

# ENSURING FOOD SECURITY AND FOOD SAFETY\*

The Mediterranean region is today facing a number of major strategic challenges, and food security and safety are by no means the least important. Since the demographic variable is a crucial determinant, the magnitude of the challenge of feeding a population which will have tripled between 1960 and 2020 must be underlined. That population will exert more pressure on fragile natural resources, not only in the North, but even more so in the South, where social and civil vulnerability is a constant threat. In the northern and east-ern Mediterranean region there are 319 ha of cultivated acreage per 1,000 inhabitants and 177 ha per 1,000 inhabitants in the South (Allaya, 2006), and that acreage is dimin-ishing. Providing better quality food for steadily growing populations – such is the equation to be solved if food security in the region is to be ensured.

The Mediterranean countries are having to take up this challenge in a context of growing urbanisation of their societies, which are opening up to globalisation (a process where customs generally evolve more rapidly than in rural life, women are gradually becoming more emancipated, the recomposition of family structures is underway and new social behaviour patterns are emerging such as the desire for consumer goods and for access to modernity in order to keep pace with certain western standards.

Dish antennas and advertising combined with the rise in purchasing power have for several years now been making city dwellers in the southern Mediterranean avid consumers.

Several key agro-economic indicators can add to this general background. To put an end to any preconceived ideas, it must be stated that as regards food output there are very few Mediterranean countries which actually show a deficit in terms of their populations' energy needs; the much-criticised trade balance concerns essentially animal feedingstuffs. The only countries where a human food deficit has been established are Malta, Algeria, Jordan and Lebanon – but this does not prevent them from implementing active food export policies! So the problem of quantities is being resolved. Yet the number of persons suffering from undernourishment is steadily increasing due to the fact that pockets of poverty still remain, that wealth is concentrated in certain population segments or that certain groups which have not been well integrated into a liberal socio-economic system are being marginalised.

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And in addition to this problem of quantities, food quality is a growing concern. Whereas the Cretan diet has been recognised by the World Health Organisation and is described as one of the most beautiful heritages of the Mediterranean Basin, the countries in the region are steadily departing from it. Changing eating habits are a universal phenomenon concomitant with economic development and urbanisation. The change has been progressive in the North but sudden in the South and has resulted in a food quality drift, one of the most convincing indications being the increase in obesity in the various populations. Modern dietary patterns must be examined in depth (but we do not yet have the key), for it is observed that the food pandemic is mainly visible in large urban centres and small rural towns that are focusing on tourism, whereas in small traditional towns and in rural areas fewer people are overweight despite the rich diet.

Against this background, the future of the Mediterranean region hinges on four essential challenges, which must be met if a more favourable food security and safety situation in its various aspects is to be created: the “sustainability” component – in both the ecological and the nutritional sense of the term – must be included in development plans; modernity and tradition – an essential component in a region with a strong cultural identity – must be reconciled; the local market must first be addressed before devoting effort to the international market; and thought must be devoted in both North and South to ensuring coherence between sectoral food safety and health policies.

## Including ecological and nutritional sustainability in development plans

### Intensifying production while preserving biological diversity

In view of the population growth in the South it would seem imperative to intensify agricultural production in order to preserve a certain degree of autonomy. Agricultural production in the North has resolutely adopted the intensive model, which results in the selection of so-called profitable varieties suited to the various food chains which, now industrialised, have shifted to the tertiary sector and are set up in the rural urban fringe. The necessary progression in agricultural production and the orientation of farming should not be to the detriment of genetic diversity, which is the *sine qua non* for preserving the future potential of appropriate crops and animal products. It should be borne in mind that the Mediterranean region accounts for only 6% of the territories of the world but contains 10% of the known plant species. Given the intensity and diversity of the fauna and flora of the region it is a duty to preserve them. In the present context in both North and South, production chains are reaching their limits, since they often destroy the environment; the challenge they have been assigned is thus that of making rational choices which will conserve natural resources.

It is becoming imperative to devise a production model and to organise markets in a manner which limits costly losses in terms of food energy throughout the agro-food system. In the northern Mediterranean 10 final calories have to be produced for one single calorie in the mouth of the consumer, and 10 calories of fossil energy are needed for the various operations in the food system. The globalisation of trade is resulting in negative externalities, since it increases foodstuff traffic and what environmental econ-

omists refer to as “absurd” costs. Food transport in England involved 30 billion kilometres in 2002 and the emission of 19 million tonnes of carbon dioxide (Pretty *et al.*, 2005). The large-scale retail trade, which is highly developed in the North, also contributes to a large extent to energy consumption and CO<sub>2</sub> emissions, since it operates in large centres where products are grouped together and then distributed throughout the country. Pollution levels are thus equivalent for greenhouse fruit and vegetable crops and for fruit and vegetables that are flown in or out. In France, 30% of gas emissions are connected with food (depending on the production and marketing methods used) and 22% are connected with road transport (one-third concerning food-stuffs) (Jancovici, 2006). The countries in the South are following suit, whereas they ought already to be focusing on an ecological agricultural and food policy.

Efforts are thus required on the part of all of the players in the food chain but also of consumers. Why not issue nutritional recommendations complete with a guide on the choice of foodstuffs which would give precedence to products that are in season and are produced locally, and foodstuffs which are economical to produce in terms of natural resources? It is known, for example, that a “western” consumer uses 4,000 litres of water per day, whereas a vegetarian consumer uses 1,500 litres (FAO, 2003). The quantity of virtual water required varies widely from one foodstuff to another: 1 kilogram of beef requires 15,000 litres, 1 kilogram of cereals requires 1,500 litres, 1 kilogram of citrus or pulses requires 1,000 litres, and 1 kilogram of tomatoes requires 150 litres. Is it not time to take account of this “virtual water” in the decisions taken on the production and marketing of foodstuffs, bearing in mind that water resources are becoming scarce in several Mediterranean countries?

## A healthy food system

Modern lifestyles encourage the use of processed products, which save preparation time, but the processing methods employed at the various stages in the food chain are not without effect on the organoleptic and nutritional quality of the foods produced. Although there has been strong focus on the health aspects of these products over the past few decades, the respect of nutrients has rarely been a crucial issue in considerations and decisions. Harvesting, storage, and processing conditions as well as processing and distribution methods all affect the sensory quality of food. The effects are quite favourable where processing conditions are gentle and well-controlled (high-pressure, pulsed electric fields, vacuum cooking) (Jeannequin *et al.*, 2005), but when processing conditions are severe (high temperatures, extreme pH values, extreme separation, extraction and purification processes, etc.) nutritional losses can be high and new toxic compounds can also be formed (Besançon, 2001).

So why not encourage professionals to undertake to abide by a quality charter which preserves nutrients throughout the food chain as with the national nutrition and health programme in France? Efforts must be made to develop the market as a whole in order to optimise the population’s nutritional intake. The roads to progress are many and varied: plant or livestock breeding, work on animal husbandry methods, animal nutrition or crop-growing techniques at the agricultural production stage; measures to improve the formulation of compound products, creation (by the food industries) of new products of nutritional advantage in all product ranges; reduction of the size of

portions; improvement of recipes and of menus in restaurants and catering trades; inclusion of information of nutritional features in the presentation of products for sale and in marketing and advertising so as to encourage consumers to make healthy choices, etc. And at the same time the various players should act together: in addition to the public authorities, producer and inter-trade organisations in the food sector, various enterprises, consumer organisations, and scientists specialising in nutrition, food technologies and economics must all contribute in support of these commitments.

### Spain requests that the Mediterranean diet be included on the UNESCO list

At the meeting of the Council of Ministers of Agriculture of the European Union held in Brussels on 16 and 17 July 2007, the Spanish Minister of Agriculture, Fisheries and Food, Elena Espinosa, called on her peers to support a Spanish proposal for including the Mediterranean diet on UNESCO's Intangible Cultural Heritage list. She stated that Spain advocated that a common strategy be implemented by the countries representing the Mediterranean diet and by all other countries that are in favour of protecting that model. Spain has been focusing considerable effort on this project for several years and is convinced that UNESCO recognition would ensure better international visibility of the benefits of the Mediterranean diet for human health. The initiative aims to underline the importance of diet from the cultural, social, regional, environmental and economic point of view.

## Reconciling modernisation and tradition in the interplay between actors

### Adapting industries and standards to local contexts

Locally produced general consumer goods have for many years enjoyed protection in return for the jobs created within the framework of an inward-looking policy, which made no provision for a stimulating competitive environment. Firms have been accustomed to this type of support policy and find it difficult to take the initiative of changing work organisation, creating, innovating, delegating responsibilities and encouraging managers and employees to assume responsibility. Furthermore, access to particular markets such as the EU market makes standards and conformity certification procedures even more important than in the past. The strategy is clear: undertakings are finding themselves confronted with a European market that is highly coveted because of its prosperity, the level of consumer purchasing power and the enviable quality of life enjoyed by the various populations. That market could be within reach of enterprises in the South. In the Maghreb, 70% of commercial transactions are already carried out with the EU. Upgrading schemes have been launched to enable firms to embark on the necessary adaptation procedures, to invest in intangibles and to enter the competition battle. The fact that very few firms are certified shows that the national undertakings which adopt international standards are motivated primarily by access to international markets and the fact that they meet the required criteria for competing on those markets. The investments they effect in order to set up quality control systems increase their production costs while the fact that their products are in the up-market range means high prices on domestic markets.

Although standardisation and efforts to improve quality are much advocated, there is still a considerable gap between the declared intentions of the public authorities and the realities of corporate commitment to the process. Industrialised products are very expensive compared to products that are produced by traditional methods. Introducing the additional costs required by standardisation can only aggravate the price differences; typical Mediterranean products are thus liable to be eliminated from the market or to lose their current value. Technology is actually a limiting factor when the industry endeavours to appropriate traditional know-how; moreover, the industry has the financial means for marketing these products. If the agro-food industries were to develop traditional local products this could give them a tremendous advantage on both national and international markets. Turkey has succeeded in transmitting tradition to local industries, whose products are distributed in the major supermarket chains operating in the country such as Migros and Metro.

Rather than plunging blindly into the “western” standardisation race, the Mediterranean countries should think of organising the exchange of information and negotiating with the great powers on appropriate standardisation procedures. Appropriate standardisation at internal market level would be less costly and would take better account of the specific features of traditional products. Partners could meet around an international negotiating table to discuss the minimum required in terms of health standards on the basis of scientific data, irrespective of any economic protection considerations, and in particular to discuss the guarantee of a certain degree of stability in these requirements. The fact that these non-tariff standards are constantly evolving makes it impossible for the South to comply.

#### **The EFSA in Europe since 2002**

The European Food Safety Authority (EFSA) is the cornerstone of the European Union for assessing the safety hazards involved in food for both human and animal consumption. It issues independent scientific opinions on all issues affecting food safety either directly or indirectly (including animal health and welfare and plant protection). The EFSA is furthermore consulted on nutrition in connection with Community legislation and also issues transparent and open communications that are addressed to the general public on all of the questions falling within its field of responsibility. The EFSA's risk assessments provide risk managers (European institutions carrying political responsibility, i.e. the European Commission, the European Parliament and the Council) with a sound scientific basis for defining politically oriented regulatory or legislative measures necessary for guaranteeing a high level of consumer protection with regard to food safety.

### **Promoting food distribution that is appropriate to the context**

The large-scale distribution trade has established a position of power in its relations with the food industries in the northern Mediterranean countries, where it often imposes its conditions. Its recent arrival in the southern Mediterranean countries is liable to result in the creation of a two-tier local industry, in which the industrial practices of the firms which have decided to collaborate are disrupted. The repercussions that this would have on the entire food chain would be all the greater since the large-scale trade, led by Carrefour, has undertaken to offer customers mainly local products.

The distribution trade bases its operations on a standardised industry, organised logistics, and large volumes of regular supplies. Not all industrialists are prepared to make such efforts due both to indifference and to the cost of the direct investment in human capital involved. Would it not be a fatal mistake for the economies and societies of the South to simply transpose this European model? The large-scale distribution trade is still inaccessible to the great majority of the population, and its ostentatious aspect can exacerbate feelings of inequality. Standardisation does of course bring health benefits, but if it is applied throughout the country it would mean that firms in the traditional distribution sector, which guarantees jobs and diversity of tastes and know-how, would go out of business. There is a firmly structured network of social relations, and a relationship of trust between customers and shopkeepers is a fundamental element. How will consumers experience this transformation? Chain stores such as Marjane in Morocco or Touta in Tunisia have understood what is at stake and are developing more in the form of local self-service minimarkets. Perhaps this is an opportunity to devise a new form of distribution, which would draw on all the positive factors of modernity while remaining in tune with local sociocultural conditions.

## **Making the informal sector compatible with formal economic systems**

The informal economy is developed both in rural areas and in urban zones, in agriculture, the industrial sector, the retail trade and services; it involves both traditional economic activities and emerging activities that are based on knowledge. In some countries the majority of the population depends on this informal economy as the mainspring of development: "It has been the honour of the poor and the response of the excluded to mass rural-urban migration, the waves of dismissals in the aftermath of privatisation, and the retrenchment policies launched by governments" (Llena, 2001). The activities which play a part in the supply and distribution of food in cities are responding to an endogenous urban trend: the informal food sector is adapting to the diversity of urban demand and, more generally, to the evolution of the socio-economic context in towns and cities. At the same time it has its own impetus as a source of income for the households involved.

In periods of economic crisis the drop in purchasing power as well as employment difficulties in the formal sector promote the development of the informal sector, which contributes to the distribution of low-cost foodstuffs and provides employment and income for certain households living in hardship, thus giving them access to food commodities (Hugon and Kervarec, 2001). Street food and the sale of fresh foodstuffs have brought a solution to the problems connected with working at a distance from the home (in the case of women in particular). Ready-made dishes are offered for sale near factory exits, offices and schools so that it is no longer necessary to return home in the middle of the day. Sales points have multiplied along the busy streets leading to markets, near taxi ranks and bus stations. The informal sector is far from being a social abnormality; it is a response to urban living conditions and to food supply and distribution difficulties and must thus be better understood and given institutional, technological, financial and organisational support as it gradually adapts.

The informal economy governs the daily lives of a steadily growing majority of working people. These people have not been doomed to live in poverty and despair by any law of

nature. Nor does any human law stipulate that the tremendous inequality in the distribution of goods must be perpetuated. Guaranteeing protection by means of national and labour legislation, social insurance coverage, education, training, decent working conditions and the satisfaction of basic needs is not a long-term objective to be achieved by future generations; these are minimum standards which civil society, governments and international organisations should be adopting now.

The informal sector is steadily growing, and any development strategy must include it and take its many different forms into account if it is to be viable: certain production activities (such as craft trades), retail businesses and services provided for categories of the population with very low incomes must be supported, whereas those which have an adverse effect on the economy and society must be eliminated (smuggling, various forms of trafficking, etc.). The informal economy also has its own specific features, which bring comparative advantages such as a very low tax burden or none at all, low labour costs (non-compliance with labour legislation) and in many cases also the fact that activities are not fixed (itinerant occupations and home-work). If they were deprived of these advantages they would be bound to go out of business. And finally, the strategy for developing this economy in the short term must give social considerations precedence over economic arguments, with a view to helping these activities to gradually develop into small and medium-sized enterprises and to operate on the basis of the modern economic fabric. Measures to provide training and access to credit and efforts to convince the various actors of the advantages of employment and entrepreneurship could create avenues which would encourage a certain degree of legalisation.

## **Bearing the local market in mind while joining the international market**

### **Building up a market for Mediterranean products**

There are many arguments in support of measures to identify and preserve the Mediterranean food heritage. It is recognised that not only the various ingredients making up the daily Mediterranean diet but also the combinations of these foods and the way they are consumed have therapeutic and preventive properties. It would certainly be of advantage to identify this heritage and highlight its value by means of quality marks (registered designation of origin, protected geographical indication, organic agriculture or other such labelling) in order to contend with food standardisation and to recover the value added which major international firms are quick to appropriate by exploiting the positive image of the Mediterranean diet/health/naturalness triad.

Products that are connected with a local area come under the cultural domain and are difficult to categorise in standardisation procedures. Is it really possible to unify and protect without impoverishing? What is the historical basis of these Mediterranean products, and how can it be proved, particularly in a region where there has been such marked intermingling of products, know-how and cultures? Historical value, connection with the local area, technical characteristics, and the variants of one and the same product are all issues which must be taken into account in any protection policy. Although these protection measures are justified, they can also create exclusion and cause the loss of a product



name and the impoverishment of diversity, depending on how they are implemented. Regulations on product origin and quality marks seem to be compatible, whereas the RDO, PGI, Red Label, Mediterranean Label and Certification of Product Conformity labels are not interchangeable. But the question of whether the origin of the raw material or the origin of the know-how should be protected has yet to be answered.

If precedence is given to products of Mediterranean origin, i.e. to the region, this would open up a tremendous market, but it would then be very tempting to intensify production in order to create wealth – at the price of exhausting local soil and water resources. It is a well-known fact, moreover, that excessive intensification deteriorates the intrinsic quality of commodities. If the emphasis is laid on the authenticity of foods, Mediterranean industrialists and craftsmen will have to organise themselves rapidly in order to protect their know-how, recipes and specific products by means of patents and labels. For the agro-food multinationals are always on the lookout for market niches to increase turnover, and they use the Mediterranean image to create a market, appropriating the recipes typical of the region.

## Informing and educating Mediterranean consumers

The consumer protection movement ensures that consumers are informed and educated and promotes consumer awareness, draws the attention of policy-makers to situations which have been observed or could arise or to the fears of the general public, and helps to ensure that measures are taken to allay such fears, to verify the situation and/or to take preventive action. Since consumer education and information on benefits and ill effects of products is limited in the Mediterranean countries, steps must be taken to promote real education and to support consumer associations, which are endeavouring to develop the socially responsible awareness that is essential to rational choices. Some associations are beginning to emerge in the South, but they often have very close links with the political authorities and thus lack credibility.

### Slow Food

Slow Food is an association which was founded in 1989 by Carlo Petrini; it is an international movement which has developed in reaction to the degrading effects of the fast food culture and the standardisation of flavours. It runs taste education programmes highlighting the beneficial effects of the deliberate consumption of local foods and acts to safeguard culinary traditions. The Association has 80,000 members in some 50 countries. It also assists the producers of quality products and encourages solidarity initiatives in the food field with a view to developing environmental responsibility.

## Devising sectoral policies which include nutrition and health

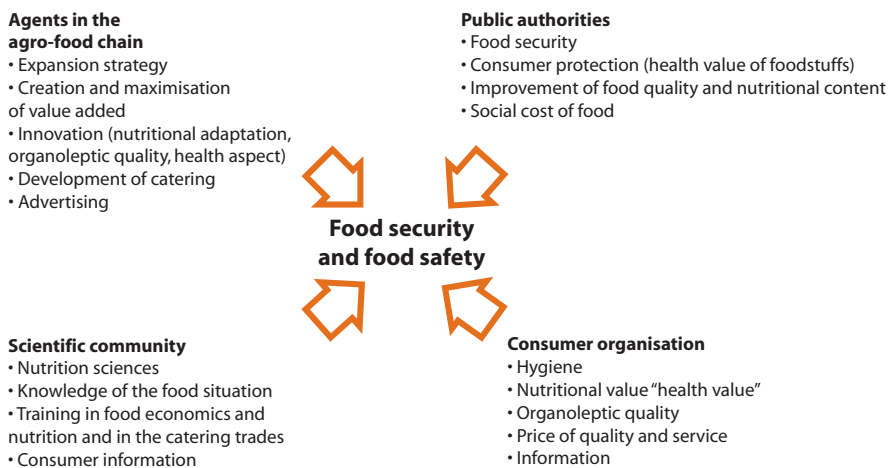
### An agricultural policy that is consistent with food security and food safety

The agricultural policies, prices and food subsidisation policies which prevailed for several decades in the South were devised and adopted with a view to ensuring food security,



irrespective of any justification from the point of view of quality. Refined cereals, white flour, imported mixed oils, and sugar were thus often primary items in the national food subsidisation schemes, with which the quantitative needs of a large proportion of the population were covered but to the detriment of nutritional and public health objectives, which are now imperative. Government support must be revised as must the prices of certain products such as fruit and vegetables, pulses, and fish in order to make them accessible for everyone (a new policy on subsidisation? investment aids? nutritional recommendations?). If this is to be achieved the various players must work together, reach a consensus and then act in accordance with their respective roles (see Figure 1).

**Figure 1 - Social forces contributing to food security and safety**



With this in view, one of the challenges will be to guarantee an ethical and socially responsible approach in production and distribution methods and in marketing campaigns, particularly as regards the content of advertising. Although the latter is still in its infancy in the SEMCs, it has recently inundated coastal towns and cities, which are more and more geared to western consumer standards. Unless it is controlled, advertising can be a contributing factor in the deterioration of food safety. Conversely, if it is geared to a public health approach it can help to restore certain dietary practices, particularly by promoting quality products.

## Several forward-looking scenarios

Against the background of this analysis and the challenges that must be met if food security and food safety are to be ensured, what are the key variables and the relevant trends? Very different pictures can be painted of possible future trends according to various models of society.<sup>1</sup> The means for achieving that security and safety will inevitably involve a series of measures focusing on major variables; several key factors are discussed below.

<sup>1</sup> - This forward-looking analysis was carried out in four stages in a series of working meetings amongst experts in the field. To begin with, the principal variables affecting food security and food quality were identified. Different hypothetical

## The key variables and how they evolve

Selecting and classifying the variables that are the mainspring of food security and food safety is still a tricky exercise since they are numerous and their prioritisation depends very much on context. As regards food security, Egypt's main problem is tremendous population pressure, whereas the principal problem in Algeria is inadequate production capacity; in Lebanon, civil and political insecurity is the main constraint, while both Morocco and Egypt are having to fight poverty and certain population segments are becoming marginalised or being excluded in the North. While purchasing power, lifestyles and eating habits are recurrent problems throughout the region and ones which must be overcome if food safety is to be ensured, industrialisation models, production and logistic conditions are problems more specific to the northern Mediterranean, whereas cultural models and consumer and producer education are the main difficulties in the South. Hypotheses were formulated for each of the variables as options for possible alternative measures. They are not mutually exclusive; some are more relevant in certain regions than others. Good knowledge of the field and of the context in the individual countries is required in order to formulate these hypotheses – hence the need for experts to devote thought to the issue.

### *Food security variables*

- *Population pressure.* Since the population transmission is now more or less complete in the North and is well under way in the South, population pressure would only be felt in local areas and its intensity would also vary from one place to another. The population forecasts for 2020 are now relatively well established with a considerable degree of certainty. It can thus be supposed that there will be strong population growth in rural areas in Egypt and in the major southern Mediterranean cities due to continuing rural-urban migration. Population growth is expected to be sustained on the whole in the southern Mediterranean countries and in rural areas in the Near East, while a status quo is anticipated in the North and in rural areas in the Maghreb. Small or medium-sized towns will continue to appear in rural areas – a process which is already well underway in both North and South – combined with the concentration of the population in coastal settlements.
- *Poverty.* The hypotheses concerning the development or reduction of poverty are classical: either impoverishment will worsen in rural areas, towns and rural-urban fringes in the South, or the present situation will continue with growing poverty in rural areas and accelerating urban impoverishment, or, the third hypothesis, poverty will, on the contrary, be considerably reduced.
- *Structural inadequacies in the production sector.* This variable is connected with five hypotheses, which are not mutually exclusive. Production inadequacy can be due to lack of interest on the part of workers in the farming profession, which is a difficult occupation that is often hard to reconcile with modern life styles and leisure activities and does not rank high on the social scale. Rampant urbanisation that is eating up

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patterns of development were then elaborated collectively with a view to constructing several general scenarios in phase 3 of the process for exploring possible futures. And in phase 4 these hypotheses were verified and demonstrated by means of the Ideos software programme with a view to proposing levers for action and avenues for exploring food safety and food security issues in the Mediterranean region.

the best agricultural land can be a further reason for giving up farming. Unfavourable climatic and pedological conditions can be a third cause and one that is aggravated by excessive human activity, which in turn generates environmental stress (water scarcity, desertification, climate change). Fourthly, the sub-Mediterranean region has not been spared internal conflicts and unrest, which limit agricultural activities: localised civil war in Algeria, war in Lebanon, land in Egypt still riddled with mines. And lastly, the national or international agricultural commodity market is not considered sufficiently profitable to justify the technical investments necessary for intensification; or again, farm holdings are too small to allow of any technological progress.

- *Distribution systems.* Although national production, taken as a whole, is sufficient, dysfunctional problems in the agricultural commodity or foodstuff distribution systems can entail the risk of local or regional food insecurity. We put forward the following three hypotheses: improvement of road infrastructures, the motor vehicle fleet and the cold storage chain; secondly, the emergence of small farmers' markets where producers sell their produce direct, particularly in the countries in the North, and which promote short-circuits and meet the expectations of consumers enamoured with tradition and product freshness; and thirdly, a distribution chain which will become more complex to the disadvantage of producers and consumers and which causes a rise in prices.
- *Government policy options.* Societal choices are expressed in public policies, which are a determining factor in development options and agricultural priorities. Either liberalism and the international market will continue to be regarded as a panacea, in which case agricultural and food exports will be promoted. Or governments, whose hopes of integration into the world economy are dashed, realise the need to return to a certain degree of protectionism in order to guarantee food autonomy. Or they give precedence to the domestic market and embark on effective rural development policies (multifunctionality and modernisation).
- *Ability to compensate for inadequate food supplies.* A country's food security depends to a large extent on its ability to purchase food on the international market where there is an agricultural commodity and foodstuff deficit. This is still a topical issue in several countries in the South. Consequently, either this ability to purchase on the international market progresses thanks to oil revenue or trade alliances, or it deteriorates and the country's foreign debt continues to grow thus seriously jeopardising foodstuff purchases.
- *Civil security and political stability.* This issue has long been to the disadvantage of the southern Mediterranean countries, particularly as regards foreign investments, due to the risk involved. There are four conceivable hypotheses: internal or regional destabilisation mainly in connection with mounting political and community tensions and religious fundamentalism; political unrest, which always limits investments (as is the case in Lebanon, for example); political stability which could be favourable unless the regime is repressive and involves administrative inflexibility and over-cautious attitudes on the part of economic actors; a return to confidence and to entrepreneurship.

### *Food safety variables*

- *Changes in lifestyle and eating habits.* At the present time, the food system is structured around consumer demand; this is very visible in the North, and it is becoming increasingly visible in the South. Consumer behaviour will thus be a crucial issue in future changes in food systems. Man is a social animal, and diet is a vector of social and cultural identity. It is an established fact that people imitate one another within a given society and also imitate other societies; this allows consumption patterns to spread, and the “dominated” imitate the “dominators”. What might the dominant food pattern of the future be? Either there will be an international movement imitating the traditional Mediterranean diet and a “Slow Food” culture advocating the quality, identity and naturalness of foodstuffs in the context of sociability and the sharing of values, will spread, but this will require high purchasing power. Or globalisation will convey the dominant image of the diet of “western” countries, and local economic conditions will provide access to it. This would mean the decline of the Mediterranean diet. Or, as modern lifestyles and the desire to adopt the image of the “dominator” spread, dietary patterns will become radically focused on time-saving, and the fast-food industry will flourish. Or people will return to a sensible or careful diet, as the result of either economic constraints or enlightened intention on the part of both consumers and public authorities. The system will then be able to handle the glocalisation of food (balanced combination of the global and the local). And a final possibility would be the intensification of modernity in our dietary patterns with strong emphasis on modern and industrial health-enhancing foods.
- *Cultural models.* The social forces which can influence the dominant consumption model in a given society include the public actors, those involved in the production, processing and distribution chain, consumer associations and scientists. The approach of these various forces to food will vary according to the weight they carry in decision-making and to the image of the societal norm conveyed. The dominant consumption pattern of a population depends on the interplay of the actors in society who or which convey messages relating to a consumption ideal. Scientists disseminate information as their research and expertise advance and can influence consumers and public authorities in their policies and regulations. As representatives of civil society, consumer associations ensure that consumers are educated and informed and that food safety rules are applied. The public authorities have a duty to protect consumers, which they fulfil by means of quality regulations, measures to provide information, and health controls. They can support certain eating patterns by implementing a food policy (issuing recommendations, granting subsidies, taxing products, etc., as is the case in the Maghreb) or a nutrition policy (issuing recommendations, exerting pressure on lobbies, as has been the case in Spain and now in France). And the agents in the agro-food chain (processing enterprises, distributors, caterers) have themselves clear strategies for expanding their market share and creating value added for economic purposes. They try to influence consumer choices through advertising, by creating items that have appeal or by adapting products. Several different societal trends are conceivable. There can be indifference to food, where feeding oneself is viewed as a secondary function that is vital but does not have any particular connotation of identity or culture. Or the opposite trend can be observed, where people

are aware of their responsibility in the food choices they make; here, consumers are highly involved and choose healthy, sustainable foods that are also the product of fair trade. A further hypothesis is that of the acculturation of food habits, where consumers have no need for identity symbols and are keen to explore. Since they do not all seek to discover the same thing, they are entitled to have a wide range of products at their disposal that are appropriate to various consumption circumstances: products with a strong social identity appeal for Ramadan, quality products for festive occasions, plain, healthy products that are easy to use for everyday consumption, etc. Societal change will thus be either controlled or uncontrolled.

- *Purchasing power that limits access to wholesome products.* Food safety depends to a very large extent on access to so-called healthy products such as fruit, vegetables, pulses or fish. With the exception of pulses in southern Mediterranean countries, these products come under the category of expensive foods or even luxury goods. No incentive policy has been launched by either producers or consumers. There are two possibilities: either a form of food subsidisation is reoriented to wholesome products, or the rise in the prices of these products will persist to the advantage of industrial products whose nutritional content is not controlled.
- *Industrialisation of products and processing methods which either conserve or disregard nutritional quality.* In view of the growing industrialisation of foodstuffs, the quality, safety and nutritional properties of manufactured goods are crucial to food safety. Several hypotheses can be suggested: either industrialists are convinced of the advantage of a nutritional approach and review the quality of staples, the technologies used and the various ingredients, additives and preservatives, or, by contrast, the food industries focus on maximum profit and care little about the nutritional value of the foodstuffs they produce. Intermediate scenarios are conceivable such as the development of “gentle” technologies or the industrialised adaptation of certain traditional products for production on a larger scale.
- *Institutional regulatory framework.* Both the absence of standardisation and product controls and the excessive application of such systems can result in the absence of food safety. Non-interventionism can lead to abusive practices affecting the health and imitations containing undesirable additives. Likewise, excessive standards can adulterate the intrinsic qualities of foodstuffs (as with the pasteurisation of milk for traditional cheeses made with raw milk). We put forward the following four hypothetical future scenarios: product control infrastructures are approved and well distributed geographically; norms and standards appropriate to the local context have been introduced and are complied with; economic actors embark upon the adoption of international standards to boost competitiveness on the world market; standards and regulations have still to be elaborated.
- *Political stance on international dumping.* The southern Mediterranean countries are often helpless when it comes to controlling the quality of the products from the international market that are flooding their markets. They lack the technical tools and/or know-how, it is true, but the main reason – which is much more serious – is that they have failed to adopt a political stance on undesirable products such as GMOs, poor-quality mixed oils, or meat of dubious origin. This laissez-faire attitude may continue.

What is more, a country such as Egypt, which is still receiving structural food aid, or other countries which may receive cyclical food aid (such as Algeria or Lebanon) would not have the right to express an opinion on the quality of that aid, although this runs counter to the food sovereignty principle.

- *Consumer and producer education, information and organisation.* Consumer and producer education are determining factors in consumer choices and demands. Three hypotheses can be formulated: either consumer associations become autonomous, more active, better organised and in a better position to defend consumer interests, or consumer-producers as individuals are better informed and more aware, or there is consumer disinformation and consumers are powerless, unable to protest for lack of structures and law.
- *Effect of the rapid development of the retail distribution trade.* The retailer distribution trade, which works shoulder to shoulder with the powerful distribution groups in northern Mediterranean countries and mainly with small local retailers in the South, can contribute to food safety. Efforts can be focused on improving the management of distribution so as to enhance food diversity, and on including and promoting traditional foods in the distribution systems (as is already the case in Turkey). It is a wager on a virtuous alliance amongst craftspeople, industrialists and distributors. The incorporation of nutritional ethics in the large-scale distribution trade rather than the focus on maximum profit would be a further desirable development. Another possibility is that the large-scale distribution trade spreads without any control. And the last hypothesis, which can be either exclusive or concomitant with the rapid growth of the modern large-scale distribution trade, is the expansion of the informal sector.
- *Quality of logistics.* The quality of logistics is fundamental for preserving the quality of foodstuffs. There are three possibilities: selection of varieties according to their resistance to logistics conditions, but at the price of reducing diversity; optimisation of logistics; supply chain and inefficiency.

## Possible futures

Several scenarios can be imagined at this stage with regard to the evolution of societies and diet in the Mediterranean region. Constructing a scenario entails combining compatible options in a coherent system. It also entails setting the dual “ideal” objective of ensuring food security and food safety. We consider that that stage is reached whenever foodstuffs are available, accessible and usable and whenever food is good, clean and fair.

### *Political autism in the food field*

This is the worst of the scenarios that could come about: the fundamentals are inconducive to food security and safety due to disinterest on the part of the public authorities with regard to food matters and the welfare of the population. Self-interest, power and abuse of power for the benefit of the minorities at the helm are the only predominants. In this type of scenario, inequalities are exacerbated and impoverishment worsens. The corruption and individual interests prevailing at various levels can give rise to conflicts, which destabilise public order and the authorities. The ability to purchase goods on the

international market deteriorates due to lack of organisation and controls. Economic actors lack confidence and avoid investment unless they are operating in lucrative sectors that are protected by corruption. Since there are no priorities for managing sustainable development, natural resources are wasted. Product norms and standards are inexistent or inappropriate so that anarchical freedom is preserved and individual interests are safeguarded. In this setup, health and food quality risks are at their peak. The industrial system is geared solely to maximum profit to the detriment of consumers, and total freedom reigns in the food distribution system, allowing the informal sector free rein to make good the shortcomings of the formal sector. Modality and tradition confront each other and compete for market shares. The lifestyle is marked by unemployment and thus entails considerable constraints regarding time management, which is disjointed as the result of job insecurity. The acculturation of food habits and the fact that people have abandoned the Mediterranean diet promote street food and other forms of fast-food catering. In this scenario, food dependency will probably remain high, and the likelihood of achieving food security and food safety will be slim.

### *The food diktat or modernity “at all costs”*

In this scenario, the public authorities embark on liberalisation and globalisation without any “safety net”. The imitation of farming and food practices in the northern countries promotes a two-tier agricultural system, where part of the sector is geared to exports and international standards are imposed and the other part can only just survive. Populations concentrate in urban zones and along the coasts, attracted by business prospects and the proximity of the sea for exports. A sizeable fringe of the urban population and small farmers find themselves on the poverty line. The focus on the imperatives of profitability does not protect workers’ purchasing power and results in the wastage of local biological assets. Since people are forced by necessity to find a means of survival in this individualistic and inequalitarian society, the informal sectors endure and even grow. Pockets of acute poverty and marginalisation may require food aid in order to forestall civil insecurity. Corruption is possible and indeed widespread. All-out modernisation creates economic gulfs and exacerbates the tendency to seek identity in religion. The Mediterranean diet is also in decline as people abandon it in the quest for modernity. In this case, the Mediterranean countries would be faced to a large extent with growing insecurity in terms of both the quality and the safety of foodstuffs.

### *A harmonious combination of local and international foods*

This scenario, which is more favourable than those described above, is consistent with a certain degree of political stability and a substantive blueprint of society. Population planning, measures to improve the education of women and to integrate them into working life outside the home ensures that population growth is controlled. Consumer associations operate freely and are non-politicised, and consumers are educated, informed and active. As the urban/rural split has gradually come to an end effective and harmonious rural development has ensued around small towns. The export commodity sectors have been standardised. The domestic market has not been forgotten: nutritional ethics have been introduced in the food industries (gentle technologies) and in the distribution trade; formal and informal local farmers’ markets sell quality products at sustainable prices. Active government policies no longer promote so many economically profitable products but now encourage foods of nutritional interest. As



regards dietary patterns, as the result of nutritionists' recommendations for a "sensible, rational and healthy" diet the consumption of cereals, pulses and fruit and vegetables has accelerated, the consumption of milk derivatives and fish has increased, and there has been a sharp decrease in the consumption of meat, certain fats and carbohydrates. We would then be very close to the "Mediterranean ideal" similar to the ideal Cretan diet of the 1970s. This would be bound to result in much less pressure on arable land and acreage under crop in that it is animal products which are mainly responsible for this constraint. Fisheries resources are a topical issue, on the other hand. Fish farms could of course be promoted, but since the pollution they cause with their current management methods is well-known, research is necessary on the management of fish farm effluents. Although the consumption of fruit and vegetables is undeniably very healthy, the production of these commodities (with the exception of pulses) requires large quantities of water, and greenhouse production creates considerable environmental problems. Here again, it is imperative to research ways and means of economising water and limiting greenhouse gases in the production of this type of crop. On the other hand, the food security and food safety of the populations would be better assured.

### *Awareness of responsibility in food matters to save public health*

In this scenario, consumers are the hub of the system and play a central role in government decisions. All of the actors are highly involved and establish strategic alliances to achieve the goal of the "health and nutrition of the population". Precedence is given primarily to the local economy. International trade is a possible avenue but is not a priority, particularly if it is engaged in to the detriment of the food security and food safety of the local population. This setup presupposes political stability, firm confidence on the part of economic actors and an entrepreneurial turn of mind. There is a profusion of activities and a decrease in poverty. Standards are adapted to the local context. Consumers and producers are informed and well educated. The impact of the Mediterranean food patterns and traditions has been established with a certain degree of modernity; consumers are even returning to the Mediterranean diet, adapting it to their new lifestyle and new expectations: simplified meals, less fats, less meat and less carbohydrates, diversification of the culinary repertoire through the introduction of new dishes, which are often of Mediterranean origin. Food is still an issue of importance. Even if the international spread of Mediterranean food becomes established, this does not guarantee that the market for the products of the region will expand, since it depends on consumer comprehension of the Mediterranean diet.

There are several possibilities:

- Consumers are very concerned about where foodstuffs have been produced and demand products of Mediterranean origin. This would constitute a tremendous market, but it would then be very tempting to intensify production in order to create wealth at the price of exhausting local soil and water resources. It is a well-known fact, moreover, that excessive intensification and the industrialisation of artisanal know-how to a degree that exceeds the rational are factors which impair the intrinsic quality of commodities.
- Consumers set great store by the structure of the Mediterranean diet, the wide diversity of foodstuffs and the combination of various foods. The origin of production is

thus of little importance, and some producers can embark on the production of new products to satisfy demand – this is how olive-growing prospered in the United States, Australia and Latin America. Mediterranean tree-growing can develop wherever climatic conditions allow. The same applies to pulses or vegetable production, or even greenhouse production. Fish farms multiply. The rest of the world can soon become a serious rival of the Mediterranean region.

- Consumers attach importance to product authenticity and to the specific features of products. Mediterranean industrialists and craftsmen will thus have to organise themselves rapidly in order to protect their know-how, recipes and specific products by means of patents and labels.

## The avenues to be explored

In this profusion of possible situations, how are the key variables to be selected on which action should be taken with a view to achieving the objective of food security and food safety? Since precedence is given to the participatory approach and consensus in this context, we have used the *Eidos*® decision-making tool. By identifying all of the direct causal relationships amongst the 16 variables mentioned above, this tool takes them two by two and analyses influences/dependencies, thereby examining the most active variables (those where any change will have a major impact on the system) and the most passive (those where direct action would be preferable in order to avoid having to change a large number of other influential variables). The most influential variables concern the level of agro-food output and the quality of the commodities and goods produced, relative poverty and inequalities, and cultural food identity. The most passive consumer involvement in food quality, the quality of industrial products and consumer purchasing power, particularly in the case of quality products that are beneficial for the health. These variables thus constitute six major fields of action for which hypotheses/options will be put forward and action scenarios will be drawn up. A scenario is only attractive, however, if it is coherent, that is to say, if it comprises compatible options. Five avenues are explored here on this basis in order to fully demonstrate the strategic dimension of food security in the Mediterranean region.

1) A comprehensive and concerted policy for food security and food safety in which the main focus is on consumers. This avenue requires good knowledge of local consumer behaviour and preferences as well as measures to raise consumers' awareness of their responsibility in food choices. Consumers are the mainspring of the production system in the broader sense, and their interests are taken into account, since consumer associations have been strengthened. Rational farming would intensify agricultural production. Selective taxation would help to improve purchasing power and thus food security, and consumers would be encouraged to choose quality products by means of subsidisation. And finally, an active policy for introducing quality in the industrial fabric would be promoted.

2) Food quality inevitably involves firms and their commitment. Since food production will inevitably become increasingly industrialised, food safety would be promoted by firms, which are now anxious to ensure quality. The regulations governing the industry would be stepped up, and the production of industrial food-stuffs at prices

suited to all categories of the population would be intensified. The tendency would be to apply quality procedures throughout the industry, and the dissemination of information on the quality of industrial foods would be broadened.

3) Highlighting the value of traditional products as the mainspring of food safety. Since identity is closely connected with cultural rooting, food safety would be organised around and by means of traditional products. Rational production would be stepped up, regulations would be adapted, and traditional products and/or products closely connected with the cultural heritage would be industrialised for wider distribution at affordable prices. Subsidies could be granted to products whose quality is guaranteed, and aids to supplement the purchasing power of the most needy population segments would enable them to have access to quality.

4) Commitment on the part of actors at all stages of the food chain. In this scenario, emphasis is laid on social ethics, commitment on the part of each actor in the food production chain and measures to protect purchasing power. Producers, industrialists and distributors are involved and can direct the promotion of their quality products to consumers, who are now aware.

5) Government intervention as a guarantee of food security and food safety. The liberalisation of the various sectors would be somewhat delayed, and the public authorities would intervene to a large extent to “impose” a certain conception of food security and food safety. The main lines of government intervention policy would comprise action to raise consumers’ awareness of their responsibility in food choices, stringent regulations imposed on the industries, subsidisation of quality products at the retail level, government schemes to educate consumers, and consumer aids and subsidies.

## **Food security and food safety are crucial to harmonious development at the local level**

The Mediterranean diet must be preserved and modernity accepted at the same time in order to promote both food security and food safety. Food safety is an issue as yet unresolved; it is connected with consumer choices, but also with the fact that actors in the food chain and the public authorities lack commitment. While the overall situation regarding food security in the Mediterranean region is fairly satisfactory on the whole at the present time, the situation has deteriorated as regards food quality and safety. Health aspects are not the only reason for consuming Mediterranean foods; defending regional products can also contribute to the environmental and cultural sustainability of the region, and promoting local products amongst the rural populations in the zone would have an economic impact. It would seem imperative to implement integrated multisectoral policies if ensuring food security and food safety is to be a societal objective in the Mediterranean region.

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2008

# *Medi*TERRA

THE FUTURE OF AGRICULTURE AND FOOD  
IN MEDITERRANEAN COUNTRIES



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CIHEAM

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