the past in order to better design the future. First a place of settlement, then a geographical concept, the Mediterranean region has become a geopolitical arena. To be Mediterranean is, let us hope, to share a common destiny, if not a common identity.

When it comes to constructing an arena of cooperation which would unite the three shores of the Mediterranean, geographic proximity compels us and would suggest that it is possible and, above all, a necessity. It must be admitted, however, that this idea is sometimes expounded more as a rhetorical exercise than a tangible proposal and that the strategic perspective of progressive Mediterranean convergence is being increasingly thwarted by the penetration of the Mediterranean region by extraregional actors.

Just as history revealed several Mediterraneans (the Roman Mediterranean was not the Ottoman Mediterranean, which was not the Arab Mediterranean), the present seems to be doing likewise. Thus, from the geo-historical point of view, it is no doubt better to pluralise any consideration of this Mediterranean, which remains above all a land of diversity and contrasts.

# THE AGRICULTURAL HISTORY OF THE MEDITERRANEAN REGION

The Mediterranean has been both a trading arena and a region of much-coveted prizes. It has been the scene of the accumulation and confrontation of knowledge and the region where the religions of the Bible emerged and coexisted for long periods, but it has also been the theatre of recurrent violence from time immemorial. Greece, Rome, the Crusades, the Arabs, the Ottomans and, more recently, the European powers (France, Britain and Russia) made this basin a strategic zone of influence and rivalry before it became established as a key geopolitical area during Cold War. Agriculture in the region has benefited from many trends that have promoted trade, but in the course of history it has also found itself at the hub of power strategies and the development of international relations – sometimes to its cost.

## A FOCUS OF AGRICULTURAL DEVELOPMENT

Crop and animal farming originated in the east of the basin, in the fertile Crescent, in the course of the long Neolithic revolution, which brought the transition from predation to production. Cereals and pulses (such as lentils and chick peas) were grown there and several animal species (goats, sheep, cattle and pigs) were domesticated from 10,000 B.C. onwards. To meet the needs of a growing population the people of the region – primarily the Sumerians – invented irrigation techniques that were designed in particular to harness water from the Tigris and Euphrates rivers by building supply channels. It was also in this region that certain food techniques, such as bread-making, emerged. Agriculture and irrigation enabled human communities to cluster in city-states and were thus the vectors of civilisation in this part of the world. That agricultural society subsequently disseminated knowledge and several of the domesticated

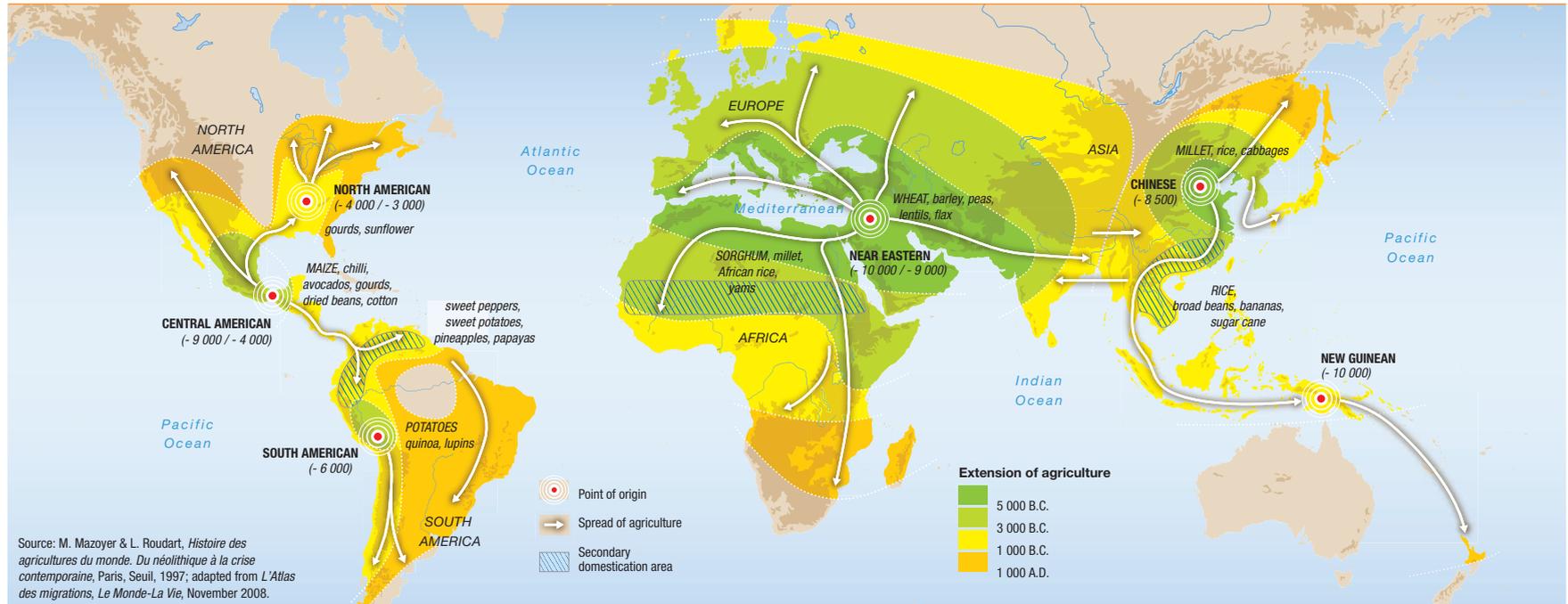
THE ROMAN EMPIRE IN THE 2<sup>ND</sup> CENTURY: MARE NOSTRUM



species to Europe and Egypt, in particular, where flood-recession crop-growing based on appropriate techniques for using Nile water enabled the influence of the Pharaohs to spread far and wide. The science of agronomy, which had begun in Mesopotamia and flourished in Egypt, was further developed by the Greeks and the Romans. Indeed it is interesting to observe a sort of lineage in this discipline, where the Latin agronomists (Cato,

Varro, Palladius and Columella) drew on the work of their predecessors and developed what Louis Malassis refers to as “Mediterranean agronomic thought”, which later spread to Andalusia, the new interface of Arab and European peoples. The Andalusian school, which was related to the great tradition of Mediterranean agronomists led by the Nabateans, actually adapted the crops they imported mainly from Asia – cotton, rice, eggplants, asparagus, chicory, sugar cane,

## SPREAD OF AGRICULTURE



and indigo plant. This school, which laid great emphasis on landscape refinement, also developed the art of creating gardens, which were embellished with jasmine and roses from the Orient. During the Caliphate of Cordoba (756-1031) the Al Andalus water engineers, most of whom were Arab, improved water mobilisation techniques, achieving such a degree of sophistication that they became the great masters in the field.

It should be underlined that these technological inputs were generally handed down or imposed as the result of conquests. The discovery of the Americas with its corollary of violence brought the introduction of maize and potatoes, for instance, to the Mediterranean, and the French agronomists, who were known as the “North African agronomists”, made the Mediterranean region a new field of investigation during the colonial period.

**DEVELOPMENT MARKED BY CONQUESTS**

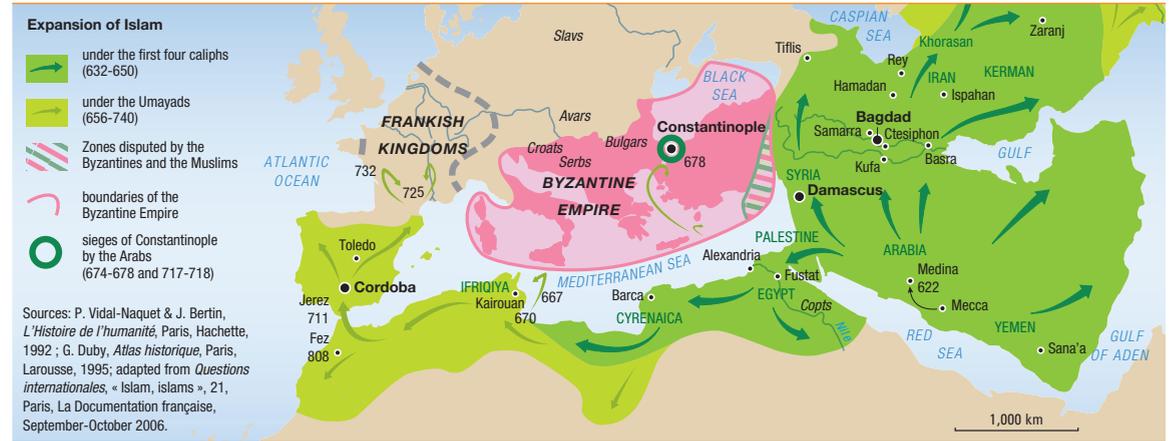
Access to agricultural commodities is gained through trade and/or land appropriation, a fact that is the crux of Mediterranean history. After the Phoenicians founded Carthage, the Greeks resorted to conquering land that ensured the cities of Attica a certain degree of food security. Indeed, when Athens lost control of the sea in the 4th century, a law was introduced banning wheat exports on pain

## THE AGRICULTURAL HISTORY OF THE MEDITERRANEAN REGION

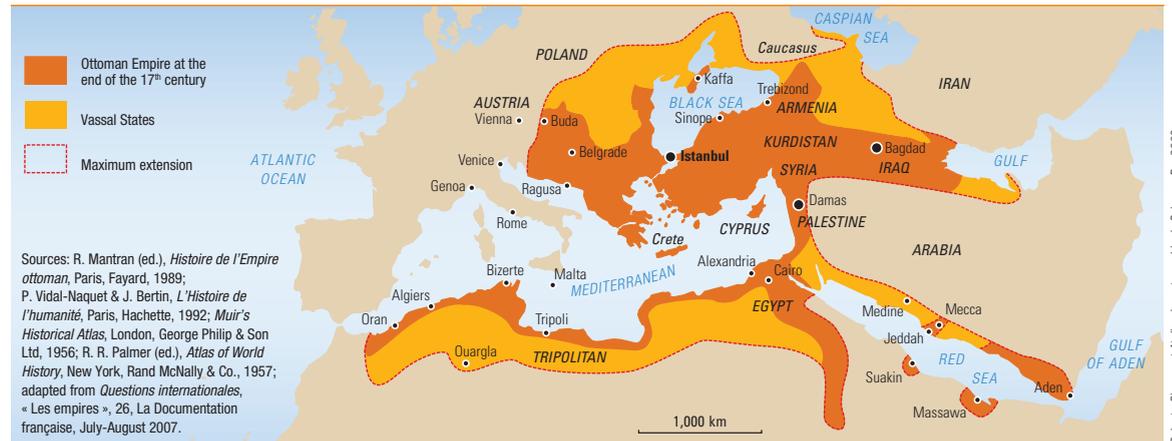
of death. That security was again assured, temporarily, by Alexander the Great, who succeeded in controlling the fertile lands of Babylonia and Egypt, from which he imported cereals. But it was Rome that made the Mediterranean its famous *Mare Nostrum*, in other words, its transaction arena: ports that were linked to waterways and roads penetrating into the hinterland made it possible to drain off the countries' agricultural riches by water and by caravan. Rome's domination over the entire Mediterranean area marked an era when certain crops spread widely. Vine and olives were grown by the colonists in the newly conquered territories, and the market value of these commodities made them a significant means of trade. Furthermore, in order to ensure food security, the Romans imposed the development of wheat, particularly in Asia Minor (Turkey) and Andalusia, in the Lebanese region of Bekaa and in Greece. Many Roman peasants, however, unable to cope with the competition from other realms of the empire, went bankrupt and were plunged into slavery, often working on vast farm estates (*latifundia*) that were set up by rich merchants. This agrarian situation inevitably had political effects – slave revolts multiplied –, and the Gracchus brothers attempted to introduce agrarian reforms from around 130 A.D. onwards.

The Arab conquests achieved in Spain and in the southern and eastern Mediterranean from the 7th to the beginning of the 8th century were also a means of controlling agricultural land; in this new “hub and spoke” setup, only the centre changed: after flowing to Rome and Byzantium, Egyptian wheat was transported to Medina, Damascus and Bagdad. It was during this Arab domination, which was contested by Byzantium, that the maritime republics of Italy (Venice, Pisa and Genoa) built up a vast trading

### BIRTH AND EXPANSION OF ISLAM



### THE OTTOMAN EMPIRE OTTOMAN IN THE 17<sup>TH</sup> CENTURY



network in the Mediterranean, essentially from the 10th to the 13th century. Italian ships were thus used for the bulk of the traffic from Al-Andalus and the Maghreb to Syria and Egypt. Similarly, Byzantium granted port concessions to *La Serenissima* from the 10th century onwards, before the emperors began to favour Genoa and Pisa in the 12th century in order to escape the Venetian stranglehold.

Then in the 16th century, it was the Ottomans who controlled a large part of the Mediterranean basin. Trading was intense, particularly since Istanbul had granted France the use of the famous Ports of Levant (in the Near East) and trading posts on the Barbary Coast (North Africa). These ports of call consisted of the ports and cities of the Empire (Sidon, Alexandria, Aleppo, etc.) and were a means of establishing a division of labour, so to speak, within the regions that were linked through the same trading network. In addition to developing trade, the Ottoman Empire also influenced culinary practices, and it was furthermore the originator of demesne ownership in the Near East, of which contemporary political history still bears the mark today. As the Empire gradually weakened in the 19th century, the Mediterranean basin became a much-coveted prize for the European powers, which strove to control the maritime traffic routes and also to obtain land. This was the case in the Maghreb, where the French conquest was coupled with the intensive colonisation of certain regions. The numerous French farmers who settled in Algeria farmed the land and gradually built up a colonial domain of modern agriculture in the coastal and in-shore regions, whereas traditional farming methods were concentrated in the mountains and in the dry, less fertile highland plains. The creation of a so-called modern sector alongside the traditional farming

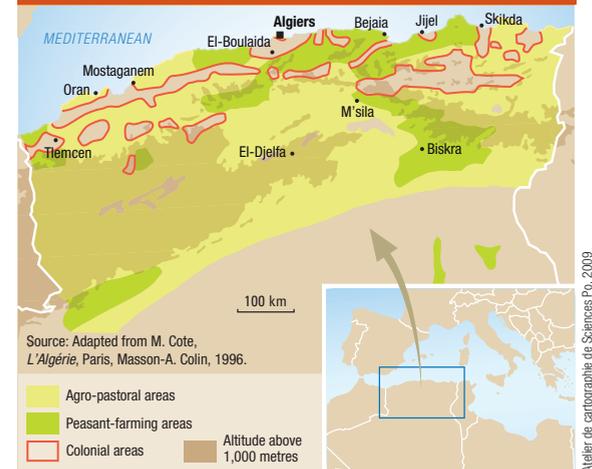
communities had considerable repercussions on agrarian and political developments: after Algerian independence in 1962, the colonists' land was converted into collectivist structures before being privatised in 1980.

### LIVING EVIDENCE OF HISTORY

Agriculture was a major contributing factor in Mediterranean civilisation, giving rise to the region's renowned knowledge of agronomy and hydraulics. Since this knowledge was accumulated and shared, it was central to agricultural progress in the region before being projected throughout the world, as was the case with olive-growing and vine-growing. But history still weighs heavily on agrarian realities in the Mediterranean countries. The agrarian question is still a salient issue of debate in Spain, at least in Andalusia, where the *Reconquista* gave rise to uneven land distribution. This is also the case in Syria, Palestine and Lebanon, where the Ottomans' distribution of land bribes to influential families left marks that are still felt today. The Mediterranean has often been more an arena of rivalry than of sharing. The ideal vision of a common past is doubtless not the most apt approach for founding a common future. Yet Mediterranean trade was so intense that the region was the scene of encounter and even intermingling of the peoples on the Mediterranean shores. Certain cultural codes – such as culinary traditions and, in particular, the Cretan diet – have been disseminated throughout the region and indeed throughout the world. This trade has always been of advantage to the States that border on the Mediterranean, but unless it is now organised it is liable to prove disastrous for many of the actors involved. Since the States are now independent, the time has come for trade cooperation. ■

## AGRICULTURAL STRUCTURES IN ALGERIA

The colonial demesnes occupied 40% of Algerian farm-land – and some of the most fertile land in the country. In 1954, approximately 3 million hectares of the agricultural area in use were still colonial properties. This colonial land was subsequently transformed into self-managed demesnes and cooperatives before becoming large State-run agricultural demesnes again in 1982. In 1987, the government divided these demesnes into smaller, more autonomous units – collective farms with private status, so to speak. The status of these farms, where private technical capital is combined with State-owned land, could develop in the future.



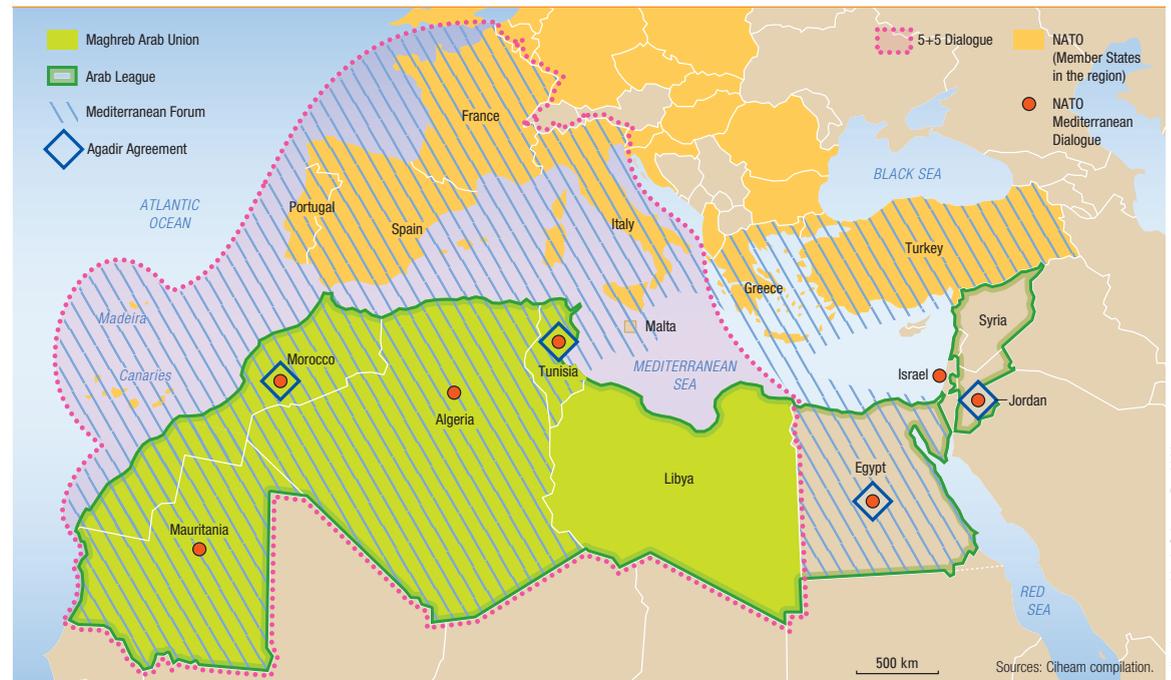
# MEDITERRANEAN CONFIGURATIONS

The noun “Mediterranean” is first and foremost a geographical term. It was not until the 19th century that the region began to be seen as a homogeneous cultural whole and then, from the second half of the 20th century, as a political project. As far as Mediterranean geography, and in particular bioclimatology, is concerned, the region is relatively well delimited. Politically, however, despite the commercial, economic, migratory and political trends that crisscross the region making it one of the world’s strategic focal points, the Mediterranean has a low profile on the international scene due to the plurality of initiatives, cooperation projects and regional organisations of varying geometry that are located there. A further reason for this lack of integration in the Mediterranean is the difficulty in progressing from an official initiative to concrete action. It thus is not an exaggeration to say that as a region the Mediterranean is more fragmented than integrated. Its future in the contemporary multipolar world now seems to be emerging around the bold geopolitical vision of the “Euro-Mediterranean”.

## A FRAGMENTED MEDITERRANEAN

The Mediterranean region is not always identified as such at the international level. In the World Bank programmes, the countries in the south and east are grouped in the MENA (Middle East and North Africa) zone; in the United Nations Development Programme (UNDP), the Mediterranean countries are divided between Europe and the Arab States; and in the case of the International Fund for Agricultural Development (IFAD), which supports agricultural and rural investments, the countries of North Africa and the Middle East form a region in its own right. Despite the fact that there is no “Mediterranean” category in most programmes, the countries in the region are involved in many cooperation arenas:

ZONES OF POLITICAL COOPERATION IN THE MEDITERRANEAN, 2009



whereas the countries in the North are involved in European integration, the other countries are also involved to varying extents in regional organisations. The League of Arab States, which was founded in 1945, encompasses nine countries. It acts in an observer capacity in Euro-Mediterranean negotiations, and it also has two bodies which operate in the agricultural field – the Damascus-based Arab Centre for the Studies of Arid Zones and Dry Lands (ACSAD, 1968) and the Arab

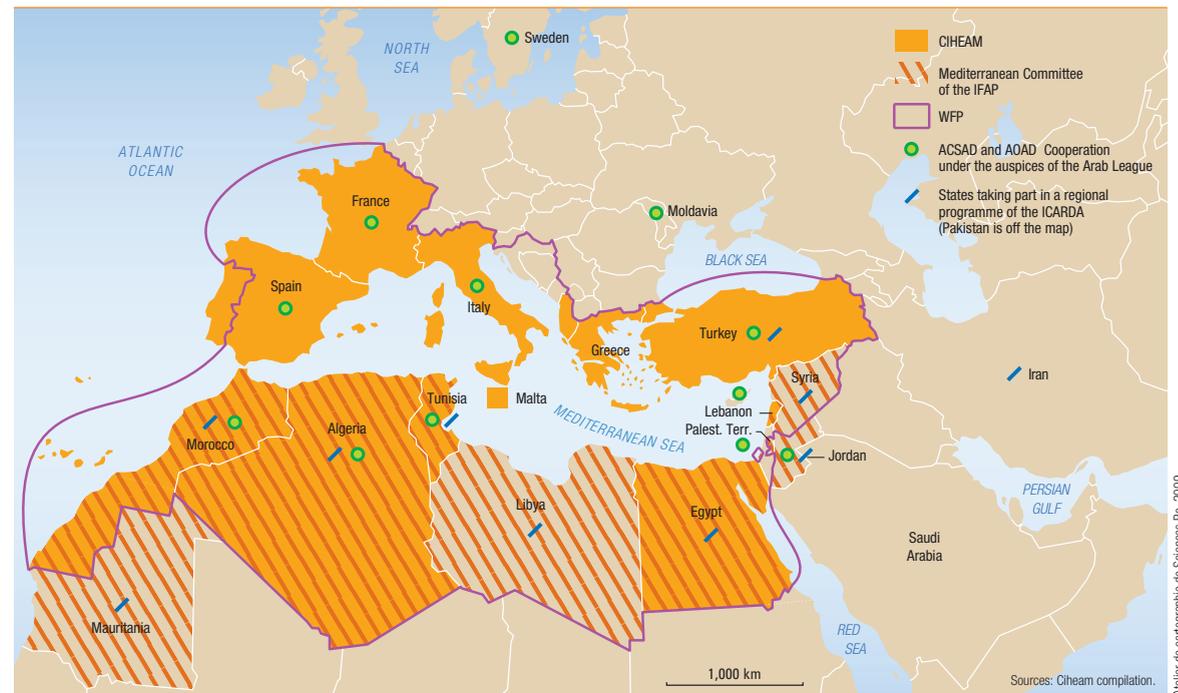
Organisation for Agricultural Development (AOAD, 1972). The Maghreb Arab Union (MAU) is working on establishing a free trade area and an area of freedom of movement of persons and capital. This second arena, which comprises five of the Arab League countries (Algeria, Morocco, Tunisia, Libya and Mauritania), focuses its agricultural project on food security. A ministerial commission deals in particular with cereals and pulses and with measures to combat desertification.

The broader issues developed by the MAU complement those of the Arab League, which are more specific, but cover a more restricted area. And finally, all of the Arab Muslim countries are brought together in the Organisation of The Islamic Conference (OIC), which has been acting as the mouthpiece of the Arab world since 1969. At the economic level, the Agadir Agreement, which was concluded between Morocco, Tunisia, Egypt and Jordan in February 2004, has been operational since 2007. Supported by the EU, this agreement is the concrete expression of the ambition to create a free trade area (still incomplete in the case of agricultural commodities) and to develop trade and economic integration. As regards security, NATO's Mediterranean dialogue, which was launched by the United States in 1994, seeks to ensure regional stability and better mutual understanding between NATO (of which Portugal, France, Spain, Italy, Turkey and Greece are members) and its Mediterranean partners (Algeria, Egypt, Israel, Jordan, Mauritania, Morocco and Tunisia). Several individual Mediterranean countries belong to certain organisations with a broader field of action: Egypt and Turkey are members of Developing 8 (D8), which is an arena of socio-economic cooperation uniting the eight most populated Islamic countries since 1997. There are two ad hoc working groups dealing with the agricultural component of the group's objectives, the first focusing on agriculture and the second on rural development. And finally, the group also devises projects such as the programme for agricultural development and food security.

### AGRICULTURAL AND RURAL COOPERATION

There are many international initiatives in the agricultural field in the Mediterranean Basin, which promote the development of inter-State relations.

### INTERNATIONAL COOPERATION, 2009



The International Centre of Advanced Mediterranean Agronomic Studies (Ciheam), which was established in 1962 and has 13 member countries, fulfils a mission of cooperation using the tools of education, network research and political dialogue. This intergovernmental organisation holds a ministerial meeting every two years on subjects such as the problems of water and fish reserves

(Zaragoza, February 2008) or the impact of climate change on Mediterranean farming systems (Istanbul, May 2010). In 1975, the United Nations Environment Programme (UNEP) launched the Mediterranean Action Plan (MAP) with a view to protecting the maritime space. The Blue Plan, one of its regional activity centres that was set up two years later, is renowned for its Mediterranean Strategy for Sustainable

## MEDITERRANEAN CONFIGURATIONS

Development (MSSD), which was adopted in Athens in 2005 and which focuses on action to promote rural agricultural development as a priority. Aware of the specific nature of the Mediterranean region, the International Federation of Agricultural Producers (IFAP, 1946), which is recognised as the mouthpiece of farmers throughout the world, set up a regional committee in 1990. Although farming systems differ from one country to another, the countries' geographical and climatic similarities and the region's cultural and historic heritage give substance to a Mediterranean identity to which the actors in the agricultural world, who organise in order to promote their regions and products, contribute. Climate features also promote cooperation: ICARDA, the International Centre for Agricultural Research in Dry Areas, focuses its Mediterranean work in particular on improving the living conditions of rural communities by developing agricultural production and productivity while respecting the environment.

### THE EURO-MEDITERRANEAN PARTNERSHIP

The "Euro-Mediterranean area" refers to a process that was launched in Barcelona in 1995 between the countries of the EU and several Mediterranean partner countries. The Euro-Mediterranean Partnership was established at a favourable and geopolitical moment following the launching of the peace process between Israelis and Palestinians and was thus seen as an obvious geographical grouping, an economic imperative and a strategic challenge. In the promising context of the new world order, it was in fact the further development of relations that had begun to emerge in the late 1950s. Its bold design rests on three pillars (a political, an economic and a cultural pillar), the objective being to make the Mediterranean a region where peace and development are combined. But the

EURO-MEDITERRANEAN COOPERATION, 2010



Atelier de cartographie de Sciences Po, 2010

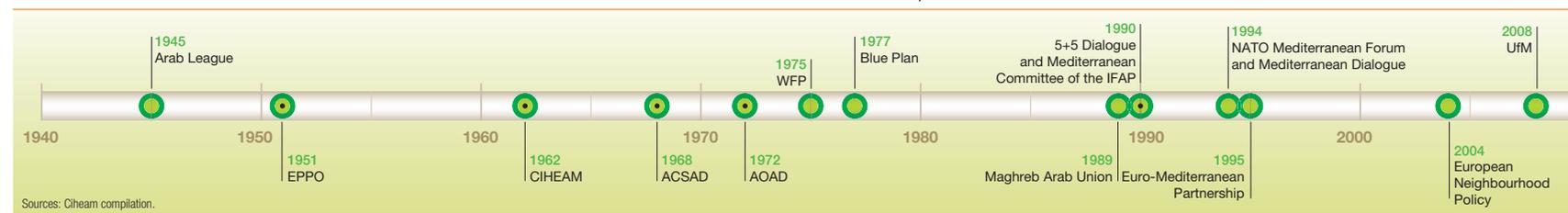
partnership has not lived up to expectations. The desired linkage between the opening of markets and democratic progress in the Mediterranean partner countries has not really worked. What is more, these countries have often been reticent when it has come to deepening relations with the EU or, on the other hand, they have given precedence to bilateral relations in order to obtain 'advanced status', as Morocco did in 2008. And the lack of South-South relations has not been conducive to progress in regional integration. The EU, for its part, has been concentrating on enlargement to the East, and these efforts have resulted in particular in marked priority for Community financial aid to the new member countries, although the Union still allocates substantial funds to the Mediterranean. At the same time, the Euro-Mediterranean process has lacked impetus due to the absence of a common EU foreign policy, and thus the non-existence of Europe as a veritable political power. The partners are thus struggling to achieve the objectives set in Barcelona in 1995. The Euro-Mediterranean free-trade area still raises a number of questions as to the impact of liberalisation and evidently operates more on an *à la carte* basis than in a regional approach. As for stability in the Mediterranean region, there is little sign of any decrease in

tension. The cultural dialogue is still fragile, as the events of 11th September 2001 sadly demonstrated.

**A critical outcome that must be seen in perspective.** Had there been no partnership at all, this would certainly have had adverse effects on the region. The Euro-Mediterranean Partnership has provided a basis for bringing regional actors together that are sometimes absolute opposites and for developing a multitude of local and national initiatives, which have stimulated Euro-Mediterranean cooperation. It must certainly be measured against a geopolitical context that has also developed tremendously. It is thus arguable that the Euro-Mediterranean Partnership provides a basis for avoiding too definite a deterioration in Euro-Mediterranean relations. The establishment of the European Neighbourhood Policy in 2004 is a further factor which has not made the Euro-Mediterranean message more readable. First, because this policy concerns a more extensive region stretching from the eastern Mediterranean to the Caucasus. And secondly, because its primary principles are bilateralism and the conditionality of aid. In 2008, the new initiative of the Union for the Mediterranean was added to other policies and then absorbed all of the existing European policies concerning the Mediterranean region. It stimulates

regional cooperation and is designed to innovate by means of joint North-South governance and precedence for concrete projects of varying geometry as well as instances of de facto solidarity. Agricultural, food and rural issues, in which environmental variables play a decisive role but which have rarely been the focus of attention hitherto, are now to come into their own in the Union for the Mediterranean. At the same time, there are two informal initiatives that are helping to consolidate political, economic and socio-cultural bonds between the two shores of the Mediterranean and to give new impetus to Euro-Mediterranean cooperation: these are the 5 + 5 dialogue, which was launched in Rome in 1990, and the Mediterranean Forum, which was founded in 1994. There are thus numerous initiatives under way in the Mediterranean region, sometimes complicating the structuring process, while new external actors (the US, China, Brazil and Russia) are becoming involved in the zone. The new dynamism that the Union for the Mediterranean and the Euro-Mediterranean Partnership have imparted may be an opportunity to build up an integral and prosperous whole, in which, given the strategic and humanitarian challenges at stake, agriculture, rural development and food production could be an essential subject of cooperation. ■

#### OVER 60 YEARS OF POLITICAL AND TECHNICAL COOPERATION IN THE MEDITERRANEAN REGION, 1945-2008



## ▶ REGIONS AND RESOURCES

**T**he diversity of the Mediterranean region is impressive: diversity of the species for which it provides a habitat, diversity of the soils and rugged reliefs that mark its landscapes, diversity of the islands that fragment it. Yet the various Mediterranean zones nevertheless seem to share common physical and biological features, which can be said to form a singular environment. And what could be better than the olive-growing boundary to define the often blurred contours of a poorly delimited Mediterranean area? When one studies the Mediterranean countries, and not only the bioclimatic Mediterranean zone, the region stretches from Brest to Tamanrasset, from Palmyra to La Coruña, from Trabzon to Aswan, to cite but a few of the boundaries. The arid lands of the South and temperate zones of the North are thus added to the Mediterranean region proper. The diversity is thus even more marked on this scale, as is the contrast between the shores: the southern and eastern shores, where land and water are often scarce, face a North that is more favoured in general. This natural determinism has not demoralised those who are subjected to it – on the contrary. Hydraulic engineering techniques have long been most efficient in regions where the greater part of the land is arid. Hostility of nature – genius of culture!

But nothing can be taken for granted – indeed, times are hard in this region of the world at the present time: the water and land scarcity that is to be explained by geography is compounded by the often disastrous mark of man. With climate change, whose anthropic cause is now beyond doubt, we have proof that certain cultural objects (such as engines, industries, and so on) can also make nature hostile. And is it where the lack of resources is most evident that the effects could be most obvious. Given the growing tyranny of aridity, responses must be urgent, massive and collective and must probably also take place at several levels including that of multilateral cooperation. If Mediterraneans want to coexist in their diversity they must join forces to plan and manage their resources together. There must be union in adversity.

The time has long passed where Strabon the geographer wrote that a squirrel could cross the Iberian Peninsula by moving from one tree to another. Mediterranean forests are one of the most endangered resources. Forestland depletion may have accompanied a certain form of development, but the situation today is very different: although forestland is recovering in certain areas in the North as agricultural land is abandoned, the risk is very real that it will disappear in the South and East of the region.

# GEOGRAPHICAL DIVERSITY AND DIFFICULTIES

**A**s a sea between lands the Mediterranean is a great divide; it is an arena of common wealth and a vector of communication between the two shores. Its central presence gives the regional fringes around its rim a certain degree of climatic unity. Strictly speaking, it can be said that Mediterranean lands are defined by shared bioclimatic features, which correspond fairly closely with those of the olive region, but the term “Mediterranean basin” is also used to describe all of the regions whose rivers flow into the Mediterranean Sea.

## SEAS, MOUNTAINS AND PLAINS

Almost an enclave, the Mediterranean has several openings (the Dardanelles, Gibraltar) through which its water, which is exposed to evaporation, is renewed. The sea is composed of maritime segments (the Tyrrhenian, Aegean, Ionian and Adriatic Seas) with their respective biocenoses (assemblages of organisms inhabiting a common biotope) and hosts 7% of the world’s marine species, some of which are endemic. Given the variety of soils, reliefs and micro-climates and the varying combinations of these factors, this biological diversity is also to be found on the land of the region, where there are 25,000 to 30,000 plant species, over half of which are also endemic. For in the glaciation period the vegetation in this region found resistance zones, and man adapted part of this plant – and animal – biodiversity to his needs. This made the Mediterranean area a vast centre for the dissemination of living species throughout the world (breeds of goats and sheep, varieties of cereals, fruit and vegetables), which today are unfortunately under threat, which is essentially anthropic: destruction of natural habitats, climate change, pollution, and economic activities.

**Essential mountainous reliefs.** Situated between the African and the European plates, the Mediterranean region is the site of intense orogenesis (mountain-forming movements). Many mountain ranges dominate the coastal plains, mountains which were often the refuge of persecuted communities – the Taurus, Mount Lebanon, Kabylia, Rif, Aurès, Sierra Nevada, Cevennes, Pyrenees, Alps, Apennines, etc. – but which are unfavourable for farming due to their steep slopes, despite the terrace farming techniques used in some areas. They act as water towers, however: by intercepting flows of humid air in winter and then storing them partly in the form of snow cover, they help to supply the rivers, some of which – such as the Tigris, the Orontes and the Euphrates – are essential to agriculture in semi-arid or arid regions. The geological history of the Mediterranean, where high tectonic activity is still detectable today (recurrence of earthquakes and active volcanism), has left a multitude of small islands in the middle of the sea: some of these islands also have mountain ranges, which in a context of water shortage are veritable reservoirs.

**The plains.** Vast plains stretch out below the mountain ranges. Besides the most extensive ones – those of the Po, Rhone, Ebro and Nile – other narrower plains along the coasts are very suitable for agriculture, since they have rainfall. The inland plains are less endowed and, in the southern Mediterranean countries, are rapidly becoming deserts. With low rainfall and high temperatures these zones form a veritable arid belt that hems in the southern and eastern Mediterranean region. It is thus no longer possible to farm the land unless, as in the Nile Valley, water resources are available in the form of surface water.

## THE MARK OF ARIDITY

Temperatures vary widely and have considerable influence on vegetation through soil formation, evaporation and the metabolism of living organisms. With the exception of the maritime façades, the daily temperature ranges are sometimes very marked – excessive heat during the day and cold – or even frost – at night. This heat – with sometimes very high temperatures – increases evaporation and evapotranspiration thus reducing the performance of rain-fed agriculture, which is already limited in a large part of the basin. The contrast between the North of the basin and the other shores must also be underlined, for the low rainfall that is typical of the southern and eastern Mediterranean countries – with the exception of Turkey – is compounded by inter-annual and intra-annual irregularity, which again affects the southern and eastern shores.

This explains why water has been a vector of civilisation. Flooding in Mesopotamia and in the Nile Valley forced men to combine efforts to counter the disastrous effects, and the aridity of the region prompted them to design sophisticated techniques ranging from the khetaras of Marrakesh to modern dams. The share of surface water that is collected in dams is now the highest in the world. With over 80% of surface water collected in dams, the countries of North Africa and the Middle East by far surpass the other regions of the world, where the maximum storage rate achieved is 20%.

## UNEVEN AGRICULTURAL POTENTIAL

Most of the humid or sub-humid region is on the northern shores; there are very few such regions in the southern and eastern Mediterranean countries. Suitable temperatures and rainfall of a least 600 mm a year are factors that promote

agriculture. Intensive mixed cropping predominates in the plains, while pastoralism tends to prevail as soon as the relief of the land becomes more rugged. The southern and eastern Mediterranean countries, i.e. the majority of the countries in the Mediterranean basin, are in the hyper-arid to arid region, where the virtual absence of water prohibits crop farming and small animal farming prevails. Intensive agriculture can be developed when water resources (rivers or groundwater) are available. This is the case in the Nile and Euphrates valleys, where the low rainfall is compensated by the availability of river water. It is also the case in southern Israel, where land in the Negev Desert has been developed by channelling water from Lake Tiberias in Galilee. Extensive cereal farming can be developed where rainfall is at least 350 mm (which is the case in some semi-arid zones); this has been done on the Anatolian Plateau, for instance, or in some of the high plains of the Maghreb. Dry farming, which is a very ancient technique that consists of alternating a wheat crop with tilled fallow land in a 2-year cycle, is the system most often used in this case.

**THE CLIMATE THREAT**

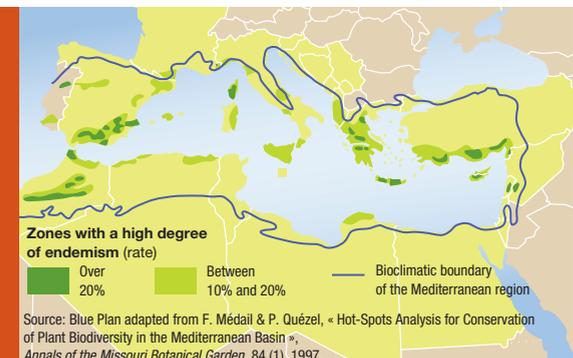
Climate change in the Mediterranean is one of the most threatening phenomena in a region that is already marked by aridity, and its consequences could prove to be tragic. The work of the Intergovernment Panel on Climate Change (IPCC) predicts a rise in temperature of 2°C to 5.5°C by the end of the century in a scenario of extremes. This could cause a rise in sea level and an increase in heat waves, which would make the Mediterranean basin one of the regions most affected by global warming. What is more, as far as water supply is concerned, rainfall, which is already scarce in the south and east, is liable to become even scarcer and more

**THE PHYSICAL ENVIRONMENT**



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The more remote a region is, the higher the degree of endemism to be found there. It is thus particularly high on islands, namely in Corsica, Crete, Cyprus, Sicily and the Balearic Isles, and it is the high-relief zones on these islands that are most subject to endemism. For where the island's isolation facilitates genetic drift in species, the remoteness of mountainous areas are a further contributing factor. The Sierra Nevada in Spain, the Rif and Atlas Mountains in Morocco, Mount Lebanon and certain reliefs in Greece and Turkey are areas where speciation is prevalent.

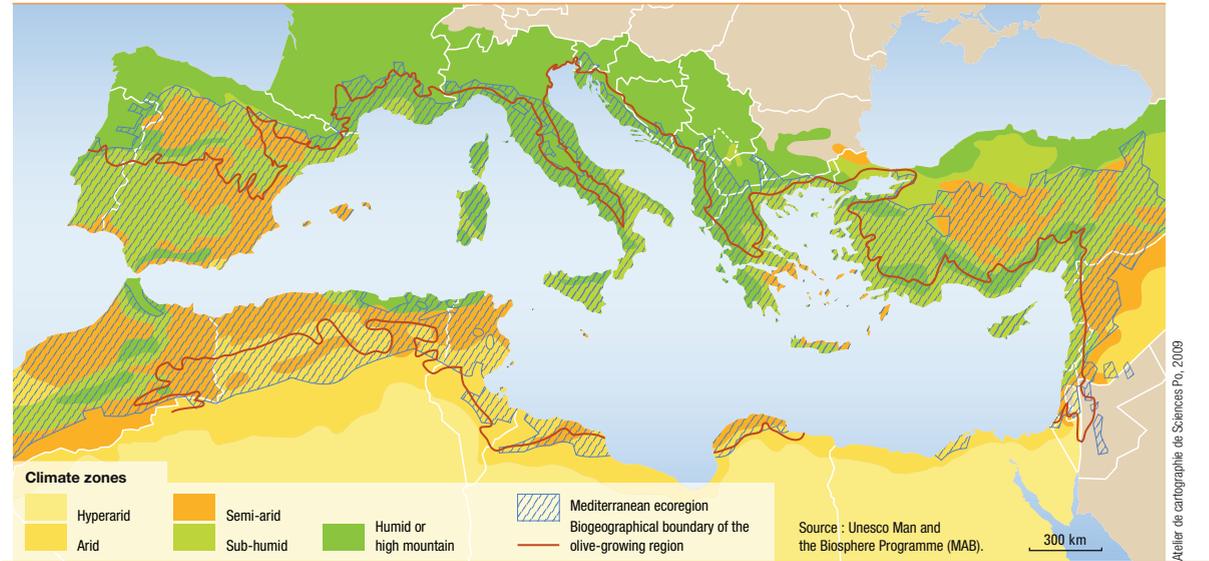


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## GEOGRAPHICAL DIVERSITY AND DIFFICULTIES

sporadic. River discharge could drop, making agricultural production more difficult. Many rivers in the Mediterranean region are in fact supplied by both snowfall and rainfall: snow cover builds up during the winter and melts in the spring, thus releasing water into the rivers or groundwater aquifers. As temperatures rise winter precipitations could come more as rainfall, thus reducing the layer of snow cover. As a result, rivers could reach their low-flow levels earlier in the year, thus affecting irrigation schemes. Likewise, there could be more frequent flooding. Rain-fed crops would be the first to suffer from these climate developments due to less frequent and more sporadic rainfall – and these two phenomena are likely to be confirmed, particularly in the southern and eastern Mediterranean countries. As regards irrigated crops, higher temperatures could boost metabolism and thus bring better yields, particularly in more temperate zones, but in certain zones where temperatures could become excessive, particularly on the southern and eastern shores, growth could be arrested at crucial stages in plant development. Higher temperatures accelerate the reproduction cycle of insects and fungal parasites. The cycle can even be triggered earlier in the season. As a result, parasite pressure on agriculture is liable to increase. The same goes for animal farming. Furthermore, the trend to climate change can increase animal water and heat stress and multiply zoonoses. ■

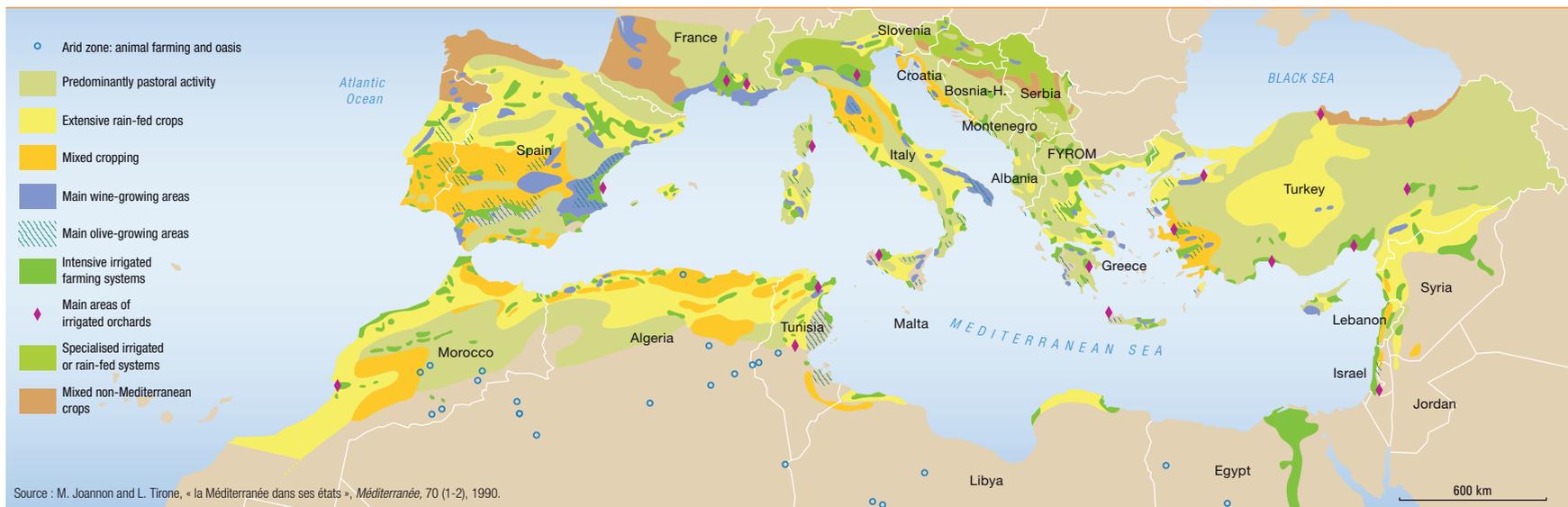
### MEDITERRANEAN BIOCLIMATOLOGY



### THE MEDITERRANEAN ISLANDS

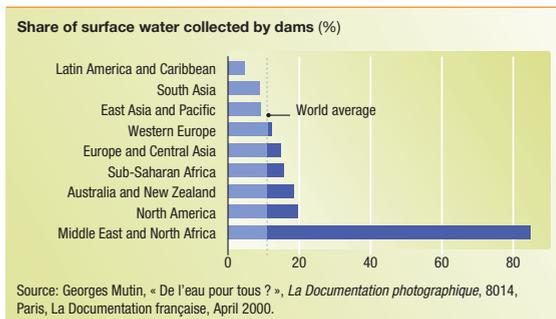
There are some 3,000 islands in the Mediterranean, 200 of which are inhabited. Only nine of these islands have an area of over 1000 km<sup>2</sup>; these are, in increasing order of area: Rhodes (1,401 km<sup>2</sup>), Lesbos (1,630 km<sup>2</sup>), Mallorca (3,618 km<sup>2</sup>), Euboea (3,655 km<sup>2</sup>), Crete (8,259 km<sup>2</sup>), Corsica (8,660 km<sup>2</sup>), Cyprus (9,251 km<sup>2</sup>), Sardinia (23,818 km<sup>2</sup>) and Sicily (25,462 km<sup>2</sup>). Since they cover almost 85% of the total insular area in the Mediterranean, the area of the other islands is obviously very limited. Tourist pressure is often high, with the result that the islands are confronted with a problem of water resources, which is more or less serious depending on the size of the island and its geographical position as well as on whether or not there are mountain water reserves. In terms of water resource potential, the situation is most favourable in Sardinia, Corsica and Crete, whereas Malta is one of the islands facing major constraints. This water shortage is compounded by a land deficit, which means that agriculture is not an easy activity, particularly on the small islands.

### MAIN PRODUCTION SYSTEMS



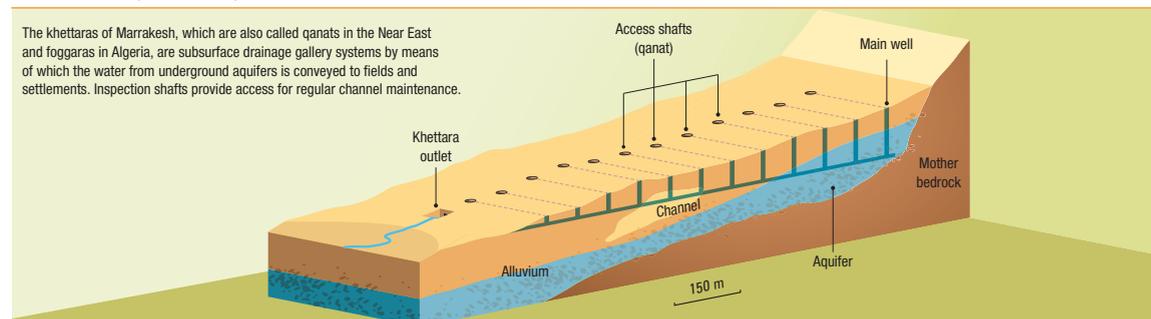
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### SURFACE WATER COLLECTED BY DAMS



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### KHETTARAS, QANATS, FOGGARAS



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# LAND REALITIES AND CONCERNS

**A** *dama*, “the earthy one” is the eponym of the first man in Hebrew. It reflects the tremendous importance attached to the soil in this region of the world, which was the first to undergo the transition from fishing to crop-growing.

## OBVIOUS LAND INEQUALITY

Whereas the chemical and biological properties of soils depend mainly on the nature of the bedrock (dolomites, limestones, etc.), the climate, vegetation and anthropic activities are clearly also factors which influence soil formation. Soil depth, on the other hand, is attributable to climate, since high temperatures and low humidity considerably reduce the bedrock degradation process. Due to the aridity of certain Mediterranean countries considerable expanses of soil are absolutely skeletal, prohibiting any form of agriculture. In Algeria, Jordan, Libya and Egypt, for example, the acreage of arable land accounts for less than 5% of the total area of the country, compared to 34% in France and 29% in Italy. The numerous desert expanses serve essentially as rangeland for animals, as is the case in the *badiya* in Syria. This aridity is compounded by the problem of gradient: half of Turkey is at an altitude of over 1000 m, for instance, and half of Spain over 600 m; over 80% of the land in Albania and Slovenia is mountainous. So, all in all, a large proportion of the land in the Mediterranean region is subject to major natural constraints, which are an obvious obstacle to agriculture, and the land gap between the northern and southern shores is very real, given that the constraints on the two shores are not the same. The northern Mediterranean countries with their areas of arable land and permanent crops that are greater in both absolute and relative terms have an obvious advantage. ■

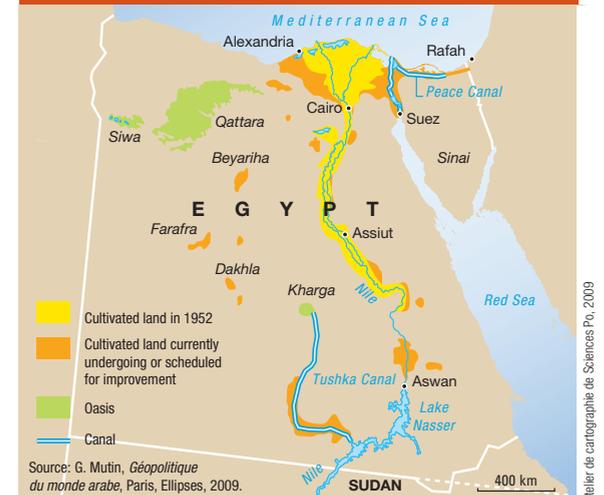
But circumstances can evolve, and some southern and eastern Mediterranean countries – Egypt and Syria in particular – have improved new areas of land with a view to turning them into agricultural land. Thanks to the Aswan Dam, the water of the Nile can now be used to irrigate areas of land where there was previously no irrigation, particularly on the margins of the delta. However, population growth is reducing the per capita acreage of arable land and making it imperative to increase productivity in order to offset this drop in ratio. Not to mention the fact that settlements are increasingly encroaching on arable land due to urbanisation and the development of tourism.

## LAND UNDER STRESS

Over and above the phenomena of eviction from the land, there are many factors which affect the soil: erosion due to gradient, wind, crop-growing practices, heavy rainfall or overgrazing, but also pollution phenomena caused mainly by the massive use of pesticides and fertilisers. The surplus of phosphorus that is released by chemical and organic fertilisers alters the organic and structural balance of the soil. And then there is the process of soil salinisation, which is unfortunately taking on massive proportions on the southern shores. This is happening because groundwater that is subject to marine intrusion or dam water that is exposed to active evaporation in hot climates, which concentrates the salt content, is used for irrigation. It also happens when irrigated land is not well-drained, since salts then accumulate with time. Erosion and salinisation phenomena can gradually cause soils to lose productivity and can even result in desertification, which is the disappearance of plant cover. This process is said to be affecting 80% of the arid land in the southern and eastern Mediterranean region. ■

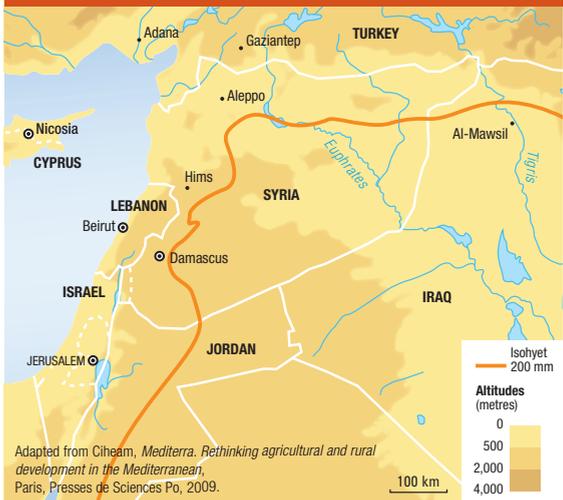
## RECLAIMING LAND IN EGYPT

The construction of the Aswan Dam enabled Egypt to intensify land use both vertically and horizontally and thus to considerably expand the area of arable land. Vertical intensification refers to the practice of growing two or three crops on the same plot in one year, since flooding has been considerably reduced. And horizontal intensification refers to the expansion of the agricultural area through the irrigation of land which without water is unproductive. The first areas that were reclaimed were concentrated in the delta. The current land improvement measures concern regions outside the Nile Valley.

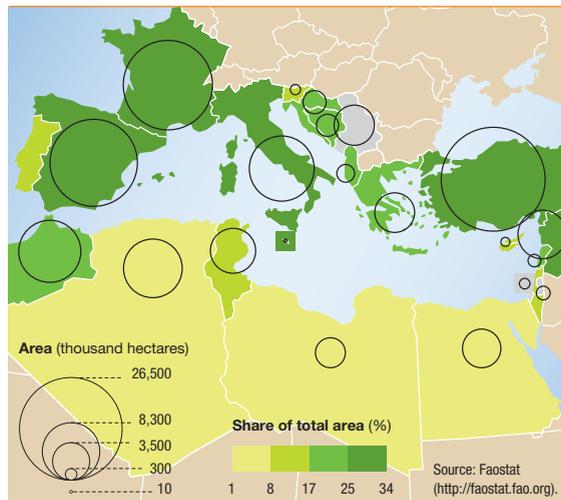


### SYRIA: THE BURDEN OF ARIDITY

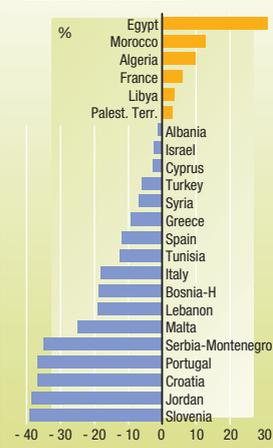
Syria has several river valleys (the Orontes and Euphrates Valleys, the Damascus Ghouta, and the Khabur Valley), where populated areas and agriculture are concentrated. But Syrian territory also includes the badiya, a region which in fact comprises all areas with an annual rainfall of less than 200 mm. The badiya accounts for 55% of the national territory but has a population of just between 1 and 1.5 million people. The land on the rim of the badiya can be cultivated thanks to a groundwater pumping system, but (since the beginning of this century) the authorities have been tending to tighten up on the rules for using underground aquifers, thus putting an end to the laissez-faire policy that has prevailed since the 1950s.



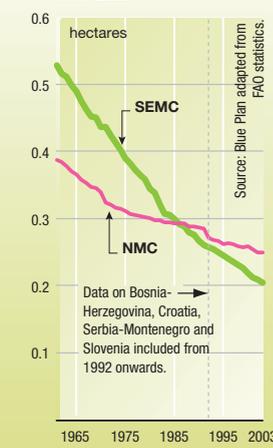
### ARABLE LAND, 2005



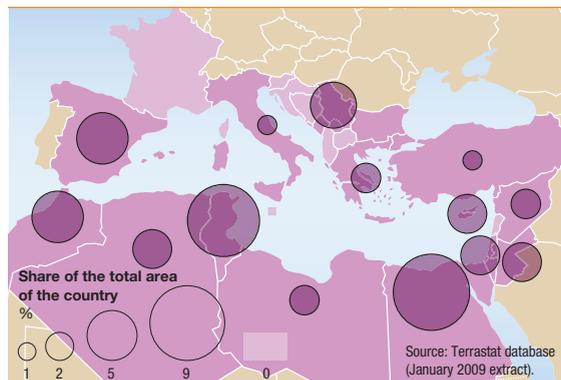
### Net loss of arable land between 1980 and 2005



### Arable land per capita 1961-2003



### SALINISED AREAS



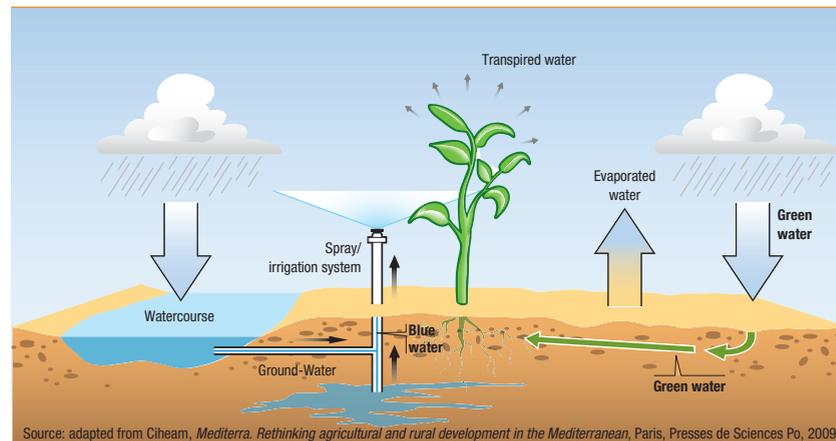
### EROSION IN SPAIN

Soil erosion is a particularly serious problem in Spain. According to ICONA (Instituto nacional para la conservación de la naturaleza), at 12 tonnes of material per hectare the erosion rate is high for almost half of the area of the country, i.e. 20 million hectares, and has reached the limit of the acceptable. Erosion is very severe on 12% of the territory, where 50 tonnes of material are being removed per hectare. Agro-environmental measures designed to reverse this massive phenomenon include avoiding soil tillage in the direction of the main slope, reforesting agricultural land and introducing more extensive production systems.

# WATER SCARCITY AND WATER GAPS

In order to get around water scarcity, the people of the Mediterranean, and in particular the Nabateans and Arabs, developed efficient systems of water engineering, which they used mainly for watering their crops. In Egypt, where crops cannot grow without irrigation, numerous techniques have been used for thousands of years to exploit Nile spates. But it was in the 20<sup>th</sup> century that irrigation was developed most, at least in terms of areas covered. This revolution in hydraulics, which was based on a supply policy, i.e. a policy of using a variety of facilities (such as dams, pipelines, etc.) to mobilise water, came about in various political and economic contexts. The southern and eastern Mediterranean countries based their independence on efforts to acquire food autonomy by launching major water engineering schemes designed to boost agriculture in an arid environment. This was the case in particular in Egypt, Syria and Morocco. In Algeria, Lebanon and the Palestinian Territories, this water scheme momentum was reduced by agricultural policy choices or geopolitical vagaries. Turkey has lagged far behind in this field but is now catching up with its programme for developing south-east Anatolia involving the eventual construction of 21 dams to irrigate 1.7 million hectares with water from the Euphrates and the Tigris. In Europe, the massive recourse to irrigation is to be explained by the Common Agricultural Policy and its productivist slant. In Spain, work started on designing hydraulic engineering schemes back in the 1930s in the context of inward-looking development based on self-sufficiency in agricultural production. Planning then developed towards a model which was geared more to agricultural exports and was confirmed by integration into Europe in 1986. Spain, France, Italy, Turkey and Egypt are the irrigation giants; the countries on the southern shores are much less developed

## GREEN, BLUE AND EVAPOTRANSPIRED WATER

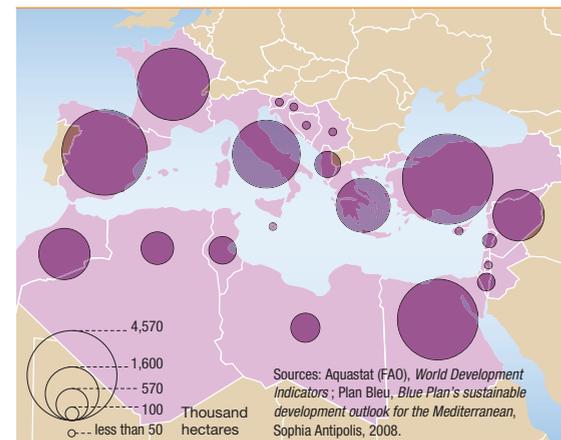


in this field. The predominance of these giants in the irrigation field is connected with the abundance of arable land (in France, Spain and Italy) or, in the case of Egypt, with the fact that agriculture is simply inconceivable without irrigation. This dependence on irrigation is also confirmed in the other southern and eastern Mediterranean countries, given their more arid climate. This need for irrigation is clearly illustrated when water supply is divided into blue water (surface or groundwater supplied by irrigation) and green water (precipitation water that is absorbed directly by the plant): in the southern and eastern Mediterranean countries with the exception of Turkey the share of blue water by far exceeds the share of green water, unlike the situation in the northern Mediterranean countries, where blue water accounted for 17% of agricultural water demand in 2005 and green water 83%.

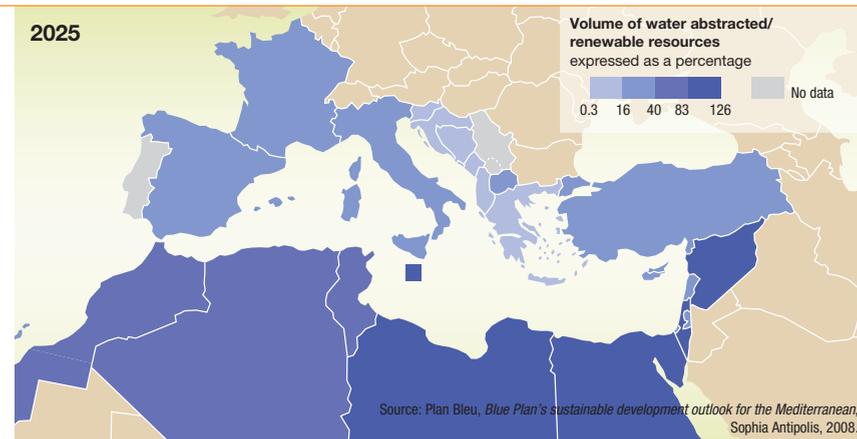
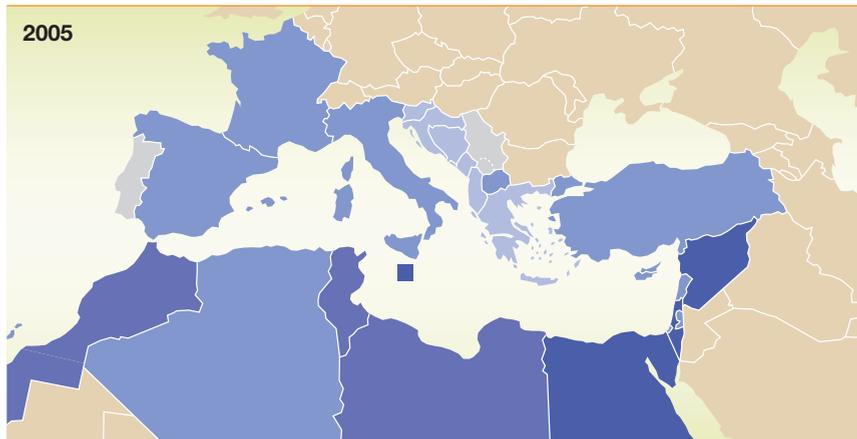
## IRRIGATION, 1961-2005



## IRRIGATED AREA, 2005

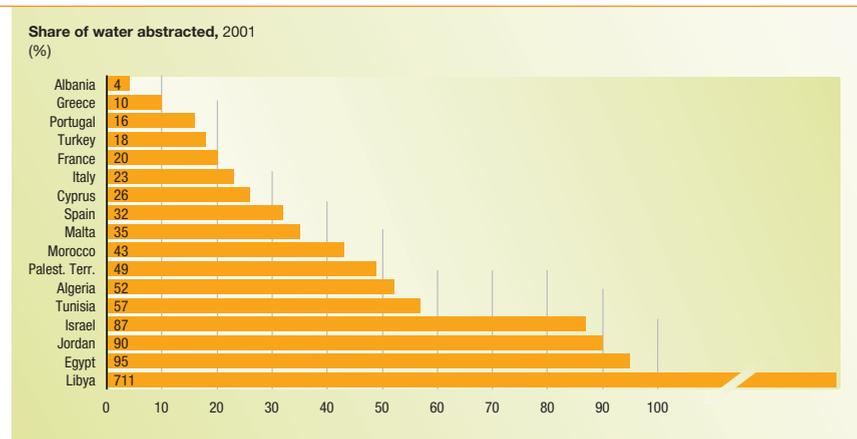
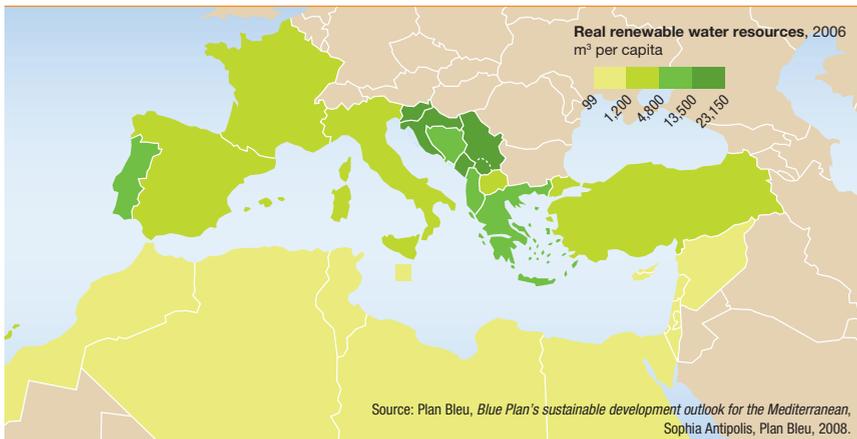


### RENEWABLE NATURAL WATER RESOURCES EXPLOITATION INDEX



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### WATER RESOURCES AND ABSTRACTION



### SIGNS OF EXHAUSTION AND STRESS

Irrigation is no doubt reaching its limit after years of rapid development, particularly in the southern and eastern Mediterranean countries, which are amongst the least endowed in the world in terms of available water resources: half of the world's "water-poor" (less than 1000 cubic metres per capita) live in the region. The natural resources exploitation index (the ratio between the volumes abstracted and the renewable water resources available) gives a worrying indication of the pressure that now weighs on water resources. Most of the southern and eastern Mediterranean countries have an exploitation index of over 50%, for instance, but it is the situation in the east of the basin that is reason for the greatest concern. With the exception of Lebanon and Turkey, both of which have water resources, the indexes are already very high (over 75%) and, to judge by trend scenarios, are liable to rise further. These quantitative limits are compounded by signs of deterioration in water quality. The increase in the volume of water abstracted from groundwater aquifers, for example, makes these aquifers more sensitive to marine intrusion. This is the case in particular in coastal regions such as islands, especially in Cyprus.

**Water geopolitics.** This deterioration in the water situation could be exacerbated by the effects of climate change, which are already being felt. Rainfall, which is already limited on the southern and eastern shores, seems to be becoming rarer and more sporadic. Water stress is all the more worrying since river basins or underground aquifers are sometimes shared by rival countries. Water management policy is indeed a major issue in the Mediterranean, in the basins of the Jordan, Euphrates, Tigris and Nile, to cite but the most crisis-prone examples. The situation is particularly tense in the

case of the Jordan basin. Since 1967, Israel has been establishing a number of mechanisms for preventing excessive abstraction of groundwater resources by the Palestinians (irrigation quotas, control of drilling, etc.), which will have to be called in question in the context of any real peace process. In the absence of binding international water law, and in a context of water stress, cooperation is the only way to facilitate access for as many people as possible to drinking water and irrigation water.

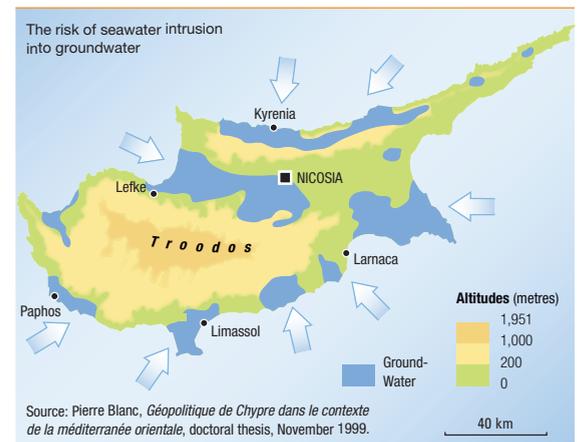
### THE NEW HYDRAULIC REVOLUTION

Supply policy does not offer any major opportunities for expansion in order to cope with these problems, despite the progress that has been made in seawater desalting techniques (particularly in Algeria, Israel, Spain, and Cyprus) and in techniques for reusing waste water (in Egypt and Israel). The future of water in the Mediterranean region must now be approached from the angle of better demand management. The time has come for a new hydraulic revolution based on water savings. In the southern and eastern Mediterranean countries, where water shortage is flagrant, irrigation is the field that offers the greatest opportunities for water savings. Irrigation accounts for over 70% of water demand, and the techniques used are wasteful, particularly in Morocco, Egypt, Syria and Turkey, where gravity-fed irrigation is predominant, in contrast to France, Israel and Libya, where precedence is given to sprinklers or drip irrigation. The transition to more economical irrigation techniques is all the easier if a pricing system prompts farmers to economise. But this presupposes two imperatives: first, farmers must be properly connected to markets so that they can sell their produce in good conditions and thus be duly remunerated, which in turn will mean that their water control invest-

ments pay off; and secondly, water management must be shared, namely through irrigator associations. The water issue remains first and foremost a question of agricultural development.

Taking the Mediterranean basin as a whole, it is conceivable that countries turn to crops that are more water-economical or more water-efficient. The water-poorest countries already import virtual water through trade by buying agricultural commodities (but they also export virtual water – Moroccan tomatoes are an example here). It is an approach for the future of regional cooperation in view of the challenges posed by climate disruptions that are already taking place in the Mediterranean region, where the water issue has become more crucial than ever. ■

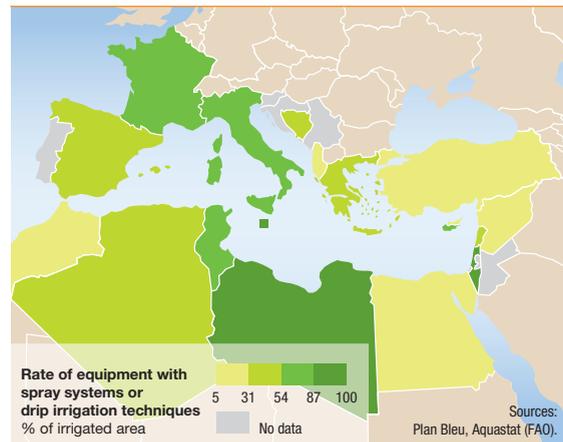
### GROUNDWATER IN CYPRUS, 2000



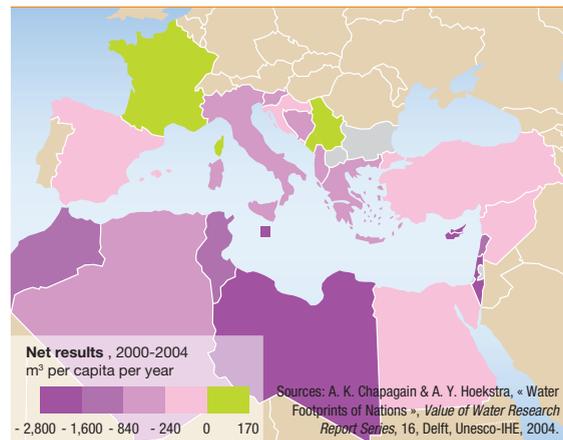
### WEST BANK AQUIFERS



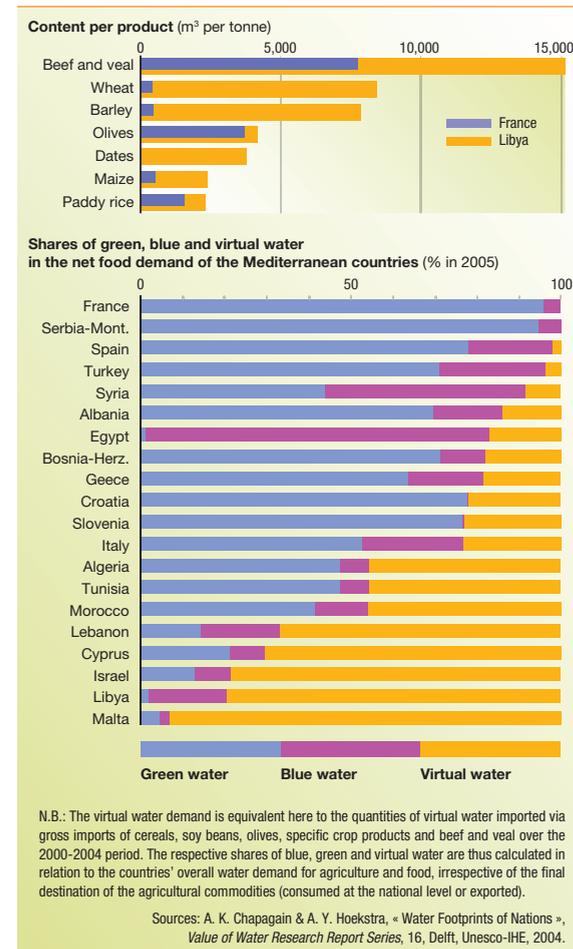
### IRRIGATION SYSTEMS, 2005



### NET RESULTS OF VIRTUAL WATER FLOWS



### VIRTUAL WATER, 2004



# BENEFICIAL AND FRAGILE MEDITERRANEAN FORESTS

The Mediterranean ecoregion is situated in a transition zone between the African, Asian and European continents and covers essentially the lowland plains and valleys of the coastal regions. It is divided into thermo-Mediterranean belts (temperatures between 17°C and 19°C) and meso-Mediterranean belts (temperatures ranging from 13°C to 17°C) and corresponds approximately with the olive zone. But the steep escarpments in the Mediterranean region are a source of plant diversification.

## ADAPTATION AND DIVERSITY

Mediterranean forests contain approximately 290 varieties of trees, 200 of which are specific to the zone. Over 60 species are classed as rare, vulnerable and endangered. Although these Mediterranean forests account for only 1.5% of the world's forestland, they constitute a unique ecosystem, which is found marginally in Australia, South Africa, California and Chile.

Natural adaptation mechanisms enable Mediterranean vegetation to resist what are often extreme environmental conditions: it responds to environmental stress morphologically (short leaves of evergreens, deep root pattern, thick bark), phenologically (early and rapid foliage development) and physiologically (dehydration tolerance, early photosynthesis, continuing photosynthetic capacity after long periods of drought). Similarly, Mediterranean forests have considerable fire resistance capacity: hardwood trees are thick-barked and have excellent germination capacity, whereas conifers produce a large number of seeds early in the season, which are protected in resistant cones.

A characteristic of the Mediterranean region is its high proportion of broad-leaved hardwood forests, which are either evergreen or deciduous (60%), in contrast to central

and northern Europe, where conifers are predominant. Evergreen sclerophylls (bush) and scrub are also relatively widespread. Some scientists consider that they are not the product of forest degradation but reflect a climax in a Mediterranean context of marked climatic and pedological constraints. Furthermore, the spatial distribution of Mediterranean forests is very uneven, the countries of the northern Mediterranean accounting for 65% of forest area. In the southern and eastern Mediterranean countries forestland is situated mainly along the coast and in the mountain regions, where there is a certain degree of humidity.

## FOREST LAND AND ITS SERVICES

Although it is often only the productive function of Mediterranean forests that is underlined, these forests have in fact a multifunctional dimension. From the 15th century onwards they were maintained in certain regions for reasons of soil and water conservation, and it was not until later that they were used for timber production. They are still valued today for much more than simply producing timber: the production of cork, fodder, mushrooms, fruit and aromatic and medicinal plants can contribute significantly to local or national economies. It is estimated that pastureland in the Mediterranean region yields almost 3 times the return per hectare of forestland than does the wood produced on the same area of land. In a country such as Portugal, cork accounts for 35% of estimated forest yield. One of the services provided by forests, and one which must be borne in mind, is the essential role they play in protecting the soil, protecting watersheds, ensuring water quality and biodiversity, attenuating climate change through CO<sub>2</sub> storage and improving microclimates. It is difficult to measure these services in market terms, but they are estimated at 65% of

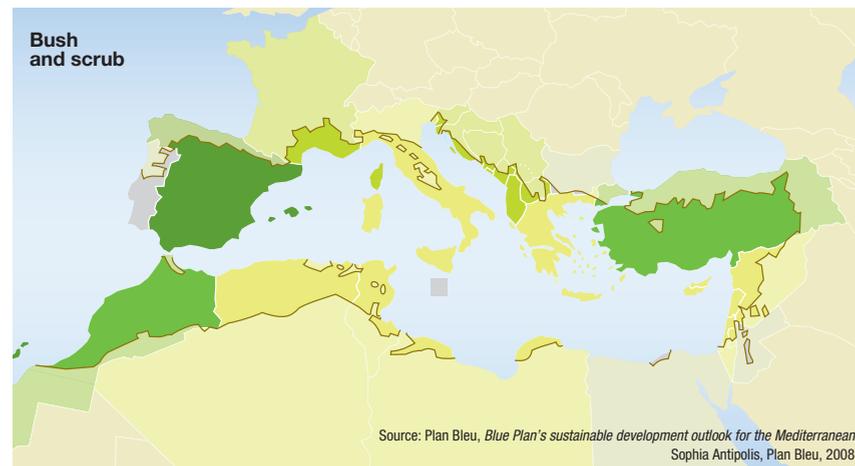
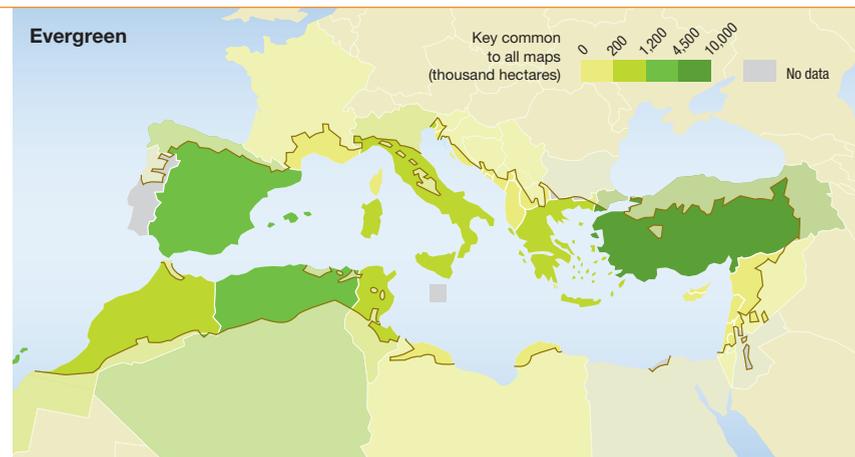
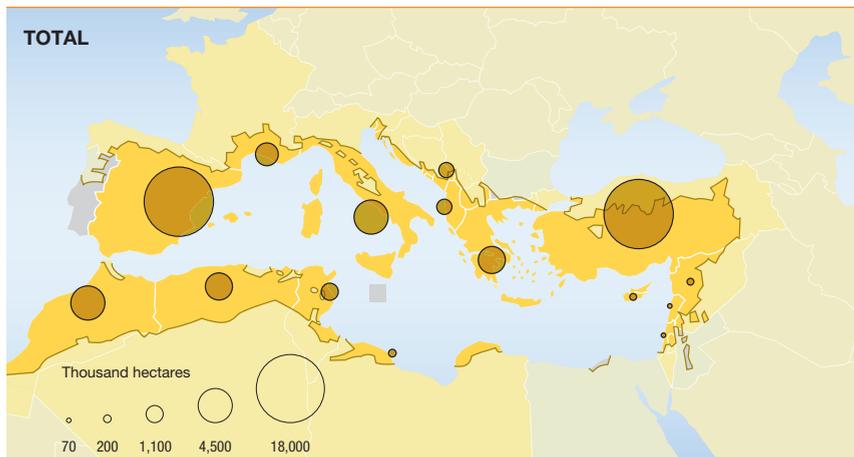
## MEDITERRANEAN SPECIES

In typical Mediterranean zones, forests are composed of broad-leaved hardwood trees, which are either evergreen or deciduous, such as *Quercus ilex*, *Quercus suber*, *Quercus coccifera* and *Quercus pubescens*, or conifers such as Aleppo pine, *Pinus halepensis*, Calabrian pine (*Pinus brutia*), stone pine (*Pinus pinea*) and maritime pine (*Pinus pinaster*). Luxuriant forests of common oaks (*Quercus robur*), sessile oaks (*Quercus petraea*), common ash (*Fraxinus sp.*), white poplars (*Populus alba*) and black pine (*Pinus nigra*), including laricio pine, can flourish in the lowland plains and riverside areas – thus in humid zones.

Other types of forest are found at higher altitudes, sometimes composed of endemic Mediterranean trees but also of species that are found elsewhere in Europe: chestnut (*Castanea sativa*), common beech (*Fagus sylvatica*), laricio pine (*Pinus nigra*), dwarf pine (*Pinus leucodermis*), Scots pine (*Pinus sylvestris*) and various species of cedar, such as the Atlas cedar (*Cedrus atlantica*), which is to be found in the Atlas Mountains in Morocco, and the Lebanon cedar of Mount Lebanon, both endemic species.

Certain scientists consider that the degradation of Mediterranean forests has also produced the evergreen sclerophylls (bush) and scrub that are relatively widespread in Mediterranean countries. Others are of the opinion that they are not degraded forests but reflect a climax stage in a Mediterranean context of marked climatic and pedological constraints. Typical bushland species are *Olea europea*, *Ceratonia siliqua*, *Myrtus communis*, *Pistaccia spp.*, *Arbutus spp.* and *Erica spp.* And the scrubland consists of slightly aromatic shrubs and dwarf species such as *Coridothymus*, *Origanum*, *Salvia*, *Euphorbia*, *Sacopoterium*, *Callicotome villosa*, etc.

**FOREST COVER IN THE MEDITERRANEAN**



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## BENEFICIAL AND FRAGILE MEDITERRANEAN FORESTS

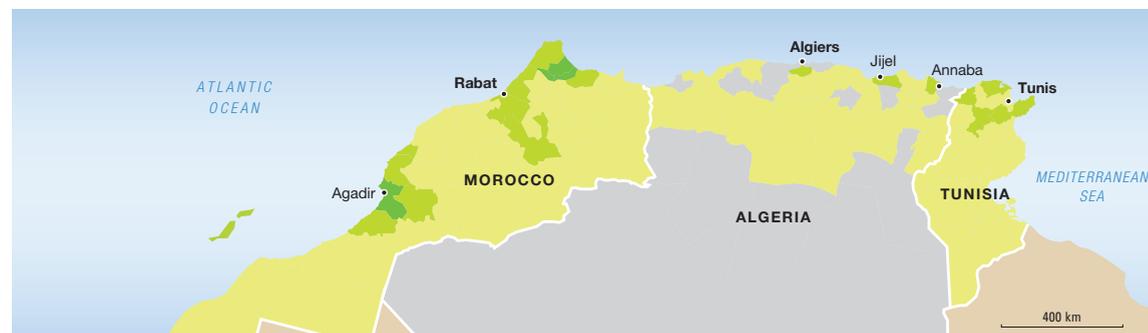
the value that is actually created, whereas timber production is estimated to account for approximately 35%. In some countries such as Turkey the production value of forestland is considerable: almost 15% of the population of the country and 50% of the rural population live in woodland villages. In the last 15 years the State forests have produced an average of 7 million cubic metres of industrial timber per year.

### GALLOPING DEFORESTATION

Despite the wealth they provide, forests are subject to all sorts of attack, not least to deforestation, particularly under the pressure of urbanisation, agricultural development and intensive logging. But it is forest fires that constitute the greatest threat. Despite the considerable efforts that have been made, the phenomenon seems to be developing in the region, making Mediterranean forests increasingly vulnerable. The area that is gutted every year in the south of Europe has more than doubled since 1970; Spain, Portugal and Greece are the countries most affected. Although natural causes such as lightning must not be disregarded, the number of natural fires is still low compared to the number caused by man, whether deliberately or accidentally. Burning, a method used by shepherds, makes forest fires virtually inevitable when practised without the necessary precautions and in periods when climate risks are high. Many fires are also the result of arson that is committed particularly for property marketing purposes.

In theory, if Mediterranean forest areas continue to disappear at the current rate of 2% to 4%, depending on the country, less than half of the current area will remain several decades hence. This deforestation could vary in intensity from one shore to the other. In the North, the phenomena of rural decline will probably be confirmed and will provide additional

AFFORESTATION RATE IN SEVERAL MEDITERRANEAN COUNTRIES, 2009

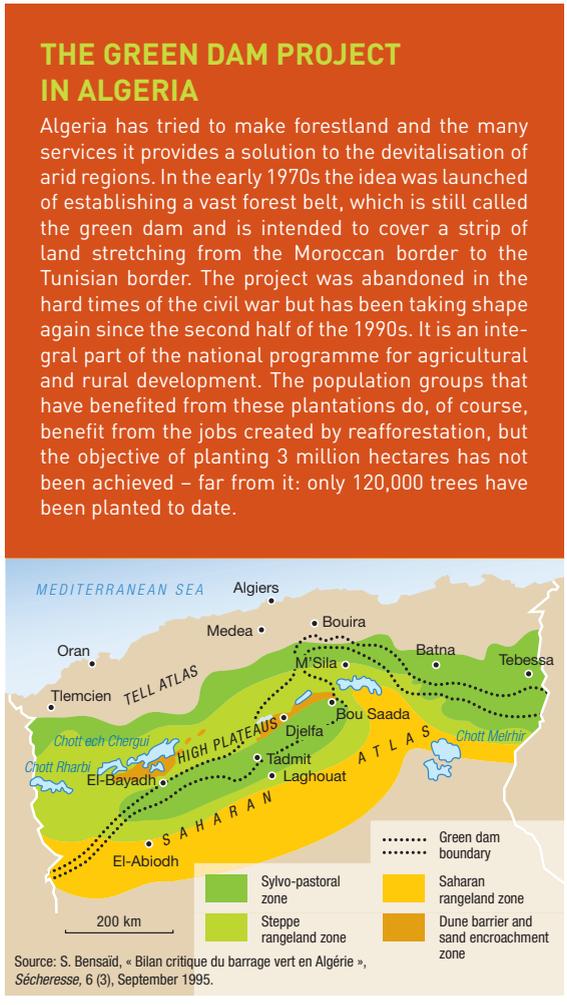


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areas for spontaneous or planned reforestation with Aleppo pine and Scots pine. But does biodiversity stand to gain by this? And the species that are more scattered along the coasts could disappear as the result of mass tourism (Spain, Balearic Isles, the Riviera, Sicily and Crete).

It is primarily in the south and east of the basin that forests are most vulnerable in view of the overexploitation of natural environments by man and his animals. The decline of this forestland could be accelerated by the increase in plant mortality induced by recurrent droughts resulting from climate change. In addition to the loss of forest resources, the capacities for regulating the water cycle and preventing soil erosion could also be limited.

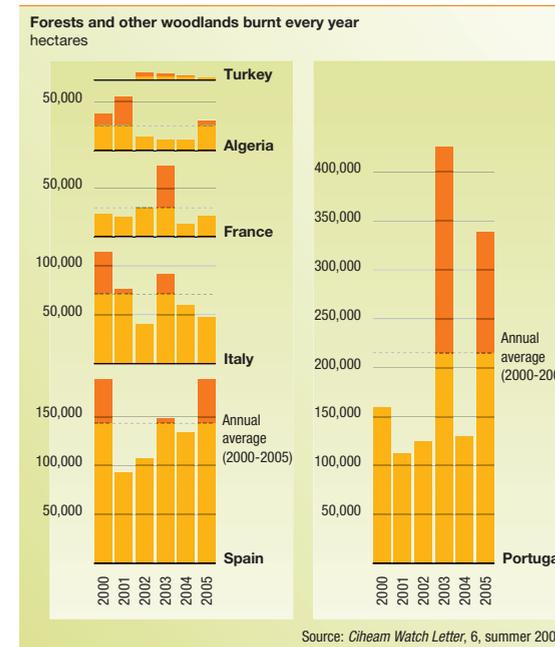
Forests are now more than ever a matter for concern, and cooperation in the Mediterranean in measures to protect against forest fires is becoming imperative. Yet the idea of cooperation in the forestry field dates back to 1911, when *Silva mediterranea* was created as an arena for concertation. This committee, which now operates within the FAO, aims to promote the concerted and sustainable management of forest areas. *Silva mediterranea* launched a Mediterranean Forest Action Programme in 1993 providing a common reference framework for all of the national forestry planning schemes of the countries in the region. At a meeting in Rome in 2002 the committee made action to safeguard forest biodiversity a central priority, in line with the plan of action devised by the UN Forum on Forests – a vast field of work, given the threats with which that biodiversity is confronted. ■



### ECONOMIC VALUE OF FORESTLAND



### FOREST FIRES, 2000-2005





## PEOPLE AND PRODUCTIONS

**A**fter engaging in fishing and hunting in the course of his migration, nomadic man settled down in Mesopotamia to cultivate the land. The Mediterranean is one of the oldest centres of agriculture. It was there, then throughout the Mediterranean, that farmers developed their activity, often adopting ingenious forms as, all too often, they often came up against a shortage of resources.

Farmers have seen their activity evolve and change over the centuries. But it is only from the 18th century in the North and the 19th century in the South that we can talk about a true agricultural revolution. Industrial and agricultural revolutions fed off each other, while certain political events shifted their course. The decline of autocratic regimes in Europe limited levies on farmers who were now in a position to create tradable surpluses which allowed them to invest. Later on, in the South, agricultural developments were marked by colonisation and then decolonisation. Since the second half of the 20th century, on both sides of the Mediterranean, farmers of every kind, from country to country and from farm to farm began (some of them at least) to form true branches of the economy.

The rise of agriculture from mere subsistence, urbanisation and the emergence of new ways of life thus led farmers to work with new actors, among them the agro-food industries and distribution, which became heavyweight players. As the integration of farmers in branches was somewhat out of step from one shore to the other, it is hardly surprising that the face of these actors varies around the Mediterranean basin. Farmers, industrialists and distributors have a real diversity of products in this Mediterranean region, so highly singular in agro-climatic terms and long worked to offer them the best of receptions.

The myriads of terraces, wells and canals all bear witness to this accumulation of work. As the story of agriculture has never ceased to seek out the new or find ways of renewal, other opportunities present themselves today: organic products, the responsible driver for the future, are in part a return to a rich agronomic history; GM crops, a gamble on the future, are products where scientific unknowns remain considerable; aromatic and medicinal species, the heritage of a forgotten past, look forward to a promising future.

# EXTRAORDINARY FARM DIVERSITY

**M**editerranean farmers share an age-old heritage and specific climatic and geographical conditions, of which drought, sunlight and rugged relief are the primary features.

## HISTORY

The first farmers emerged in the Neolithic (or Polished Stone) Age (10 000 B.C.) in several regions of the world: the near East, China, Mexico, the Andes and the eastern United States. In the Mediterranean region, the “Fertile Crescent”, which stretches from Palestine to the foot of the Zagros Mountains (between Iraq and Iran), is the most ancient seat of agriculture (between 12 000 and 8 500 B.C. according to various sources) and animal husbandry (8 000 B.C.). It would seem that as the result of several factors including the depletion of natural resources in connection with climate change and population growth, the hunter-gatherers in the region began to settle and to produce food by domesticating plants and animals and practising irrigation. But although the invention of irrigated agricultural production prompted the development of major civilisations, it also promoted the bondage of the peasantry. As Fernand Braudel puts it (1996), “whenever there is a transition from dry land to irrigated land [in the Mediterranean region], there is a transition from a relatively free peasantry to peasant slaves.” These dominated peasantries endured for several thousand years and they still persist today in the southern and eastern Mediterranean, whereas they were abolished within a few decades on the northern shores from the middle of the 20<sup>th</sup> century, entirely, or almost entirely, through modernisation policies.

Two agrarian societies coexisted for centuries: a sedentary peasant society, which took advantage of the complementa-

riety of land types, and an itinerant agropastoral society. In the 20<sup>th</sup> century, however, as the result of the development of economic activities, land privatisation, nomad settlement and crop farming, land was extensively reorganised through the colonisation of the rich agricultural plains, particularly along the Mediterranean coast, and the hinterlands and mountainous regions were gradually abandoned. The mark of pastoralism – the mobility of people and herds –, the collective use of vast territories and the persistence of the customary rights accompanying these practices still endure, however, in the southern and eastern Mediterranean region.

## MILLIONS OF FAMILY FARMS

With some 17 million farms, the Mediterranean region has a working farm population of millions of people, 70% of whom are on the southern shores and 44% in two countries alone – Egypt and Turkey. Due to the history of the region, the diversity of its ecosystems and of the agricultural policies and production strategies pursued, these farmers have extremely varied profiles both in the South and in the North. Farms are mainly family-run, their differences being in the structures of farming families, the land they hold and the degree to which they are integrated into the market. It is the families who work the land directly: nuclear families on the northern shores (1.5 workers per farm), and extended families in the South, which generally consist of two or three households (6 to 12 people). The level of education of family farmers in the North has risen considerably (in France, one-third of farmers have secondary school or higher education). In the South, illiteracy is still widespread (46% in Tunisia), and most farmers have only primary education (84% in Tunisia). All of the Mediterranean countries pursued poli-

## PEASANTS AND FARMERS, 7000 B.C.



cies for modernising their agricultural sectors in the second half of the 20<sup>th</sup> century in a context marked by the end of the second world war and the colonised countries’ return to independence. The objective was to integrate agriculture into the national reconstruction and development process and to enhance the efficiency of farming systems. Irrigation and land privatisation were the principal instruments used in these agricultural policies.

## LAND STRUCTURES INCONDUCTIVE TO MODERNISING AGRICULTURAL ACTIVITIES

The development of agricultural production, but also of industrial and economic growth, is determined to a large extent by land structures. Although there is no optimal farm size, the fact that latifundia (vast farm estates) and

microfundia (small holdings) co-exist in most Mediterranean countries is an obstacle to land and labour productivity as well as to the competitiveness of farming systems.

**The history of agrarian structures.** The fact that there is such a vast number of microstructures is connected with the scarcity of resources and strong population pressure in the South and East. But it is also the mark of a long agrarian history dominated by a latifundia system, which structured the agricultural production areas of the Mediterranean region. This system originated in the Ottoman Empire (which stretched from Albania to Greece and from the Middle East to Egypt and as far as Tunisia) and in the Iberian Kingdom, and was extended to the French, British and Italian colonies (in the Maghreb, Egypt and Libya respectively) in the 19<sup>th</sup> and 20<sup>th</sup> centuries. In this land rent system agriculture was organised in large demesnes, which produced goods for export markets using low-paid agricultural labourers. It was abolished in the 20<sup>th</sup> century and modern agricultural systems were built up involving a high level of State investment, but the avenues followed in this process differed from one Mediterranean country to another: collectivisation followed by privatisation in the Balkans, Algeria and Tunisia, radical egalitarian agrarian reforms in Syria, Egypt, Greece and Albania, and the development of vast irrigated areas in Turkey, Morocco and Tunisia.

These countries are now endeavouring to reorganise their agricultural systems on the basis of a model with which most industrialised countries have succeeded in intensifying production and considerably enhancing productivity: the private individual family farm operating in a market economy. However, in a context of trade globalisation and State divestment there are many obstacles to the general

## AGRARIAN REFORM AND COUNTER-REFORM IN EGYPT

The agrarian reform launched by the Nasser government was carried out in several phases with constant lowering of the land ownership ceiling: 200 feddans in 1952, 100 in 1961, and 50 in 1969. Since many landowners then carried out fictitious divisions amongst relatives, a considerable proportion of the agricultural area escaped the agrarian reform. Despite these concealment practices, however, many families received plots of land, and this resolved the landless peasantry issue at least in part. In addition to placing a ceiling on the size of farms, the Egyptian State imposed farm tenancy regulations on landowners which were very favourable for the peasantry (life-long leases and modest rents). Landowners were thus unable to put the rent up and tenant farmers enjoyed stable tenure for almost 4 decades.

An agrarian counter-reform was introduced in 1992 with a view to enhancing productivity and thus increasing cereal and export crop output, with which food imports could be financed. The purpose of those who inherited the *intifah* – the liberalisation process launched by Sadat in 1974 – was to suspend the land rent freeze that had been imposed by the 1952 agrarian reform. The reform made provision for raising rents in order to concentrate land in the hands of modern farmers, whose larger farms could provide a basis for intensifying production with a view to creating surpluses. This counter-reform resulted in land concentration and the exclusion of many peasant farmers; its effect on agricultural productivity was uncertain.

application of this model (lack of capital, lack of extension services for propagating knowledge and techniques, and lack of structures for organising the various related industries). Latifundia enclaves persist: thousands of hectares of agricultural land have recently been leased to rich countries that are seeking to externalise their agro-food production – as is happening all over the world. In the Mediterranean region, this massive appropriation of agricultural land (2.5 million hectares throughout the world in 2009) concerns Morocco, Algeria, Egypt, and Turkey, and it is the Gulf countries that are often the lessees.

**Land distribution is still unequal.** Despite the implementation of more or less active land reforms, land is still a resource that is very badly shared in the Mediterranean region, and this compromises access for the smallest holdings to other inputs. The situation in Tunisia is very revealing in this context: the proportion of farmers who have effected investments in each category of farm size increases with the size of the farms. And although there are still many small structures in the North there is a higher proportion of small farms in the southern and eastern Mediterranean countries due to population growth and the fact that the other sectors have limited potential for absorbing workers. As a result, the land is fragmented, and this fragmentation is a handicap for modernising farming systems. The agricultural area in Turkey is as large as the area in France or Spain, for example, but the average farm acreage (6 ha) is less than one-eighth of the French average and less than one-quarter of the average in Spain.

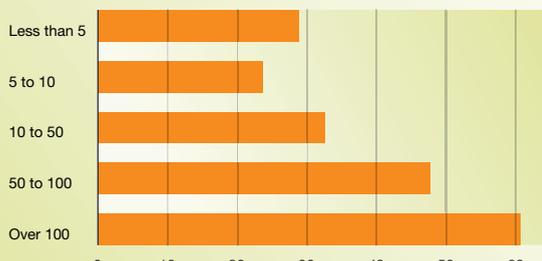
Analysis of farm structures in eight countries on both shores of the Mediterranean (France, Spain, Greece, Italy, Turkey, Tunisia, Algeria and Morocco) reveals three features of the Mediterranean farm structure landscape:

## EXTRAORDINARY FARM DIVERSITY

1. there is a large number of small farms (less than 5 ha) on both the northern and southern shores, and particularly in Greece (76% of farms on 27% of the agricultural area), Italy (77% of farms on 17% of farmland), Morocco (71% of farms on 24% of farmland) and Turkey (67% of farms on 22% of farmland);
2. in France, small farms are marginal (22% on 1% of the agricultural area) and there is a large number of large farms – over 50 ha – (37% of farms on 81% of farmland);
3. there is marked concentration of land in Italy (2% of farms farm 39% of the agricultural area), Spain (10% of farms on 70% of farmland), Tunisia (3% of farms on 34% of farmland) and Algeria (2% of farms on 23% of farmland).

### TUNISIA: FARMERS AND INVESTMENTS

Share of farmers who have effected investments, in each category as a % of the category total

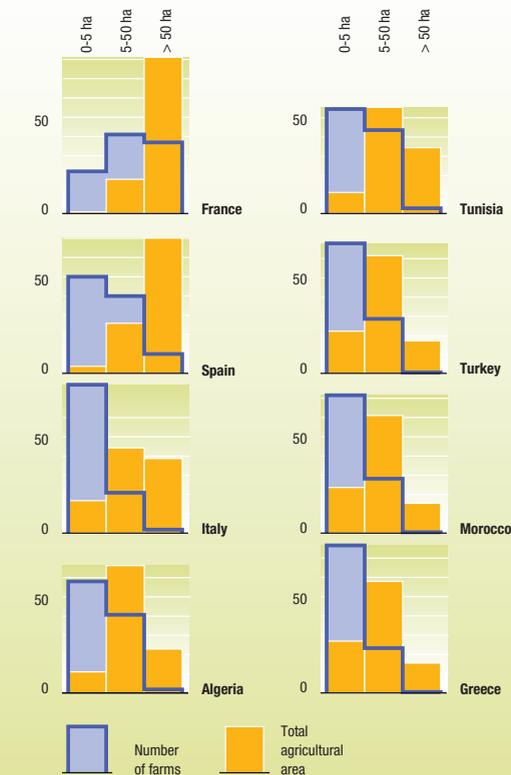


Source: Ministry of Agriculture and Water Resources (Tunisia), Farm structure survey, 2004-2005.

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### FARM STRUCTURES, 2005

Share of the number and acreage of small, medium-sized and large farms in the total number and total area, 2005  
base 100 = national total



Sources: Ministry of Agriculture (Tunisia), Farm structure survey 1994-1995; Medagri 2006; Ministry of Agriculture and Rural Development (Algeria), RGA (agricultural census) 2001; Ministry of Agriculture, Rural Development and Maritime Fisheries (Morocco), RGA 1996; INS (national statistical institute) (Turkey), RGA 1991.

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### RATHER DIFFERENT FARM STRUCTURES IN FRANCE

The average size of French farms is the largest of the entire Mediterranean basin. This feature is related in particular to the choices that the French authorities have made in farmland policy since 1945 (tenancy status). As a reminder, market policy comes under the CAP in the main, whereas farm structure policy is devolved to the national level.

The structural policy pursued in France has aimed to produce viable and efficient family farms. With this in view, the 1960 and 1962 agricultural guidance laws made provision in particular for encouraging older farmers to retire from farming and promoting mobility to regions that were to be developed. The land which thus became available was generally taken over by Land Management and Rural Establishment Agencies, which then allocated it preferably to farmers who met the modernisation criteria.

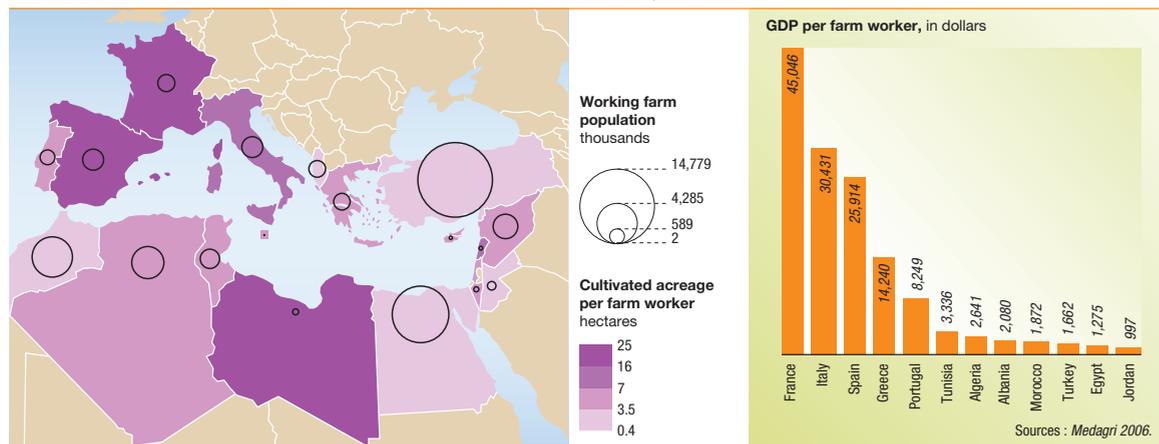
This increase in farm acreage was also facilitated by industrial development and subsequently by the tertiary sector in France, a situation which made it possible for a large proportion of the working farm population to move to sectors that were developing rapidly. This factor, which was very favourable in Europe, did not play a major role in the southern and eastern Mediterranean countries. The development of facilities and machinery on these growing farms was financed through a banking system specific to the agricultural sector. It was of course also promoted by the CAP, whose price guarantee system encouraged investments.

### THE “END OF PEASANT FARMERS” IN THE NORTH?

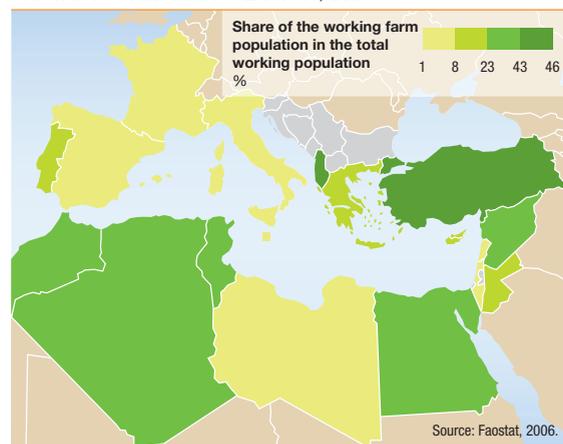
In the north-west of the Mediterranean region urban development and the rapid growth of industries and services, which have absorbed rural-urban migration, have resulted in the acceleration of agricultural modernisation. With the support of the common agricultural policy (CAP), land and labour productivity has been considerably increased through intensification and mechanisation. Labour productivity is 10 times higher in the northern Mediterranean countries, for example. The productivity gap per hectare is narrower, however, due to the development of irrigated crops and labour intensification in the South (the ratio is 1 to 5). Measured in terms of cultivated acreage per farm worker, the productivity differential is again clearly to the advantage of farmers in the North (although Libya is an exception in the South). Modernisation has resulted in land concentration, the specialisation of production systems and a high level of market integration. In France, the number of farms has been divided by 4 in 50 years, while the average farm acreage has increased (50 ha in 2005); in Italy, the number of farms has decreased by half in 35 years. These changes have been accompanied by an increase in the area of land under tenancy (72% in France) and a decrease in the number of farmers engaging in several different activities (15% in France).

So what has become of peasant farmers? There are now very few family producers living and working in village societies. Peasant farmers have become family agriculturalists (farm contractors), who are more autonomous in relation to local communities, less dependent on the vicissitudes of natural resources, but more subject to market rules, and who look upon the land primarily as a facility. Furthermore, the fact that the family-farm duo has grown apart and that objectives

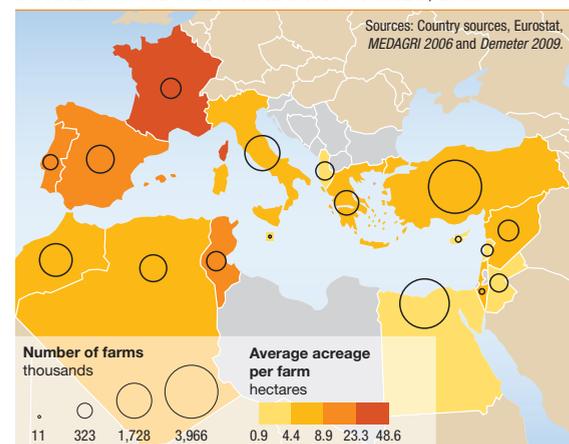
### PRODUCTIVITY OF MEDITERRANEAN AGRICULTURAL SECTORS, 2003



### WORKING FARM POPULATION, 2004



### CURRENT AGRICULTURAL STRUCTURES, 2003



are no longer shared by the family group has meant that farms have lost part of their family dimension. European farming systems are becoming increasingly individualised, although the emotional and cultural bond with the land endures and land inheritance is generally still a family affair. This predominance of individual modern farms is thus a recent development in Western Europe and one that has been accompanied by the adaptation of farming methods involving the widespread use of mechanisation and the increasing use of immigrant labour. It must be stressed furthermore that the number of corporate farms with a variety of legal statuses has increased considerably: 25% of farms in France are corporate farms, and in 2005 they held or managed over half of the AAU (the average farm acreage being 100 ha). New farmers are now emerging in the 21st century who are abandoning the intensive farming model and adopting more environment-friendly farming methods in response to society's demand.

### MODERNITY AND TRADITION IN THE SOUTH AND EAST

Contrary to the trend in the North, the farming population in the southern and eastern Mediterranean countries is continuing to increase in absolute terms. The working farm population has increased by over 7 million people, an increase which is actually relative compared to the overall population increase in the same period (+ 160 million people on the southern shores between 1965 and 2005). But although the proportion of farmers is diminishing in relative terms it is still high in some countries. The increase in the working farm population in absolute terms raises questions including that of what is to become of the many small farms. There is still marked dualism in these countries; it is an

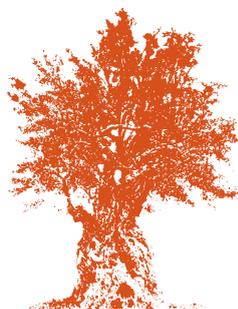
age-old phenomenon, which originated in five centuries of latifundia and colonial systems and underlines the contrast between traditional and modern farmers. The former form a large peasantry, particularly in Morocco, Tunisia, Algeria, Egypt and Turkey. The market integration of these farmers, who are still using outdated techniques, is low, so that the bulk of production is for the farmers' own consumption. The profiles of these traditional farmers, who are very dependent on the natural environment, vary: agropastoralists and herders in the steppelands, irrigator farmers in the oases, smallholders in regions of rain-fed agriculture. Many engage in several different activities. But with time these farms are gradually becoming fragmented due to the inheritance rules prevailing in most of the southern and eastern Mediterranean countries. The modern farmers generally have large farms and use modern farming methods, which are market-integrated and geared to export products. They are found mainly in the irrigated areas and cereal-growing plains or in regions where fruit-tree crops are produced (such as the Tunisian olive production region), where they increase the pressure on land and water resources. The differences in productivity and farm incomes between the small peasant farms and the large modern farms are considerable, both in irrigated agriculture (where the ratio is 1 to 12) and in rain-fed agriculture (a ratio of 1 to 7). What is more, incomes fluctuate widely in rain-fed regions due to climate hazards.

**From decolonisation to globalisation.** Agricultural policies sought for some time to attenuate this dualism by integrating the two sectors and overhauling farm structures. In the 1960s, Tunisia endeavoured to group small farms together, for example, by setting up production cooperatives around

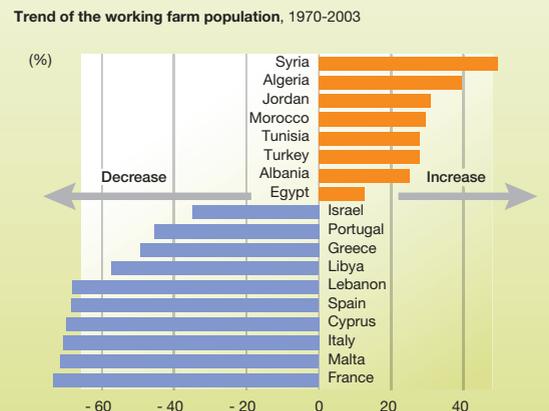
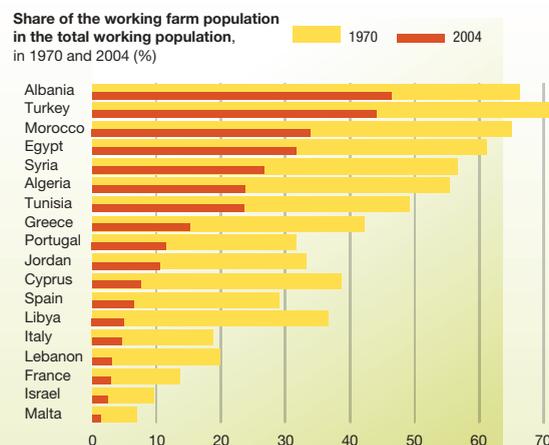
a core formed by the former colonial farms, and to build up homogeneous and modernised units. Similar efforts were made in the extensive State-owned irrigated areas in Morocco, Tunisia and Turkey. As the result of these policies all farmers were gradually integrated more and more into the market. But the dualism persisted and was even accentuated as the result of the liberal policies adopted by most countries. Although most countries (Tunisia, Morocco, Egypt, etc.) pursued policies of investment incentives encouraging partnerships in the agricultural sector, these policies actually promoted the development of major corporate farms with international capital, which take out leases on land in order to farm it. In Tunisia, where the former colonists' land, which was nationalised in 1964, has been used to serve this policy, the various forms of corporate farms occupy approximately 364,000 hectares, i.e. 6.8% of farmland (farm structure survey, 2005). Furthermore, producer organisations and associations, which play an important role as partners of the administration in extension services for farmers, ought to have facilitated farm modernisation (access to natural resources and in particular to inputs, credit and the market). But both in Egypt, where civil society organisations, an ancient tradition in the country, are increasing (there were 35,000 in 1990), and in the Maghreb, where there is a profusion of institutions (agricultural cooperatives, inter-trade groups, associations, etc.), the small peasant farmer and poor farmer sector is absent from these structures. The new 2008 Green Morocco Plan, which is based on the two pillars of intensive agriculture and food production, actually seems to confirm this dualism. If there is no remedy for this dualism, how can small farms be prevented from drifting into permanent marginality? There are several solutions to this issue so crucial for the present and future of

Mediterranean rural areas; they include rural development, measures to diversify production and the recognition of regional multifunctionality.

From a more optimistic point of view, we would underline that there is a sector of family farms which are beginning to modernise their farming methods: they are enlarging their production structures, enhancing land and labour productivity, becoming involved in organised lines of production and becoming integrated into the market. Developing this third sector – situated between the poor farmer sector consisting of family microfarms and the corporate farming sector, which is geared to export markets – is a major political challenge; it would be a means of overcoming the dualism and guaranteeing the future of Mediterranean farming systems. For in an economic situation of price volatility and tension on international markets this type of agriculture seems best suited to meeting the objectives of the food security policies that the countries of the region, and in particular those on the southern shores, have introduced in response to the 2007-2008 crisis. ■

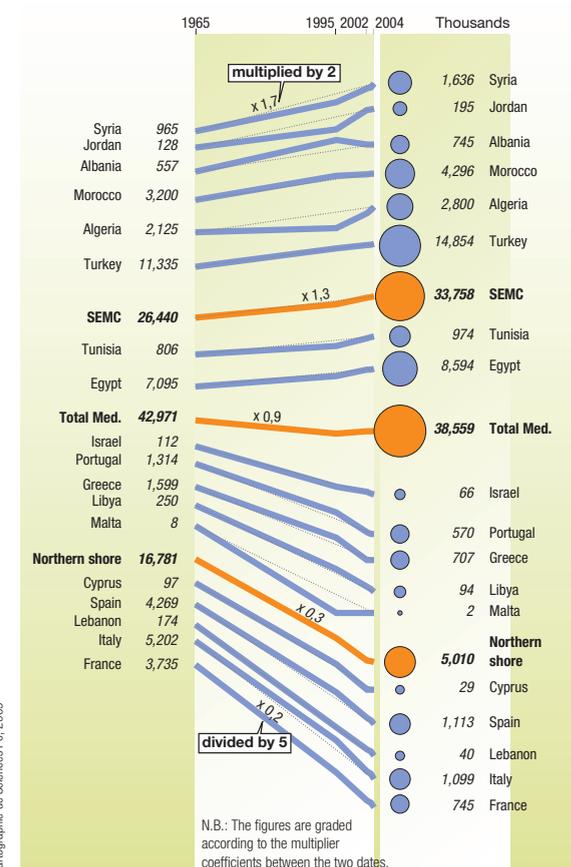


### WORKING FARM POPULATION



Source: Our calculations adapted from FAO statistics.

### TREND IN THE WORKING FARM POPULATION, 1965-2004



Source: Faostats, 2006.

# THE AGRO-FOOD INDUSTRIES

**T**he agro-food industries are growing rapidly in the SEMC. Whether measured by value of production, added value of enterprises, the number of establishments or wages in the sector, these industries have been booming for three decades, with manifest dynamism in Morocco and Tunisia. For their part, the Mediterranean countries of the European Union have posted lower growth rates in the agro-food industries (AFI) which experienced a considerable boom from the 1960s, especially in France and Italy, due to the considerable increase in agricultural products. It is in terms of jobs, especially, that this sector has levelled out in the European Mediterranean countries. Despite this, this sector, now at the consolidation phase, is structured very differently from the SEMC. The AFI sector in Europe is modern and well-endowed with resources and large enterprises. Some of them are true industrial flagships with a strong international dimension.

## AFI IN THE SEMC: WHAT DO THEY LOOK LIKE?

There are many factors holding back the AFI in the SEMC. Firstly, note the proportion of the first transformation sector including raw materials, in production of animal foods, processing of crops, sugar refining, transformation of cereals, production of vegetable oils and the dairy industry with the production of butter and powder. The second transformation using already transformed raw materials, on the other hand, is penalized by the level of purchasing power in the SEMC which limits outlets for products with a higher added value.

In the SEMC, the encouraging growth of production in the AFI does little to conceal a fragmented structure of the sector where there is a lack of medium-sized units. The cornerstone of healthy competition, enterprises with

between 10 and 250 employees are largely absent in most of the SEMC. Despite upgrading policies applied in almost all the Mediterranean countries, the predominance of micro-enterprises persists, except in Turkey and Morocco where their share is less than 60% of the agro-food industry. Of course, they do help to guarantee food security for the low-income strata of society for which they mean less costly products and jobs at the same time. However, as they are not very profitable and lack resources of their own necessary to innovate, micro-enterprises gain little benefit from public investment policies and are increasingly sidelined. In the small large enterprise sector, the public sector AFI is still large, despite privatisation. It continues to play an active investment role in agriculture or food transformation. It still has a strong presence in large agro-industrial combines in Algeria, Egypt, Jordan and Turkey, especially in the tobacco industry, sugar refineries, pressing of oleaginous plants and extraction of fats. This situation was the rule until recently in the countries of Southern Europe, where the State played an industrial investment role alongside private capital, especially in the tobacco sector. Also with a major presence alongside the State, conglomerates, usually family-owned, such as ONA (Omnium Nord-Africain) in Morocco, Ghabbour and Orascom in Egypt, Sabanci in Turkey, Cevital in Algeria, have invested in the agro-food industry, sometimes in association with major international groups (notably in Egypt and Turkey).

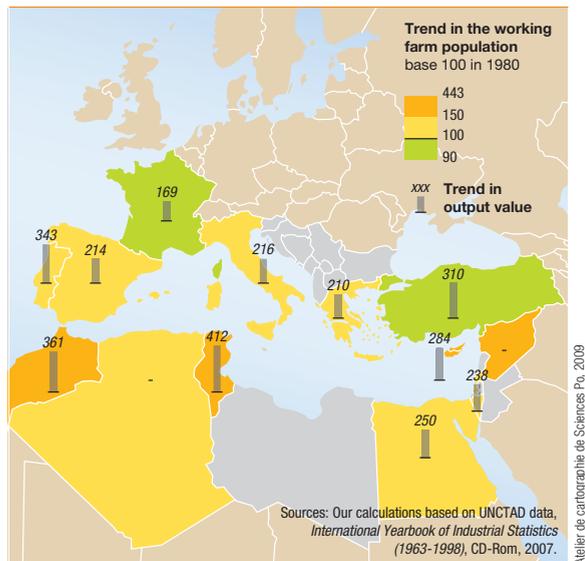
## SLOW AND CIRCUMSCRIBED INTERNATIONALISATION

The fragmented and dispersed structure of the industry explains to some extent the low level of foreign investment for the largest multinational agro-industrial firms in the region. Concerned at the risks and uncertainties related to

their investments in the host countries, these multinationals prefer to invest in existing structures rather than create subsidiaries from scratch and to target their capital on regions of the world where the presence of mega conurbations and the level of consumption provide more attractive markets for their transformed products.

Between 1987 and 2006, Turkey, Israel and Egypt attracted the most FDI from the top 100 multinational agro-industrial firms. Outside the top 100, in recent years Algeria and Morocco have aroused the interest of many European investors, especially French. The brassica sector, dairy industry and transformation of cereals, more directed towards the domestic market, are the most attractive sectors. However, the transformation of fruit, vegetables and even olive oil, which are more export-oriented, are also of interest to European investors. For their part, local enterprises would do well to develop strategies for linking up with European countries, especially with a view to exports. By integrating brands of multinational agro-tertiary firms such as Carrefour, the agro-food branches of industrial conglomerates in the SEMC can thus export their products to European Union markets by circumventing certain non-tariff barriers. ■

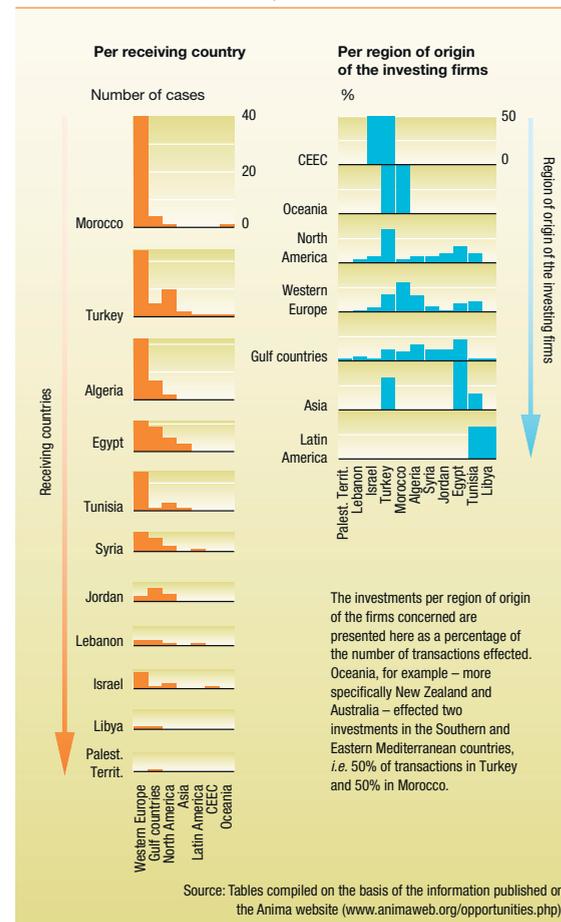
### TRENDS IN THE AGRO-FOOD INDUSTRY, 2005



### MERGERS, TAKEOVERS AND PARTNERSHIPS, 1987-2006



### INVESTMENTS AND AGRO-FOOD INDUSTRIES, 2003-2009



### THE FABRIC OF THE AGRO-FOOD INDUSTRY IN THE SOUTHERN AND EASTERN COUNTRIES, 2007



# COMMERCIAL DISTRIBUTION OF AGRO-FOOD PRODUCTS

In a market economy, distribution is a vital link between producers and consumers. It provides easier access to consumers, information on products and prices, and this is not counting the fact that it is itself becoming an important economic sector (job creation and creation of added value) as the economy grows.

## THE MODERN DISTRIBUTION BOOM

The distribution of food products has undergone a tremendous revolution in the world. Once upon a time assured by small local retailers, it has become concentrated with the emergence of big name brands. The availability of capital, foreign direct investment, improved supply logistics and information technologies are all factors which, on the supply side, have led to the boom in large-scale distribution. For their part, urbanisation, rising average incomes, changes in the structure of the active population and economic and social policies which affect incomes are the chief factors in demand for big name brands.

The Mediterranean has not escaped this revolution even if major differences prevail between the two shores, for there is clearly a correlation between per capita income and the development of modern distribution. Thus, the phenomenon of concentration is more marked in the North. With a slight disparity compared with France and Italy, Portugal and Spain have seen a strong concentration movement: in Portugal, the share of hypermarkets and supermarkets rose by 25% between 2001 and 2005. In Spain, large-scale distribution rose by 60% between 2000 and 2004. In the SEMC, cultural, economic and administrative constraints have limited the development of this type of distribution. However, a positive correlation can be observed between the scale of FDI and the development of supermarkets.

Alongside this concentration movement, a process of internationalisation is taking place under the influence of multinational distribution firms, some of which come from the North shore and Europe in general. To spread their net, these actors in search of new markets use conquest strategies, the chief of which are direct acquisitions, franchises and joint ventures with local partners. This internationalisation especially affects SEMC because the absence or weakness of national groups capable of organising large-scale distribution leads these countries to welcome international and especially European brands. Turkey, with its large population and economic boom is the country which attracts by far the most FDI in the distribution field.

## THE RISK OF EXCLUSION IN THE SOUTH

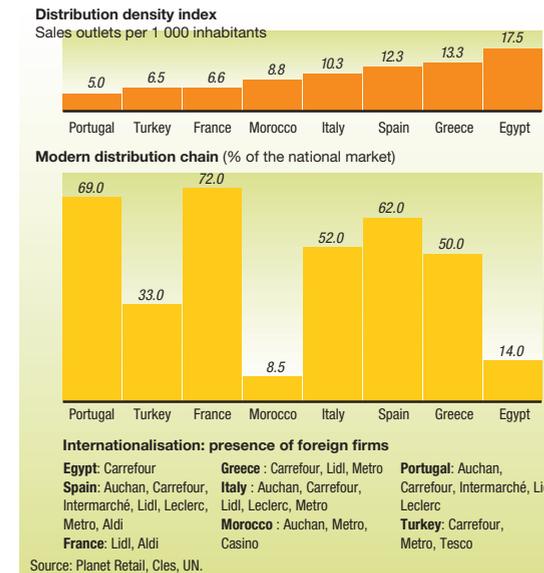
The development of large-scale distribution is accompanied by competition between firms which forces them to innovate through product diversification and marketing strategies, even to the extent of “no-price competition”, in other words, any feature, other than price, which gives the product a competitive edge (quality, service, etc.), loyalty schemes (store loyalty). In the latter field, the development of distributor own brands is part of the benefits widely brought into play. Even with less than 10% of food sales in the SEMC, the thrust of large-scale distribution rocks the practices of the agro-food industries (AFI) which wish to have a supermarket presence. With demanding standards, product traceability along the chain, logistics and regular bulk supplies, large-scale food distribution demands organisation and abundant human and financial resources from AFI. Only organised producers can meet these demands without giving up too much added value. If they are not organised in strong structures, they risk being sidelined. By imposing drastic

## THE MAJOR DISTRIBUTION FIRMS, 2006



Atelier de cartographie de Sciences Po, 2009

## DISTRIBUTION STRUCTURE AND SOCIO-ECONOMIC FACTORS, 2006



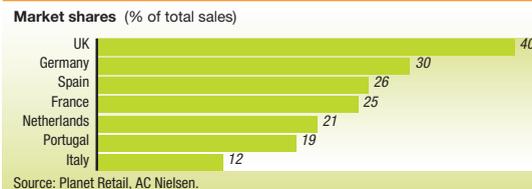
Atelier de cartographie de Sciences Po, 2009

quality standards for products, large-scale distribution could exclude many products made by indigenous farm producers to the benefit of products made in the more developed countries. If the development of large-scale distribution is the sign of the emergence of an urbanised middle class, it is not necessarily a measure of the local development of agriculture.

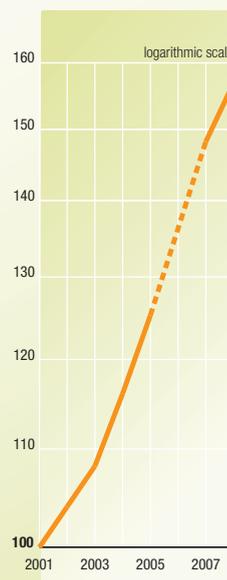
### THE REVIVAL OF SHORT CHAINS

At the same time, and quite often as a reaction to the development of large-scale distribution, shorter sales chains are formed because they offer certain advantages: better remuneration of the producer, lower costs to the consumer, improved local productivity, reduction in energy costs, respect for the seasons and thus better guarantees of freshness, etc. Italy has thus seen a strong development of this type of distribution. The products most involved in direct sales are, in descending order, wine, fruit and vegetables, olive oil and cheeses. In the case of wine, 35% of wine producers sell their production, at least in part, through direct sales. But that is less of a novelty than in other sectors, such as fruit and vegetables or cheeses, where the number of producers resorting to direct sales is rising. The “direct sales” category covers several forms of selling, from farm sales to fairs and stores in shops. However, farm sales predominate by far. ■

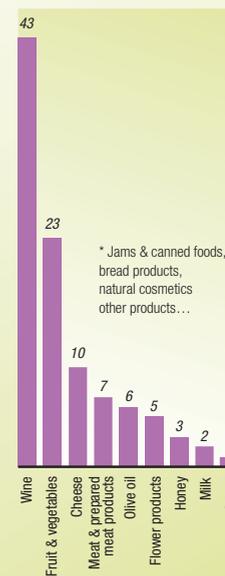
### DISTRIBUTOR BRAND PRODUCTS, 2007



**Trend in farms practising direct sales in Italy, 2001-2008**  
(base 100 in 2001)



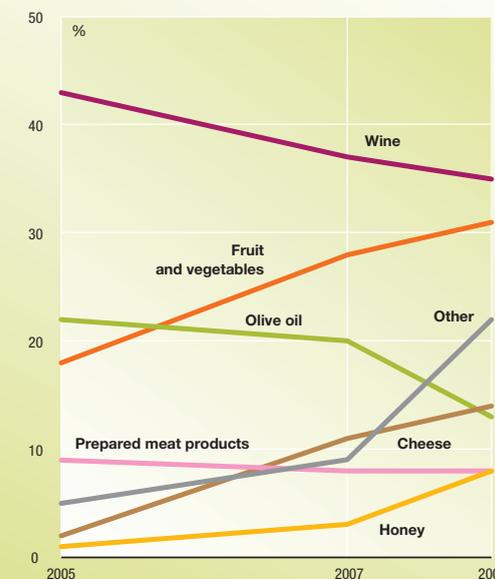
**Share of each category of products in the value added of direct sales in Italy 2008 (%)**



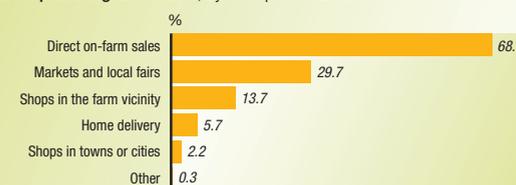
Source: AGRI 2000, Osservatorio Internazionale sulla vendita diretta 2008.

### DIRECT SALES – THE CASE OF ITALY

**Trend in farms practising direct sales by type of product (2001-2008)**



**Farms practising direct sales, by sales point in 2008**



Source: AGRI 2000, Osservatorio Internazionale sulla vendita diretta 2008.

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# PLANT PRODUCTS

## MEDITERRANEAN SPECIALITIES

**A**t the heart of Mediterranean agriculture for centuries, the olive, wheat and the vine remain the essential pillars of agricultural economies in the basin, along with fruit and vegetables.

### A THOUSAND YEARS OF OLIVES AND OLIVE OIL

The olive tree is the emblem of the Mediterranean, so much is it linked to its climate and its history. It spread throughout the region thanks to the progressive establishment of the Mediterranean climate, some 10,000 years ago. Its domestication probably took place in what is now Syria, and was spread by the Phoenicians to North Africa and then by the Greeks to the northern Mediterranean, especially Provence and Italy. It spread further under the Romans, as each conquered territory had to grow olives and vines. During the imperial period, some provinces, Baetia (Andalusia), Africa (Tunisia) and Apulia (Puglia) even specialised in oil production. After many centuries marked by variations in the area under olive cultivation, primarily in line with the growth in the olive oil trade, olive growing expanded again in the contemporary era, especially in the north Mediterranean basin (Andalusia, Castile, Apulia and the Peloponnese). This was linked to demographic growth, the major boom in trade and industry and the development of transport infrastructure. From the 1960s onwards, olive growing developed in Syria, Morocco and Tunisia, while some northern regions (Castile, Ebro) started rooting up olives trees, due to the loss of competitiveness related to the high costs of harvesting.

The olive is now grown around the world, in China, Australia, the United States, Argentina and South Africa, thanks to its proven nutritional and health benefits. However, the Mediterranean region still concentrates the

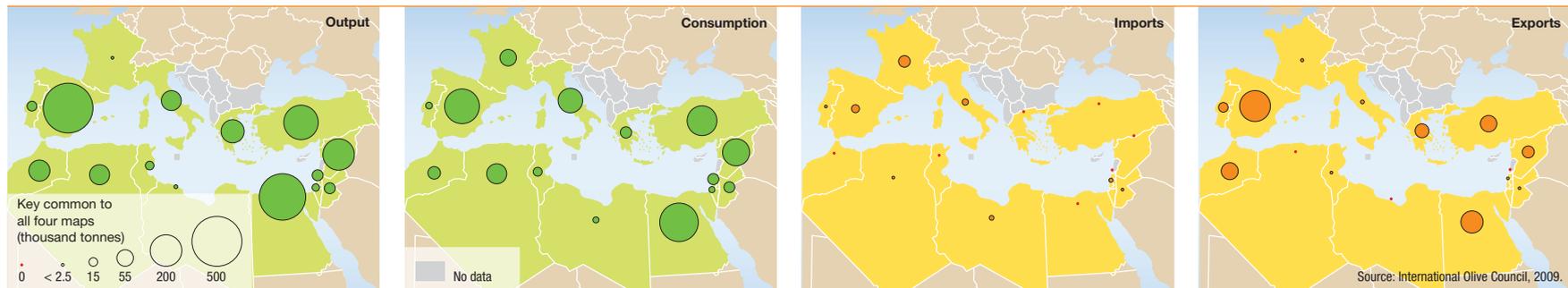
bulk of world olive plantations. The agro-climatic conditions make it a preferred zone with a warm climate, strong luminosity and light, stony soils which suit the physiological and anatomical qualities of the olive tree, namely its large roots, foliage and summer dormant period. On the other hand, its susceptibility to cold (it freezes between -10°C and -13°C, makes it less suitable to more northern regions of the basin, just as its lack of resistance to excessive aridity excludes the desert zones of the Near East or the Sahara. The area under olive cultivation, some 8 million hectares, is chiefly devoted to the production of olive oil, which is more profitable than the production of table olives which still have to be harvested by hand which restricts its growth. With 2.3 million hectares, Spain, where Andalusia alone accounts for 60% of the country's olive cultivation, takes top spot both in the Mediterranean and the world. It is followed by Tunisia, with over 1.6 million hectares, half of which are in an area between Sousse and the south of Sfax. Then comes Italy, where the Apulia region, Sicily and Calabria account for some 60% of the area under olive cultivation. This phenomenon of concentration of olive growing can also be seen in Greece, the fourth country in terms of area: the Peloponnese and Crete account for 60% of the country's olive-growing area. Among the SEMC, Turkey is the leading producer, where over 70% of the cultivated area is on the Aegean coast. It is followed by Syria, where olive growing is prominent in the Aleppo region and along the Mediterranean coast.

**Concentrated local production of olives.** Spain, Egypt, Turkey, Syria and Greece are the leading producers of table olives around the Mediterranean since these five alone provide almost three quarters of world production. Especially

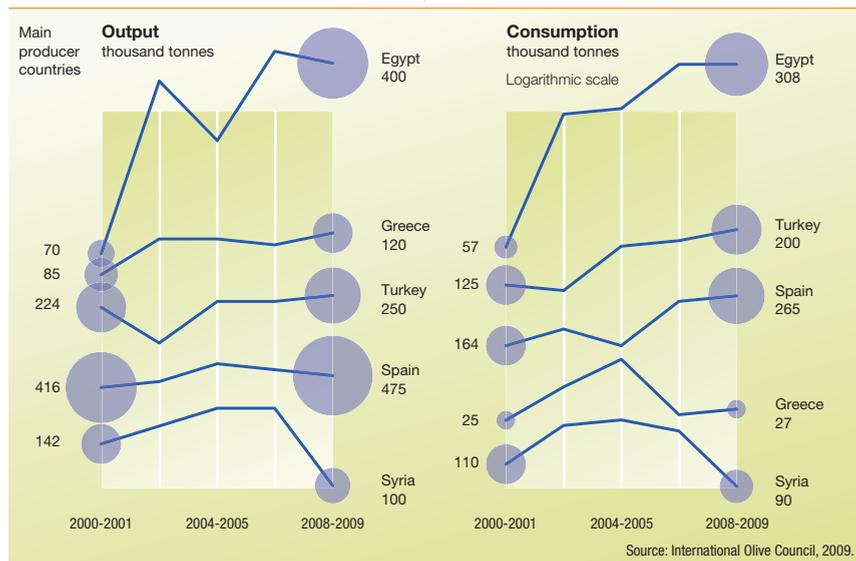
remarkable is the growth in Egypt (+500% between 2000 and 2008) the result of a clear political will, with the creation of basic infrastructure in development zones (roads, electrification...), sales of land to olive growers at low prices, tax exemptions for olive growers, technical assistance for estates, etc. Syria, on the other hand, experienced a fall in production of some 30% over the same period, apparently linked to an unfavourable climatic environment. Production also rose between 2000 and 2008 in the Maghreb countries, Portugal and Palestine, but output volumes remain low. Mediterranean olive production is mostly destined for local consumption since olives form an important part of the local diet. While a considerable proportion of olives are exported from Portugal and Morocco, exports from other countries are low, including from the major producers, such as Spain, which only exports about 35%. Egypt is now the biggest consumer of table olives in the region in terms of volume consumed, but ranks only third in per capita volume per inhabitant, behind Turkey and Greece, although consumption tripled between 1992 and 2005. Per capita consumption held steady in Algeria, Jordan, Tunisia, Turkey, Spain, France, Greece and Italy. It showed a downward trend in certain countries: between 1992 and 2005, an Israeli's consumption fell to one third, that of a Syrian, Moroccan and a Portuguese fell by half due to urbanisation of life styles, as olive consumption was rather based on family production.

**Competitive advantage globally.** Spain, Italy, Greece, Turkey, Tunisia and Syria, in descending order, are the biggest olive oil producers in the Mediterranean region and also the world, since they concentrate 88.5% of world production, with Spain providing almost half. The two biggest

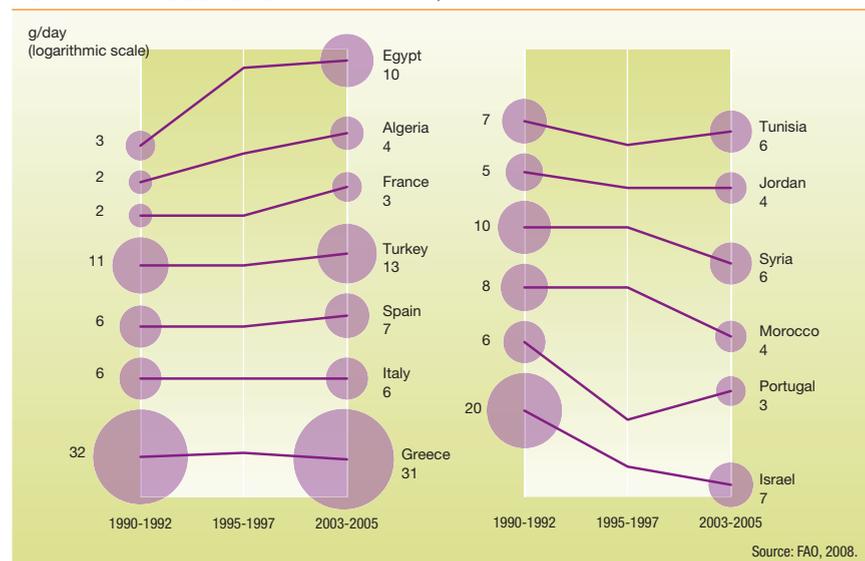
TABLE OLIVE PRODUCTION AND TRADE IN THE MEDITERRANEAN REGION, 2007



OLIVE PRODUCTION AND CONSUMPTION, 2000-2009



PER CAPITA TABLE OLIVE CONSUMPTION, 1990-2005



## PLANT PRODUCTS MEDITERRANEAN SPECIALITIES

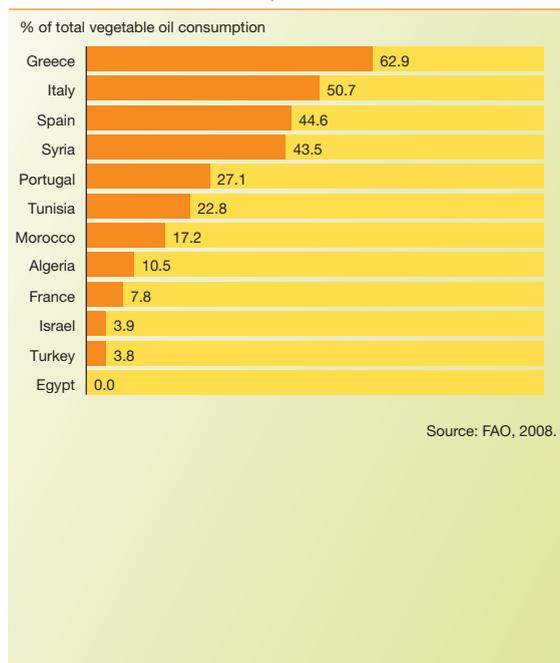
producers (Spain and Italy) recorded a sustained increase in production from 2000 to 2008. Apart from the increase in their area under olive cultivation, encouraged by EU aid, and increases in the price of olive oil, there was also an increase in productivity related in part to EU support, which is a factor in investment. The improvement in yields per hectare is the result of improved mastery of the technical aspects of olive growing, replacing old trees with new and increasing the amount of irrigated land. The other countries' production remained fairly stable. Only Tunisia, famously, saw a marked increase in its production.

Most of the olive oil produced in the region is destined for the local market. Italy, Spain and Tunisia have the capacity to export. Surprisingly, it is the two largest producers, Italy and Spain, which import most oil, in part because they re-export the imported oil. Italy, for example, imports some of the Tunisian oil in bulk to sell it on with a higher added value. But if Spain and Italy import oil, it is also because of their high consumption.

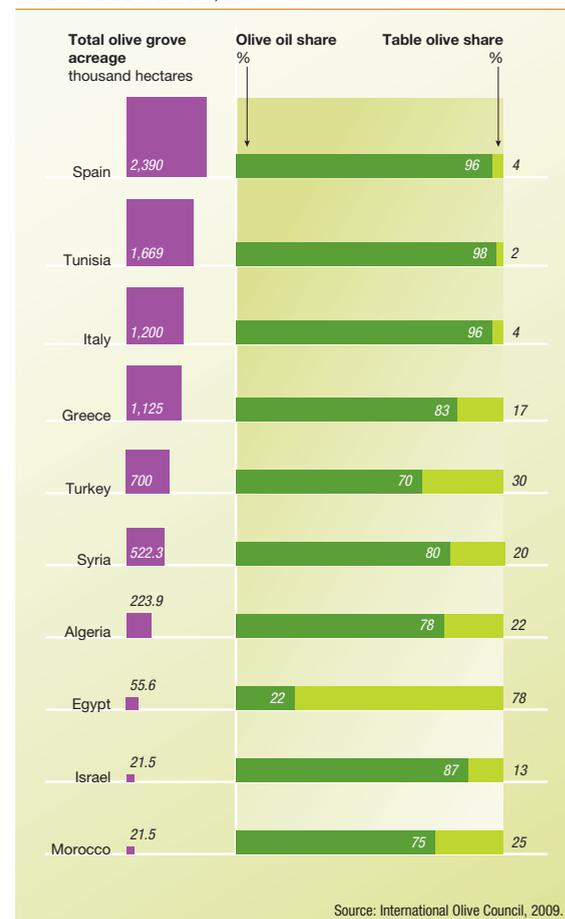
Per capita consumption of vegetal oils declined between 1990 and 2005 in Algeria, Egypt, Greece and Portugal, while it increased in France, Israel, Italy, Syria, Tunisia and Turkey, and remained stable in Spain and Morocco. In this contrasting panorama, per capita olive oil consumption increased everywhere except in Greece where it declined and in Algeria, Spain, Morocco and Turkey, where it was unchanged. However, the share of olive oil in total consumption of vegetal oils by Mediterranean people is still low. It is close to 50% in only four countries (Greece, Spain, Italy and Syria). And French consumption is still very low compared with other oils, despite promotion campaigns. The product is observed to be totally absent from the diet

of Egyptians who nevertheless consume large quantities of table olives. The vegetal oils most consumed in the region are sunflower oil, rape oil and soya oil. This situation can be attributed to the lower price competitiveness of olive oil especially due to the high cost of labour at harvest time. This low price competitiveness forces the olive-growing industry to promote the nutritional qualities of olive oil and the lands it comes from.

### OLIVE OIL CONSUMPTION, 2005

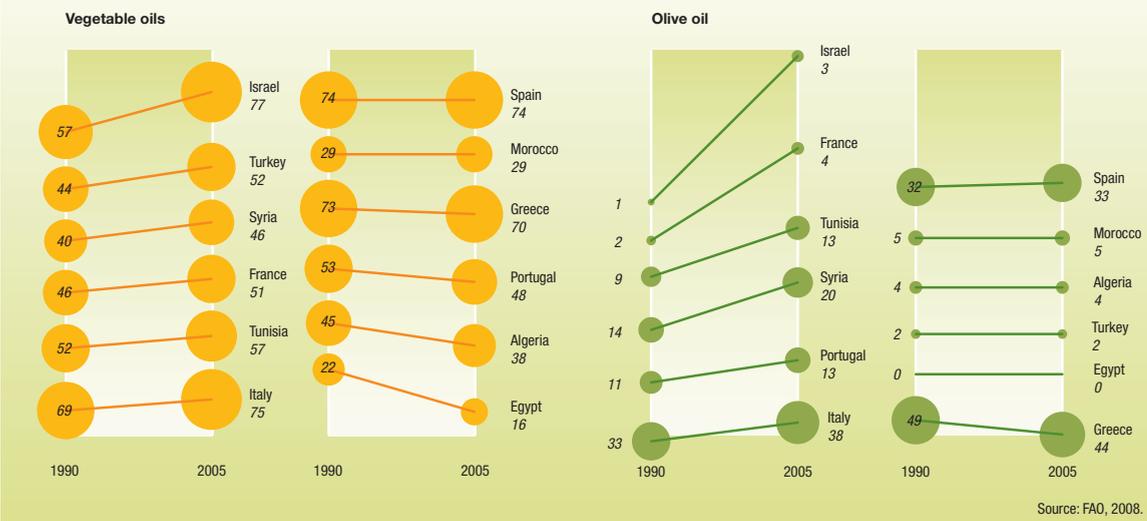


### ACREAGE ALLOCATED TO OLIVE OIL AND TABLE OLIVES, 2005



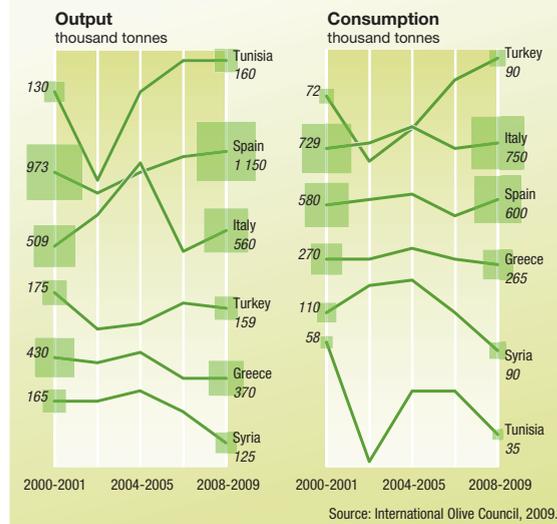
### TREND IN VEGETABLE OILS AND OLIVE OIL CONSUMPTION, 1990-2005

g/caput/day (logarithmic scale)

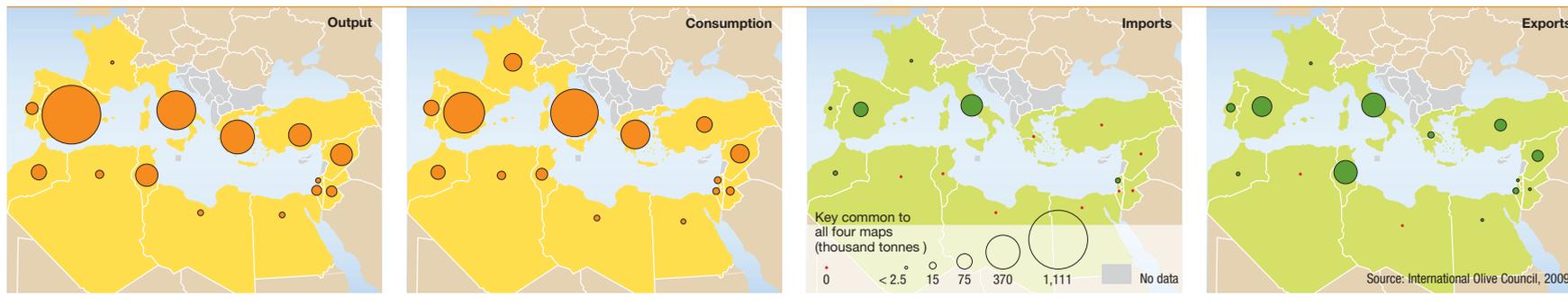


### OLIVE OIL PRODUCTION AND CONSUMPTION

Main producer countries (logarithmic scale)



### OLIVE OIL PRODUCTION AND TRADE IN THE MEDITERRANEAN REGION, 2007



#### EMBLEMATIC WINES AND VINEYARDS

To understand vine-growing, you have to see it in the context of the history of Mediterranean civilisations, which illuminates its various facets – symbolic, cultural, technical or economic. It means distinguishing production of wines and alcoholic beverages from that of fresh and dried grapes. In geographical terms, the vine (*vitis vinifera*) is associated with the Mediterranean in the same way as cereals and the olive. Like these two crops which symbolise the Mediterranean, the conquest of the Mediterranean by wine-growing is linked to the domination of certain civilisations. Originating in the Caucasus, cultivation of the vine was spread throughout the Mediterranean basin by the Phoenicians and, above all, by the Greeks, who made the amphora of wine a currency of exchange for their trade. After Greece, which was defined as a civilisation of the vine, the long journey of vine cultivation continued, despite periods of setback. Among the periods of expansion can be included the Roman era, when it was implanted in Gaul, primarily to meet the needs of the legions but also to make wine a currency of exchange in the slave trade and trade in goods. In the Middle Ages, the monasteries of Europe encouraged the planting of vines in the North and the development of vine growing and wine making methods, whilst with the spread of Islam, vines for wine-making tended to decline. With the industrialization of the northern shores of the Mediterranean and the development of the railways, wine production shifted from the consumer regions, such as the Paris basin, to the French Mediterranean regions, making it by far the largest vineyard in the world, and then to the Maghreb, then colonised or under a protectorate, to the point where Algerian vines represented one third of French production.

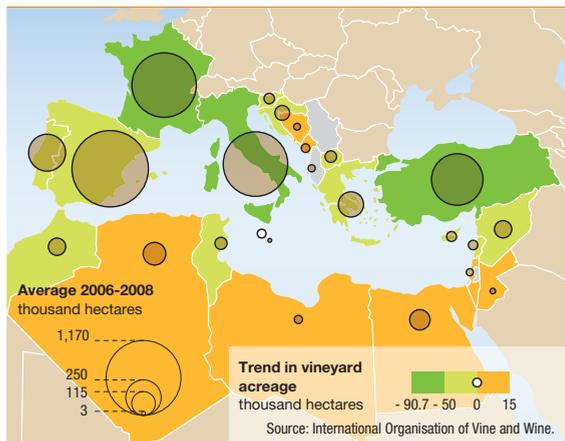
Thus, the wines with a strong alcohol content imported from Algeria, so-called “medicinal wines” allowed producers to blend them with the low alcohol wines, produced in the south of France, selling them for over a century as the table wine of manual workers in the urban concentrations and mining areas. With the decline in physical labour and changes in eating habits, the consumption of these “rough wines” collapsed during the glorious thirties creating a major distortion between production and consumption of wine. The European Community then took some major structural measures to reduce wine consumption and develop products better suited to the new markets. Wines from defined regions then generally replaced the so-called table wines, marking the end of the complementarity between the two shores of the Mediterranean.

**World domination.** With the detachment from wine-growing in the Maghreb, the bulk of Mediterranean vine cultivation became established on the northern shores of the Mediterranean and in the Balkans. The area under vines in the Mediterranean countries (including the Balkans) is 4.2 million hectares, or some 53% of the world area (7.7 million hectares and over half the world production of wines (145 million hectolitres out of some 270 million). The Mediterranean region also provides one third of world production of fresh and dried grapes. Spain, France and Italy stand out with 1.1 million hectares for the first, and some 850,000 hectares for the other two. These countries are both the largest producers, consumers and exporters of wine. Then comes Turkey with over 500,000 hectares, mostly devoted to production of fresh and dried grapes. Lastly, Portugal, with 248,000 hectares and Greece with 115,000 hectares should be mentioned. Although the vine-growing

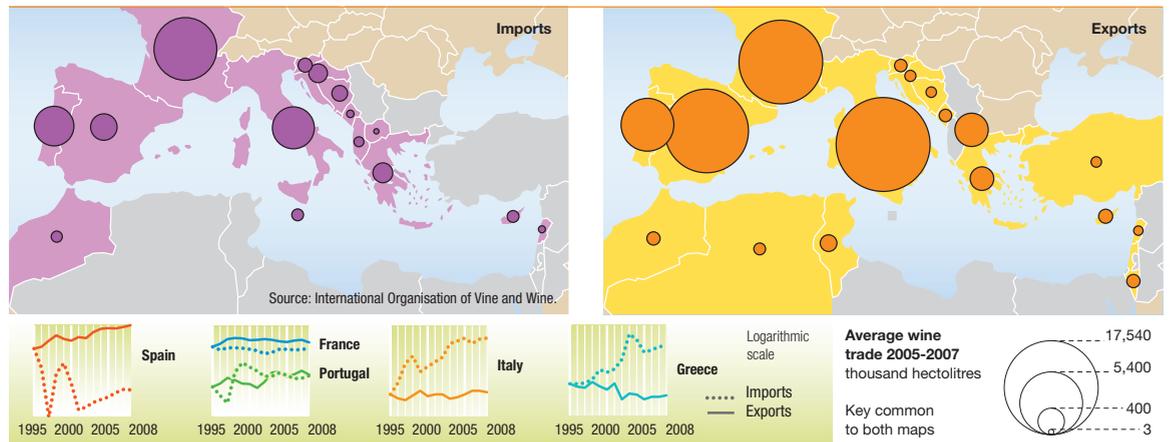
areas of the islands (Cyprus and Malta) do not represent a significant proportion of the global area and production, vine cultivation is an important part of their agriculture.

**Competition and globalisation of tastes.** While wine production has stabilised overall in the world, there has been a real change in markets for wine with the rising power of new players: North and South America, Australia and South Africa. These new wine-growing areas are generally founded by large global groups and supported by brands and a more standardised range of wines produced to meet the “expectations” of the market. At the same time, per capita consumption has declined sharply in the traditional wine-growing countries, even though it is still considerable in France, Italy and Spain (54 litres per year per person in France, 44 in Italy and 29 in Spain). In the Mediterranean European countries, there has been a shift from a pattern of regular consumption to a more occasional or festive consumption pattern, and this trend has led to the search for wines of better quality with clearer identities. While wines with a geographical designation are sought, named wines (appellation specific to a firm) and wines from specific grape varieties are gradually taking their place alongside them. On the other hand, mass wines, linked to industrialisation, are disappearing. In an increasingly competitive market where consumers’ tastes are more demanding, wine producers must both resist the competition from the new countries in international markets and also that in their own regions. The Mediterranean European countries are still big exporters, especially Spain, France and Italy. As regards imports, France is by far the biggest importer in the Mediterranean. However, Italian imports are increasing with a view to re-export, as in the case of olive oil.

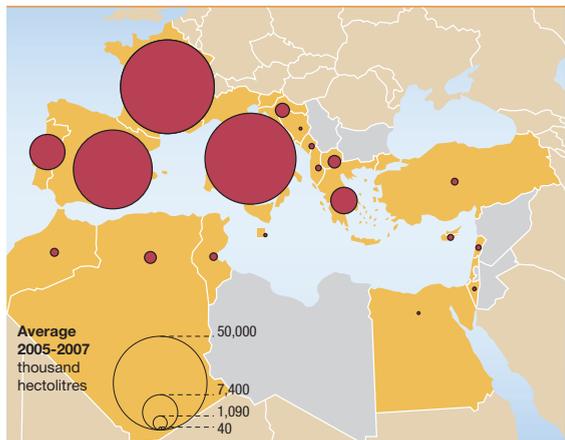
VINEYARD ACREAGE, 2005-2007



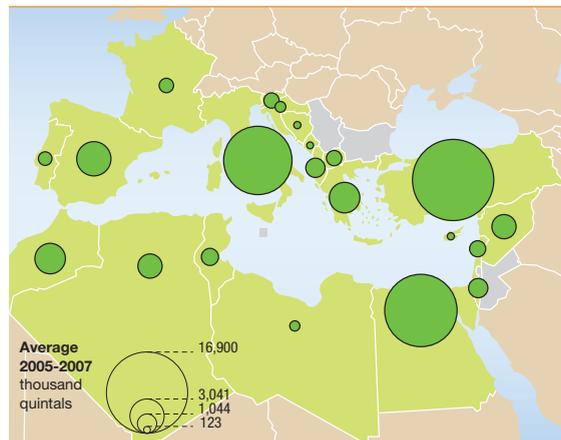
WINE TRADE IN THE MEDITERRANEAN REGION, 2005-2007



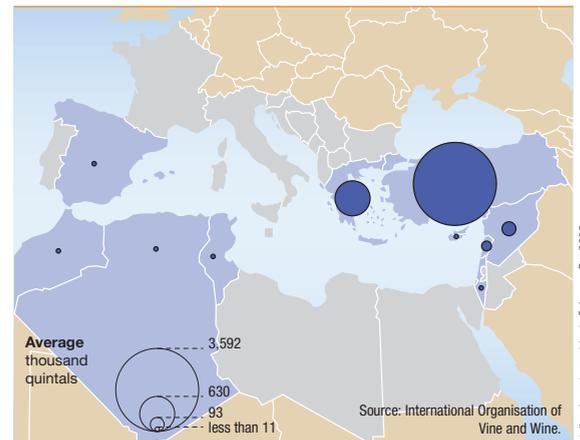
WINE IN THE MEDITERRANEAN REGION, 2005-2007



FRESH GRAPES, 2005-2007



RAISINS IN THE MEDITERRANEAN REGION, 2005-2007



**Grapes.** In the East of the Mediterranean basin, peoples who embraced Islam have progressively dropped wine growing in favour of the production of fresh or dried grapes reputed for their nutritive qualities. The Arabs even exported their products to Europe which discovered or re-discovered the grape during the crusades. This historical and climatic geography probably explains the persistence of vines in the countries of the Levant. Currently, production of fresh grapes is rising steadily, from 45,000 to 65,000 quintals between 1995 and 2008. Although production of grapes exists in all the wine-growing countries, especially Morocco, Spain, Syria, Greece and Algeria, three countries stand out clearly: Turkey, Egypt and Italy. In the dried grape market, Turkey dominates with some 370 tonnes, while Greece, the second largest producer, famous for its currants, has seen its production fall from a peak of 90 tonnes in 1995 to 60 tonnes today. Syrian and Lebanese production should also be mentioned.

#### CEREALS IN THE CRADLE OF THE MEDITERRANEAN

If rice is the cereal of Asia, maize that of South America, wheat is certainly the Mediterranean's, at least because of its origin and the place it still holds in food. From Neolithic times, the wild cereals which grew in the oak forests of the mountain forelands of the Taurus and Zagros, within the borders of modern-day Turkey, were harvested before being sown in fields close to villages. Barley, einkorn wheat (*Triticum monococcum*) and emmer wheat (*Triticum diococcum*) are thus the oldest cereals to be cultivated, around 8000 BC. It seems that this emmer wheat was the origin of the durum wheat which appeared in Egypt in the first millennium BC and which is now eaten in the form of semolina or pasta. Soft wheat, which is used to make bread, is the result of a

crossing of durum wheat with a wild grass, probably unintentional. With the domestication of wild species, cereals thus became the staple food of the Mediterranean basin. In the SEMC, the part consumed directly is still a high proportion of the food ration, while it has recently declined in the North due to socio-economic change, while increasing in indirect form with the development of livestock breeding which is very greedy for cereals.

**A North-South imbalance.** The largest Mediterranean cereal producers are in the northern part: France, Turkey, Italy and Spain have accounted for over 65% of Mediterranean production since 2000. The great Paris basin, the plain of the Po, Castile, the great Anatolian plateau are among the major producer regions. With over 10% of regional production, Egypt is the leading producer country on the southern shore, far ahead of Morocco, which produces less than 3%. Looking at wheat, the Mediterranean cereal *par excellence*, the rift between the North and the SEMC is even more accentuated. The same four countries come top, this time representing just over 68% of production. The leading country on the southern shore, Egypt, only accounts for just under 8% of production, while the top Maghreb country, Morocco, produces less than 4% of the region's wheat.

The larger arable area in the North explains this difference between the two shores of the Mediterranean. Higher rainfall in the North, wider use of irrigation and inputs (fertilisers and pesticides) and better technical and organisational mastery of production also allow producers in these countries to achieve high yields (for wheat, they are not only 3.5 times higher than those of the Maghreb countries but also more consistent). Agricultural policies play an important role. Cereals cultivation is supported by the CAP, while Turkey

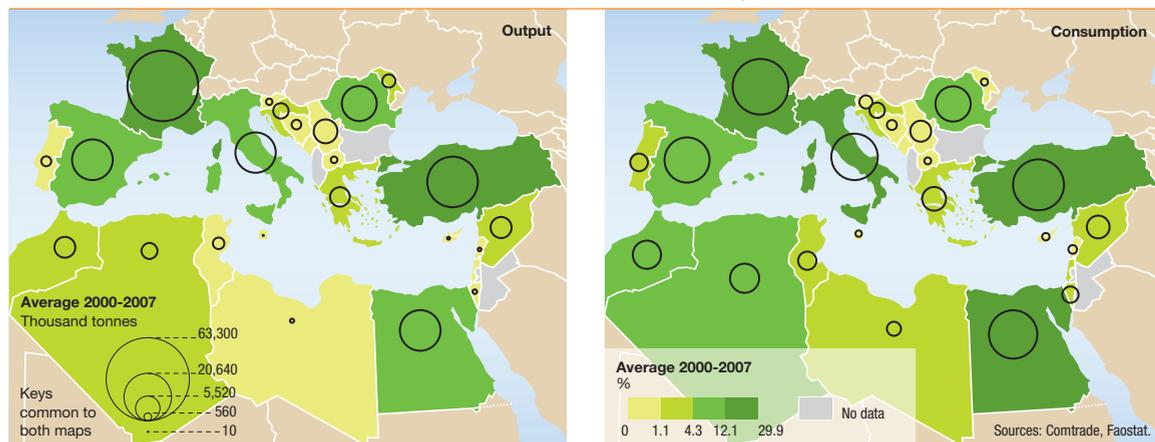
puts it at the core of its agricultural development. On the other hand, the SEMC (especially the Maghreb countries) made the development of agricultural products for export the priority. However, it should be pointed out that Syria more than tripled its wheat yields during the 1990s through an ambitious programme of irrigation of cereal fields. The same applies to Egypt, where an irrigation policy allowed yields similar to those of the most competitive countries to be attained, but this is confined to a region covering the Nile (note that yields per hectare are the cumulative result of two or three harvests a year).

**Massive consumption.** Among all the regional groups, the SEMC account for just over 42% of cereals consumption and over 47% of wheat, compared with 52% and 48% respectively for the countries of the European Union. Across the Mediterranean region, the level of self-sufficiency in cereals is almost 100%, but this is because France is a major provider. In wheat, the level is only 70%. In the period 2000-2007, the level of dependency on wheat imports of many Mediterranean countries has even risen to over 50% today. Among the dependent countries, only Egypt and Syria have managed to reduce their dependency during that period.

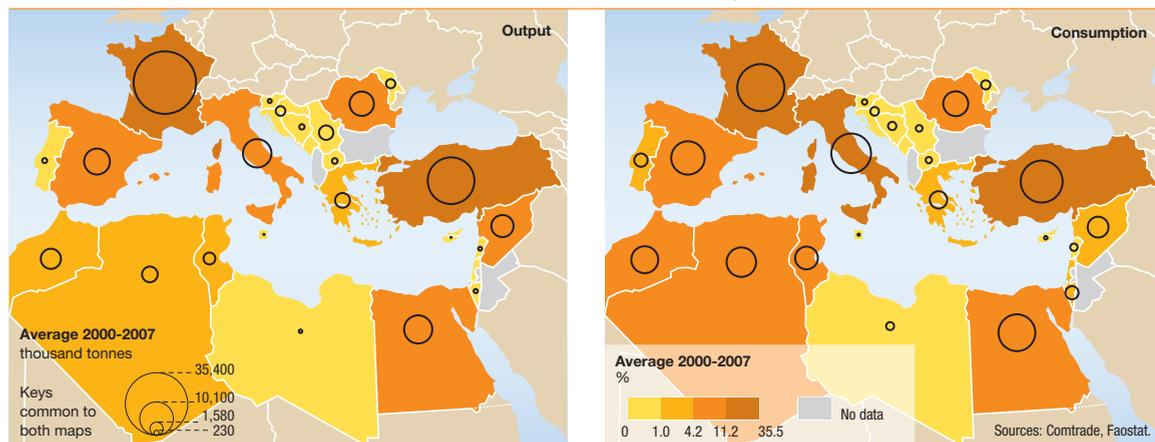
#### RICHES OF FRUIT AND VEGETABLES

The diversity of agro-climatic conditions in the Mediterranean allows the production of a wide range of fruit and vegetables. For some of them, the Mediterranean is even the chief producer in the world, to the point where they qualify them as Mediterranean products, even if some of them do not originate in the region. This is particularly the case of apricots, almonds, figs, dates, strawberries, hazelnuts, clementines, beans and tomatoes.

**CEREAL OUTPUT AND CONSUMPTION IN THE MEDITERRANEAN REGION, 2000-2007**



**WHEAT OUTPUT AND CONSUMPTION IN THE MEDITERRANEAN REGION, 2000-2007**

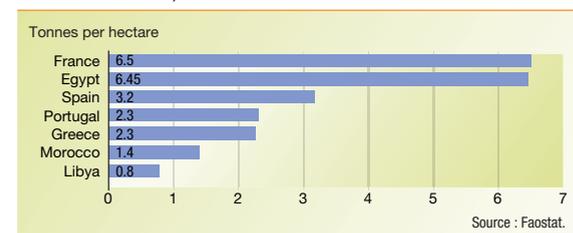


**TURKEY AND THE DEVELOPMENT OF CEREALS**

During the period 1950-1990, Turkey brought about a cereals revolution in three stages. In the first period (1950-1965), rapid mechanisation allowed a spectacular growth in the cultivated area. The large-scale introduction of new Mexican varieties and their spread marked the start of the second stage (1966-1975) which would result in a shift from dependency to self-sufficiency. The introduction in 1975 of a "technological package" suited to the conditions of dry cultivation of wheat in winter on the Anatolian plateau, the wheat loft of Turkey, was the third stage of the cereals revolution. This semi-arid type zone alone accounts for almost half the area under wheat cultivation in the country. The technological package seeks, in particular, to increase the moisture available for wheat cultivation by improving ploughing to reduce evaporation of water from the soil.

From Yavuz Tekelyoglu, "L'agriculture turque : entre puissance et adaptation", in Pierre Blanc (dir.), *Du Maghreb au Proche-Orient : les défis de l'agriculture*, Paris, L'Harmattan, 2002.

**WHEAT YIELDS, 2000-2006**



## PLANT PRODUCTS

### MEDITERRANEAN SPECIALITIES

**Specialisation and concentration.** Turkey, Italy, Spain and Egypt are the leading producers of fruit and vegetables around the Mediterranean and represent over 65% of total production (by volume) of the zone. Tomatoes are the most widespread product. They account for 20% of production in Italy, 14% in Spain, 31% in Egypt, 35% in Jordan, 26% in Turkey and 15% in Morocco. Grapes have a not inconsiderable share of production, especially in the countries of the North Mediterranean (22% in Spain, 41% in France, 26% in Italy). Citrus fruits occupy an important place in production, especially in Israel (20%), Morocco (15%) and Spain (17%). Despite the diversity of production of fruit and vegetables at Mediterranean level, there is nevertheless a degree of specialisation at country level. Thus, in each of the countries of the Mediterranean basin, some 65% of production (by volume) is covered by five products. This specialisation is found in terms of the two shores of the Mediterranean: while orchard products represent over half the production of the countries of the north Mediterranean (Italy, France, Spain), market gardening is predominant in the majority of the SEMC (over 65% of production in Morocco, Turkey and Egypt).

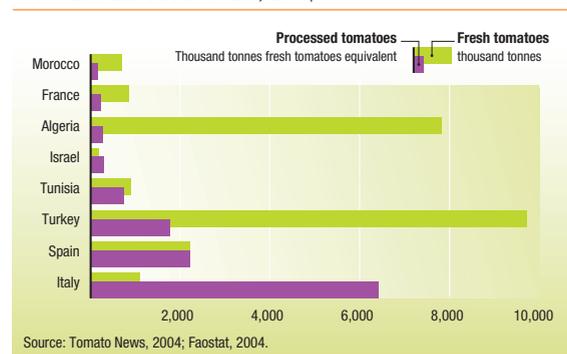
**The pre-eminence of domestic markets.** In the majority of countries, especially the SEMC, production is primarily destined to supply domestic markets. Turkey exports only 14% of its production, Egypt 13% and Morocco 24%. Exports are thus an important outlet for the production of Spain, France and Israel with 62%, 57% and 33% respectively of production by value. Certain fruit and vegetables are even essentially export products (of which 60% by value go to the European Union). In Spain, 53% of the production of oranges and 72% of mandarins are exported. Similarly, 25%

of Israeli grapefruit, 31% of Moroccan oranges and 20% of Moroccan tomatoes are sold in foreign markets. In the SEMC, production for export is a quite separate branch from products destined for domestic markets. More capitalist and more innovative, this production often comes from larger enterprises which meet the high demands in terms of the phytosanitary and commercial standards of the European market and hyper and supermarkets. This export production is often located in zones separate from that destined for the domestic market, which is seasonal and closer to the major consumer markets. As Mediterranean production of fruit and vegetables consists mainly of perishable products, it is not surprising that the Mediterranean countries export essentially to their neighbouring countries. Thus, the great majority of trade in fruit and vegetables in countries of the Mediterranean zone (53%) occurs within the zone. But following the example of tomatoes, the share of fruit and vegetables destined for transformation should not be overlooked. Italian tomato production and a not

inconsiderable part of Spanish production is largely destined for the manufacture of canned and bottled products. As tomatoes produced for transformation do not have the same characteristics as tomatoes destined to be sold fresh, the two branches of production are completely separate in those countries.

Although Euro-Mediterranean exports of fruit and vegetables are primarily from the EU countries (78% by value), they are nevertheless a very important sector for the SEMC. Fruit and vegetables represent over half of agricultural exports from those countries and are a not inconsiderable source of revenue. This may shed light on the debate concerning the opening of the European market to products from the SEMC in the framework of the Union for the Mediterranean. In the South, improving access to the EU market for the principal export products is a major challenge, while in the North, producers fear an exacerbation of Mediterranean competition in a sector which is very vulnerable to crises and which receives little support from the CAP. ■

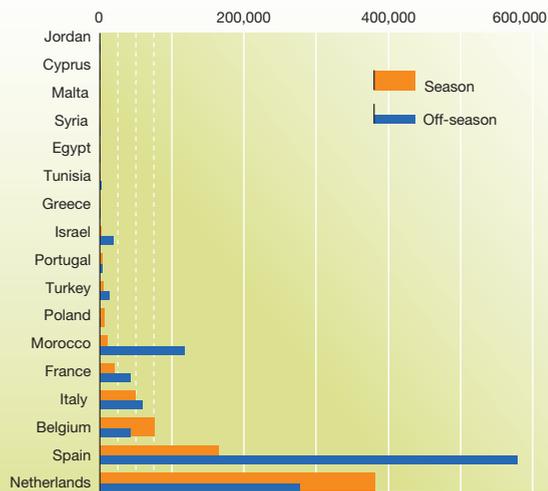
#### PROCESSED TOMATOES, 2004



### SEASONAL AND COUNTER-SEASONAL

The tomato trade is highly seasonal. Thus, while trade in tomatoes within the EC essentially takes place during the "natural" period of production, i.e. during the summer, European imports from countries of the South Mediterranean (especially Morocco) consist primarily of counter-seasonal fruit. However, the profitability of production structures (glasshouses, ripening platform...) explains why production and thus European exports occur all the year round. This is especially true of Spain, where the volumes produced counter-seasonally far exceed those produced in summer.

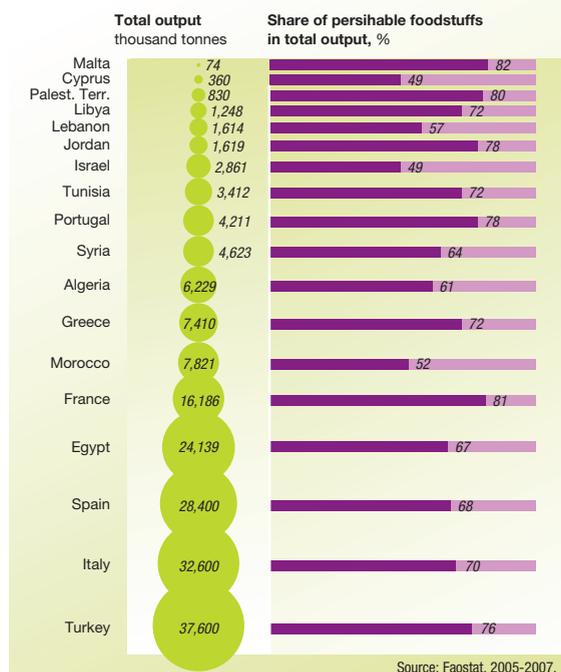
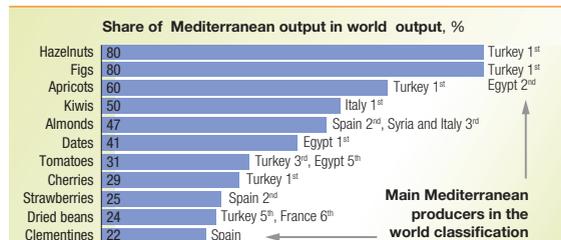
Tomato exports to EU countries by season  
thousand tonnes



Sources: Tomato News, 2004; Faostat, 2004.

Atelier de cartographie de Sciences Po, 2009

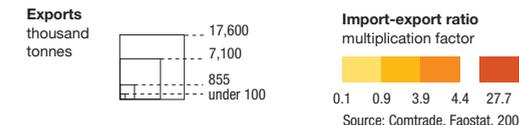
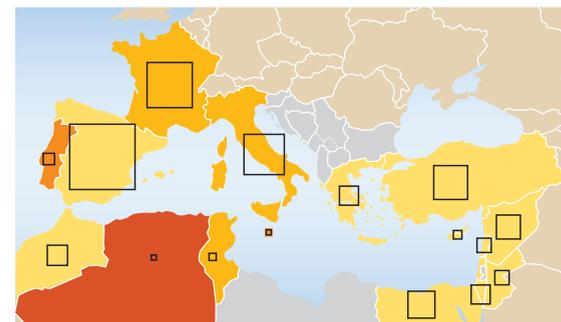
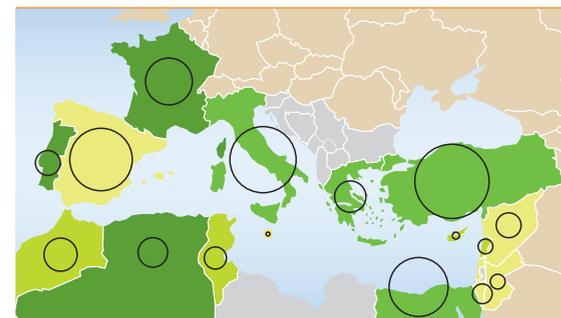
### FRUIT AND VEGETABLE PRODUCTION



Source: Faostat, 2005-2007.

Atelier de cartographie de Sciences Po, octobre 2009

### FRUIT AND VEGETABLE PRODUCTION AND TRADE IN THE MEDITERRANEAN REGION



Atelier de cartographie de Sciences Po, 2009

# ANIMAL PRODUCTS

The eastern Mediterranean is a very ancient if not the most ancient, home of domestication of livestock (goats, cattle, sheep and donkeys especially) which goes back to the Neolithic revolution. The purpose of keeping some of these species changed in the 20th century as societies evolved.

## A VARIETY OF LIVESTOCK

With approximately 1.4 billion head in 2007, the chicken was the most widespread domestic animal in the Mediterranean, especially in Turkey (344 million), France (175 million), Spain (135 million), and Algeria (125 million). At over 150 million head (a quarter of the world flock), sheep are the second most numerous Mediterranean species. Grazing land with low productivity is plentiful in the Mediterranean, in the mountains and certain steppes or cereal plateaux, which has led to the development of pastoral farming. Turkey, Syria and Spain, with their vast grazing areas, play host to the majority of the sheep population, with 25.5, 23 and 22 million head respectively. Like goats, the adaptation of certain breeds of sheep to the hot climate has facilitated their introduction in the Mediterranean, much more concentrated than in the northern countries for cultural reasons, pig-breeding involves some 61 million head, which makes pigs the third largest group, dominated by Spain (26 million) and France (15 million). The fourth largest group is cattle, where France (26 million) and Turkey (11 million) account for the bulk of the production due to the size of the temperate zones in those countries. Other species, albeit less common, are emblematic of the Mediterranean region and play a major role in the conservation of biodiversity. Such is the case of goats, with a population of 37 million head, donkeys, very common in Egypt with over 3 million head and Morocco

(about 1 million), buffalo, especially in Egypt (4 million) and camels which are very well adapted to the arid zones (200,000 and 300,000 head in Algeria and Tunisia respectively).

**Production systems.** Animal production systems differ enormously from one species to another. They are essentially extensive or semi-extensive for the production of meat from sheep and goats, intensive or semi-intensive in the case of production of cow's, sheep's and goat's milk, and intensive for poultry and pigs. Due to the predominance of certain products in the north Mediterranean, this shore has more intensive production systems than the eastern and southern shores, with the use of food supplements. While traditionally the vegetation of grazing land provided a large part of the fodder destined for small ruminants, the number of animals has increased fivefold since the 1950s without any increase in the grazing area. Moreover, there has been a decline in the total food resources related to erosion and degradation of soils caused by over-grazing, excessive cutting of wood and ploughing. Grazing now only represents 10% to 25% of the animals food base compared with 70% in the past. That has led to an increase in the use of concentrated foods, the cost of which is quickly recouped with the rise in the price of mutton and lamb. In the light of these changes, pastoral farming, especially nomadic, has been declining in the SEMC. The change in feeding of animals, the supply of jobs, especially at oil sites as well as, earlier, the creation of new international borders, tolled the knell of a nomadic way of life redolent of the history of the peoples of the region.

**Meat production.** Production volumes, of course, are correlated to the scale of farming of each animal species, even if it varies depending on productivity, with generally higher levels in the

north of the basin. The largest volumes of meat are provided by monogastric species where production can be rapidly adjusted to increases in demand, primarily pork, with over 8 million tonnes of meat produced, followed by chickens, which provide 6.5 million tonnes. Next come ruminants, with cattle (5 million tonnes), then far behind, sheep which only account for 1.5 million tonnes. Pork production is predominant, and Spain, with 3.5 million tonnes, is the leading producer (63% of pork produced by that country). The share of pork is also very high in Portugal's overall production (49%) and in Italy and France (40%). In the other countries, with the exception of Syria where mutton and lamb production dominates with 44% of total production, production of chickens comes top with a share ranging from 40% to 50% and as high as 63% in Israel.

From 1998 to 2007, the general trend in animal production is upward in the East and South of the basin, in the countries of the former Yugoslavia and Albania, especially the production of chickens to meet the needs of expanding populations (+392% in Bosnia-Herzegovina, +140% in Israel and +120%

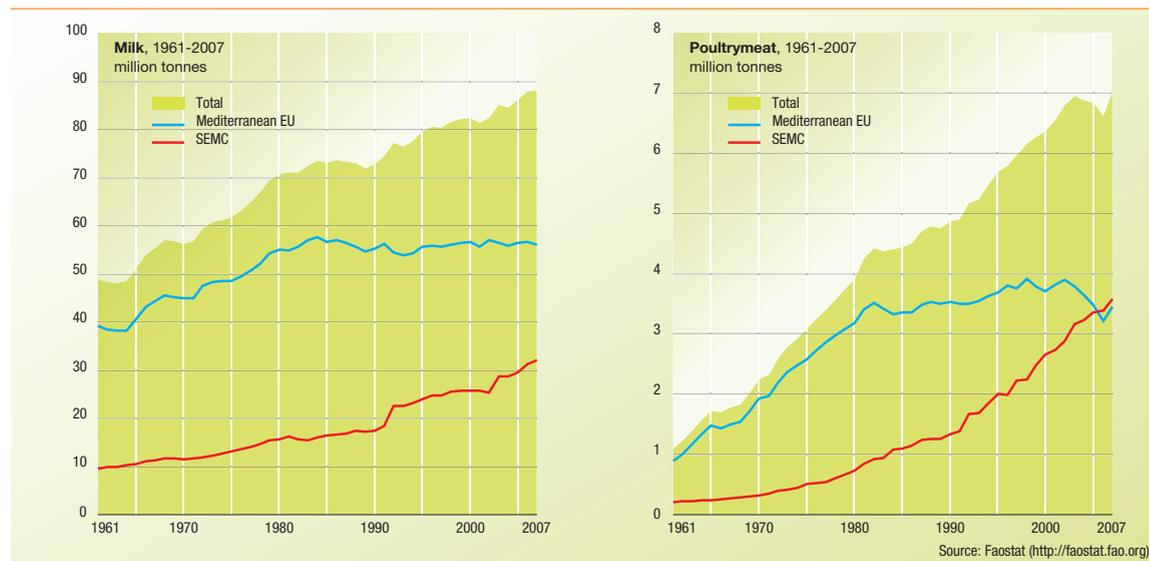
## LIVESTOCK, 2007



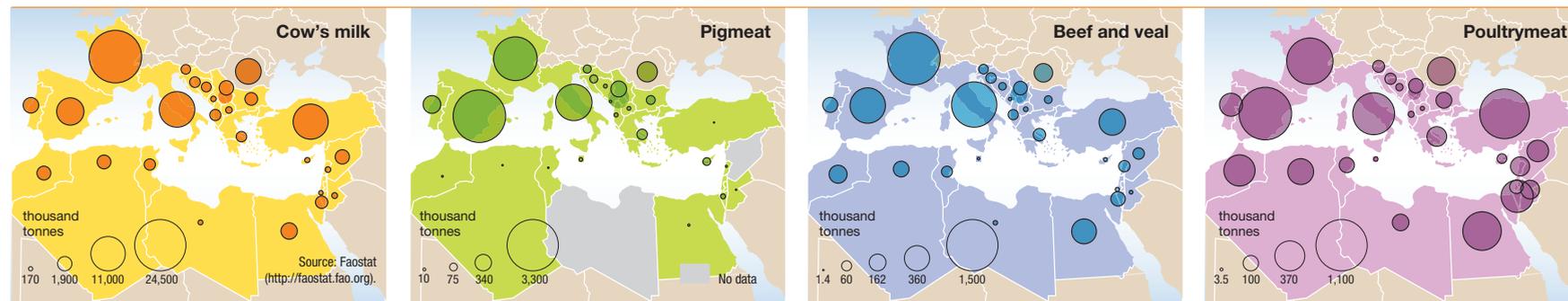
in Turkey). In the North, however, it is stagnation, and even a decline in Italy and France. Demographic trends may be part of the explanation. For ruminants, there has been a significant increase in cattle production in Morocco (41%), Egypt (27%) and Turkey (20%). Sheep production is also rising in some countries, in particular Syria (33%), Algeria (109%) and Morocco (104%). Conversely, the major producers of ruminants, such as Turkey, Spain and France, have seen a decline in their production (14%, 13% and 30% respectively). Lastly, among the major pork producers, only Spain and Italy have seen a fairly considerable increase in their production (29% and 14% respectively) while French production stagnated.

**Milk and eggs.** Rich in proteins, dairy products have always been the subject of fairly sustained development in the Mediterranean. As a staple food, they are highly diversified in the region, if only for the large variety of cheeses or dairy products which reflect the innovative capacity of Mediterranean peoples when it comes to food. With a

**MILK AND POULTRYMEAT OUTPUT**



**SEVERAL ANIMAL PRODUCTS, 2005-2007**



production of 70 million tonnes in 2007, fresh cow's milk is the essential source in the Mediterranean. This production is, as often the case, highly concentrated, with four countries accounting for the bulk of output: (France (24.4 million tonnes), Italy and Turkey (11 million tonnes each) and Spain (6 million tonnes). The presence of temperate areas has facilitated this type of livestock farming which is not suited to excessive temperatures. Moreover, the systems of guaranteed prices for milk which prevailed in France and Italy under the Common Agricultural Policy (CAP) allowed an increase in production, at least until the arrival of milk quotas in 1984. The production of milk from small ruminants is also highly concentrated. Sheep's milk is produced primarily in Syria (874,000 tonnes), Turkey (782,000 tonnes) and Greece (727,000 tonnes). Three countries, France, Turkey and Greece supply over 50% of goat's milk production and the 2.5 million tonnes of buffalo milk are covered 90% by Egypt, with Italy and Turkey producing almost all the rest. Cheeses, with some 4.5 million tonnes, come mainly from France (1.87 million tonnes) and Italy (1.16 million tonnes), two countries which also dominate butter production due to their food tradition. During the last decade, considerable efforts have been made to increase milk production in the SEMC, among other ways, by the import of specialised breeds to meet the new needs created by the major increase in the population (+60% in Jordan, Algeria and Egypt between 1998 and 2007). It stagnated, however, in the European Mediterranean countries, due to the dairy quotas designed to prevent over-production. Egg production is also very important in the Mediterranean, with a volume of 4.6 million tonnes in 2007. France, Turkey, Spain and Italy are by far the chief producers with over 700,000 tonnes of eggs each in 2007. Some countries have seen a huge increase in

their volumes, notably Algeria, Egypt, Syria and Albania, with growth rates in excess of 40% (68% in the case of Algeria).

### HIGHLY DIVIDED CONSUMPTION PATTERNS

The European Union has a database of very recent figures for consumption, but the ones used will be those of FAO (2003 figures) in order to allow comparison with the SEMC. Meat consumption varies considerably from country to country but a clear division emerges between the North and South of the basin. The EU Mediterranean countries consume between 79 and 121 kilos of meat per person per year while the SEMC, with the exception of Lebanon, are below the 30 kilos per person per year threshold. However, these countries are seeing a clear increase in consumption, especially in Lebanon and, to a lesser extent, Tunisia and Syria. It is also interesting to note the carnivorous diet of certain countries: the Spanish consume a great deal of pork, in the form of raw ham and chorizo, while the Israelis eat mainly chicken. More generally, the consumption of pork and beef is predominant widely in the North, with poultry predominant in the South. Even though it is less obvious, this division between the two shores exists in the field of dairy products; total consumption, excluding butter which is specific to certain countries such as France, ranges from 35 kilos per person per year in Morocco to 274 kilos in France. All the EU Mediterranean countries are above the 100 kilos per person per year threshold, but some SEMC are also above it, notably Turkey (122), Algeria (108) and Tunisia (104). Consumption of fresh milk is not proportional to consumption of dairy products. The share of fresh milk is marginal in France (23%) and Italy (9%) but predominant in Tunisia (80%). The general trend is rather towards a net increase in consumption of milk per person, especially in Lebanon and Egypt (+92% and +70%

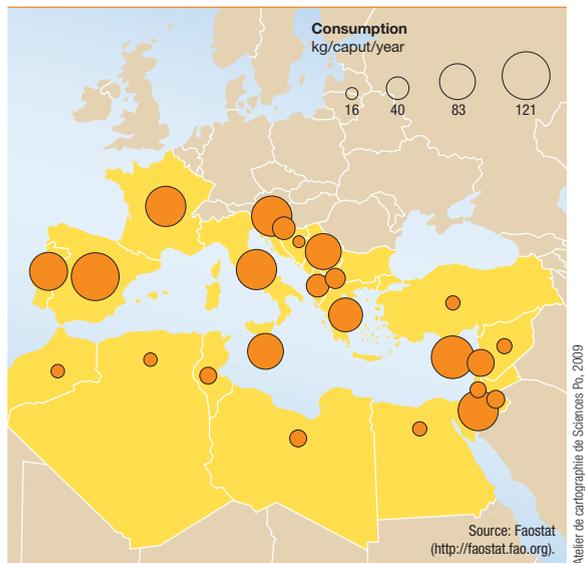
respectively between 1998 and 2007). Only Turkey has seen a decline in its consumption of 10% over the same period/ Like meat and milk, egg consumption is much higher in the North than in the South. While the French, Spanish, Italians and Croatians consume over 10 kilos of eggs per person per year, some SEMC consume very little, especially Algeria (4 kilos) and Egypt (2 kilos). Overall, levels of consumption per person have not varied with the exception of Israel (- 40 %) and Greece (-20 %).

As can be clearly seen, patterns of consumption and production seem quite consistent: the increase in consumption of meat leads to an increase in production as production processes become more efficient and can be intensified. The same pattern can be observed for milk production where some deficit countries have become self-sufficient, such as Syria and Tunisia, while others are still a long way off (Egypt, Morocco, Algeria). ■

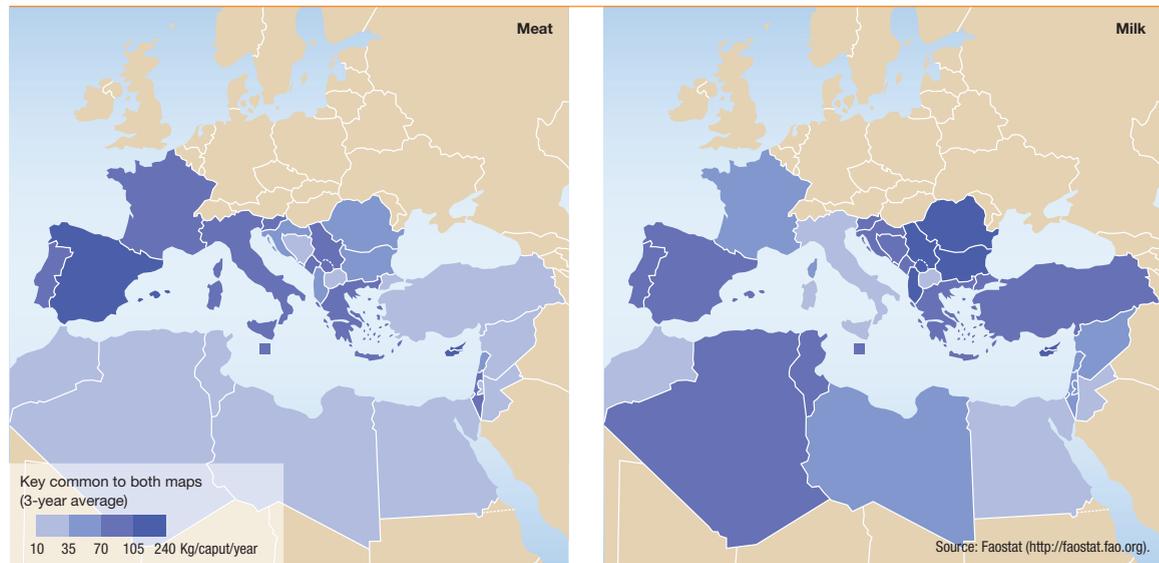
### LIVESTOCK FARMING AND CLIMATE CHANGE

Climate change will affect livestock farming in the Mediterranean and modify its geography. Recurring drought coupled with heat waves will be a drain on animal well-being. Already scarce plant resources could diminish and make livestock farming difficult, especially in steppe zones. Rising winter temperatures could accelerate parasitic cycles and thus give rise to an increase in zoonoses (leishmaniasis, brucellosis, catarrhal fever, etc.). Furthermore, livestock contribute to greenhouse gas emissions, which should be taken into account in the coming environmental revolution.

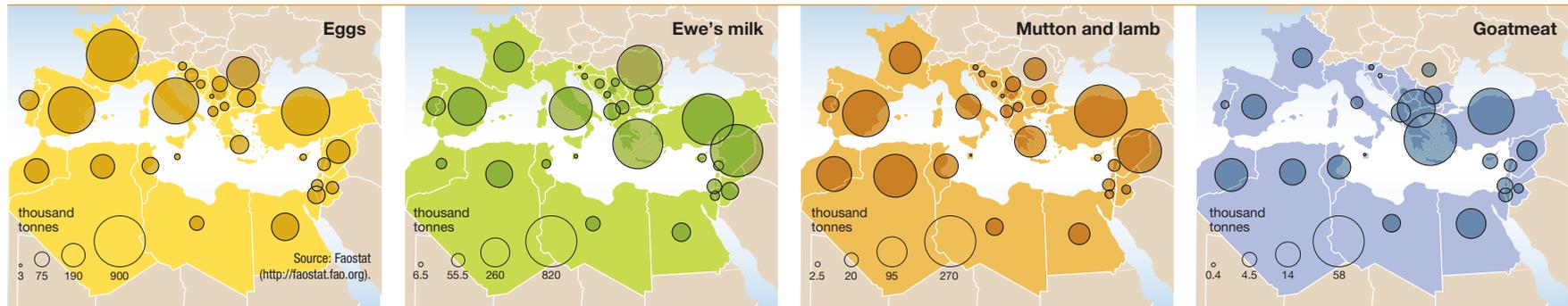
MEAT CONSUMPTION, 2003



AVERAGE CONSUMPTION, 2001-2003



SEVERAL ANIMAL PRODUCTS, 2005-2007



# EMERGING AND INNOVATIVE PRODUCTS

Since the 1980s, the growing demand for quality products and the need to diversify agricultural production in a context of globalisation has led to the development of “innovative” products. In the Mediterranean, these emerging products now represent an important part of agricultural production, an element of diversification of traditional farming and a factor in competitiveness on global markets.

## THE BOOM IN ORGANIC AGRICULTURE

In the field of biological agriculture, undeniable progress has been made in recent years. In 2007, in the Mediterranean, almost 6 million hectares were being farmed, double the area in 2001. Three Mediterranean countries of the European Union stand out: Italy is the top producer but Spain is fast catching up, and France, after a period of stagnation, wants to stimulate the sector in the framework of its plan “Organic Agriculture: 2012” to become self-sufficient by 2012. Organic agriculture is a more recent fad in the SEMC, first initiated by foreign agro-food enterprises established in those countries, and also governments and donors which saw its competitive potential. In those countries, the area given over to organic agriculture was 344,000 hectares in 2006.

Benefiting from national regulation, Tunisia and Turkey, the leading countries in the SEMC, have set up a national certification system and are well placed on international markets with regard to their traditional products (dried fruit and nuts for Turkey, dates, aromatic and medicinal plants and olive oil for Tunisia). In the western Balkans, Serbia is in first place, with vast areas devoted to it, followed by Croatia. It is certain that the process of accession to the EU has stimulated the organic sector in those countries. Indeed, it has allowed the establishment of a regulatory framework

and opening of the European market to these products.

Lastly, although organic agriculture has made significant advances in the Mediterranean region, its development is limited for the moment by several factors: problems in marketing organic products, the limited capacity for promoting the product, insufficiency of transformation and distribution infrastructure and the lack of consumer information.

## THE PREMIUM ON QUALITY

Alongside organic products, typical and traditional products are an obvious way of promoting local resources, especially in a context of globalisation which is leading to their rediscovery. Thus in 1992, the EU adopted a series of regulations on systems of protection and promotion of agro-food products (protected designation of origin [PDO], protected geographical indication [PGI], traditional speciality guaranteed [TSG] which represent a “guarantee” to consumers, a first-rate commercial tool for producers and a contribution to local development. It is interesting to note that 80% of certified products in the EU, in the three categories, come from Mediterranean countries (Italy, France, Spain and Portugal, essentially). And even in non-EU countries where the quality approach is not institutionalised (absence of ineffective quality recognition systems, except in Turkey; lack of involvement of public authorities), one can see the emergence of a local products sector where some producers, researchers and operators have realised the importance of “local products”.

## A SOURCE OF AROMATIC AND MEDICINAL PLANTS

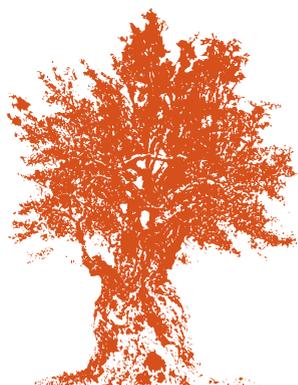
Among the emerging crops, aromatic and medicinal plants (AMP) are increasingly becoming the focus of SEMC

development policies and programmes. Their use and preservation are a matter of public health, protection of nature and biodiversity, intellectual property as well as economic development. In particular, in the least favoured zones, the collection of plants which are most often wild is a source of income for the most deprived, such as small farmers and landless shepherds, not to mention that when they are cultivated, they sit easily with traditional crops such as maize, beans and vegetable crops. Unfortunately, it is difficult to evaluate national production of aromatic and medicinal plants, as national and/or regional statistics are lacking and collection is often informal in most of the countries.

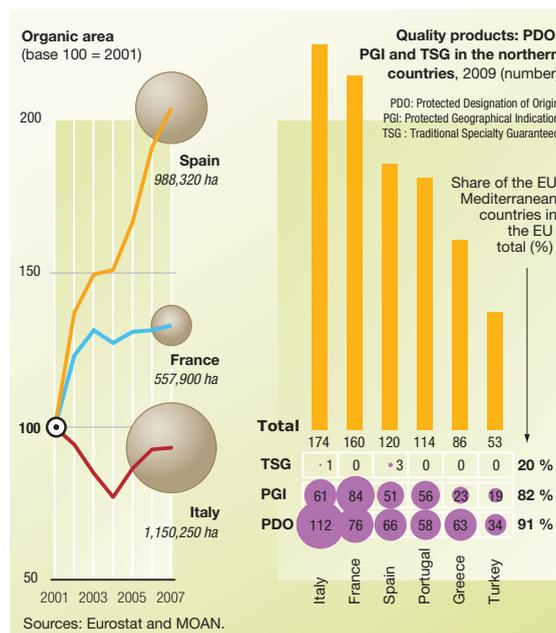
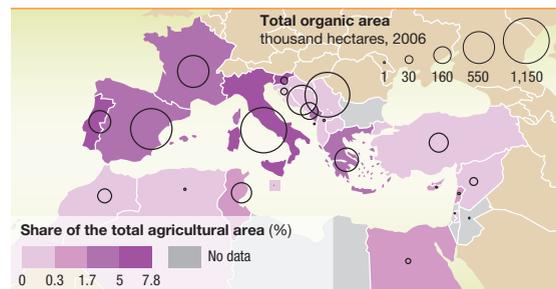
**Morocco chose to embark on the promotion of these plants to make them a development tool.** Due to its rich soils and favourable climate, the country offers considerable plant biodiversity with 800 native species in particular. Of the plants found there, 90% are in their wild state and only 10% are cultivated in the various regions of the country. The success of Moroccan production can be measured by the rapid growth of exports to the five continents of North America (United States and Canada), Central and South America (Mexico, Brazil), Africa (Tunisia, Gabon, Nigeria) Western and Eastern Europe, Near East and Far East, and Australia. However, the sector is characterised by the existence of a multitude of poorly coordinated players (collectors, middlemen, distillers, large companies and numerous associations). The National Institute of Aromatic and Medicinal Plants, the only such establishment in Africa, was created to develop and pursue the national strategy in a sector called on to supply several high added value sectors: perfumery, cosmetology, and the food additives and spices industry.

### GMO – WAITING IN THE WINGS

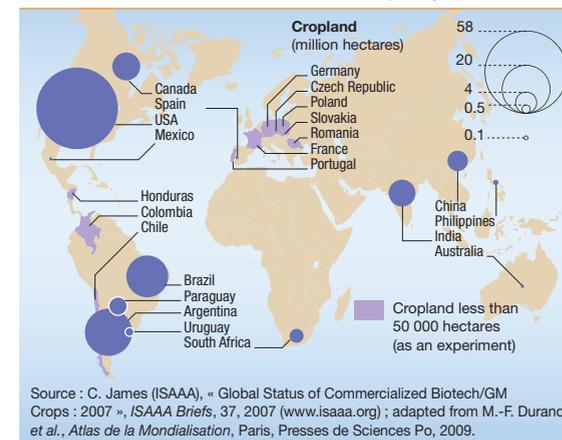
As well as emerging products which exalt quality and links with the region and tradition, the Mediterranean is also witnessing the development of genetically modified organisms (GMO) which are the subject of lively debate between fans and disparagers. For the time being, this region is lagging behind compared with other regions of the world. On the southern shore, only Egypt, driven by the food crisis and the need to have disease-resistant crops, has approved the cultivation of a genetically modified variety of maize. In the North, Spain (Aragon and Catalonia, in particular) is the chief producer (some 80,000 hectares of GMO maize in 2008, or 22% of the national area under cultivation of this crop), followed by France (some 20,000 hectares) and Portugal (4,500 hectares) where these areas represent an infinitesimal proportion of the useable agricultural land (UAL). ■



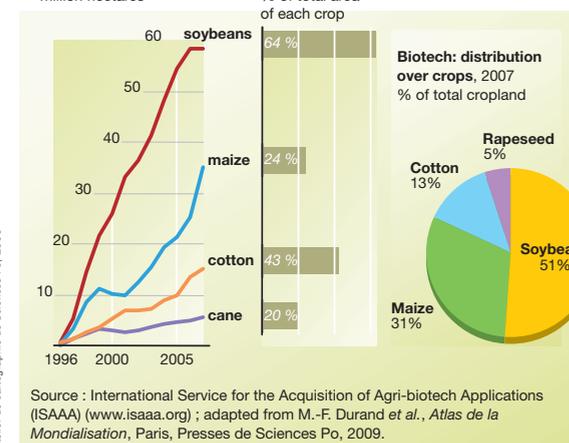
### ORGANIC AGRICULTURE AND QUALITY PRODUCTS



### MAIN COUNTRIES USING GMO CROPS, 2007



### GMOs grown throughout the world, by crop type





## REGIONAL CONTRASTS

The countless villages and countrysides in the Mediterranean region rival in beauty with the magic of its often millennial cities. The visitor is enchanted by this dual heritage that has been handed down by the sweat of the peasant's brow and the labours of craftsmen. For the many tourists in this part of the world do not come solely in search of sun, sand and sea. They find innumerable reasons amongst its intoxicating treasures to cultivate the mind, to wonder and to relax.

Whereas these contrasts between cities and countryside often offer a rich tapestry, others are a reason for concern. Obtaining medical care or an education or simply having access to drinking water is not an easy undertaking throughout the Mediterranean. Progress has of course been made in this part of the world, where life expectancy is rapidly rising and education has penetrated the remotest areas. There have never been as many educated men and women in the region, both in absolute terms and in proportion, than there are today.

But the fact remains that there is still too often a marked contrast between the urban and the rural Mediterranean world. Access to drinking water and preventive medical care is nevertheless more systematic in urban zones along the coasts than in the inland

rural areas. And although literacy schemes are extensive, they have not yet reached the remotest enclaves, and women are often those most frequently excluded. This regional gap is at its most visible in the South and East of the Mediterranean basin. The rural infrastructure and regional development policies implemented in the North have revived areas that have sometimes been deprived. European solidarity has resulted in beneficial redistribution measures restoring regional balance. The complex interlocking of structural policies must not mask the success of these joint efforts, which have enabled Mediterranean regions to strengthen their foothold in a prosperous Europe.

On the other shores, various areas have gradually been connected with the urban world through these policies, whose importance is realised by the States concerned. But there is still a great deal to be done. It is imperative that these measures be successful if equity is to be promoted and rural and urban populations are to be able to live together within each country and, more generally, in the Mediterranean region. Just as agricultural and rural development, which form the core of European integration, must be an integral part of Mediterranean cooperation.

# REGIONAL INEQUALITIES

**W**hen it comes to access to basic services there are two marked divides. The gap between the EU Mediterranean countries and those on the southern and eastern shores, although narrowing, is compounded by the urban-rural gulf, which is particularly marked in the latter countries: whereas access to basic services (education, health, water supply, etc.) is generally well provided in urban areas, it is still uncertain and variable in the rural world. Although the development policies pursued in the 1990s brought considerable improvement in the living conditions of rural communities, such improvements are long overdue in certain regions. Urban-rural disparities in the northern Mediterranean countries have been considerably reduced, on the other hand, thanks to the vigorous national and European policies pursued in the rural area management sphere.

## POVERTY, A RURAL PHENOMENON

In the northern Mediterranean, poverty was formerly more a rural phenomenon but is now tending to develop in certain urban zones, as is confirmed in France by the data on monetary poverty: between 1996 and 2002 the number of poor people in urban units of over 200,000 inhabitants increased by 8%. The poverty risk is still higher in rural areas, however. In the very rural parts of the mountain regions in Albania, the poverty rate reached the alarming 45% mark in 2004, whereas the rate is 23% at the national level and 21% on the coast. This country is said to have entered a phase of impoverishing growth with marked regional disparities. In the southern and eastern Mediterranean countries poverty is declining on the whole, at least when measured in terms of the monetary poverty threshold defined by the World Bank. But this general observation conceals disparities between

and within countries. Rural populations are still the most affected: in Egypt, poverty affects 27% of the rural populations compared to 11% of urban people. Almost two-thirds of the poor populations of Algeria and Morocco live in rural areas. In Algeria, the poverty map drawn up by the national area management agency in 2001 reveals a clear gap between the urban and coastal zones on the one hand and the rural areas on the other. In Tunisia, over 8% of the rural population is still living below the poverty threshold compared to under 2% in urban areas, and pockets of extreme poverty persist in certain rural zones. Monetary poverty is generally compounded by more limited access to educational, social and health facilities. The rural areas in the southern and eastern Mediterranean countries are clearly those primarily concerned by the Millennium Development Objectives, i.e. reduction of poverty and hunger by half by 2015, primary education for all – a major development challenge given the size of the under-15 population – and reduction of the infantile mortality rate.

## EDUCATION, THE VECTOR OF SOCIO-ECONOMIC DEVELOPMENT

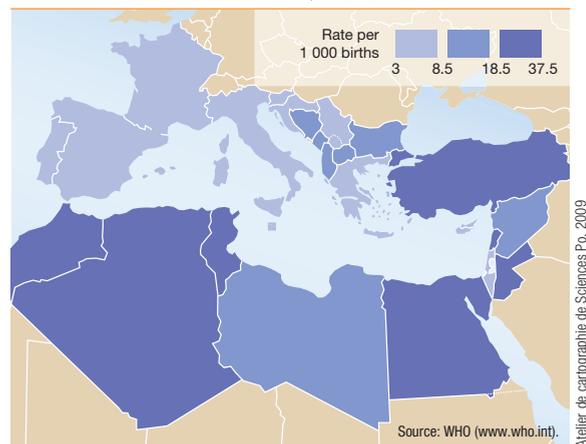
As regards access to education, the same gaps are found again between the two shores of the Mediterranean but also between rural and urban worlds in the countries in the South and East. Most southern European countries register high percentages of children in full-time education (a primary school enrolment rate of 99% and a rate of 82% to 99% for secondary education). The countries on the southern and eastern shores, on the other hand, are lagging behind to a certain extent: the primary education enrolment rate ranges from 74% to over 97%, and the rate for secondary education varies considerably: it is 32% in Morocco, 60% in Lebanon

and over 90% in Israel. However, the general level of education of the population as a whole has improved compared to the situation in 1999. UNESCO has observed that the number of children who are out of school has decreased by 2 million and that the teaching staff in higher education has increased by 30%. Education is nevertheless still more accessible in towns and cities than in country areas, and the gender distribution is still uneven – the percentage of boys in full-time education is often higher than that of girls. In Upper Egypt, 12% of men and 22% of women in urban areas have not had any schooling; the rate is doubled in the rural world, reaching almost 20% for men and 36% for women. Furthermore, barely 30% of rural women in Egypt attend secondary school, compared to 40% in towns and cities. In Algeria, whereas the literacy rate in rural areas rose from 48% in 1998 to 68% in 2005, only a very small number of women are concerned by this improvement: over 54% of women in the country as a whole cannot read or write. In Morocco, the illiteracy rate is still high, although it has dropped considerably: 50% in 2005 for rural communities compared to 25% in towns and cities. The rate for women is higher, at 65% and 35% in rural and urban areas respectively. This situation corroborates the conclusions drawn by the FAO and UNESCO, which consider that illiteracy is essentially a rural phenomenon, which is connected with poverty and hunger and which “hinders rural development and food security, threatens productivity and health, and limits opportunities to improve livelihoods and to promote gender equity.”

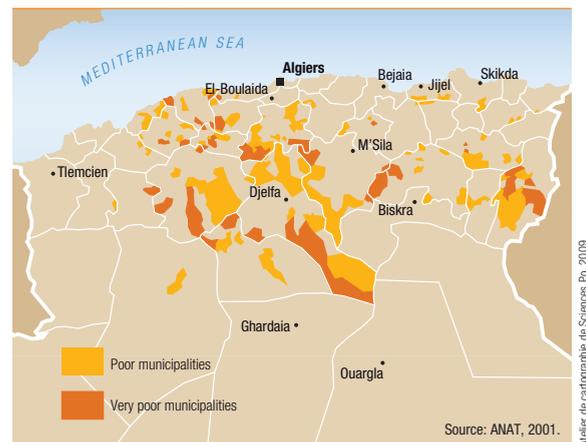
## THE HEALTH OF THE RURAL POPULATIONS CONCERNED

Investments in facilities that guarantee a healthy environment for the various populations are a sine qua non for

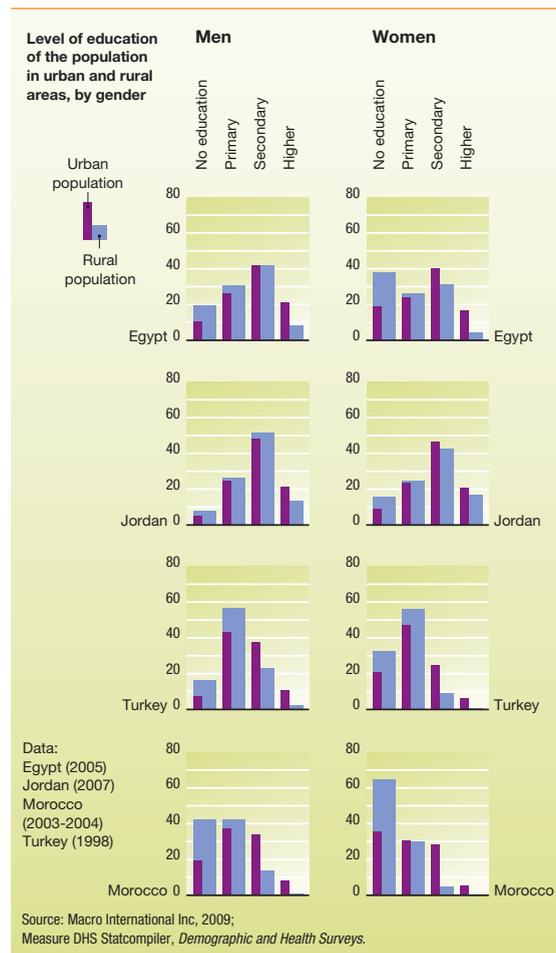
### INFANTILE MORTALITY RATE, 2007



### POVERTY IN ALGERIA



### LEVEL OF EDUCATION OF THE POPULATION



improving people's health. It should be pointed out that 20% of the infantile mortality cases (children under 5 years of age) in Egypt are due to diarrhoea and other infectious diseases connected with poor water quality. The protests of thirsty Egyptian citizens in the summer of 2007 underlined the precarious situation in certain regions of the country. Although the infantile mortality rate, which is a good indicator of the state of health in a country, has dropped in the southern and eastern Mediterranean countries, is still higher than in the countries on the northern shores: 25.9 ‰ in the South as against 5.7 ‰ in the North. It also reflects the rural-urban gap: in 2005, for example, the rate in Egypt was 56 ‰ in rural areas (compared to 39 ‰ in towns and cities), and the rate in Morocco was 69 ‰ in rural zones (compared to 38 ‰ in urban areas).

**Access to water and sanitation.** Having access to water means having a source that produces at least 20 litres per capita per day and is situated at a distance of less than 1 km (Millennium Indicator no. 30). According to this definition, it is estimated that all of the European Mediterranean countries have 100% drinking water coverage in both urban and rural areas. In the southern and eastern Mediterranean countries needs are still higher than the resources available, and the availability of resources is not necessarily a guarantee of quality. Drinking water coverage in rural areas improved in general in the period from 1990 to 2006, however, rising from 75% to 86%, whereas the rate deteriorated slightly in urban zones – by 2% over the same period. Although progress has been made on the whole, marked inequalities persist in certain countries: in Morocco, almost all urban populations have access to drinking water but only 58% of rural communities are covered. Syria, Tunisia and

Turkey have better networks in rural areas, where 87% of their populations have access to drinking water. Access to running water in the home is still essentially an urban privilege in the southern and eastern Mediterranean countries. In Morocco, 87% of the urban population has such access compared to 15% in the rural world, whereas in Jordan and Israel coverage is estimated at over 90%. Access to drinking water is also related to the availability of an efficient sanitation network: where there is no sanitation, fouled water is found in groundwater or rivers, and this does not facilitate purification. The situation is similar as regards access to sanitation infrastructures (sewage network, septic tanks, etc.), with disparities according to region. In the countries on the northern shores, sanitation infrastructure coverage is 100% for the urban population compared to 96% in rural areas. City dwellers in the North African countries have 90% coverage against 59% for rural people. The facilities coverage rate has improved over the last 20 years, however. In Morocco, although still inadequate, it has practically doubled, increasing from 25% in 1990 to 54% in 2006. In Syria, the rate has increased from 69% to 88%, and it is estimated at 72% for Turkey (compared to 69% in 1990). There is still room for progress as regards water and sewage treatment facilities, which are essential to public health. In Egypt, for example, only 21% of rural households are connected to the public sewage system (the rate rises to 84% in urban zones).

**Access to health systems.** Rural-urban disparities are also observed in access to public health systems in the southern and eastern Mediterranean, whereas this is not the case in the EU Mediterranean countries. They are most marked in Tunisia, Morocco and Algeria. The number of deliveries attended by trained staff is a further indicator of this dis-

parity. In Algeria, trained healthcare workers attend 92% of deliveries in country areas compared to 98% in towns and cities. In Jordan, the difference between urban and rural areas is very slight (around 1%), whereas the gap is wider in Egypt (66% of deliveries are performed by professionals in rural areas compared to 89% in urban zones) and very marked in Morocco, where 40% of rural deliveries are attended compared to 85% in urban areas.

Measles, which is still a major cause of mortality in children under 1 year of age due to lack of vaccination coverage, is a further indicator, particularly of the level of prevention. It must be stated, however, that vaccination coverage against measles in the southern and eastern Mediterranean countries is as good in rural communities as it is in towns and cities. Turkey is the only country where there is a regional difference, 69% of rural children having been vaccinated compared to 84% of urban children.

### ENDING ISOLATION AND BOOSTING RURAL DEVELOPMENT

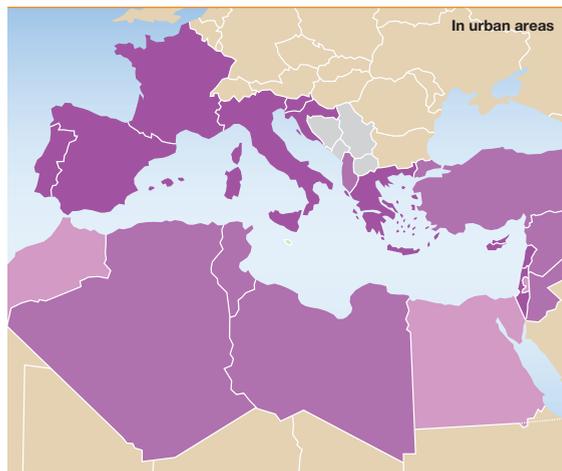
Action to reduce poverty will also inevitably involve the creation of road infrastructures, which are essential for economic development. This is particularly true of agricultural activities whose land-locked location does not facilitate either access to national and international markets or input distribution. Road and motorway construction has developed considerably since the 1990s (road infrastructures have been increased by 15% compared to 0.5% for motorways). The Moroccan motorway network tripled in the period from 1997 to 2006, increasing from 212 km to almost 640 km. In Algeria, it doubled in six years: it was estimated at 49 km in 2000 and by 2006 there were 107 kilometres of motorway – which is limited when

one considers the size of the country. Precedence was given to developing the road network, which has tripled in size since the 1970s, with a total of 110,000 km in 2006. Morocco has been building roads in rural areas since 1995 within the framework of the Millennium Development Objectives, so that 54% of the rural population now has access to the network. The railway network has not been developed to any great extent in the last few years (less than 0.1% in the period from 2000 to 2005), since precedence has been given to building roads and motorways. And finally, access to electricity has been developed in all countries – the grid now covers 99% of the territory in Egypt and 96% in Algeria.

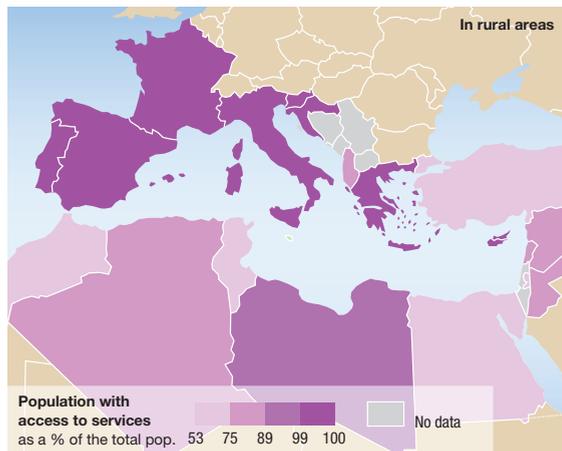
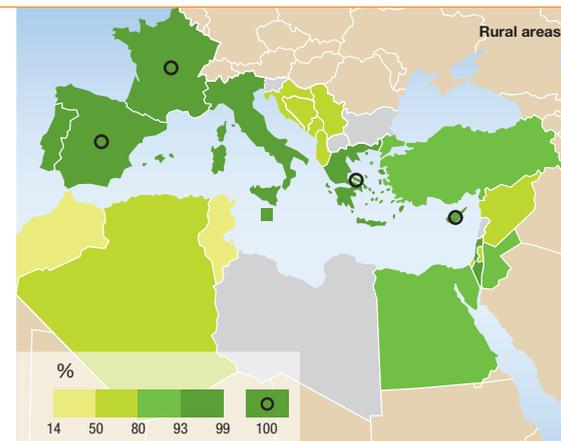
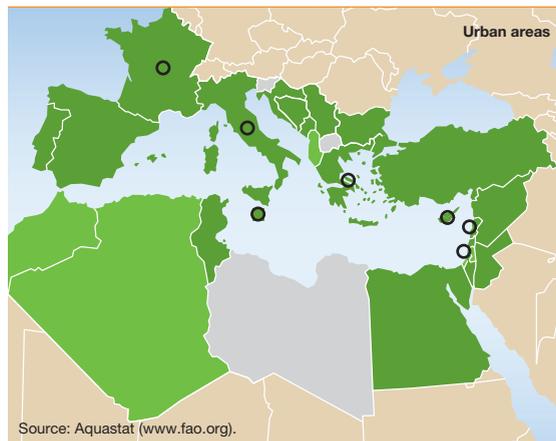
There are still marked North-South disparities in terms of education, health and amenities, despite the efforts made by the southern and eastern Mediterranean countries, where the gap is accentuated by the urban-rural divide. Despite community policies, some rural communities in the southern and eastern Mediterranean countries are still finding it difficult to overcome their isolation due to their more difficult geographical locations (in mountain and steppe regions, etc.), and infrastructures are still effectively lacking, a situation which compounds real monetary poverty. This is the case in Albania with its mountainous regions, in Algeria with its steppelands, in Lebanon with its peripheral regions in northern and southern Bekaa, in Turkey with South-East Anatolia, and in Egypt with Upper Egypt.

Whereas the challenge in the North is to revitalise rural areas in population terms by developing economic activities, the big challenge in the South is to promote the development of basic infrastructures so as to bring the peripheral regions, which are often very populated, into line with the stronger dynamics generally typical of the coastal and urban areas. ■

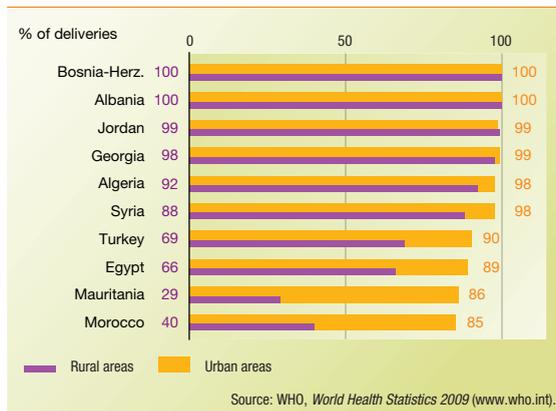
ACCESS TO PUBLIC HEALTH SERVICES, 2004



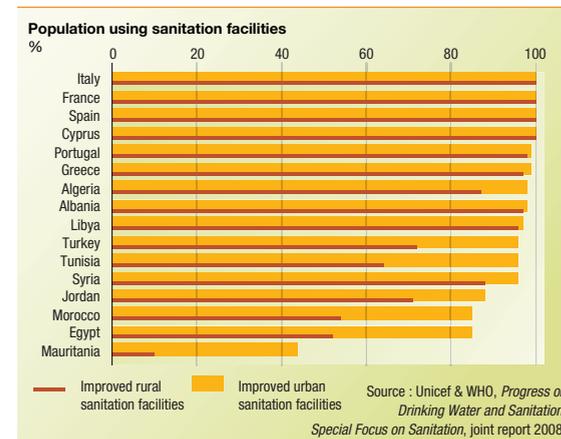
DRINKING WATER COVERAGE, 2006



DELIVERIES ATTENDED BY TRAINED STAFF, 2007



SANITATION COVERAGE RATE, 2006



# THE RURAL RECONQUEST

The policies of the EU countries that were launched in the 1960s supported the modernisation of a competitive agricultural sector that was geared to intensive production. Profound changes came about in rural areas from the early 1970s onwards, the most important being the decline in the significance of agriculture in terms of workers and income. Today these areas are being recomposed as the “non-agricultural” population gradually forms the majority, particularly in areas less endowed with production inputs. Developments have taken a different course in the southern and eastern Mediterranean countries: population growth, rising unemployment and the spread of poverty in rural areas are all challenges which agriculture cannot meet alone. Furthermore, the liberalisation of the economy has aggravated the situation of the most vulnerable population groups, most of whom are located in rural areas – hence the need for special efforts to promote them.

## RURAL DEVELOPMENT POLICIES IN THE SOUTHERN AND EASTERN MEDITERRANEAN COUNTRIES

Rural areas in the southern and eastern Mediterranean countries have been the focus of a policy of providing infrastructures and services (electrification, drinking water, roads, agricultural advice bureaus, etc.), which have been financed entirely or in part by international organisations. Sectoral projects, particularly in the irrigation field, have been a core issue since the 1960s. Egypt, Algeria, Tunisia and Morocco are emblematic examples of these developments, which took place in three stages:

*Stage 1: the « re-appropriation » of agriculture after decolonisation.* This reconquest of land formerly controlled by France, or, in Egypt, by the landed nobility was organised through particularly strong intervention on the part of the

State: in Morocco, 1 million hectares of land were irrigated and/or covered by the “semi-arid land project”; in Tunisia, land was collectivised in the 1960s; in Egypt, a policy of water resources development and agrarian reform was pursued; and in Algeria, land was placed under direct state control and agrarian reform was introduced.

*Stage 2: State withdrawal.* This second stage coincided with the implementation of the structural adjustment programmes in the mid 1980s. Since the poorest rural population groups were suffering the negative effects of internal liberalisation, which reduced government transfers, social support measures and schemes were introduced, although no real rural development strategy was announced. The Integrated Rural Development Programme in Tunisia can be cited here as an example, or the measures taken by the Social Fund in Egypt to support small investment or business start-up projects.

*Stage 3: Opening up to the international market.* This period of external liberalisation overlapped with the previous stage and is still in progress. This opening corresponded with the period when national rural development strategies were affirmed that focused on fighting poverty and reducing unemployment by diversifying activities and improving the living conditions of rural populations. These strategies took the form of the Green Plan in Morocco, the Rural Renewal Programme in Algeria, the Integrated Development Programme in Tunisia, and the 2030 programme in Egypt. In Turkey, a new rural development programme was drawn up in 2006 with a view to EU approximation, and a huge development programme, the GAP project (*Güneydoğu Anadolu Projesi*), furthermore concerns the region of South-East Anatolia. Many actors are involved in rural development in the southern and eastern Mediterranean, but unfortunately they often operate without any plans for

concerted action. Tasks are in fact shared to a certain extent, but not enough to build a common vision: public facilities and international organisations take action through major schemes, whereas local development associations and international NGOs work more on small projects in the fields of health, education and the environment.

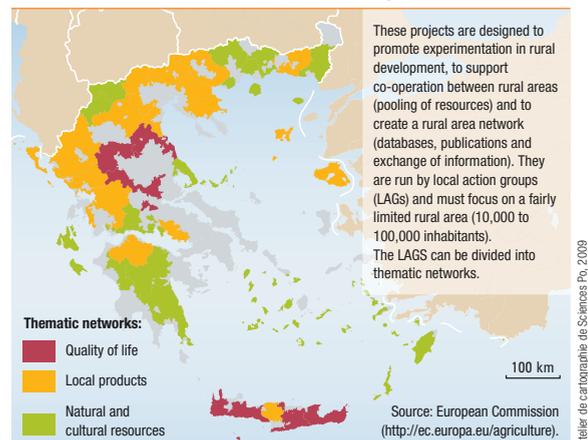
## EU RURAL DEVELOPMENT POLICIES

The rural development policies implemented in the EU Mediterranean countries are supported mainly within the Community framework. The EU has adopted the principle of subsidiarity in response to problems of coordination amongst the many rural development actors: depending on the degree of decentralisation established, each country has several regional levels of consultation on, participation in, and elaboration and implementation of local strategy. As with the southern and eastern Mediterranean countries, there have also been three major stages in the history of rural development policies in Europe:

*Stage 1, when rural was synonymous with agricultural.* From 1975 to 1988, rural development was essentially limited to the socio-structural policies of the CAP, which were geared to modernising production, processing and marketing. Specific measures also focused on the least developed areas and mountain regions from 1975 onwards.

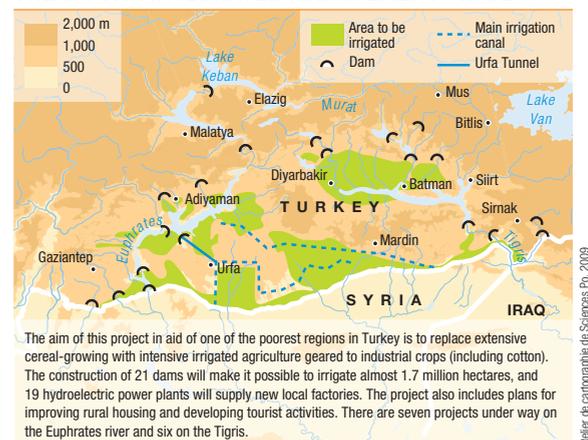
*Stage 2: the stage of regional and environmental policies.* In the 1980s it was realised that rural areas only benefited to a limited extent from the CAP, which was designed and implemented with a view to launching and supporting the modernisation of agriculture and farms (20% of agricultural areas were producing 80% of value added). After the publication of the Andriessens report on the future of the rural world in 1988, rural development became a major

### GREECE: LEADER PLUS PROGRAMME, 2007



Atelier de cartographie de Sciences Po, 2009

### THE GAP: AN INTEGRATED MANAGEMENT PROJECT



Atelier de cartographie de Sciences Po, 2009

concern. The MacSharry reform in 1992 introduced agro-environmental measures to take account of local areas and recognise the environmental amenity benefits of farmland and certain farming practices. An ambitious policy to reduce regional imbalances, a common problem in many rural areas, was launched in parallel with a view to preparing as far as possible for the single market that was scheduled for 1993. That policy defined six objectives, two of which concerned rural development specifically (Objective 1 and Objective 5b). All or part of Spain, Greece, Portugal and the south of Italy were classed as underdeveloped regions (Objective 1). Other experiments were launched in the regional policy context, such as the Community initiative programmes, which included the Leader programmes and their successive generations (Leader, Leader II, Leader +), the most successful initiative in terms of rural development since the beginning of the 1990s.

*Stage 3: The autonomy stage, from 2000 onwards.* Rural development policies gradually formed a coherent whole, being quite separate in part from regional policies, and when Agenda 2000 was adopted they became the second pillar of the CAP. The main objective of the latter was to help all rural zones to meet economic, social and environmental challenges with a view to facilitating social and regional cohesion. Numerous measures were scheduled in the Rural Development Regulation for the 2000-2006 period (diversification of activities, tourism, village renewal operations, etc.). Two of these measures, concerning the agro-environment and support for mountain regions, received the bulk of funding.

EU enlargement to 27 countries has brought renewed interest in rural development, since rural regions now account for 91% of the territory of the EU and over 56% of

its population. A new Rural Development Regulation has been drawn up for the 2007-2013 period. This new rural policy is now financed by the European Agricultural Fund for Rural Development (EAFRD), which was set up in 2005, and consists of four main lines of policy: 1) measures to improve the competitiveness of agricultural and forestry sectors; 2) measures to improve the environment and land management; 3) measures to improve the quality of life in rural areas and to diversify the rural economy; 4) implementation of local rural development strategies based on the experience gained in the Leader programmes.

Since its inception, the second pillar has been allocated between 20% and 25% of the CAP budget, depending on the year, which itself accounts for some 43% of the total EU budget. The EU granted a total of €561 million for funding rural development in the 2000-2006 period (and 56% of that amount was allocated to the Mediterranean countries). And a total of €908 million will be allocated for the 2007-2013 period (32% of which will go to the Mediterranean countries). In each member country the EU funding (EAFRD) is supplemented with public funds (from the State and regional budgets) and private funds. In the EU Mediterranean countries EU funding for the 2007-2013 period will amount to between 36% of the total amount allocated to rural development (in the case of Greece and Portugal) and 23% (in the case of Spain), whereas the share of public expenditure will be around 44% in Spain and 53% in France. The share of private expenditure ranges from 15% in Greece to 34% in Spain. It should also be pointed out that as regards how the EU appropriations are distributed over the four above-mentioned lines of policy, lines 1 and 2 absorb from 70% to over 80% of those resources in all of the Mediterranean countries of the EU except Malta.

### SUPPORT FOR REGIONAL POLICY IN THE EU

Parallel to this second pillar of the CAP, EU regional policy, which also supports rural areas, is still being implemented. Far-reaching reforms were brought about in this policy in the period from 2000 to 2006; its objectives were reduced from six to three : to promote the development of underdeveloped regions; to support the economic and social conversion of regions facing structural difficulties, including declining rural areas (this objective covers the broader issues of former Objectives 2 and 5b of the 1994-1999 period); and to support human resources development (training and employment) (formerly Objectives 3 and 4 in the 1994-1999 period).

The regional cohesion policy for the 2007-2013 period focuses on three lines of action: 1) convergence between the regions and the Member States in order to enhance conditions for growth; 2) regional competitiveness and employment with a view to helping the regions to anticipate economic change through innovation and environmental protection; 3) European regional cooperation with a view to developing cross-border and interregional cooperation. The European regions are classed into four groups for the first two lines of policy: converging regions, some of which are in Spain, Italy, Greece and Portugal; 'phasing-out' regions (where aid is being gradually phased out) – these include regions in Spain, Greece and Italy; regions of competitiveness and employment – this concerns France, northern Italy and certain regions in Spain and Greece; and 'phasing-in' regions (where aid is gradually being phased in).

There is no real continuity between the former zoning system adopted in regional policy (1994-1999) and the classification of European regions according to the 2007-2013 objectives in that this new classification system is designed

to be dynamic so that trends can be taken into account. Regions formerly classed in Objective 1 (underdeveloped regions) are thus now part of the converging regions, while others are classed in the "regions of competitiveness and employment" or "phasing-in" regions. Certain regions that were formerly classed under Objective 2 (declining regions and industrial areas) are now in the "regions of competitiveness and employment" category. Regional policy has three funds for financing these lines of action: the European Regional Development Fund (ERDF), the European Social Fund (ESF) and the Cohesion Fund. In the period from 2007 to 2013, ERDF action in rural zones will focus on improving accessibility through measures to improve infrastructures and communication networks and on developing new economic activities (in the context of the "convergence" and "competitiveness and employment" objectives). The ERDF also makes provision for supporting investments to create economic activities related to the cultural and natural heritage and to tourism with a view to taking account of the specific local characteristics of regions with natural handicaps (defined according to the criteria of climate and altitude, and island regions); most of these regions are rural areas.

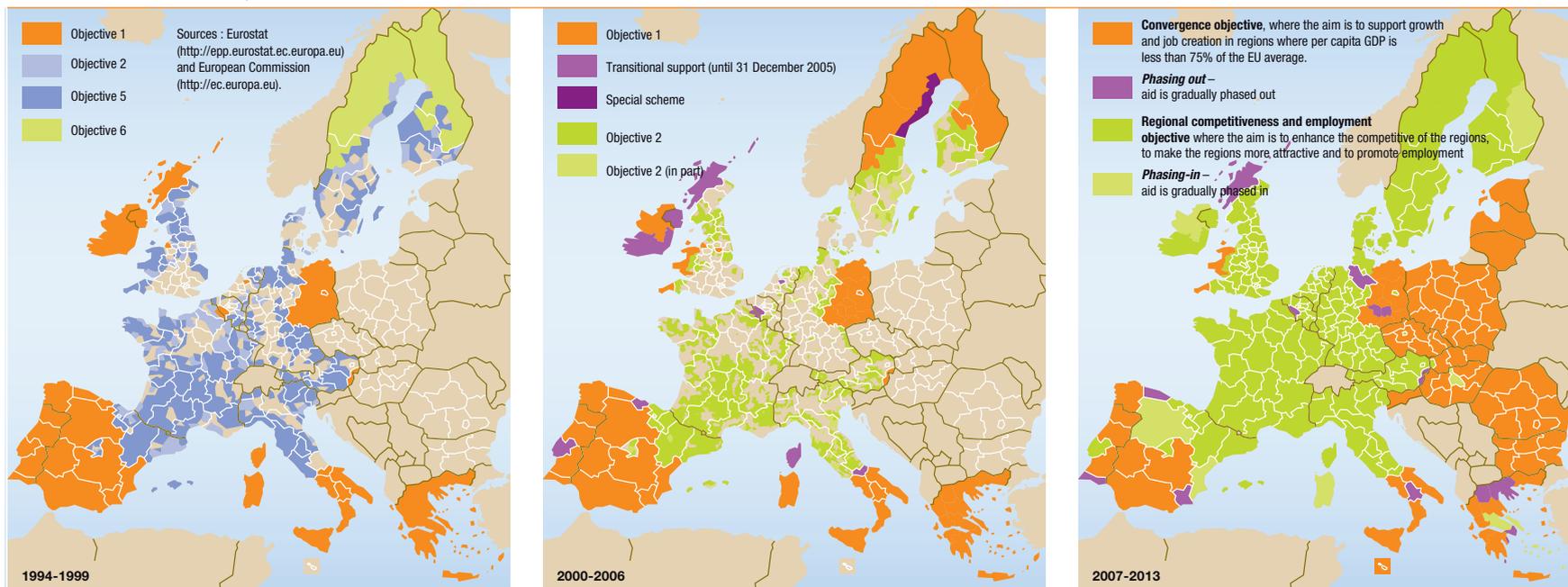
### THE RURAL WORLD AS A COMPONENT OF SUSTAINABLE DEVELOPMENT

From the sectoral and technical point of view, as rural development policies have become more autonomous their orientation has developed towards an integrated and multi-sectoral approach. Given the economic and social changes in the southern and eastern Mediterranean countries (liberalisation of the economy, opening to the external market, depletion of natural resources, population growth,

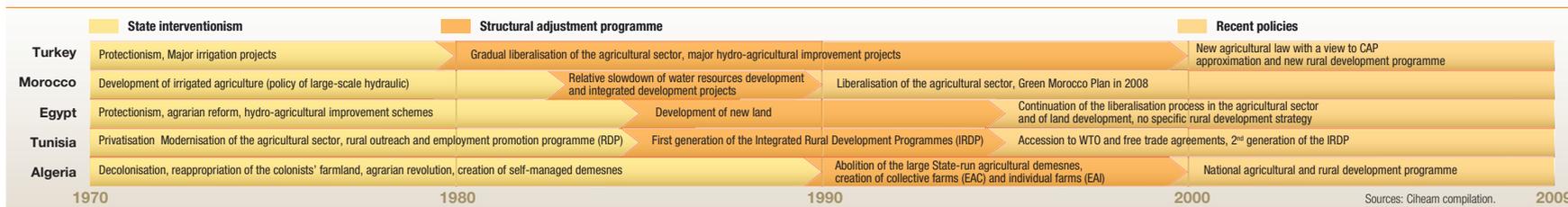
increasing unemployment and poverty in rural areas), measures to integrate rural areas into the overall development process have become imperative. Rural development policies are now geared to fighting poverty and improving the standard of living of the various populations; the emphasis is on diversifying job-creating economic activities and incomes in rural areas and on improving infrastructures and services. But the effort to upgrade rural areas that are sometimes far removed from the coastal belt, which already has links with regional and international economic trends, is a vast undertaking.

In the EU context, rural development policy has developed rapidly and, with the announcement of a second pillar in the CAP that is very compatible with WTO obligations, has acquired a certain degree of autonomy with regard to agricultural policy. However, in-depth analysis of the appropriation of EAFRD funds to the various lines of policy that constitute the second pillar reveals that agriculture still receives the lion's share. But European rural zones, which have become less and less agricultural, receive a number of forms of support and aid in the context of regional policy, which focuses on improving the competitive capacity of the various regions and diversifying economic activities. Thanks to these aids, rural areas have funding at their disposal which goes beyond the agricultural sector and which they can use for developing infrastructures and creating jobs. Even if approaches differ in both the northern and the southern Mediterranean, the need for sustainable development based on the preservation of resources, regional balance and social equity make it imperative to integrate rural areas as an essential component of development policies. ■

THE STRUCTURAL FUNDS, 1994-2013



RURAL DEVELOPMENT POLICIES IN CERTAIN SOUTHERN AND EASTERN MEDITERRANEAN COUNTRIES, 1960-2009





# FISHERIES AND AQUACULTURE

## THE WEALTH OF THE DEEP

**T**he Mediterranean, the sea between lands – a denomination that points to its importance. It is a fact that for man, who names the elements, the land is the place of settlement and the sea the zone of travel. Much more than that, this sea was the natural “Route” for craft in quest of territories, and it is still the busiest shipping route in the world, that of supertankers, but it is also one of the world’s largest and most ancient fishing grounds, whose products have become an integral part of the Mediterranean diet.

Today the Mediterranean accounts for only a small share of the volumes fished throughout the world, a result which reflects the weakness of plankton in its waters when one considers the area of this sea, for compared with other waters of similar area, this output is not particularly significant. Yet as the confluence of several singular seas the Mediterranean offers a biodiversity for which it is still renowned. So the Mediterranean people have long gone fishing elsewhere, particularly in what can be regarded as the mother of the Mediterranean: the great Atlantic Ocean. This is nothing new. The Romans had already realised the importance of such a mass of water when they developed the coastal cities of Hispania.

With the Atlantic Ocean the peoples of the Mediterranean had a true resource which its more capricious waters had long protected from man’s appetite. This was without reckoning with the technologies with which a turbulent ocean can now be crossed, an ocean that is in turn revealing its limits as high population pressures continue to grow.

Aquaculture, which is intended to compensate for seas that are overcrowded if not nearing exhaustion, is often presented as an emerging sector, yet it is actually an ancient activity in the Mediterranean, where it was practised by the Etruscans and developed by the Greeks and Romans. It was already used as a means of stocking fresh products ready for consumption near the major urban centres. But in the 20th century production was intensified as the result of human needs and access to technology. This development, which also concerns more marginal inland aquaculture activities, is of course to be explained by the refinement of marine reproduction and fish and mollusc feeding methods. The inverted curves of sea capture and aquaculture indicate that this seems to be a general trend.

# THE SEA AND THE FISHERIES SECTOR

In a world whose population is steadily growing, food security is a crucial concern. Fisheries products are thus essential, particularly for land-poor countries with a wealth of marine resources, such as Egypt or the islands. As the result of technological advancement, the sea and oceans are subject to increasingly intense anthropic pressure, as is the case with the land: overexploitation, pollution, global warming, fishing in deeper and deeper waters are all factors that are jeopardising the sustainability of marine resources. Mediterranean populations have always engaged in fishing in the Mediterranean Sea, this “sea between lands”, and seafood products are central to their diet. Yet some Mediterranean countries (France, Spain, Morocco, Turkey, Egypt,...) also exploit other seas and oceans – the Atlantic Ocean, the Black Sea, and the Red Sea – where they sometimes obtain the bulk of their catch.

## FISHERIES AND TRENDS

The data on the various countries have been aggregated in three categories for analysis purposes: the EU Mediterranean countries, i.e. Bulgaria, Cyprus, Spain, France, Greece, Italy, Portugal, Malta, Romania, and Slovenia; the North African countries including Algeria, Egypt, Libya, Morocco and Tunisia; and the remaining Mediterranean countries, i.e. Albania, Croatia, Israel, Lebanon, Monaco, the Palestinian Territories, Serbia and Montenegro, Syria and Turkey. The fisheries products of the countries of the Mediterranean region and the Black Sea amounted to just under 6 million tonnes in 2007, i.e. barely 4% of world output. Total production increased slightly (+8.3%) in the decade from 1997 to 2007, mainly in connection with the growth in the aquaculture sector (+73%) over the same period, which offset the drop in capture fishery (-5.6%).

TOTAL FISHERIES OUTPUT, 1950-2007



The volumes produced are very concentrated: almost half (48%) are produced by the countries on the European shores – mainly Spain, France and Italy, which together account for 40% – whereas Egypt, Morocco and Turkey alone account for 45% of volume. Six countries thus produce around 85% of output. However, whereas total output decreased significantly in the EU Mediterranean countries (-20.5%) during the decade from 1997 to 2007, it increased considerably in the North African countries (+32.9%) and in Turkey (+34.7%).

## Threats and regulations

The depletion of resources is now making it difficult to increase output at all, except in the aquaculture sector. Global warming entails considerable uncertainty for the years that lie ahead: although the intensity of its effects on sea water temperature has not yet been measured precisely, it is bound to affect the profile of animal populations. It could bring about intensive redistribution of fish and mollusc species, particularly in the Mediterranean Sea. In view of the urgency of the situation, both in the Mediterranean and in nearby seas, regulations are being established, mainly in the EU context, that define mesh sizes which vary depending on fishing zones and provide a means of limiting the capture of young fish and allowing them to reach maturity.

Furthermore, the General Fisheries Commission for the Mediterranean (GFCM), of which all of the above-mentioned countries except Portugal and the Palestinian Territories are contracting parties, endeavours to regulate a sector where competition is high. This Commission, which was set up under the auspices of the FAO in 1949, focuses on three objectives: promoting the development, conservation

and management of living marine resources, formulating and recommending conservation measures, and promoting cooperation projects in the training field.

**INFRASTRUCTURES AND WORKFORCE**

The Mediterranean countries have a total fleet of approximately 125,000 fishing boats, but a large proportion of this fleet operates outside the Mediterranean. This is the case with the French, Spanish, Moroccan, Egyptian and Turkish fleets, which also fish in the Atlantic, the Red Sea, and the Black Sea.

The breakdown according to number of vessels per country by no means reflects the capacity of this fleet. For the EU Mediterranean countries account for half of the fleet, but their boats are large, powerful and technologically more efficient than most of the vessels of the other Mediterranean countries. Egypt, in particular, still has a large proportion of unpowered vessels, which operate on the Nile and the lakes.

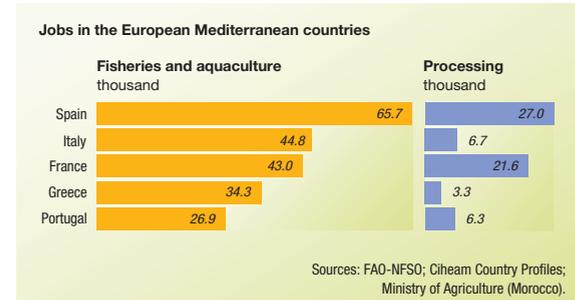
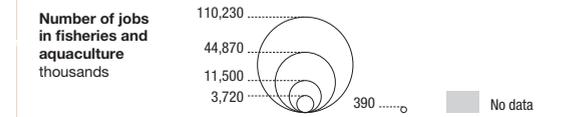
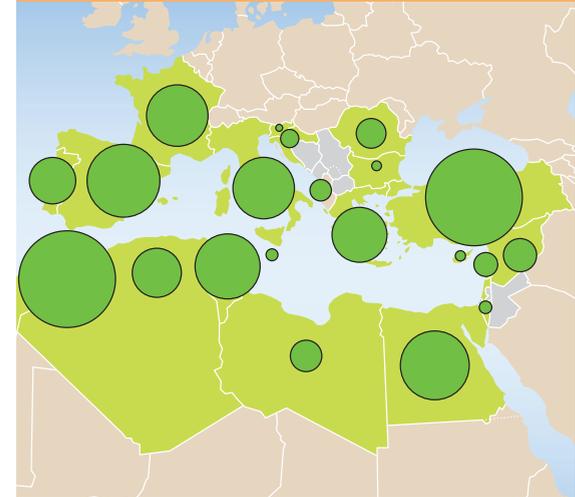
The 20% decrease in the number of fishing vessels in France, Greece, Italy, Portugal and Spain in the period from 1996 to 2007 may be connected with the drop in output but also with the increase in the capacity of vessels, since the reduction in gross output was less marked (15% less in 2007 compared to the 1996 output). In Spain, the main decreases were registered in deep-sea fishing, whereas in France vessels of less than 12 m were the most affected. Since the statistics for the other Mediterranean countries are unfortunately either incomplete or inexistent, it is difficult to identify any trend and, in particular, to see whether the same phenomenon is taking place in the Mediterranean as in Europe.

**FISHING AS A SOURCE OF EMPLOYMENT**

It is difficult to evaluate employment in the fisheries sector because most countries have no specific statistics and there are many different international sources (FAO, Ciheam, Eurostat, and OECD). The task is complicated by the fact that fishing activities often create part-time jobs. Although Eurostat bases its figures on the criterion of full-time equivalents, this method is not always used outside Europe, where the phenomenon is widespread. Apart from the above-mentioned sources, it is estimated that the fisheries sector (capture and aquaculture) in the Mediterranean countries generates approximately 630,000 jobs. Some 36% of these jobs are in the European Mediterranean countries and 41% in the North African countries. Labour productivity, measured in terms of output per labour unit, varies widely from one country to another in the region, from 1 tonne per worker in Lebanon and Albania to 18 tonnes in Spain and 22 tonnes in France. The EU Mediterranean countries produce approximately 13.3 tonnes per worker on average and thus register higher productivity than do the North African countries (7.8 tonnes) and the other countries in the Mediterranean (5.5 tonnes).

In France, Greece, Italy, Portugal and Spain, in addition to the decrease in the number of vessels there is also a general decrease in the number of people working in capture fishery – according to the OECD the figure dropped by 30% in the period from 1998 to 2004. However, this decrease was not observed in the aquaculture and processing sectors, where a certain degree of stability, and even an upward trend, was registered over the same period. This could indicate that production jobs will be emerging in these sectors in the long term. ■

**JOBS IN THE FISHERIES SECTOR**



# CAPTURE FISHING AND AQUACULTURE

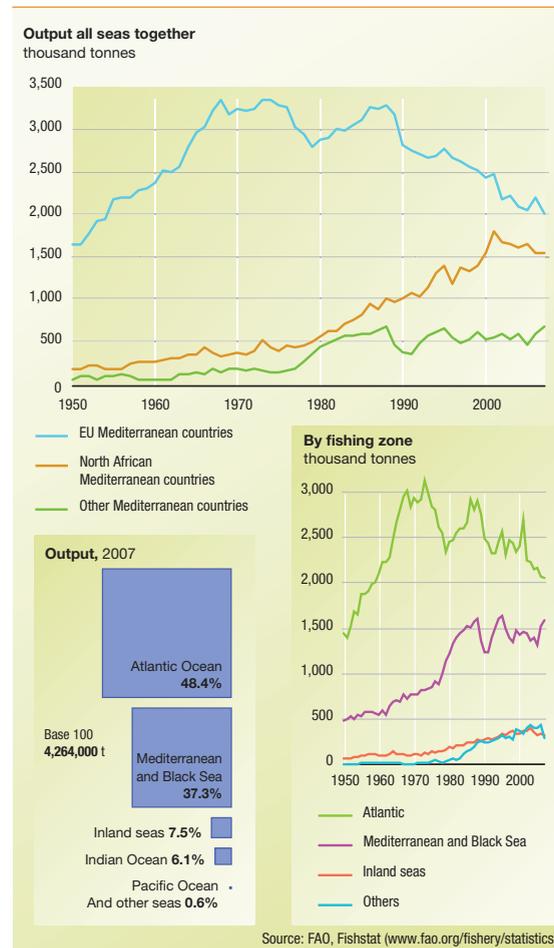
**A**quaculture is developing rapidly at the world level, and it is a sector that is steadily growing in the countries around the Mediterranean, where a growth rate of 73% was registered over the period from 1997 to 2007. Growth has declined in the capture fishing sector, on the other hand, a trend that is connected in particular with the preservation of fish reserves.

## CAPTURE FISHING

Over 85% of the catch of the Mediterranean countries is fished in the Atlantic, the Mediterranean and the Black Sea, the remainder being fished in internal waters (7.5%) and other seas such as the Indian and Pacific Oceans (6.7%). This distribution is constantly evolving, with a drop in catch in the EU Mediterranean countries and a marked increase in the catch of their neighbours, particularly Turkey and Morocco. The share of the volume fished by the European countries in the total volume fished by all of the countries in the basin thus increased from 58.5% in 1997 to 47.3% in 2007, whereas the catches of the North African countries increased from 30.5% to 36.3% of the total volume over the same period. This drop in the catches of the Mediterranean countries is connected to some extent with the fact that the volume of their catches in the Atlantic has been decreasing since the mid 1970s (2 million tonnes in 2007 compared to a maximum of 3.1 million in 1973), with a marked decrease in the case of France, Italy, Portugal and Spain, which is partially offset by Morocco's increase in catches.

The main species fished are sardine and mackerel in the Atlantic, and anchovy and sardine in the Mediterranean and in the Black Sea, where there are also large catches of clams, mackerel, hake, bluefin tuna and mullet. Pelagic fish (which live in the superjacent waters and have little contact with

## CAPTURE FISHERY



the seabed) predominate, accounting for 57% of catches, and are followed by groundfish (which live near the sea floor – whittings, hake and mullet).

**The Mediterranean and Black Seas.** From the 1950s until the mid 1980s, fish catches increased and then began to oscillate due to the variation in Turkish catches of anchovies in the Black Sea. In 2007, approximately 1.5 million tonnes of fish were fished in these seas, i.e. 30% of the capture fishing output of the Mediterranean countries. Only two countries – Italy and Turkey – obtain over 50% of their catches in the Mediterranean and the Black Sea. Turkey was the biggest producer in the Mediterranean and in the Black Sea in 2007 (40.6%), but the bulk of its output is composed of low-value pelagic fish, which is caught in the Black Sea. The volumes fished by the European States in these two seas, and also in the Atlantic, have been steadily decreasing since the 1990s, whereas the catches of the North African countries have been increasing since the mid 1970s. The volume of Mediterranean and Black Sea catches of the EU Mediterranean countries amounted to 33.7%, and that of the North African countries to 25.7%, of those volumes in 2007.

## AQUACULTURE

This sector now accounts for 30% of fisheries output; production is based more on fish farming (66% of output) than on mollusc farming (33%). It is furthermore very concentrated: Egypt, France, Spain, Italy, Greece, and Turkey account for 95% of total aquaculture output. Aquaculture is developing all the more since high and medium-value species are produced, compared to catches at sea, where low-value species are also caught: in 2007, 35% of catches

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were herrings, sardines or anchovies mainly for non-food use (production of fish meal, for example).

**Evolving fish farms.** Whereas in Spain, France and Italy production is geared mainly to molluscs, Greece and Turkey focus on the intensive production of fish (sea bream, sea bass and trout), and Egypt, where aquaculture accounts for 63% of fisheries output, focuses on the semi-intensive farming of tilapias, grey mullet and carp.

Quite apart from the volume of fish produced, the value of agricultural products seems to have influenced developments in the sector. In 2007, the production of sea fish (sea bream, sea catfish, mullet, turbot, tuna, etc.) accounted for 30.2% of output and 46.7% of output value, whereas molluscs, which ranked first in terms of volume at 33.6%, accounted for only 24.5% of output value. Furthermore, the number of species farmed is rising. This is more marked in the case of fish than of molluscs, shellfish and aquatic plants, where the diversity of supply is even diminishing. But of the 65 fish species registered 40 generate low output (less than 1,000 tonnes). This is the case with semi-commercial/experimental production modes (meagre, sole, red sea bream, etc.) and commercial production modes targeting local demand or specific market niches (tench, sturgeon, etc.). Mollusc farming, on the other hand, is based on extensive production, which is more connected with the environmental context and in particular with the quantity of plankton. After developing in France, Spain and Italy in the 1970s, 1980s and 1990s, production is now steadily declining both in terms of volume and in terms of variety of species farmed.

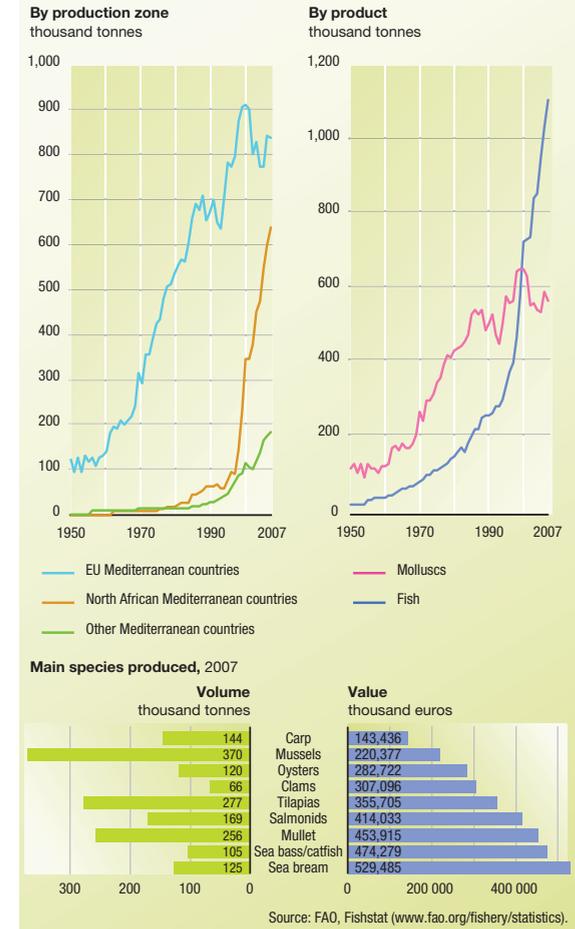
Egypt is the country where aquaculture is being developed most at the present time, in brackish waters or freshwater. This semi-intensive production is aimed at meeting the

animal protein needs of a steadily growing population, which, moreover, lacks space for developing agriculture. This progression of fish-farming in Egypt is playing a major role in the growth of the sector in the Mediterranean alongside farms in Greece, Turkey, Spain and Italy, which practise intensive farming. In the other countries (Algeria, Portugal, Morocco, and Tunisia), aquaculture development is still marginal; the activity is stagnating or is a commercial failure, except in the case of Israel, which has really developed the sector.

**LIMITED OUTPUT?**

However, after the marked development over the last few years, the aquaculture output of the EU Mediterranean countries seems to have levelled off. This is to be explained by several factors: the lack of new zones that are suitable for farming molluscs and establishing marine fish farms, the drop in the prices of many marine species (particularly sea bass and sea bream) due to abundant supplies, environmental issues, new regulations and the limited diversity of species offered to consumers. Opportunities for expansion now seem to come from the development and establishment of new production technologies that are more environment-friendly, such as recirculation systems, which economise water and energy, and the installation of rearing cages in the open sea. ■

**AQUACULTURAL OUTPUT**



# FISHERIES AND AQUACULTURE MARKETS

**T**otal demand for fisheries products from the Mediterranean region has been steadily rising since the 1960s. This rapid development, which is connected with population growth and the increase in human consumption, is exacerbating the fish reserve deficit.

## STEADILY RISING DEMAND

There is a marked difference between consumption in the EU Mediterranean countries and in the other countries in the region. It is much higher in the EU countries in terms of both total demand and per capita consumption. In the period from 2003 to 2005, the Mediterranean countries of the EU, representing 44% of the total population, accounted for 70% of demand with an annual per capita consumption rate of 29 kg, i.e. three times higher than the rate in the other countries.

This increase in consumption in Europe is now levelling off: consumption rose by 7.6% during the period from 1995 to 2003, whereas annual per capita consumption in the other countries of the Mediterranean basin, led by Egypt, increased by approximately 44%, from 7.2 kg to 10.5 kg per person per year. Israel and Portugal are the only countries where consumption has decreased. There are major disparities amongst the European countries of the Mediterranean; per capita consumption in Bulgaria, Slovenia and Romania is close to that of the southern and eastern Mediterranean countries.

The species most consumed, taking all countries together, are large pelagic fish and groundfish, which are particularly popular in Portugal (94 g per person per day), a major cod consumer. Egypt produces and consumes freshwater fish (carp and tilapia). A considerable volume of molluscs and shellfish is consumed, but this consumption is limited almost

exclusively to the Mediterranean countries of the EU.

The fisheries products deficit has increased in almost all Mediterranean countries. The population increase, the rise in per capita consumption, the stagnation or even decrease in captures at sea and the uncertainty as to how aquaculture will develop in most countries suggest a scenario of rising prices which, as is the case with other agricultural commodities, does not necessarily benefit producers – particularly since this demand for fisheries products can be satisfied through imports, which are already high.

## IMPORTS AND EXPORTS

Analysis of the fisheries trade reveals a balance of trade deficit from the Mediterranean region. Despite the fact that production has been stable over the last decade, the volume of trade has increased (by 47% in the case of imports and by 51% in the case of exports), reflecting the rapid expansion of the globalisation of trade and expansion of markets.

In 2006, all of the countries, with the notable exception of Morocco, were net importers in terms of volume. When trade is expressed in value, there are five countries which are net exporters: Morocco, Tunisia, Turkey, Croatia and Malta. The European Mediterranean countries – Spain, France, Italy, Portugal, and Greece – are by far the main importers, together accounting for 87% of the imports of the region in terms of volume and 95% in terms of value.

Paradoxically, with 77% of exports in terms of volume and 78% in terms of value in 2006, the countries on the northern shore, together with Morocco, are the main exporters in the region, which is not surprising since, as the main producers, they have dynamic processing sectors, a factor which is important when catch volumes are shrinking.

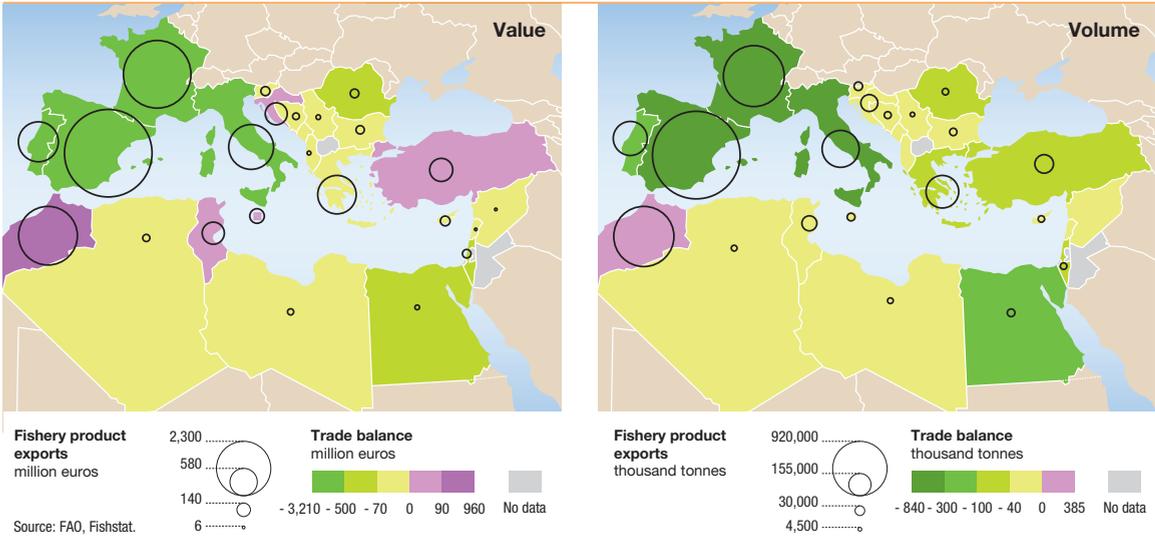
Imports are increasing in most of the countries in the

region. This is the case in Egypt, which is under growing demographic transition and where the population is young: demand is exploding (imports have increased by 87%), despite the fact that output also increased – by approximately 120% – in the 1995-2005 period (thanks to aquaculture). Morocco, on the other hand, is the only net exporter in the region in terms of both volume and value. But now that the 1995-2005 period of growth in exports – which rose by 54% – is over, it will find it difficult to keep this pace up in the years that lie ahead. Output in Morocco in fact increased by only 21% over the same period and, in 2007, there was a slight drop in output, whereas per capita consumption increased.

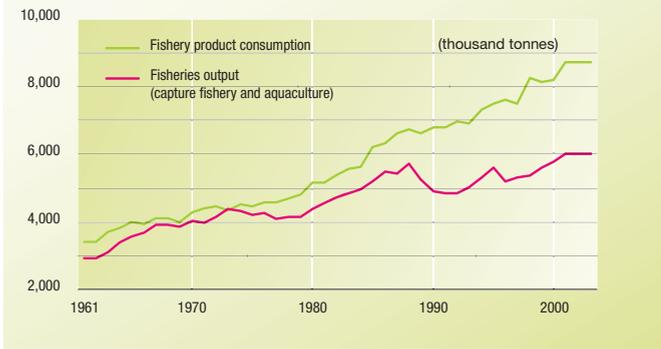
The FAO statistics do not provide information on the origin and destination of imports and exports, and this makes it difficult to analyse the fisheries trade of the Mediterranean countries. Eurostat provides information for the countries of the European Union, however: 47% of the imports of the EU Mediterranean countries come from the EU Member States. Furthermore, outside the European Union, Morocco was the leading supplier of the EU Mediterranean countries in 2007, accounting for some 3% of their total imports. ■



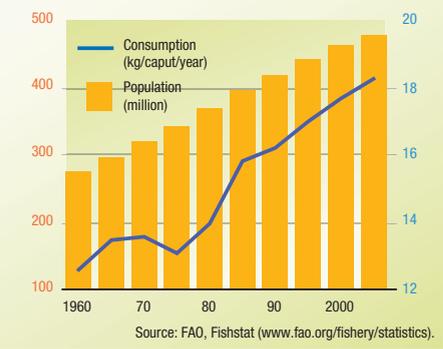
FISHERIES AND AQUACULTURE MARKETS, 2006



Consumption and output, 1961-2003



Population and consumption, 1960-2005



THE JAPANESE MARKET AND BLUEFIN TUNA

Japan is a member of the General Fisheries Commission for the Mediterranean and is known to be a major consumer of bluefin tuna: 80% of Mediterranean output goes to Japan. Bluefin tuna stay in the Mediterranean in the course of their long migration mainly to ensure reproduction; their other breeding ground is the Gulf of Mexico. Until the 1970s, bluefin tuna was fished primarily in the Atlantic, but since then the Mediterranean has become the main region where they are fished, but also where they grow.

This fish is exported at high prices to Japan in particular, where it is consumed as steak or sushi, but is now seriously endangered due to overfishing. The number of *Thunnus thynnus*, which have been overfished for decades, has decreased by 80% in the Atlantic and by two-thirds in the Mediterranean since 1970. The evolution of the stock of bluefin tuna reflects a reality which is also affecting other species and highlights the need for regulation and concerted action in the fisheries domain. In the case of bluefin tuna, the European Commission does set fishing quotas every year, but these quotas are exhausted within a few months. What is even more serious, the volume of illegal catches is reportedly much larger than the quotas.

In July 2009, the Principality of Morocco filed an application with the Convention on International Trade in Endangered Species (CITES) to have bluefin tuna classed in Annex 1, which lists the species requiring the highest degree of protection. Such a decision would amount to prohibiting exports from the Mediterranean and Atlantic to Japan.

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## FOOD AND HEALTHY EATING

Proper nutrition, primarily a physiological necessity, is today a constant battle – for the individual and for the community – in order words, for coexistence. *Panem et circenses* (bread and circuses), the ironic phrase coined by Juvenal, actually stresses the importance of food for political stability. But being able to eat to one's satisfaction is above all a question of human dignity, for it is life itself that is at stake. This fortunately seems to be self-evident in societies where the food battle has been won on the whole. It was unfortunately not so long ago that Luis Buñuel immortalised the famine in Las Hurdes, a mountain enclave in Spain where men, women and children starved to death less than a century ago. In the remote regions of Castile and Estremadura, where birds of prey loomed above their victims, it is now the restaurants that attract passing tourists. We have come a long way thanks to man's thirst for development! Yet there is still hunger in the Mediterranean region. The bread riots in 2008 were a reminder of how precarious the food security situation is in some areas of the basin. And in societies where people have enough to eat in general or indeed eat more than enough,

people are still dying of hunger because the fact that food is available does not necessarily guarantee access to food for the poorest. Eating is also a sociocultural act. Who can demonstrate this better than the Mediterraneans? Culinary pleasure is maintained by Mediterranean cuisines that are veritable living memories of a history of intermingling peoples and cultures. Most of these gastronomies, which are often refined, are exported. The Cretan diet is quoted as the quintessence of a cuisine whose flavours excite the palate while its balance is of interest to dieticians, physicians and the general public. But let us not be mistaken: these cuisines that are hailed the world over and recognised as wholesome by medical experts are gradually being abandoned for others more renowned for their excessive calorie count than for the finesse of their dishes. We must concern ourselves with food insecurity measured in terms of quality and with undernourishment, since the health and economic risks are considerable. The food battle, which was thought to have been won for good, has simply entered a new phase.

# HOW SECURE ARE FOOD SUPPLIES?

**F**ood security has for obvious reasons long been a political concern. The Mediterranean region is no exception: the pharaohs already organised an extensive system in Egypt for storing harvests in order to prevent famine in periods of low river flow. The concept of security of supplies has constantly evolved. Food security was for many years assimilated to self-sufficiency for each country but was then defined as follows by the FAO in 1976: “When all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life.” It is now no longer a question of self-sufficiency but of access for populations to foodstuffs, and that access can be ensured through production and/or trade. In the countries in the north of the basin local production contributes largely to supplies, whereas in the southern and eastern Mediterranean countries, with the exception of Turkey, supplies are provided to a very large extent through trade and even in some cases through food aid. The balance of calories produced and calories consumed in each individual country shows that the South needs to use external supplies to a very large extent in order to reinforce food security. These State-level considerations must not hide the fact that even when adequate supplies of food are available this does not necessarily guarantee that every individual has access to food. That access depends mainly on each individual's economic and social capacity, as Amartya Sen theorised when observing famine phenomena.

## IMPORTS AND SUBSIDIES IN THE SOUTH

It was thought that the risk of food insecurity would decrease at the beginning of this century as the result of trade, at least in this region of the world. But the “hunger riots” which

broke out in 2007 and 2008 were an unfortunate reminder of how fragile food supplies still are in certain countries. Egypt and Morocco have been the theatre of uprisings that have revealed the precarious state of affairs, despite the fact that these essentially urban social movements have been limited compared to what has happened elsewhere in the world. Mechanisms for subsidising staple foods are the result of food policy choices intended to secure internal stability: in Algeria they concern bread, flour, semolina, milk and oil; in Tunisia only three lines of product are subsidised – milk, bread and flour; in Morocco only sugar and an annual quota of 1 million tonnes of common wheat receive State aid; and in Egypt the prices of bread and flour are fixed and accessible to the entire population of the country, whereas rice, sugar and oil come under a food coupon system, in which consumer subsidies are means-tested. Although these systems have had their weaknesses in certain areas to the extent that uprisings have occurred, they are nevertheless efficient, if costly; the recurrence of crises could eventually become a serious problem, particularly if the agricultural trade balances continue to deteriorate in the southern and eastern Mediterranean countries.

**Critical dependence on cereal imports.** Despite the efforts to modernise farming (water resource development policy, land improvement), output cannot keep pace with the needs of a rapidly growing population, so that the deficits in the South and East are growing. The scarcity of natural resources (land and water) is aggravating this situation, particularly in Algeria, Egypt, Morocco, Tunisia, Lebanon and Jordan. Cereals account for the largest volumes of imports. This trend is of course connected with dietary patterns in the southern and eastern Mediterranean countries, but also with

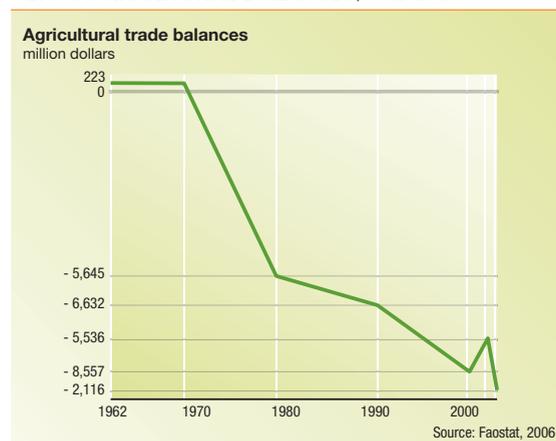
the fact that developing the share of animal proteins in daily food intake increases cereal needs tenfold (approximately 7 plant calories are needed in order to produce one animal calorie). The North African countries (from Morocco to Egypt) are very dependent on cereal imports: in 2007-2008 they absorbed almost 19% of world wheat imports, whereas they account for only 2% of the world population. This dependence is steadily growing.

## FOOD AID IS DIMINISHING BUT THE PRICE RISK REMAINS

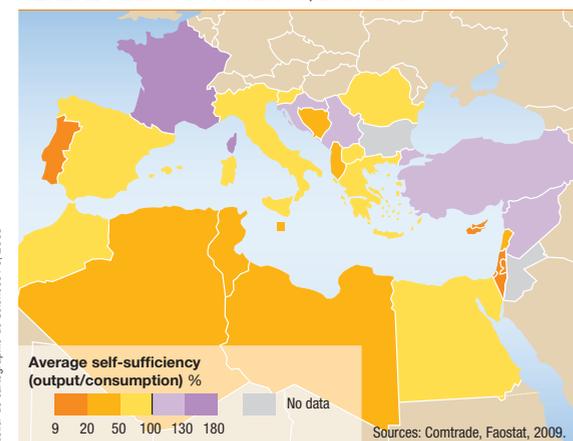
It is interesting to observe, however, that this growing food dependence is not accompanied by rapid development of food aid. The opposite is even the case, since food aid has been decreasing sharply since 1990 in regions where the levels of aid have sometimes been high. This contraction is connected with the political stabilisation of the region (the end of the war in former Yugoslavia and Lebanon, but also the fact that planning, which had little incentive effect in Albania, has been abandoned), and it must be borne in mind that in the 1980s food aid served as a means of dumping for the United States, which was keen to win back market shares from a Europe that had developed a food surplus. These mechanisms of direct export aid have meanwhile been prohibited in the WTO context. Although food aid has decreased sharply it is nevertheless still considerable in the Palestinian Territories (for geopolitical reasons) and in Mauritania (where the motives are political and economic). Despite this decrease in food aid it must be borne in mind that the southern and eastern Mediterranean countries are very dependent on agricultural imports: they seem to be more in a position to obtain food through trade, but on condition that wide variations in the prices of agricultural

commodities do not make those commodities inaccessible for the most vulnerable countries. The main risks are budget risks. From the food security point of view, the risk is primarily nutritional, since the populations tend to buy subsidised products to cover their calorie needs – to the detriment of a balanced diet. Furthermore, the development of illegal trading hits the poorest population segments hardest. It is already observed that undernourishment has increased sharpest in North Africa and the Middle East since the beginning of the millennium (13.5%). Given this reality it is imperative that solutions be found at the local, national, infra-regional (Maghreb) and regional (Mediterranean or even Euro-Mediterranean) level. There are many different means of taking action ranging from creating strategic stocks to opening up the remotest regions. ■

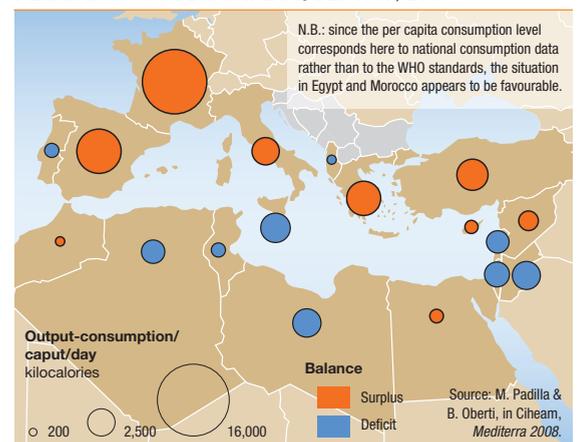
SEMC AGRICULTURAL BALANCES, 1962-2004



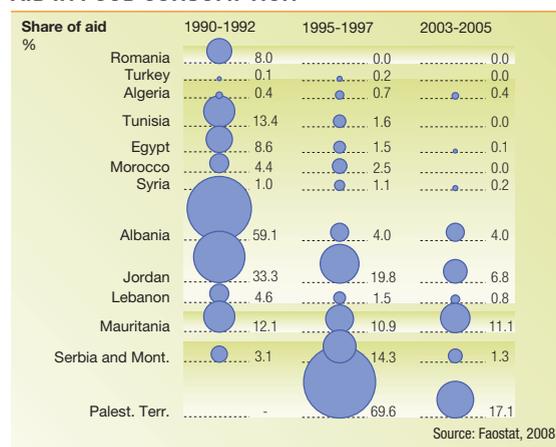
CEREAL SELF-SUFFICIENCY, 2000-2007



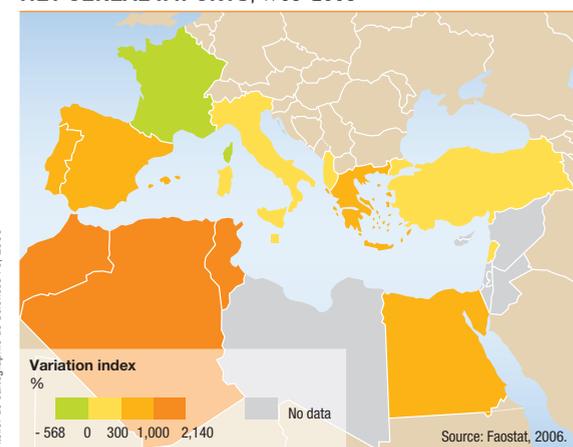
PER CAPITA FOOD SURPLUS/DEFICIT, 2004



AID IN FOOD CONSUMPTION



NET CEREAL IMPORTS, 1963-2003



# THE MEDITERRANEAN DIET

The Mediterranean diet, which developed over the centuries as the result of the intermingling of the peoples of the basin, is known and recognised the world over. A series of epidemiological studies has shown, for example, that the dietary characteristics and health of the population of the region are very closely related: there is a lower incidence of cardiovascular disease and certain types of cancer such as lung, stomach, pancreas, bowel, breast and cervical cancer, and according to some research this type of diet is also a factor reducing the incidence of Alzheimer's disease.

## THE MEDITERRANEAN DIET, A PARAGON OF HEALTHY EATING

The "Cretan diet" of the 1970s is now regarded as the paragon of the Mediterranean diet. With its high fibre, vitamin, antioxidant, mineral, phytoestrogen and fatty acid content it has many nutritional advantages. This recognition is related to a series of scientific studies which have demonstrated the specific quality of the Cretan diet and its effect on health. This Cretan and, more broadly, Mediterranean, diet, which is much praised for its nutritional and organoleptic qualities as well as its social role, has inspired many international and national recommendations and was officially recognised as an international reference by the World Health Organisation (WHO) in 1994. These recommendations include in particular the food pyramid of the USDA (United States Department of Agriculture), which shows the number of portions of each type of food recommended in daily intake. The lower the food's position in the pyramid, the larger the quantities eaten should be, whereas the foods at the top of the pyramid should be consumed sparingly. The pyramid emphasises that intake of all forms of fat (with the exception

of olive oil) should be limited, and it makes a distinction between the various foodstuffs according to their glycaemic index, which measures the capacity of a given carbohydrate to raise the blood sugar level after a meal compared to the reference standard of pure glucose. Whole-grain cereals are at the bottom of the pyramid, and white bread is at the top. The pyramid also strongly encourages the consumption of fruit and vegetables.

**The virtues of the Cretan diet.** How is this "Cretan" diet, which has evolved from the intermingling of culinary traditions, to be described? First of all, the daily ration can be termed frugal with a supply of approximately 3,000 kcal per capita per day and a quantity of animal products that is limited to a maximum of 20% of the daily calorie intake (compared to 40% in English-speaking countries). The core of the meal consists of vegetables, which are also used to accompany cereals such as couscous, pasta, etc. Meat and fish, which are consumed mainly in the coastal areas, serve to provide flavour or are reserved for festive occasions. They can also form the basic ingredient of sauces with olive oil and condiments. And finally, salads (seasoned with olive oil) and fruit are part of all main meals. Fresh milk is used very little, but fresh sheep or goat's milk cheeses, fermented milk (labneh, rayeb, ayran etc.) and yoghurt are staples in all Mediterranean diets, the cheeses often being mixed with the vegetable dishes. Furthermore, culinary herbs and spices are widely used as well as acid flavouring with vinegar or lemon juice. As regards beverages, apart from the Muslim countries, where alcohol is prohibited, drinks are consumed during meals; they consist of wine, which is often diluted with water, or drinks flavoured with aniseed and accompanied with side dishes.

This dietary diversity is combined with a wide diversity both of cooking techniques (boiling, simmering, roasting, grilling, drying, or steaming) and of preservation techniques (solar drying, salting, fermentation, pickling in vinegar or oil, slow cooking, or candying). The Mediterranean diet, which is due to be included in the World Heritage List at Spain's request is a combination of a variety of products and know-how. Its reputation is of course based on the composition of food intake and the nutritional advantages it offers, but also on

## CRETAN, JAPANESE, INUIT

The "Cretan" diet is not the only diet in the world with proven health advantages. The Japanese model, which is less energising and has a high fish and whole-grain cereal content, or the Inuit model, whose nutritional structure is quite the opposite of the Mediterranean model, are also health references.

"Reference" models	Calorie supply (Kcal/caput/day)	Animal share of intake	Main ingredients
Cretan	3 136	18 %	Vegetables, olive oil, condiments, seasoning and spices, cereals, fruit, fish, fermented milk and cheeses, drinks flavoured with aniseed, wine
Japanese	2 768	20 %	Fish and seafood products, vegetable oils, fruit, pulses, seeds and nuts, whole-grain cereals, beverages (tea)
Inuit	3 000-5 000	90 %	Meat, fish, animal fat, seaweed, berries

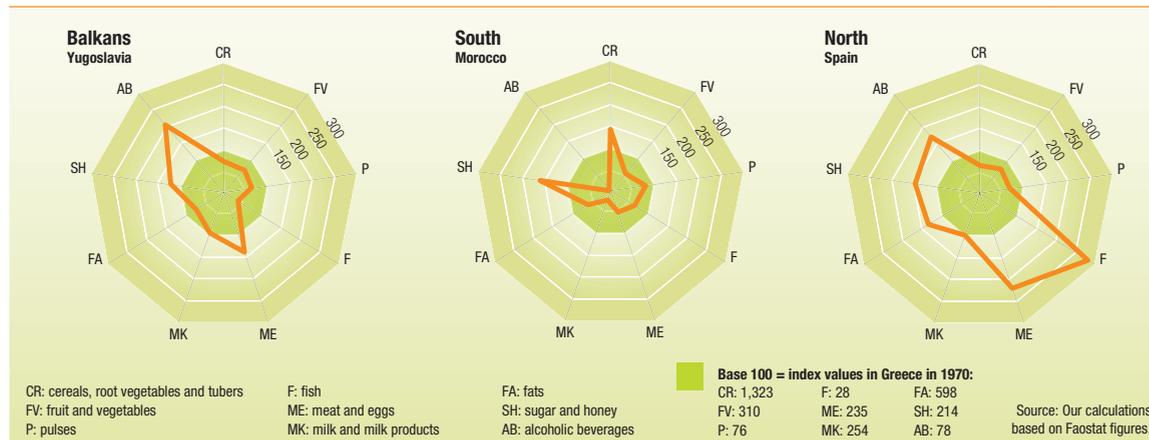
the cultural brand, sociability and commensality that are associated with it.

**Variety and national nuances.** None of the national diets has adopted the Cretan model strictly speaking. The peoples on the northern shores consume more meat, fish, fats, sugar and alcoholic beverages (as in Spain, for example). And the peoples on the southern shores eat large quantities of cereals and sugar and very few animal products, fruit or vegetables (as in Morocco, for example). In the Balkans, the Albanian diet has a specific focus on cereals, milk and milk products, but the diet of the vast majority of the Balkan countries is composed of cereals, meat, sugar and alcoholic beverages. It is in fact the dichotomy between animal and vegetable calories in daily intake that makes the two shores of the Mediterranean so different: whereas southern Mediterraneans include very few animal calories in their diet (10%), northern Mediterraneans include much larger quantities (30% of daily intake), and the peoples of the Balkans come close to the latter with 24% of daily intake. And it is surprising to observe that although the countries on the rim of the Mediterranean produce large volumes of fruit and vegetables many of them, such as Morocco, Algeria and Egypt, actually consume only small quantities of these products. In the Mediterranean countries the recommended daily intake of 400 g per person is more or less complied with in the North, whereas this is rarely the case in the South.

**WORRYING SIGNS OF DETERIORATING FOOD QUALITY**

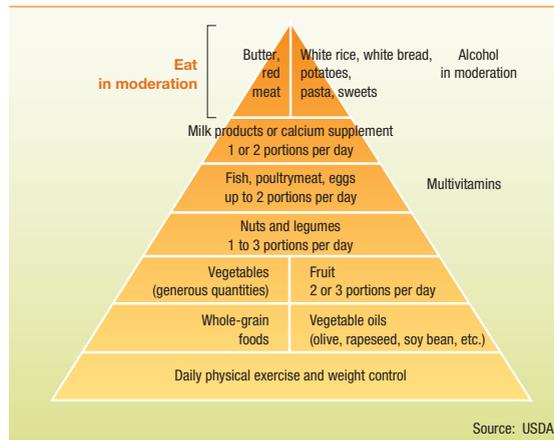
A food quality indicator (FQI) has been established combining a number of recommendations as to the quantity of each type of food to be eaten daily or the proportions of

**THE THREE TYPES OF FOOD IN THE MEDITERRANEAN REGION IN RELATION TO THE CRETAN DIET, 2003**

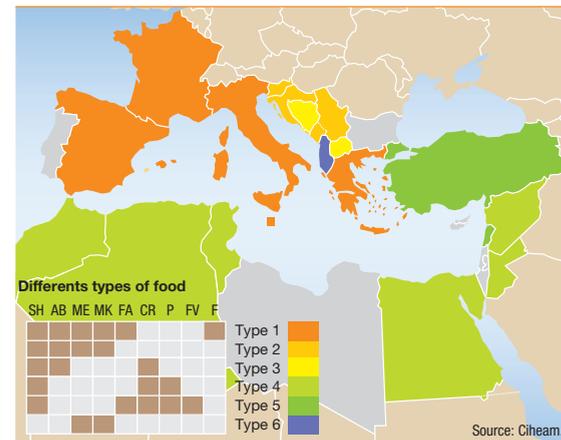


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**WILLETT'S PYRAMID, 2003**



**DIFFERENT TYPES OF FOOD**



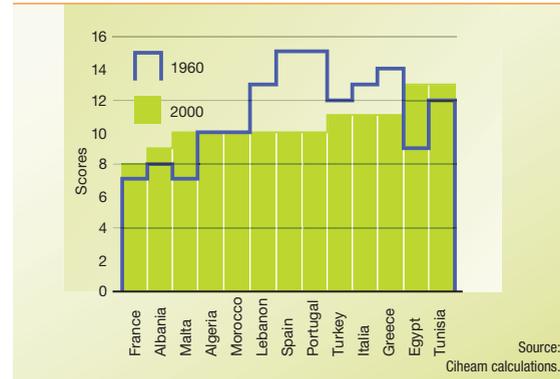
Atelier de cartographie de Sciences Po, 2003

nutrients to be complied with in daily intake. The FQI is the sum of a series of scores that are attributed according to consumption level per type of foodstuff compared to the quantity recommended. The score varies from 0 to 2 for each variable, representing the least to the most satisfactory. The highest score indicates the intake that is most beneficial for the health and most preventive (the maximum score is 18). Using this table of scores we have calculated the FQIs for the Mediterranean countries over the period from 1960 to 2000.

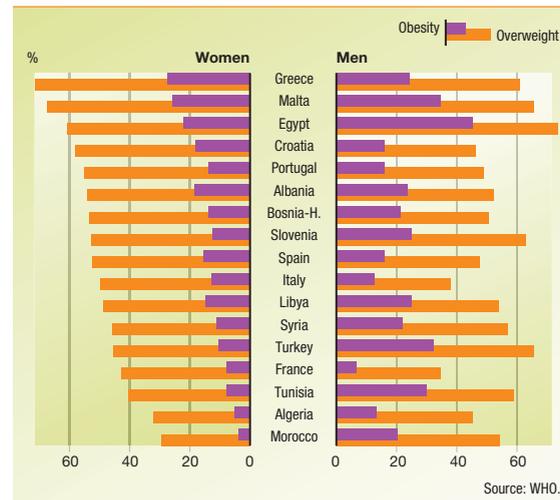
The table shows quite clearly that, although the situation in the Mediterranean countries is not disastrous (there is no FQI below 4), it is worrying, since there is a marked drift in the number of countries with a good or very good FQI in 1960 towards average or even poor FQI levels by 2000. The overall situation is thus shifting from a wide variety of situations to a more homogenous situation but with lower levels of quality. Three groups of countries can in fact be identified on the basis of this indicator: those where the quality of daily intake has deteriorated (Spain, Greece, Italy, Lebanon,

Variables	Scores		
	2	1	0
Meat (g/day)	< 200	200-400	> 400
Olive oil (g/day)	> 15	15-5	< 5
Fish (g/day)	> 60	60-30	< 30
Cereals (g/day)	> 300	300-100	< 100
Fruit and vegetables (g/day)	> 700	700-400	< 400
% lipids in daily intake	< 15	15-30	> 30
% saturated fats in daily intake	< 10	10-13	> 13
% of complex carbohydrates in daily intake	> 75	55-75	< 55
% of proteins in daily intake	> 15	15-10	< 10

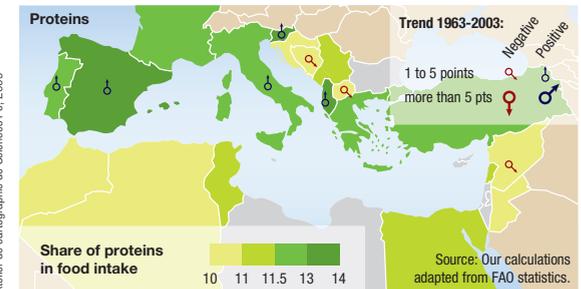
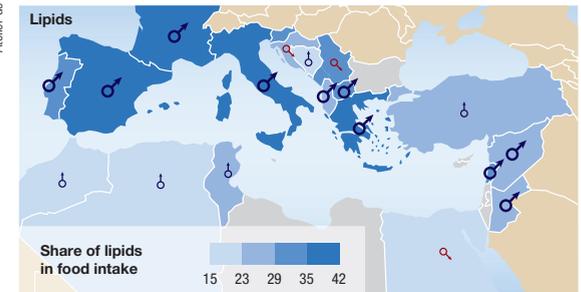
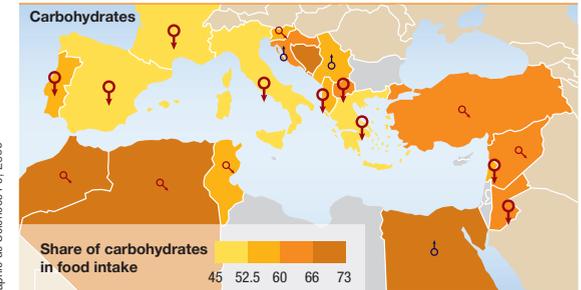
**FOOD QUALITY INDICATOR, 1960-2000**



**OBESITY IN THE MEDITERRANEAN REGION, 2009**



**FOOD INTAKE, 2003**

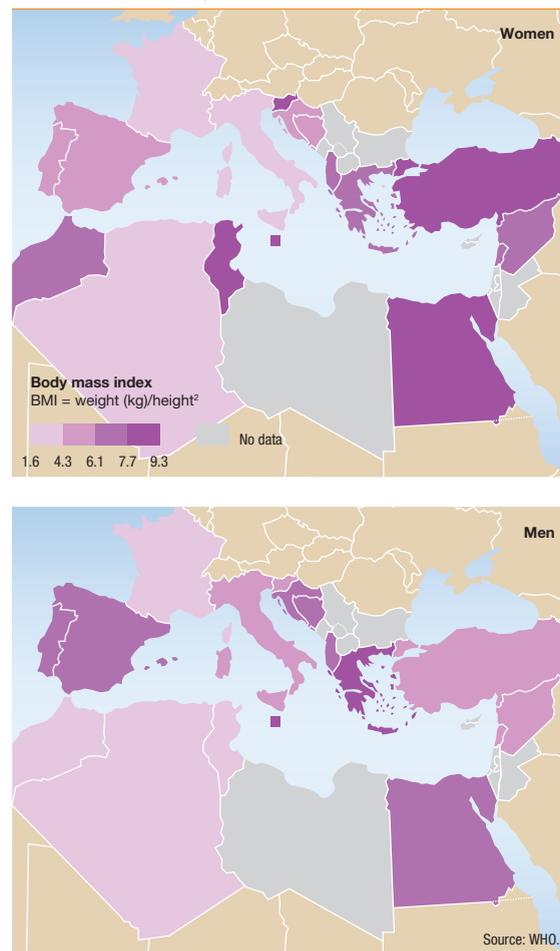


Portugal, and Tunisia), countries which are stable (Albania, Algeria, France, Morocco, Tunisia, and Turkey), and finally those where the quality of daily intake has improved (Egypt and Malta).

When one considers the proportion of carbohydrates, lipids and proteins in daily intake it is observed that values vary widely from one shore to the other but also that the proportion has developed over time. There is in fact a marked trend in Mediterranean food intake towards diets with a high fat content to the detriment of carbohydrates. Carbohydrates still account for a large proportion of the diet, however, but the type of carbohydrate consumed has changed: they were formally consumed in the form of whole-grain cereals but these have now been replaced by refined and processed cereals. The same applies to fats: the polyunsaturated fatty acids that are implicated in cardiovascular disease, certain forms of cancer and diabetes are overtaking by far the monounsaturated fatty acids which are contained in large quantities in olive oil.

**Obesity, overweight and hidden hunger.** These developments are already affecting the populations in the various countries to a greater or lesser extent. Whereas overweight and obesity (and the concomitant non-transmittable chronic diseases such as diabetes, high blood pressure, cardiovascular disease and certain forms of cancer) were long regarded as diseases specific to developed countries, there has been a spectacular rise in the incidence of these diseases in the Mediterranean region, particularly amongst young people and poor population groups. Egypt, Greece and Turkey, where 20% of the population is now suffering from obesity, are the countries worst affected. The emergence and rapid spread of these “civilisation” diseases are to be related to the

**BODY MASS INDEX, 2009**



## AN EXAMPLE FROM FRANCE OF FOOD SUPPLY ACTION

A scheme was launched in May 2007 involving a charter of voluntary nutritional commitment targeting enterprises. These charters aim in practical terms to induce industrialists to change the nutritional composition of their products towards better nutritional quality. They aim to reduce salt, simple carbohydrate, total lipid and saturated fatty acid content or to increase the consumption of complex carbohydrates and fibre, fruit and vegetables. The charters must be based on specific objectives quoting precise figures that are dated and verifiable. Inspections are carried out by independent bodies. In February 2008, the firm of St-Hubert was the first in France to sign a “charter of voluntary commitment to nutritional progress”, and other businesses have since followed suit.

### School fruit breaks

This fruit-break operation was launched on the initiative of the French Ministry of Agriculture and Fisheries with the collaboration of the Ministry of Education. Its purpose is to encourage the free distribution of at least one piece of fruit per week to children in primary schools or outdoor centres in addition to the meals that are provided.

French people do not eat enough fruit, and in some cases it is a form of food inequality. The fruit-break operation aims to reduce this injustice by distributing fruit to children direct. It was launched at the beginning of the 2008-2009 school year, and over 100 municipalities are already taking part, covering 92,000 children in 556 schools. The operation was extended by a European programme at the beginning of the 2009-2010 school year, distributing fruit to schools that are willing to participate.

changes in lifestyle and eating habits that are connected with urbanisation (people buy ready-made meals and eat between meals, the fast-food market is developing, people consume sweetened beverages – this is particularly the case in the southern and eastern Mediterranean countries and amongst young people – etc.).

A salient factor is that these diseases are often accompanied with nutritional deficiencies. Almost all of the southern Mediterranean countries are thus facing epidemic obesity combined with hidden deficiencies and very high levels of malnutrition connected with nutritional deficiencies (iron, vitamin A and iodine deficiency). Micronutrient deficiencies, i.e. lack of vitamins and minerals (flour, potassium, calcium, magnesium, selenium, and so on) are a “silent urgency” since they are to a large extent invisible – to the point that they are often called “hidden hunger”. Yet these deficiencies are one of the most widespread forms of malnutrition in the world.

### NUTRITION POLICIES

Measures to fight deficiencies or nutrition excesses form the core of public health policies in the Mediterranean region. These policies are based on nutrition and diet and aim primarily to change behaviour that is considered to be “deviant”, because it is the cause of the non-transmissible chronic diseases mentioned above. Governments try to intervene with preventive measures and to convince people to change their eating habits by informing them. In the northern Mediterranean countries action has focused on individual factors including measures to improve people’s knowledge of the nutritional properties of various foods, how to interpret the information on product labels and what a balanced diet consists of as well as communication

(advertising at times when children watch television, for example). Advertising campaigns promoting certain food products such as fruit and vegetables aim to change people’s attitudes, motivation and tastes.

A more ecological approach to eating habits – ecological also in the etymological sense of the term (*oikos* meaning “house”) – has emerged in the last 10 years: more action is being taken on the consumer’s (social, economic and geographical) environment, since it has now been established that that environment and consumer behaviour are closely linked. If consumers have easy access to supermarkets, for example, they will be more attracted by industrial products than others who live in the country and have access to local markets. Two types of action tend to be combined: action targeting the individual, his preferences and motives (nutrition education, informational marketing and campaigns to promote recommended foods – five different fruits and vegetables per day, for example), and action aiming to influence the environment of the act of consumption (price incentives, subsidies, measures to improve quality via professionals, etc.).

**Interventionism in the South.** In the southern Mediterranean countries the first measures in the food field were taken in the context of a very centralised policy, taking the form of the general subsidisation of staples (introduced in Algeria in 1973, in Egypt in 1967, and in Morocco and Tunisia in 1970). The underlying idea was that these measures could improve food security without requiring in-depth social reforms or calling the basis of the economy in question. They brought a certain degree of social peace, and subsidies were applied to all products: cereals and derivatives, oil, powdered milk, sugar, plus meat and eggs in the case of Tunisia, tea, meat,

dried beans and lentils in the case of Egypt, and coffee in the case of Algeria.

As the result of the structural adjustment plans required by the International Monetary Fund in order to reduce the debts of States with very adverse budget situations, subsidies were gradually abolished from 1986 onwards in Egypt, from 1988 in Algeria, from 1983 in Morocco and from 1991 in Tunisia. This subsidy withdrawal policy was not well received by the population, and “bread riots” broke out in Casablanca in June 1981 and January 1984 and in Tunis in January 1984. So the States then embarked on policies to privatise and liberalise agro-food firms and the agro-food trade, despite all of the difficulties involved due to the customary State protection policies. These privatisation and liberalisation policies culminated in the accession of Egypt, Morocco, Tunisia and Turkey to the World Trade Organisation in 1995; Algeria

### IRON SUPPLEMENTATION PROGRAMME IN TUNISIA

An iron supplementation programme was introduced in 1990 in the context of a national programme focusing on the perinatal period and has since been applied throughout the country with a view to preventing iron deficiency anaemia in pregnant woman or correcting it in women suffering from the condition. Almost 70% of pregnant or anaemic women are covered by the scheme. The recommended dose in preventive care is 100 mg of iron element per day. Where moderate anaemia is diagnosed the curative treatment is 200 mg of iron element per day with regular monitoring of the circulating haemoglobin mass.

is still awaiting signature. Subsidisation policy has been replaced by other measures. In Morocco, a food compensation programme has been introduced to preserve the living standards of the most needy; it includes schemes involving work in the public interest (food in return for work) and direct food transfers (national mutual assistance and distribution of foodstuffs through the Catholic Relief Services). Algeria has opted for income aid, adopting and launching the “social safety net” scheme in 1991. In Egypt, the idea of a social action plan has been put forward but has not yet been put into effect. In Tunisia, a dietary and nutritional monitoring system that has been in operation since 2006 with the collaboration of European partners provides the basis for monitoring the evolution of nutritional problems as well as the impact of the strategies pursued so that they can be readjusted where necessary. Six specific actions have been devised and scheduled for the period of the 11<sup>th</sup> plan (2007-2011) involving measures to combat iron deficiency in children and women of child-bearing age, to promote breast-feeding, to combat vitamin A deficiency, to eradicate iodine deficiency, to combat stunting and to prevent obesity in children and adolescents.

Foodstuff fortification also helps to improve the nutritional status of the various populations. The Algerian Ministry of Health is running a vitamin D supplementation scheme for all infants as well as a screening programme for disorders due to iodine deficiency in children from 0 to 4 years of age (goitre, cretinism) and in pregnant women and nursing mothers. Dietary measures are recommended in order to combat anaemia (diversification of the diet with emphasis on the value of foods with high iron and folate content), and iron supplementation is provided for groups at risk. Furthermore, the Nutrition Committee

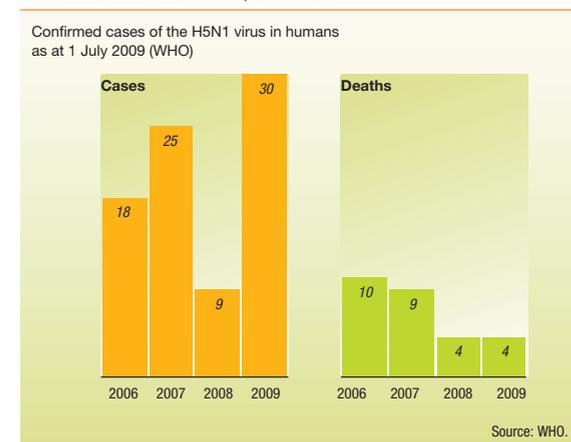
stresses that mothers should be encouraged to breast-feed their children. In Lebanon, the WHO is supporting a Micronutrient Initiative, which has been promoting iodised salt since 1995 and flour fortified with iron and folic acid since 2006. In Turkey, the Ministry of Agriculture and Rural Affairs undertook extensive measures in 2000 to encourage animal production in order to eliminate the widespread iron, calcium, riboflavin and zinc deficiency. In Morocco, the measures taken to improve the nutritional quality of the foodstuffs that are made available to certain categories of the population (flour fortified with iron and vitamin A and D compounds and iodised salt) provide a means of correcting the deficiencies that are still found in women and children in mountain regions.

### THE EMERGING CHALLENGE OF ZOOSES

The development of diseases that can be communicated from animals to man is also a major challenge for public health policies. These pathologies affecting the Mediterranean basin include in particular bird flu, bovine spongiform encephalopathy and brucellosis. Bird flu has been very much in the news recently, although there have been few victims. Back in 2005 many scientists presented it as a pandemic of the future. This infectious disease is caused by A-strains of the flu virus and affects birds, which can then easily carry it. Although this virus is benign, the H5N1 strain can be highly pathogenic.

In Egypt, one of the countries most affected by the epidemic, the government launched a warning against bird flu in 2006. The victims were mainly women and children who had been in contact with poultry. The authorities decided to slaughter chickens in domestic poultry farms

### H5N1 VIRUS IN EGYPT, 2006-2009



and to close poultry shops, and 15 million fowl were slaughtered in one month, but bird flu is still very difficult to control: of the 45,000 to 50,000 poultry farms in Egypt only 22,000 are authorised, and domestic production is still very important for 85% of the Egyptians who raise poultry. The government decided recently to promote the import of frozen chicken in order to bring domestic production to an end. This bird flu episode has had dire consequences for vulnerable population groups, since it has deprived them of food resources and a means of savings (poultry farming is a major source of savings in Egypt). More broadly, since climate change could promote animal diseases that can be communicated to man, it is absolutely imperative to develop policies for monitoring animal and poultry farms (traceability, prophylaxis, etc.). ■

## 8

## ▶ THE MEDITERRANEAN REGION AND GLOBALISATION

The Mediterranean is no longer the core of the world economy, but it is the backbone of international relations where all contemporary forms of tension are concentrated. And practically the entire world – States, migrants, private companies – is active in the Mediterranean region. The history of the Mediterranean is also a chronicle of departures – of the quest of the many inhabitants of the basin and their families, who have had to leave their towns and villages in search of work and stability. There are thus pockets of Mediterranean culture dotted over the continents of the world. The diasporas brought with them the arts, books and restaurants of their native countries. Often enriched, and not only in the economic sense of the term, they support their homelands, particularly the rural areas they often come from. Some of these diasporas have distinguished themselves in the States where they have settled – whether in Brazil or Canada or the United States. And at times they are not without influence on the trade and even the political strategies of the principal actors operating in the Mediterranean region.

With its dynamic food markets and its proximity to the major oil fields of the Gulf, the Mediterranean attracts the interest of those who want to matter in the world. By the same token, the peoples of

the Mediterranean have the ability to project themselves, particularly through their agriculture: wines, oils and cheeses are also the ambassadors of a Mediterranean in quest of new spaces.

The Mediterranean space is at the same time an encounter between two shores. History and the present show that Mediterraneans often seek to reach the opposite shore: by conquest, through trade or simply – fortunately – out of curiosity. It is nowadays more often the people on the southern shore who seek a European eldorado, while goods from the North reach the markets of the South and those from the South would like to find outlets in the North more easily.

The present and future of the Mediterranean peoples are thus linked in part. When lives are interlocked, concord presupposes joint projects, conciliation and solidarity. The peoples of Europe, the near East and North Africa are no exception to this prerequisite for coexistence. In a globalised world where regional areas are becoming established as places of trade and regulations, Euro-Mediterranean cooperation is emerging as a new stage of millennial history. It is only the will of men and the determination of policies that can give concrete form to what geopolitics is now indicating as the logical avenue for action.

# MIGRATIONS AND DIASPORAS

The Mediterranean is an area of regional and international migration movements. It has been projected throughout the world through emigration that began in antiquity and continued over the centuries. Some diasporas are today obvious patches of the Mediterranean on remote continents. This migration has continued incessantly from one shore to the other – from North to South during the colonisation period, but nowadays generally in the opposite direction.

## THE MEDITERRANEAN AS A WITNESS OF HISTORY

Diasporas (from the Greek *spiro*, dispersion) originated in age-old and worldwide migratory movements and are often characterised by the strong links that bind emigrants to their countries of origin. These migratory flows are generally accompanied by a migration chain phenomenon, where emigrant population groups act as hosts to newcomer compatriots. The Armenian, Jewish, Palestinian, Syro-Lebanese, Greek and Italian diasporas are amongst the largest originating in the Mediterranean.

Transnational communities became established mainly after the second world war (as was the case with the Maghreb peoples) on more confined host lands or even in one single region, essentially in Europe (as was the case with the Turkish and Maghreb populations). Although emigration on this continent began at the beginning of the 20<sup>th</sup> century, it was boosted by the “30 glorious years” (the 30-year boom period following World War II), when industrial needs provided opportunities for population groups from the least developed regions: the largest waves of emigration originated in the mountains of Kabylia in Algeria, southern Tunisia, and in the Anti-Atlas and Rif Mountains in Morocco, but with time the phenomenon spread throughout these three

countries due to economic constraints. The same phenomenon was observed with the Turks of Anatolia, who came mainly to Germany. The two countries signed an agreement in 1961 allowing Germany to recruit Turkish labour.

These transnational communities, which spread through several European countries and even throughout the world, are also referred to as quasi diasporas; as is the case with the some 3 million Moroccans in Europe and 160,000 Moroccans in the United States, but also with the Turks, who likewise emigrated to these two regions. Immigration from the southern Mediterranean to the European countries is tending to decrease, however, as the result of several factors: legislation in Europe has been tightened up due to unemployment and the recent arrival of migrants from Eastern Europe, and rising growth in the countries of origin is curbing the emigration trend. In the Gulf countries, migratory flows are more erratic due to the vicissitudes of the oil economy.

**These migratory flows have political and/or economic causes:** development disparities between the North and the South of the Mediterranean region explain the flows from the Maghreb to Europe, whereas it is the South-South gap that prompts the migrations of population groups from the near East – Egypt, Jordan, Lebanon and Palestine – to the Gulf countries, whose oil industry makes them an eldorado. At the geopolitical level, the Israeli-Arab conflict has prompted the largest population movements in the east of the basin. Many Palestinian refugees from 1948 and their descendants have settled in Syria, Lebanon and Jordan or elsewhere in the world. They have been joined by other waves of emigrants leaving the Palestinian Territories, particularly after 1967. On the other hand, many Jews living in Mediterranean countries moved to Israel from 1948 onwards, Moroccan

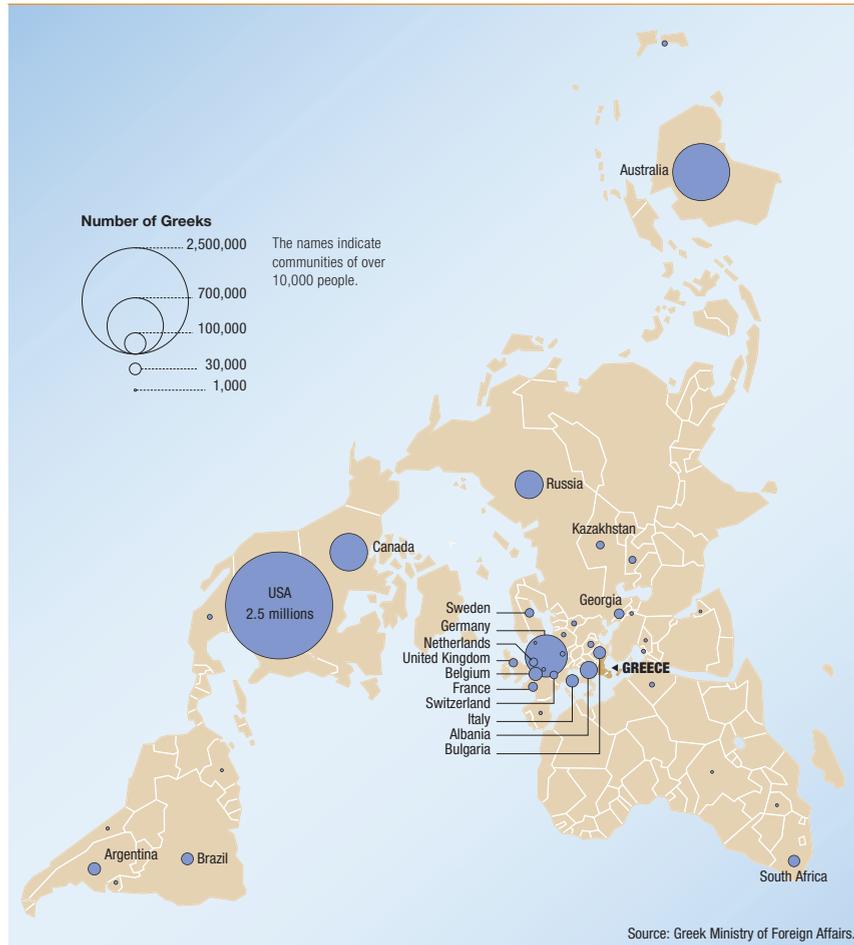
## LEBANON AND ITS DIASPORA

The Lebanese diaspora has been formed through several waves of emigration: the incidents in the mountains between 1840 and 1860 and then the Ottoman embargo against the same mountain area in Lebanon during the first world war prompted many Maronite and Drusian peasant farmers to leave, and many of them went to South or North America. Although this movement waned after the country gained independence, it still continued. During the civil war (1975-1990), the wave of emigration intensified again, turning to North America, since the instability in South America made the continent less attractive. Since that war, Australia has become a new destination, while Canada is replacing the United States as the host country for Lebanese migrants. Europe, which plays a more marginal role as a destination, continues to host migrants who are relatively well-off, and in Africa the Lebanese are taking over many branches of industry. Emigration is more temporary in this case, and also in the Gulf countries, since many Lebanese return after working for several years abroad. It is impossible to assess exactly how many Lebanese are living abroad, particularly after several generations in a foreign country. This diaspora obviously provides a great opportunity for Lebanon – both in terms of local investment or direct aid to the families who have stayed at home and as regards promoting Lebanese cuisine or economic links between Lebanon and the countries hosting the immigrants, etc.

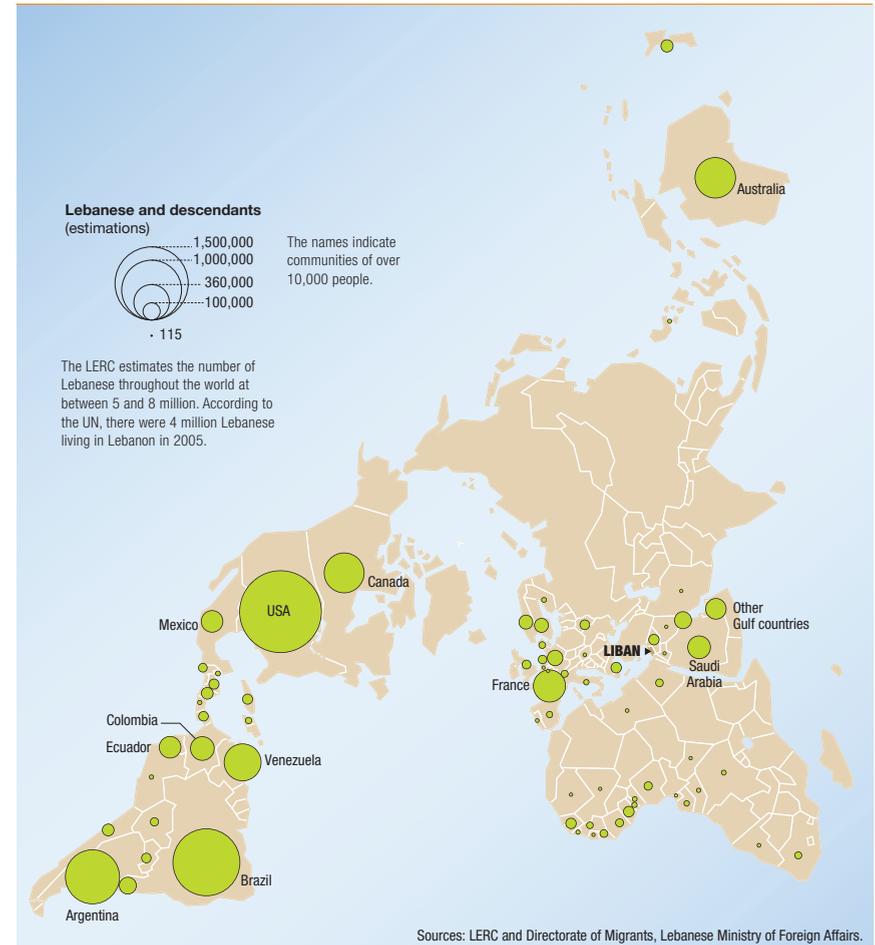
Jews forming the largest group of these immigrants (250,000 in the period between 1948 and 1975).

It is interesting to note that some emigration countries have in turn become immigration regions. This is of course the case with Spain, Italy and Portugal but also, to a lesser extent

### GREEK DIASPORA



### LEBANESE DIASPORA



Atelier de cartographie de Sciences Po, 2009

and, in particular, more recently, with the Maghreb countries, which are becoming host countries for sub-Saharan migrants. The Near East countries are another similar example, hosting migrants who are fleeing the civil war in Iraq. Syria is hosting between 1.2 and 1.5 million Iraqi refugees, for instance, Jordan is hosting between 500,000 and 750,000, Lebanon some 20,000 and Egypt over 80,000.

**MIGRATION AND RURAL AREAS**

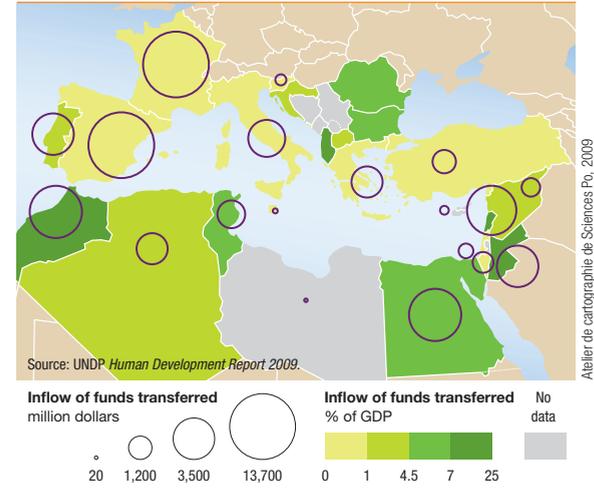
Intraregional and extraregional migration have beneficial trade-offs, particularly for rural areas, which supply a very large proportion of the migrants: economic opportunities for the regions of origin are also opportunities for the host countries, where they compensate for the lack or shortage of labour in certain sectors, particularly in agriculture. This agricultural labour displacement trend is nothing new – Spanish labour was already recruited in the fruit and vegetable farms of the Languedoc-Roussillon region in the south of France in the 1960s. Today the regions of Valencia, Murcia and Andalusia are in turn hosting seasonal migrants for work on labour-intensive farms. Italy undertook to increase the number of immigrants by 33% in 2008. These labour needs partly explain the massive regularisation procedures carried out in 1985 and 2005 in Spain, Portugal and Greece. Spain and Morocco are planning a sustainable partnership for the recruitment of seasonal agricultural labourers. Morocco already supplied agricultural labourers for 3 to 6 months in 2007. And the northern Mediterranean is not the only region concerned by this agricultural migration – Lebanon and Jordan host Syrian and Egyptian workers, for example, to offset domestic labour shortages. These migrants are a source of considerable cash flows for some countries. Since 1990 the total volume of funds

transferred by emigrants has exceeded the public development aid or foreign direct investments effected in the southern Mediterranean countries. The sums remitted by the diasporas or transnational communities of these countries account for a very large proportion of GDP (over 10% in some cases) – particularly in Lebanon, Jordan, the Palestinian Territories and Morocco. Rural areas benefit from this manna – both directly through the social safety net it provides for the receiving families but also through the development programmes that are financed through the funds transferred. More generally, agricultural and rural areas can also benefit from emigration, which relieves the population pressure on land. Diaspora populations can import so-called ethnic products from their countries of origin (aromatic plants, wines, cheeses, etc.). And finally, both the Italian and Lebanese diasporas and the Turkish and Moroccan quasi diasporas act as the ambassadors of very typical cuisines. ■

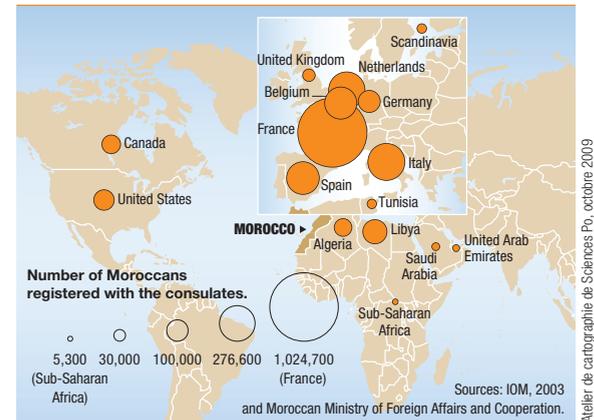
**THE CASE OF MOROCCO**

The French association *Migration et développement*, which many migrants join, runs a number of development projects. Thanks to its efforts, eight villages in Taroudant, a mountainous province with a semi-arid climate and very marginalised population in southern Morocco, now have electricity. In the same municipalities the association is helping to promote local agricultural resources through pilot workshops focusing on the production of olives, saffron, argan oil, dates and henna. It also runs rural tourism activities, establishing rural inns and bed & breakfast accommodation.

**SUMS REMITTED BY MIGRANTS, 2007**



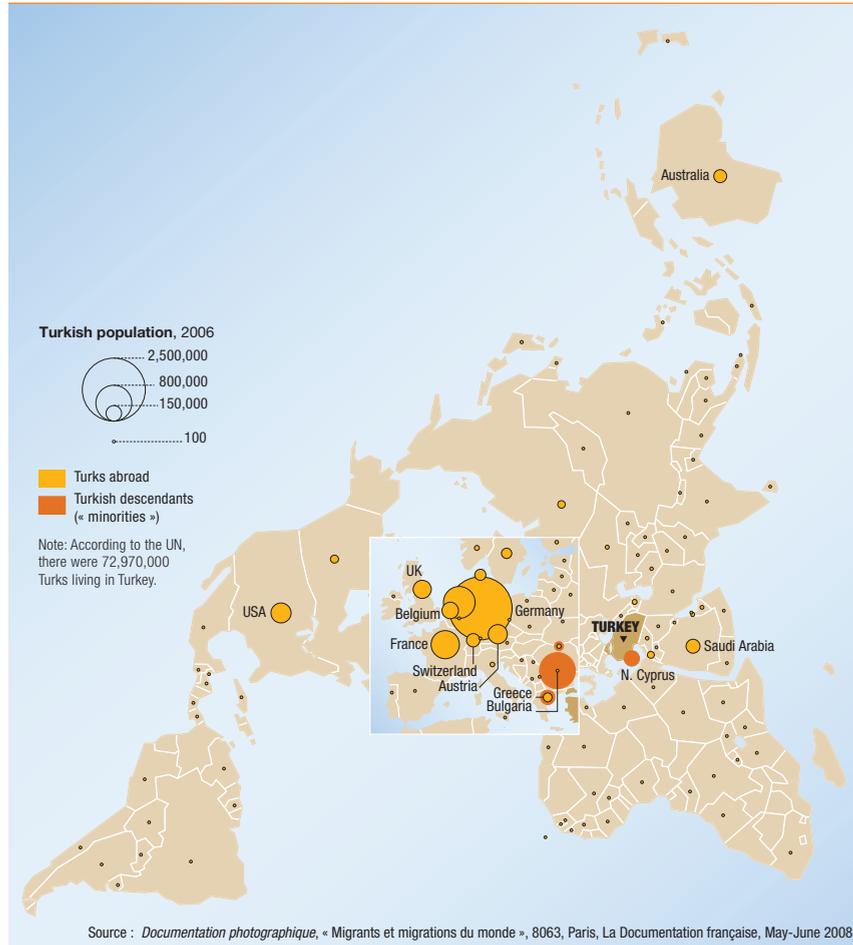
**MOROCCAN QUASI DIASPORA, 2002**



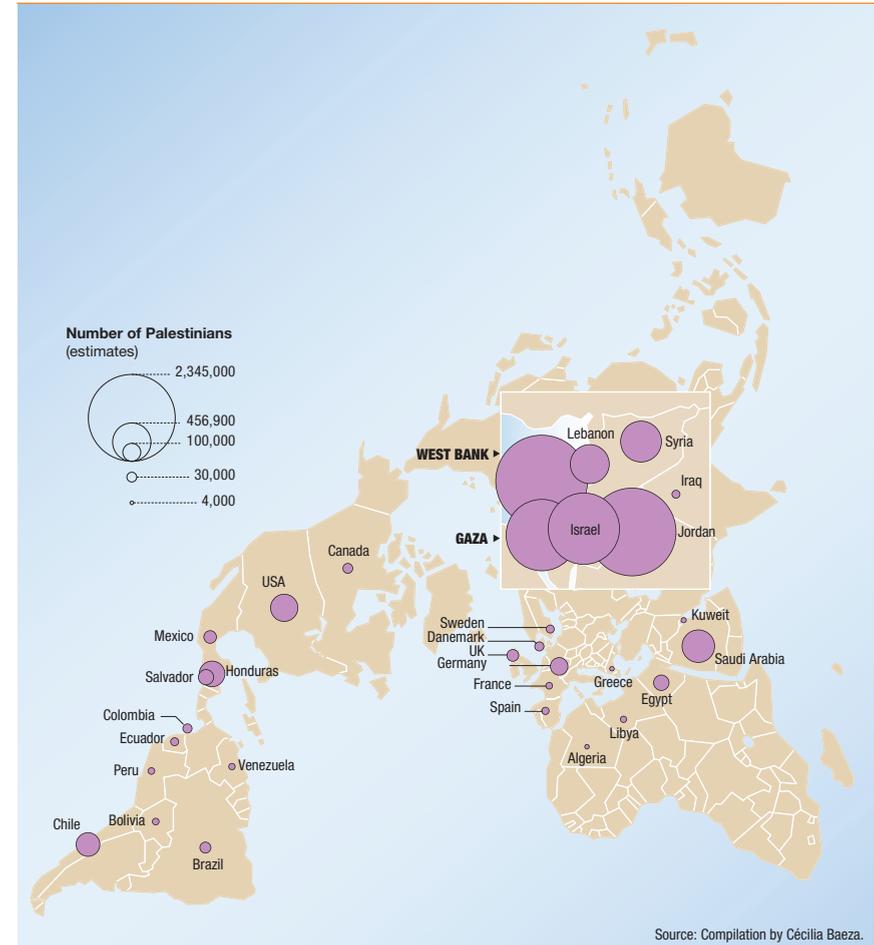
Atelier de cartographie de Sciences Po, 2009

Atelier de cartographie de Sciences Po, octobre 2009

### TURKISH QUASI DIASPORA



### PALESTINIAN DIASPORA



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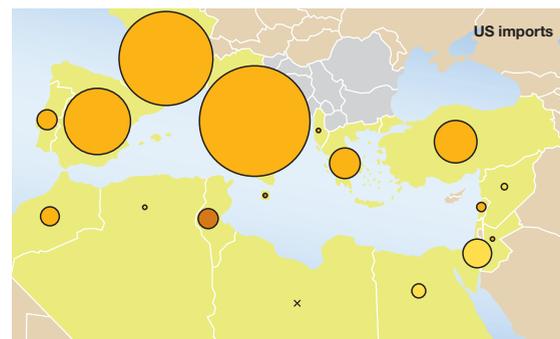
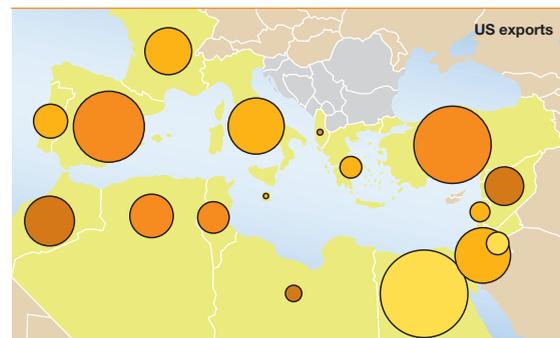
# EXTRAREGIONAL ACTORS

All of the Mediterranean countries engage in trade relations with a large number of third countries, whether they have a deficit or a surplus of agricultural commodities. Among extraregional actors, the United States is the largest trading partner in the region, whose geostrategic importance, coupled with the trade dependence of some Mediterranean countries, has facilitated the deployment of American food power. But in a world that is in the throes of geo-economic recomposition new powerful actors are knocking at the Mediterranean's door. With its vast territory, Brazil is now inviting itself to the Mediterraneans' table and is also present in their engine fuel due to the development of biofuels. And, given the cereal needs in the region, Russia and Ukraine could reinforce their presence there in the future. Japan's presence in the region is discreet; it is not through agricultural trade but through an ambitious policy of cooperation, particularly in the water resource development field, that the country is maintaining an active presence.

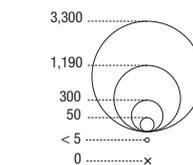
## THE UNITED STATES – THE NEW STRATEGY

The United States has been playing a major role in the Mediterranean region since the end of the second world war, particularly in the trading field. With the launching of the Marshall Plan, trade with the countries on the northern shore, and more broadly with European countries, was boosted, with the result that trade relations became highly interlinked. Agricultural trade is no exception; it accounts for a large volume of trade with the US, and two EU Mediterranean countries stand out from the others: Italy is the fourth largest supplier of the United States, and France ranks ninth. Europe-27, for its part, is the second-largest agricultural supplier of the United States, for which it is the

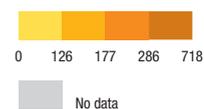
## US AGRICULTURAL TRADE



Agricultural trade in 2008  
million dollars



Trend 2004-2008  
%



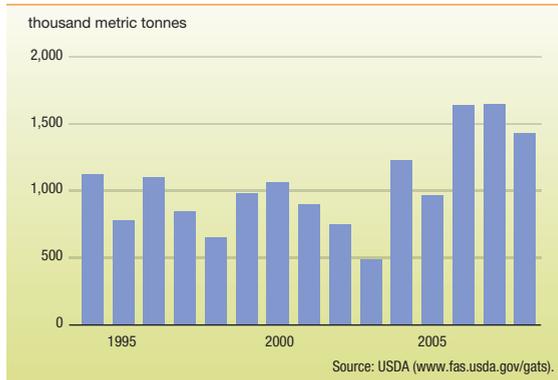
Source: USDA

fourth-largest agricultural commodity export market (after Canada, China and Japan). The United States is the second trading partner of the southern and eastern Mediterranean countries after the EU: in 2008, 13.2% of the imports of these countries came from the United States, which was the destination of 8.2% of their exports. The US is a leading trading partner of Israel, Turkey, Egypt and Jordan as well as Morocco and Algeria, which are the largest importers of American agricultural commodities. Wheat and other cereals such as maize and soybeans account for a very large share of US agricultural exports to the Mediterranean countries: in 2008, over half of the total agricultural commodities exported to those countries were cereals. Despite a certain degree of competition on the cereals market due mainly to the return of Russia and Ukraine since the beginning of the millennium, the sharp rise in demand at world level, and more specifically in the Mediterranean region, has enabled the United States to maintain its levels of exports to those countries. The Mediterranean region thus currently receives 22% of US wheat exports (the same proportion as in 1984). And soybean sales to Mediterranean countries have risen sharply in the last few years. Turkey is an exception, however, since the most important commodity it imports from the United States is cotton.

**The US strategy of bilateral agreements.** In the cold war context the US agricultural export strategy in the region, which was based essentially on food aid, was dictated primarily by geopolitical motives. With the PL480 Food for Peace Programme, a veritable food weapon, the United States was able to establish control in the Mediterranean region, which served as a corridor for the Sixth Fleet: Egypt, a veritable strategic hub, received the most food aid – 1.5 million tonnes

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**US CEREAL AND SOYBEAN EXPORTS TO MOROCCO, 1994-2008**



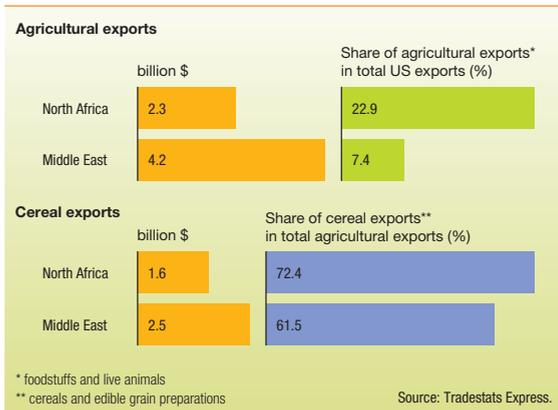
Atelier de cartographie de Sciences Po, 2009

of US wheat per year; Turkey, serving as a barricade against USSR penetration into the Mediterranean, was a further major beneficiary of US aid in the 1970s, receiving all of the wheat imported from the US as aid.

The US gradually modified its Mediterranean strategy in the course of the 1980s, and today US food aid to the region is virtually non-existent except for ad hoc aids to conflict zones. On the other hand, the US has endeavoured to establish bilateral trade relations with the countries in the region thus gaining a preferential position with respect to other agricultural powers. By establishing liberalised trade the US has tried to maintain its economic and political interests in the region, still extremely strategic from Washington's point of view. The countries which received the most food aid in the 1970s have thus become the United States' main clients. This strategy of closer economic relations was built up through a range of trade agreements. Free trade agreements were signed with Israel in 1980 and then with Jordan in 2000 and Morocco in 2004 – trade in cereals with Morocco is buoyant, although Rabat is diversifying supplies. It should be pointed out that these agreements are generally wider in scope than the association agreements proposed by the EU to the same countries, because they cover most agricultural commodities. In parallel, the US has proposed framework agreements on investments and trade to other countries in the region; these are flexible, non-binding arrangements, the aim being in each case to develop towards a bilateral free trade agreement. A number of countries have signed – Algeria, Egypt, Tunisia and the Gulf countries.

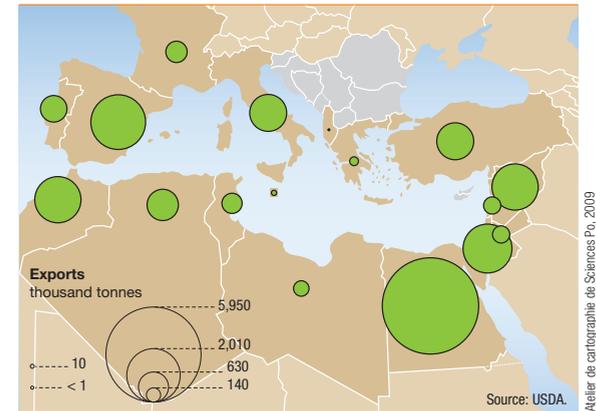
**Free trade zones.** The US is seeking furthermore to establish "Qualified Industrial Zones" or industrial estates providing duty-free and quota-free access to the American market for

**US EXPORTS TO NORTH AFRICA AND THE MIDDLE EAST, 2008**



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**US CEREAL AND SOY BEAN EXPORTS, 2008**



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all goods and services produced there. The first zone was set up in Jordan in 1998, and this was followed by a zone in Egypt in 2004. These various strategies are based on the American intention to set up a Middle East Free Trade Area in a region of geo-economic and geostrategic importance.

**BRAZIL – A NEWCOMER TO THE AGRICULTURAL SCENE**

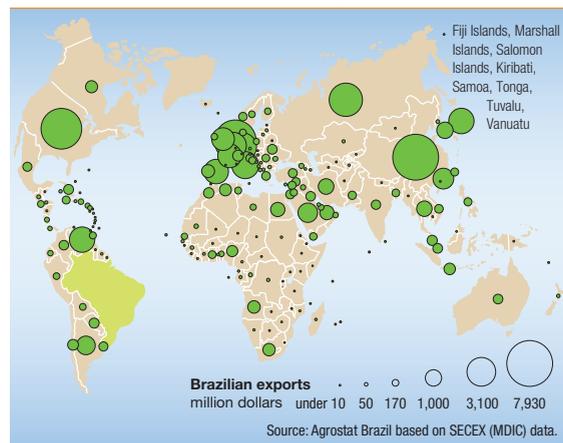
Banking on its water and land potential, Brazil has opted for a model of economic extroversion and has made agriculture the vector of its integration into world trade; this trade dimension has been coupled with a diplomatic drive. It is a gamble that seems to have worked, since Brazil is now one of the world's leading agricultural powers. Although the US and the EU are still the leaders in world agricultural trade, Brazil has been the world's fourth-largest agro-food exporter since 2007. The EU is the main purchaser, followed by

China and the United States. Spain and Italy are the two EU Mediterranean countries which import the most Brazilian products. In a context of high energy demand Brazil intends to make its agro-fuel industry one of its flagship sectors and to export its ethanol to Europe. But ethanol is subject to high customs duties on entering the European Union (60%), and other agricultural products also come up against strong protection measures.

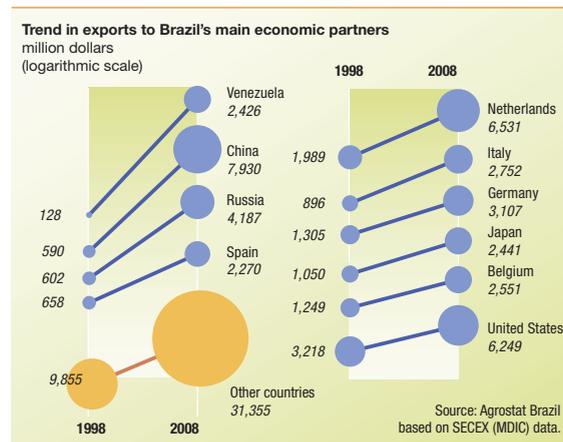
In view of this arsenal of customs barriers, Brazil is trying to diversify its markets – hence its commercial and political diplomacy focusing on the Arab League countries, for example, which entered a partnership with Brasília in 2005. Brazil has entertained long-standing relations with certain Arab countries, if only through the presence of a large Syro-Lebanese community on its territory. The Arab countries are not Brazil's leading partners in agricultural trade, but their share has been growing very rapidly in the last few years: the volume of exports has increased by 600% in one decade, amounting to a value of over \$6 billion in 2008. This amount must be compared to Brazilian agricultural exports to the US (6.2 billion dollars), or even those of China (\$7.9 billion). This growth in Brazil's agricultural exports to the Arab countries is also illustrated by the following figures: Egypt's bill has tripled (\$770 million in 2008 compared to \$274 million in 1998), Syria's bill has been multiplied by 5 (\$261 million in 2008 compared to \$48 million in 1998), the bill has been multiplied by 7 for Tunisia (\$185 million in 2008 compared to \$28 million in 1998) and by 16 for Algeria (\$547 million in 2008 compared to \$35 million in 1998).

**The share of Brazilian agricultural commodities in imports.** Products from Brazil account for 8.5% of Egypt's agricultural imports; the figure is 10.4% for Morocco and 7.2%

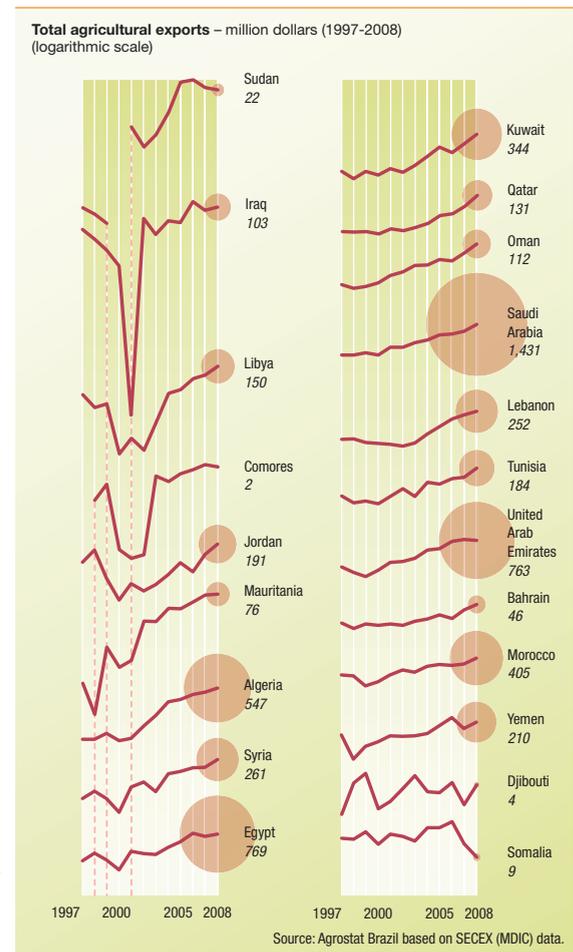
**THE BRAZILIAN AGROBUSINESS, 2009**



**THE BRAZILIAN AGROBUSINESS, 1998-2008**



**BRAZIL: TRADE WITH THE ARAB COUNTRIES OF THE ASPA**

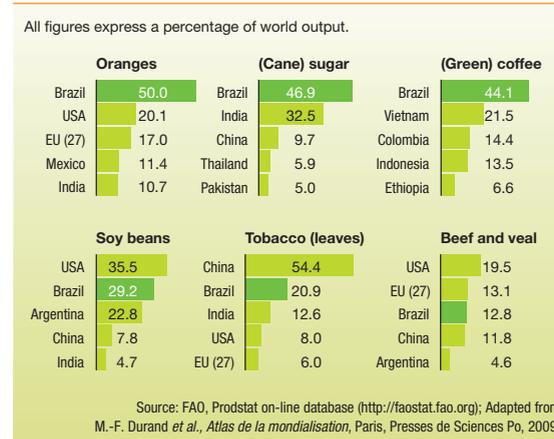


for Algeria. Egypt, Algeria and Libya are now 3 of the 10 leading purchasers of Brazilian beef. Similarly, the Arab League countries' share of Brazilian agricultural exports is also around 10%. Brazil exports essentially sugar, meat and soybeans. It is the traditional and virtually exclusive supplier of sugar to Egypt, Morocco and Algeria. The markets of the Arab countries are an important source of outlets for Brazil, which is a major meat exporter: in 2004, 47% of Algeria's meat imports and 91% of Egypt's meat imports came from Brazil. The figures for soybeans are less spectacular, but Brazilian soybeans nevertheless account for 29% of Moroccan soybean imports. The upward trend in Brazilian exports to Arab countries was confirmed in 2008. Brazil and Turkey have also established trade relations (the volume of trade carried out between the two countries increased by 400% between 1999 and 2008) as well as cooperation in the energy (biofuel) field.

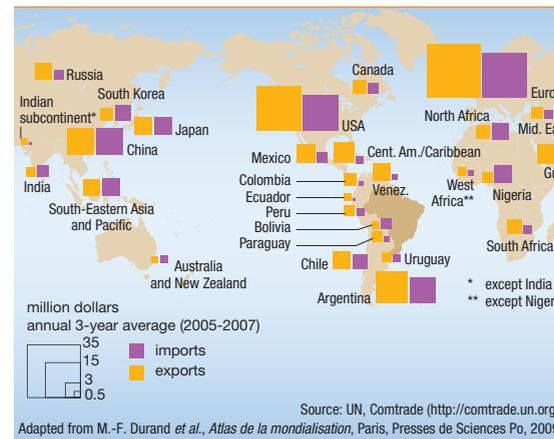
**JAPAN: CO-OPERATION RATHER THAN TRADE**

Japan has concentrated on soft power rather than on a power strategy for historical reasons. The country of the rising sun thus brings its influence to bear throughout the world through its enterprises but also by developing strong cooperation with developing countries. Although public development aid has been decreasing significantly since 1998, Japan is still the second provider at world level after the United States. Japan's approach also embraces the Mediterranean, particularly the eastern region of the basin. A report published by the Japan Bank for International Cooperation (JBIC) states quite bluntly that the stability of the Middle East is of great importance for Japan when one bears in mind Japan's considerable dependence on energy resources from the region, thus clearly underlining Japan's

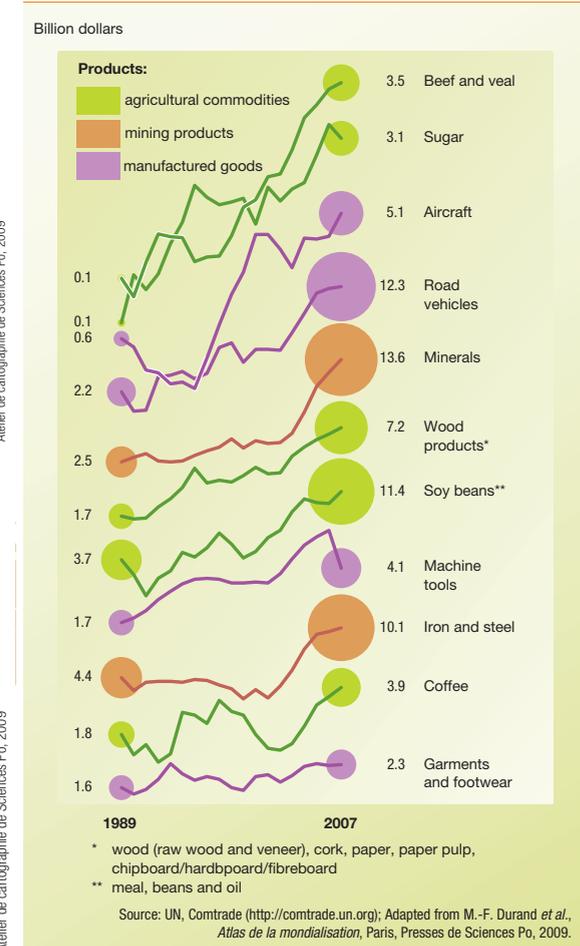
**BRAZIL: AGRICULTURAL COMMODITIES, 2007**



**BRAZILIAN FOREIGN TRADE**



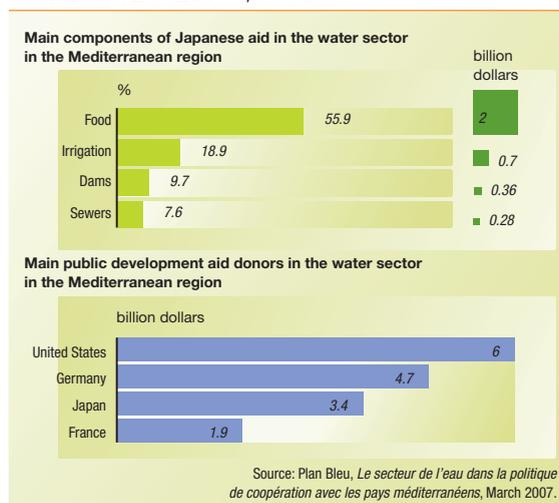
**BRAZILIAN EXPORTS, 1989-2007**



interest in a region that is vital for its oil supplies. Yet the country bases its action more on improving economic and social infrastructures than on diplomatic action, which, in the last analysis, is discreet. Japan is very involved in technical cooperation with the southern and eastern Mediterranean countries, running numerous water projects as an essential vector of development and thus an essential means of reducing poverty and instability; it is one of the three main sponsors in this field. This water resource development cooperation is carried out by the Japan International Cooperation Agency, which provides technical assistance and subsidies, and by the JBIC, which provides loans; promoting integrated water resource management and an efficient and sustainable supply of drinking water is a core priority.

**An unprofitable agricultural deficit.** Japan has maintained a very high level of agricultural protectionism for historical, political and sociological reasons. This has allowed the country to protect its rice output, which is strategic for the population, but also its agricultural activities in general, which ensure a social safety net in the event of economic vicissitudes. But apart from rice production, where Japan is self-sufficient, the country's agricultural dependence is growing, for the external pressure from the WTO, obliging Japan to dismantle tariffs, is compounded by the internal pressure of massive urbanisation. Maize is used to a large extent for animal feed, and maize imports are rising steeply. Japanese purchases benefit mainly the United States, however, so that Japan's agricultural trade relations with the Euro-Mediterranean are fairly limited. Taking the region as a whole, France is the country which trades most with Japan, mainly by exporting wine and spirits.

**JAPANESE STATE DEVELOPMENT AID  
IN THE WATER SECTOR, 1973-2004**



Atelier de cartographie de SciencesPo, 2009

**RUSSIA AND UKRAINE, EMERGING ACTORS**

In the north of the basin, the EU has been developing an effective economic partnership with the Russian Federation since the 1990s. However, although trade between the two partners is becoming consolidated – the EU is Russia's primary trading partner – agricultural trade is still limited. The EU Mediterranean countries trade very little with the Federation, although Italy nevertheless accounts for approximately 10% of EU exports to Russia. Turkey, on the other hand (which ranked 5th for exports and 9th for imports in 2005) is one of Russia's primary trading partners due to intensive "suitcase trading". Russia has recently extended its

field of action through efforts to develop closer relations with the southern Mediterranean countries for various reasons, including diplomatic reasons, since it has been participating in the Organisation of The Islamic Conference in an observer capacity since 2005.

Economic relations focus mainly on the energy sector, with the exception of Egypt, which imported 8 million tonnes of Russian wheat in 2009. Cereals are in fact a strategic product for Russia, as was underlined by the country's declared intention at the first cereals summit organised by the Russian President in January 2009. Russian land consists of 40% chernozems – very deep, humus-rich soil. It is thanks to these veritable food reservoirs for crops that Russia has regained its position as the third largest cereals exporter in the world. With an investment policy that is in its infancy, the country could make cereals the basis of its food power, which is particularly useful in a strategic region like the Mediterranean. For the time being, however, Algeria and Egypt have been criticising the quality of Russian wheat.

Ukraine also has tremendous cereals potential, which is doubtless even greater than that of Russia in terms of exports, since larger quantities could be exported: the country's output potential can be reasonably estimated at 100 million tonnes a year compared to 130-140 million tonnes in Russia, but Russia's population is three times that of Ukraine (Ukraine has 14 million inhabitants compared to Russia's 150 million). The Ukrainian territory consists of a vast plain stretching for over 100 kilometres from east to west and 600 km from north to south with 40 million hectares of chernozems in the vast basin of the river Dnieper. As soon as this country is able to invest substantially in agriculture – a process that is already under way with the inflow of foreign capital in particular – it will also be able to

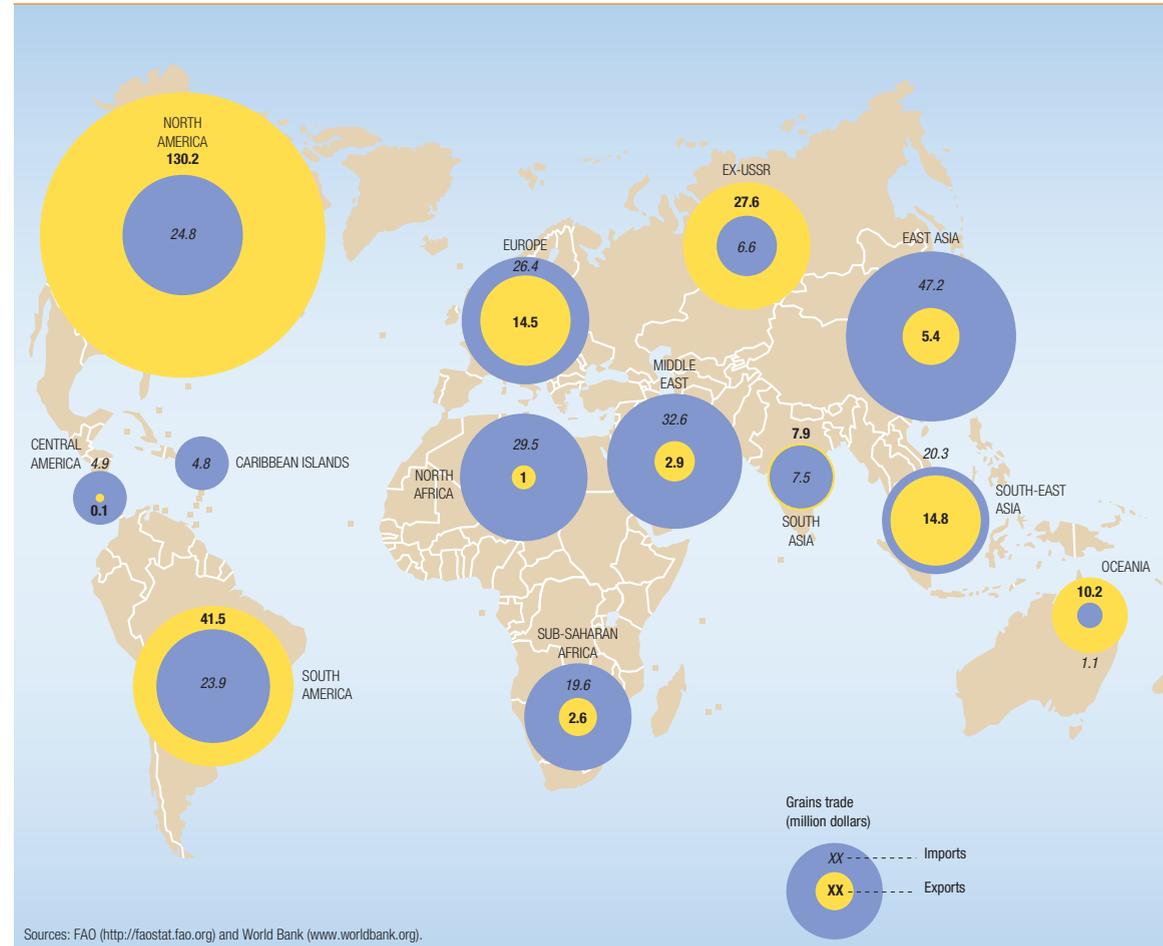
become a new strategic actor in the Mediterranean region, particularly if energy trading opportunities develop – with Algeria, for instance.

At the world level, North Africa and the Middle East offer huge cereals markets for these countries, which are now emerging after decades on the sidelines of world trade. Given the high level of dependence of the Mediterranean region, the basin could be the theatre of strong competition, in which the countries on the northern shores are unlikely to be the winners. ■

**UKRAINE-RUSSIA: TREND IN WHEAT IMPORTS IN NORTH AFRICA AND THE MIDDLE EAST**



**GRAINS TRADE, 2007**



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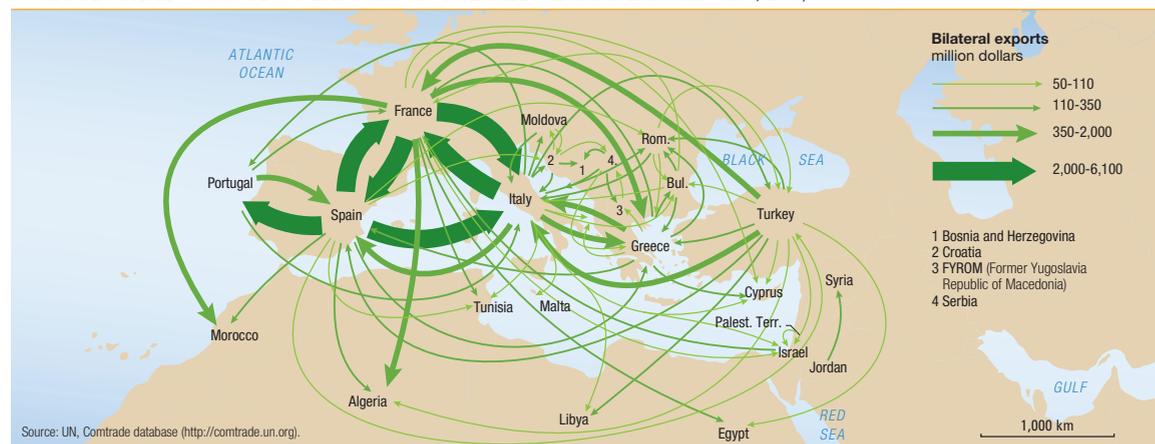
# AGRICULTURE IN EURO-MEDITERRANEAN COOPERATION

The agricultural question, which has lacked attention in the Euro-Mediterranean context since 1995, is an issue that merits closer examination. Yet, paradoxically, it is the symbol of the olive tree and the boundaries of the olive-growing region that are generally cited to delineate this Mediterranean region. And when it comes to food, it is of course the Mediterranean diet that marks the point of convergence of the cultures of the region.

## AGRICULTURE, A SECTOR TOO LONG FORGOTTEN

There are two reasons to explain this: first, farmers around the Mediterranean have generally been sceptical of the opening of markets; in the North, they have preferred to rely on the specificity of the EU and CAP mechanisms, and in the South they have feared the collateral effects of the liberalisation of Euro-Mediterranean trade. Misunderstanding and fear have thus predominated. And secondly, in a world context where agriculture and its multidimensional nature have been disregarded, it was not until the turning point of the 2007-2009 period that the strategic dimension of agriculture was rediscovered and public policies, development models, regional balances and food security were re-examined as well as the priorities to be set in the international cooperation agenda. In the euro-Mediterranean context, agriculture was thus ignored to a large extent from 1995 to 2005. The only brighter interval in that unproductive decade was the organisation in Venice of the first Euro-Mediterranean ministerial conference on agriculture in November 2003, the only such conference that has been held to date. From 2006 onwards, the European Commission finally decided to open the agriculture chapter, but to do so on a bilateral basis with whichever partner countries wished to participate, in a context where the aim is to establish the euro-Mediterra-

AGRICULTURAL COMMODITY EXPORTS IN THE MEDITERRANEAN REGION, 2007



nean free trade area in the course of the 2010-2020 decade. Jordan, Israel and Egypt have since concluded agreements establishing a schedule for the gradual liberalisation of agricultural trade, and negotiations are under way with Morocco, Tunisia and Lebanon. The process could be launched with Algeria and the Palestinian Authority from 2010 onwards.

**The need for a multilateral approach.** Given the magnitude of the challenges emerging in agriculture in the Mediterranean region, it is only logical to conclude that the agricultural component of Euro-Mediterranean relations cannot continue to be confined to the field of trade alone – in fact to the clear advantage of Europe, which is always the leading agrotade partner of most southern and eastern Mediterranean States. Broadly speaking, Europe currently accounts for approximately one-third of the agro-food purchases of

those countries (a proportion which is diminishing as new actors, including Brazil, arrive on the scene) and receives approximately half of their agricultural exports (in particular from the Maghreb, since Egypt and the Near East countries account for a smaller and more relative share). There are several major challenges – such as the management and preservation of natural resources, the improvement of health and phytosanitary standards, rural development, adaptation to climate change, agronomy research and training, and measures to encourage consumers to adopt more responsible eating habits, and so on – which can only be met through a multilateral approach of regional cooperation.

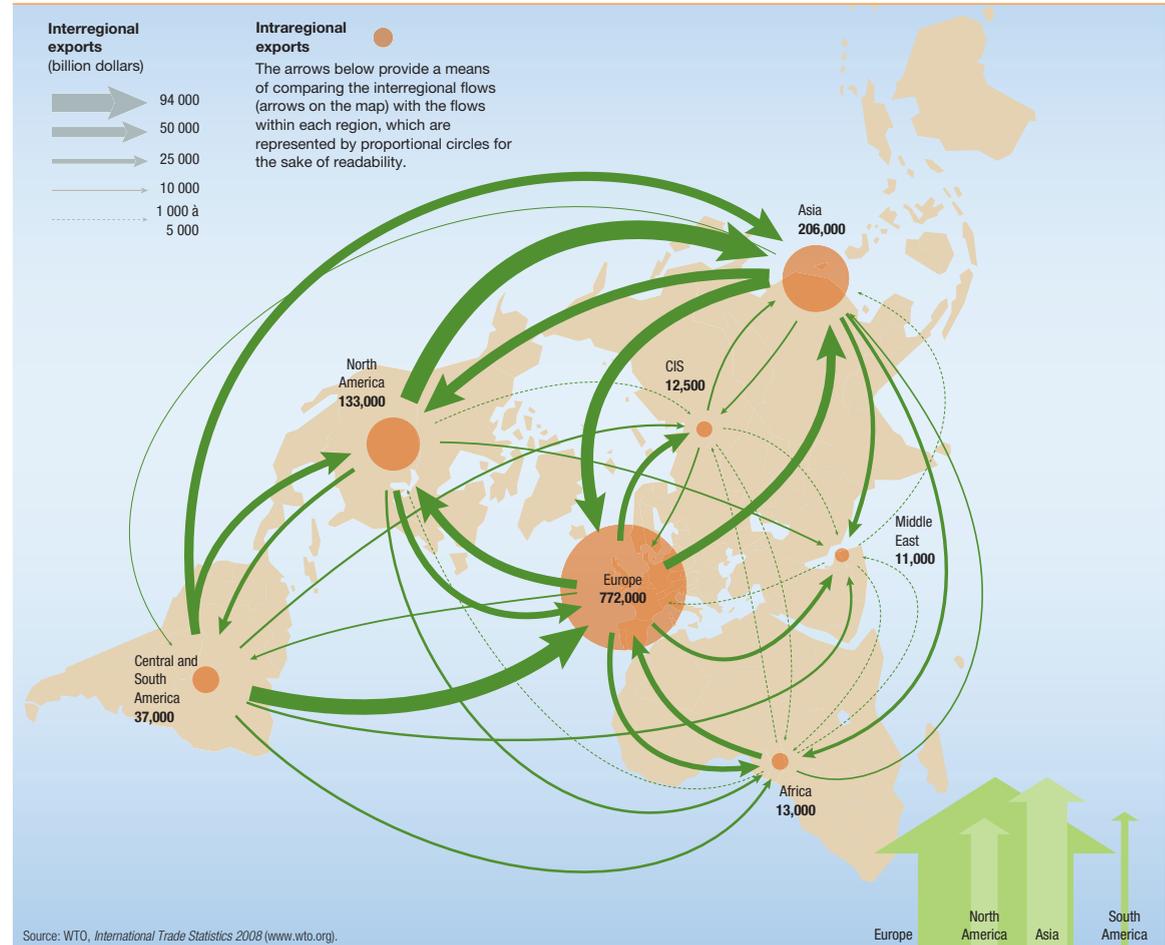
## THE FOOD SECURITY OBJECTIVE

The various world crises that influence international relations have been compounded by the new food equation,

which is likely to result in new disturbances, volatilities and inequalities. The food security constraint is the most ancient and permanent concern in the world. And when one observes agricultural dynamics in the Mediterranean region one is unfortunately forced to conclude that the region mirrors and magnifies the strategic challenges and geopolitical tensions that are rooted in the broader world food issue. Since quantitative and qualitative food security calls for tangible forms of solidarity, the objective of guaranteeing that security must be one of the pillars of the new Union for the Mediterranean, which was launched in 2008 and has since been endeavouring to establish an innovative framework for cooperation with a view to strengthening relations between European and Mediterranean countries.

**2010 must be a banner year for policies.** Agriculture, food and sustainable rural development cannot be ignored in this approach. Greater attention must be devoted to certain major issues for the future of the region which, despite growing awareness and regular reminders from the regional economy, have been largely neglected in Euro-Mediterranean cooperation. Four themes seem to be emerging as priorities for action in the agricultural component of the Union for the Mediterranean (sustainable rural development, health and phytosanitary standards, the quality and identity of Mediterranean products, and agronomy research networking), but the bold ambition that is needed if food security and food quality are to become the main strategy of Euro-Mediterranean geopolitics has yet to emerge. ■

**AGRO-FOOD EXPORTS THROUGHOUT THE WORLD, 2007**



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# ACRONYMS AND ABBREVIATIONS

<b>AAU</b>	agricultural area in use	<b>IFAD</b>	International Fund for Agricultural Development	<b>PPP</b>	purchasing power parity
<b>ACSAD</b>	Arab Centre for the Studies of Arid Zones and Dry Lands	<b>IFAP</b>	International Federation of Agricultural Producers	<b>SEMC</b>	Southern and Eastern Mediterranean Countries
<b>AFI</b>	agro-food industry	<b>IMF</b>	International Monetary Fund	<b>TSG</b>	Traditional Specialty Guaranteed
<b>AOAD</b>	Arab Organisation for Agricultural Development	<b>IOC</b>	International Olive Council	<b>UfM</b>	Union for the Mediterranean
<b>ASPA</b>	Summit of South American and Arab Countries	<b>IPCC</b>	Intergovernment Panel on Climate Change Integrated Rural Development Programme (Tunisia)	<b>UN</b>	United Nations Organisation
<b>CAP</b>	common agricultural policy	<b>IRDP</b>		<b>UNCTAD</b>	United Nations Conference on Trade and Development
<b>CEEC</b>	Central and Eastern European Countries	<b>ITC</b>	information and communication technologies	<b>UNDP</b>	United Nations Development Programme
<b>CIP</b>	Community Initiative Programme	<b>JBIC</b>	Japan Bank for International Cooperation	<b>UNEP</b>	United Nations Environment Programme
<b>D8</b>	Developing 8	<b>JICA</b>	Japan International Cooperation Agency	<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organisation
<b>EAFRD</b>	European Agricultural Fund for Rural Development	<b>KBE</b>	knowledge-based economy	<b>USDA</b>	United States Department of Agriculture
<b>EMP</b>	Euro-Mediterranean Partnership	<b>KEI</b>	Knowledge Economy Index	<b>WHO</b>	World Health Organisation
<b>ENP</b>	European Neighbourhood Policy	<b>MAP</b>	Mediterranean Action Plan	<b>WTO</b>	World Trade Organisation
<b>ERDF</b>	European Regional Development Fund	<b>MAU</b>	Maghreb Arab Union		
<b>ESF</b>	European Social Fund	<b>MDG</b>	Millennium Development Goals		
<b>EU</b>	European Union	<b>MEFTA</b>	Middle-East Free Trade Area		
<b>FAO</b>	United Nations Food and Agriculture Organisation	<b>MENA</b>	Middle East and North Africa		
<b>FDI</b>	foreign direct investment	<b>MPC</b>	Mediterranean Partner Countries		
<b>FQI</b>	food quality indicator	<b>MSSD</b>	Mediterranean Strategy for Sustainable Development		
<b>GAP</b>	<i>Güneydogu Anadolu Projesi</i> (Turkey)	<b>NARDP</b>	national agricultural and rural development programme		
<b>GDP</b>	gross domestic product	<b>NATO</b>	North Atlantic Treaty Organisation		
<b>GFCM</b>	General Fisheries Commission for the Mediterranean	<b>NMC</b>	Northern Mediterranean countries		
<b>GMO</b>	genetically modified organisms	<b>OECD</b>	Organisation for Economic Co-operation and Development		
<b>HDI</b>	human development indicator	<b>OIC</b>	Organisation of The Islamic Conference		
<b>ICARDA</b>	International Centre for Agricultural Research in Dry Areas	<b>PDA</b>	public development aid		
<b>IDP</b>	Integrated Development Programme (Tunisia)	<b>PDO</b>	Protected Designation of Origin		
		<b>PGI</b>	protected geographical indication		