Preface

I. After the publication of the 1998 and 1999 reports, CIHEAM now presents its third annual report, which focuses on the year 2000, thus honouring its commitment to draw up a periodical document reflecting the general development of agricultural and agro-food systems in CIHEAM member countries and constituting an instrument of knowledge, analysis and reflection on the main aspects and events affecting the agricultural and food economy in the region: we are pleased to fulfil our ideal engagement with the addressees of the report - members of government, members of parliament, officials of international organisations and national administrations, representatives of scientific institutions and professional organisations, and economic operators – who in their various capacities have encouraged us to pursue this initiative, which is gradually drawing the attention of all of the Mediterranean countries.

In fact the Ministers of Agriculture of CIHEAM member countries, who held an initial meeting in Rome in May 1999 and met again in Rabat in May 2000, have again acknowledged that CIHEAM report is a valuable reference document for the countries of the region and an essential tool for making CIHEAM the most effective arena for observing agricultural, agri-food and rural development policies in the Euro-Mediterranean area.

II. The structure of the present report is similar to that of the previous editions. It is divided essentially into four parts:

- **Part I** is devoted to the general topic of the relationship between **natural resources and agriculture**, which is discussed both from the point of view of the challenges presented to Mediterranean agriculture by the requirements of environmental protection and the designing of sustainable agriculture in the context of the Euro-Mediterranean partnership and from the point of view of the constraints confronting the countries on the southern and eastern shores of the Mediterranean in the structural adjustment policies they are pursuing in parallel with the problems they are encountering in the management of natural resources in this delicate phase of economic transition. The development of the subjects dealt with in Part I leads quite naturally to the consideration of the concept of the multifunctionality of agriculture in the Mediterranean region and of the connection between this concept and rural development, which is a fundamental aspect of Mediterranean economies. The issues broached in the last chapter of Part I concern the scope of the concept of multifunctionality in

the Mediterranean region, the compatibility of that concept with the liberalisation of trade in agricultural commodities, and the extent to which the agricultural policies of the Mediterranean countries are consistent with the principle of multifunctionality.

Without wishing to anticipate the conclusions drawn in Part I of the report, which gives a very clear account of the issues at stake in agricultural development in the region and the relations between the countries responsible for the Euro-Mediterranean partnership, we feel that we must confirm what has constantly been argued in our annual report ever since the first edition: the benefits which can result from opening markets and the free trade zone to the partner countries in the Southern and Eastern Mediterranean could be cancelled if the current restrictions regarding the covering of the financial and social costs of transition in those countries persist.

- **Part II** presents **sector and country analyses**. After describing the development of the national economies and of the agricultural aggregates in those national economies, this section shows how agricultural and agri-food production, consumption and foreign agricultural and agri-food trade developed in the year under review, and it concludes with comments illustrating the main features of agricultural, agri-food and rural development policies in the various CIHEAM member countries.

  As was already the case in the previous editions of the report, Part II is the synthesis of the contributions drawn up by the national correspondents, which are available in full on the Internet, as is the full edition of the report.

  We are very much in favour of this working method – contributions from the national correspondents and summary report – which constitutes the original feature of our report and foreshadows the function of observatory of agricultural, agri-food and rural development policies with which the Ministries of Agriculture have entrusted CIHEAM. In the preparatory phase of the present edition, the Editing Committee and national correspondents held a joint meeting to mark the first experience of creating an interactive network which can be developed with a view to implementing the observatory. And our efforts will continue to that purpose with the support of CIHEAM Governing Board.

- **Part III**, in which a specific subject of particular importance for the region is developed each year, discusses **the water problem in Mediterranean countries**. This section of the report covers the broader and essential issue of the availability and rational utilisation of water resources in the Mediterranean countries, advocating a programme of priority measures for the attention of policy-makers in the region.

- And finally, **Part IV** focuses on **the main indicators of agricultural and agri-food development** in the countries of the Mediterranean, comprising a supplemented and improved update compared to the data contained in the previous editions.

III. Encouraged by the support received on the publication of the earlier editions and by the numerous expressions of approval, we are confirmed in our determination to continue our work. And more specifically, we appreciate the acknowledgement of our report which we have received from the Ministers of Agriculture of CIHEAM member countries and also from the responsible bodies of the cooperation programme, which is co-financed by the European Commission and CIHEAM. The policy and management committee of that programme - on which the officials of the scientific institutions of the partner Mediterranean countries are represented – regards our report as a decision-making aid and includes it in the activities of the programme. This confirms the validity of CIHEAM's initiative of publishing its report, whose purpose from the outset has been to serve the countries in the region.

Now that that initiative has been consolidated in the present edition, I wish to express my sincere thanks to the members of CIHEAM Governing Board, the national correspondents, the members of the Editing Committee and Mr. Mahmoud Allaya of the IAM-Montpellier, who accepted responsibility for the general coordination of the present edition of the report within the Editing Committee.

Enzo CHIOCCIOLI
CIHEAM Secretary General

Foreword

The globalisation which accompanies us as we move into the 21st century is generating far-reaching interaction between the areas, economies and societies of various countries of the Mediterranean region.

This year CIHEAM is publishing its third annual report entitled *"Development and agri-food policies in the Mediterranean region"*. Part I of the present 2000 edition analyses the relationship between natural resources, rural development policies and the multifunctionality of agriculture. Mr. José Maria GARCÍA ALVAREZ-COQUE and Mr. Najib AKESBI have prepared this part.

Part II is devoted to the sector and country analyses of the CIHEAM member countries. Its constitutes a synthesis of the country reports provided by a cooperative network of correspondents. Mr. Slimane BEDRANI, Mr. Giulio MALORGIO and Mr. Gérard MICLET have prepared this synthesis. This network of correspondents is composed of Mr. Ibrahim ABDEL-AZIZ and Mrs Hoda MOUSSA (Egypt), Mr. Najib AKESBI (Morocco), Mr. Slimane BEDRANI (Algeria), Mr. Adrian CIVICI (Albania), Mr. Luis Bruno DIMAS FERNANDES (Portugal), Mr. José Maria GARCÍA ALVAREZ-COQUE and Ms. Elena CEBRIAN-CALVO (Spain), Mr. Mouïn HAMZÉ and Mr. Antoine HADDAD (Lebanon), Mr. Mustapha LASRAM and Mr Abdelhakim KHALDI (Tunisia), Mr. Giulio MALORGIO (Italy), Mr. Gérard MICLET (France), Mr. Demitris PSALTOPOULOS (Greece), and Ms. Berna TÜRKEKUL (Turkey).

Part III discusses the water problem and the priority measures to be taken in order to improve the management of this resource, which is becoming increasingly scarce in the Mediterranean region. It has been prepared by the Mediterranean Agronomic Institute in Bari (Italy), and more specifically by Mr. Atef HAMDY.

Part IV presents the main indicators of agricultural and agri-food development in the Mediterranean countries which are members of CIHEAM. This part has been prepared by the Mediterranean Agronomic Institute in Montpellier (France), and more specifically by Mr. Mahmoud ALLAYA.

The CIHEAM annual report is drawn up under the supervision of the CIHEAM Secretary General, Mr. Enzo CHIOCCIOLI. The editorial team of the 2000 edition, coordinated by Mr. Mahmoud ALLAYA, was composed of Mr. Najib AKESBI (Hassan II Institute of Agronomy and Veterinary Medicine,Rabat, Morocco), Mr. Mahmoud ALLAYA (Mediterranean Agronomic Institute in Montpellier, France) Mr. Slimane BEDRANI (National Institute of Agronomy, Algiers, Algeria), Mr. Roberto CAPONE (CIHEAM General Secretariat, Paris), Mr. José Maria GARCÍA ALVAREZ-COQUE (University of Valencia, Spain), Mr. Giulio MALORGIO (University of Bologna, Italy), Mr. Gérard MICLET (National College of Agronomic Studies, Montpellier, France) and Mr. Albert Simantov (Delegate representing Greece on the CIHEAM Governing Board).

The translation from French into English has been carried out by Ms. Carolyn G. LOANE and Ms. Anne CLOUGH and the translation from English into French by Ms. Thérèse ZAREMBA-MARTIN; the English version has been edited by Ms. Carolyn G. LOANE and the French version by Mr. Mahmoud ALLAYA. The compilation has been done by Ms. Fabienne KISS and Ms. Isabelle DEBABI.

Both the full report 2000 and the country reports will be published in electronic format on the CIHEAM website:
http://www.ciheam.org

ACRONYMS AND INITIALS

AAU	Agricultural Area in Use
AGDP	Agricultural Gross Domestic Product
ALF	Agricultural Labour Force
AoA	Agreement on Agriculture
AFI	Agri-Food Industries
AMS	Aggregate Measure of Support
CAP	Commun Agricultural Policy
CTE	Committee on Trade and environment
EAGGF	European Agricultural Garantee and Farm Guidance Fund
EIA	Environmental Impact Assessment
EMA	Euro Mediterranean Agreements
EU	European Union
FDI	Foreign Direct Investment
FTA	Free Trade Area
GDP	Gross Domestic Product
LSU	Livestock Unit
MENA	Middle East and North Africa
PDO	Protected Designation of Origin
PGI	Protected Geographic Indication
PSE	Producer Subsidy Equivalent
RDP	Rural Development Plan
RDR	Rural Development Rules
RFC	Regional Farming Contract
SAP	Structural Adjustment Policies
SARD	Sustainable Agriculture and Rural Development
SMAP	Short and Medium Term Priority Environment Action Plan
TLF	Total Labour Force
WTO	World Trade Organisation
YWU	Year Work Unit

1 Natural resources and Mediterranean agriculture

1.1 - Introduction

There is widespread concern for the preservation of natural resources. It is also becoming widely recognised that farming and conservation of the natural environment are closely linked. Agriculture is the primary use of land throughout the major part of the world, influencing landscapes and biological diversity, which has evolved with the growth of farming. This is also true for the Mediterranean area, where agricultural systems have been a source of environmental value by maintaining landscapes, conserving bio-diversity and protecting historical features. The Mediterranean ecosystems have been recognised by scientific and environmentalist communities as being among the leading "Global 200" eco-regions of the world (Insausti, 2000).

Some of the non-trade concerns of agricultural policies are what economists call externalities[1]. One problem in assessing the impact of agricultural systems on the environment is that they provide externalities. As with almost any production activity, agricultural activities can cause both negative and positive externalities that are not accounted for on the market.

It is almost impossible to find an agricultural system which produces only one type of externality, be it positive or negative, and it is normally difficult to assess the balance between the two. In the first sections of this chapter emphasis is placed on the negative environmental impacts of farming activities. The discussion will then move to the positive environmental impacts related to the multifunctional role of agricultural systems in rural development.

Many agricultural systems around the world are depleting soil resources and do not replace nutrients on a regular basis. In addition, agriculture is a significant user of water, and supplies are becoming limited in many countries. Of the world's fresh water used by people, agriculture uses more than 70% for irrigation. Unsustainable agricultural practices are significant sources of non-point pollution. The global challenges to find the solution to desertification, climate change, and loss of bio-diversity require major efforts.

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[1] Externality, by definition, is an effect which the action of an undertaking or individual produces on other undertakings or individuals which or who are extraneous to that action; the effect can be negative or positive and can result for non-participants in the action in an uncompensated cost or advantage. (cf. UNCTAD, 1994 et Faucheux & Noël, 1995).

However, the agricultural sector is a key economic sector for many Mediterranean countries, particularly in the Southern and Eastern regions, measured in terms of total labour force employed in the country. Furthermore, **farming is not the sole cause of the most serious environmental problems in the Mediterranean area.** The natural resource base of the Mediterranean ecosystems have been threatened by demographic pressures and by a range of practices in different areas of economic activity, as in the case with overfishing and the overdevelopment of tourism. Tourism is a well-known source of environmental pressures, mainly due to the destruction of coastal cliffs, beaches and sand dunes, the pollution of bathing waters and the conversion of natural areas into tourism infrastructures.

When environmental impacts related to farming activities are significant, they are often the effect of how the agricultural systems are managed rather than of agriculture itself. In most cases the pressure on the natural resource base and degradation of the environment can be considered to be both a cause and an effect of the economic stress of the rural sector.

Sustainable agriculture and rural development should not be considered as contradictory goals. The main objectives of rural development include growth, poverty reduction, employment generation and sustainability. For these criteria to be fully integrated into the process of economic development, it is argued that environmental protection and sustainability dimensions should be carefully integrated into agricultural policy analysis. According to this view, environmental problems become a constraint upon rural development and there is a need to achieve development strategies that allow the conservation of the natural resource base and, at the same time, promote growth and reduce poverty in rural areas (see Box 1.1). Environmental concerns must be integrated into national, social and economic development programmes in a way that makes environmental protection an instrument of growth rather than a restraint on development or trade.

Box 1.1 - Sustainable agriculture and rural development

FAO has adopted the following definition for *sustainable agriculture and rural development (SARD):*

"Sustainable development is the management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. Such sustainable development (in the agriculture, forestry and fisheries sectors) conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable." (FAO Council, 1988).

At the *macro-economic* level, economic growth, employment generation, a serious attack on poverty, reduction in the rates of population growth, and relief of the debt burden in developing countries are among the essential prerequisites for SARD.

1.2 - Environmental challenges

Natural resource management for sustainable agriculture and rural development in the Mediterranean region is constrained by a number of pressures (see World Bank, 1995a):

- *Overuse of water resources* continues to be a matter of concern. The population in the Mediterranean region is growing rapidly and countries are continuing to over-exploit non-renewable fossil aquifers at excessive rates.

- *Desertification of arable land.* In marginal areas, farmers are continuing to overgraze marginal lands, deplete scarce forest resources, and use increasingly poor-quality water for irrigation, causing the constant shrinkage of productive land. For most Southern and Eastern Mediterranean countries the food gap is expanding and it is unlikely that a change of trend in the status of net food importing countries could be achieved in the next decades. The limited potential for yield improvements in rain-fed and irrigated areas combined with the uncertain evolution of world food prices make the future situation quite worrying for net food importing countries in the region. The challenge for many Southern and Eastern Mediterranean countries is to reverse this trend without depleting their natural resource base.

- *Deforestation* is continuing to expand. Important natural habitats of forest

grasslands are still being destroyed, in spite of the reforestation efforts encouraged in some countries.

- *Unrestrained urbanisation*. This is a source of air pollution in major urban centres. In turn, rural poverty in developing countries is a major cause of intra-country demographic pressure and rapid urbanisation. As both water and arable land become scarcer, urban centres, especially in the Southern and Eastern Mediterranean countries, are growing at a dramatic rate, exposing increasing numbers of the poor to inferior housing, worsening air pollution, and sub-standard sanitation. Urban expansion and tourism are often related developments, which are a source of depletion of agricultural and coastal ecosystems.

- *The human dimension* of the above problems is equally disquieting. The vast majority of the poor in Southern and Eastern Mediterranean countries (about 70%) live in rural areas (Bishay, 1998). In the Middle East and North African region (MENA) some 50 million people have no access to safe drinking water, and 85 million lack safe sanitation.

- *Loss of bio-diversity*. The Mediterranean terrestrial eco-region holds almost 5% of the vascular plant species on Earth (over 25,000 species), and is one of the richest areas in terms of bio-diversity. The region is known as the place of origin of dry area crops and livestock. The environmental characteristics of rural landscapes vary across the Mediterranean region, which determine the nature of their response to environmental pressures and impacts. Rural areas provide a rich diversity of landscapes, whose primary characteristics have been shaped over time by climatic and biological processes and influenced by human activities. But the relatively high nature value of many cultivated landscapes has been under severe pressure for several decades, evolving towards a more uniform and less complex landscape.

- *Intensification of landscapes* on both sides of the Mediterranean basin. Traditional agricultural systems require a considerable input of skilled work to manage grazing systems and maintain features such as dry stone walls and hedgerows. With the decline in traditional farmland management, the shift towards mechanisation and more intensive production systems, coupled with a decline in the numbers of people working the land, many of these 'cultural' landscape features are being lost (Box 1.2).

In addition to the above-mentioned pressures several emerging issues are currently under discussion:

- A pessimistic scenario of trade liberalisation in the agricultural sector would probably reinforce the current trends of intensification for cash crops even in countries where food security is not attained. Irrigated crops will increase the

demand for water, the supply of which is severely limited and subject to multiple and competing uses. However, as will be discussed below, links between trade and environment are yet to be well established. Negotiations comprising health and bio-diversity combined with genetically modified food (GMO) will also have important implications for Mediterranean countries. Not only because some of them are large cereal and dairy produce importers but also because of the implications for one of their principal exports (fruit and vegetables).

- The rural sector is a significant supplier of positive externalities, according to the concept of multifunctionality that will be reviewed later in this chapter. The question is whether the positive externalities associated with rural activities are more important than the negative externalities resulting from agriculture.

Box 1.2 - Main threats to European landscapes

Landscapes are undergoing radical transformation as a result of six ma in trends:

- the intensification of agricultural landscapes in which the ques for greater agricultural productivity continues with ever larger property st uctures and increasing mechanisation;
- the reforestation or fallowing of rural land gradually ab ndoned by agriculture, the continuation of a centuries-old transformation pr cess;
- increasingly fragmented habitats, in particular in large alluvial v alleys or on coastlines;
- the expansion of the urban peripheries of large cities unti they form metropoles;
- the spread of public transport infrastructures, motorways, hig h-speed rail tracks and power lines;
- the expansion of tourist facilities in mountain regions or on coast ines with an increasingly marked propensity to engage in large cultura marketing campaigns on important historic or natural sites.

Source: Luginbuhl (1998) Landscapes: Policies for a pluralist Europe. Naturopa: 86, 19 8.

1.3 - Rural poverty and sustainable agriculture

The development of rural areas has obvious connections with the conservation of the natural resource base. A misunderstanding of those connections could lead to the mistake of believing that rural growth and sustainable development are contradictory in essence. However, rural poverty can be conceived as both a ***cause*** and an ***effect*** of pressure on the natural resource base and degradation of the environment. The rural poor are frequently exposed to the dangers of erosion and the loss of an already miserable productive base; but poverty also accelerates erosion and desertification. Rural people usually lack capital to invest even in traditional methods of water and soil conservation. Short-term decisions are a matter of survival for many rural producers in developing countries. Poverty leads to short-term decision-making that is often environmentally destructive. It is difficult to ask an agricultural producer to stop degrading the soil and to switch to environmentally friendly farming methods, when overexploiting and exchanging some of the natural capital stock for cash may be the only profitable alternative.

As has already been underlined, almost three-quarters of the poor in the Southern and Eastern Mediterranean countries live in rural areas: they are the rural poor (Bishay, 1998). They depend on agriculture and/or other non-farm activities for their livelihood. The rural poor usually live in areas where fertile land is scarce, agricultural productivity is very low, natural disasters (floods and droughts) are frequent, and natural resource degradation is quite common. Rural growth would enhance the demand for labour, thus generating further rural employment, reversing the rural-urban migration process, reducing rural poverty, increasing rural incomes, and finally contributing to the overall rural development objectives. Without growth and savings, there will be a lack of investment for resource conservation.

World development thinking is concerned about the question of alleviating rural poverty in the developing world, thus reaffirming ideas which were already formulated in the early 1980s (Kossaifi 1998, Khan 2000). It can be said that in the Southern Mediterranean countries, the poor are usually farmers with little or no land; they are self-employed in the informal sector, and have limited skills. Usually, most poor people live in rural areas and, in the countries where the majority of the poor are urban, poverty incidence is higher in rural areas. Occupationally, poor people in rural areas are agricultural wage earners (in Egypt, 40% of the rural poor have been reported to be agricultural workers; see Eeghen, 1995), and small farmers. In several countries, high population growth has contributed to poverty. Demographic pressure and limited water and land availability have led to mass emigration to large cities where rural migrants settle with few employment possibilities and limited access to social services.

In a more general context, some environmental problems seem to worsen with poverty (Esty, 1999). From this point of view economic growth can make resources available for investments in environmental protection. The population explosion

presents a major challenge for the Southern Mediterranean region in terms of the need for job opportunities and housing. However, the expanding labour force can also be seen as an opportunity to generate higher income per capita and resources for sustainable development (Dhonte, Bhattacharya, and Yousef, 2000), but there is no guarantee that this positive result will always be the case. It is therefore important that environmental policies evolve in parallel with growth-orientated strategies.

1.4 - Sustainable agriculture and trade policy

Links between trade policy and the environment are relevant to the discussion of the choice of appropriate public strategies to deal with environmental problems. Two major policy issues arise from these links. First, the question on how the liberalisation of agricultural trade could impact the environment. And secondly, the effects of environmental policies on trade. Both questions are of interest to Mediterranean policies in their attempt to create a more integrated marketplace.

As regards the first question, the 1999 CIHEAM Report (section 1.4) underlined the difficulties in anticipating how and to what degree trade liberalisation will affect the environment in Mediterranean ecosystems.

It is interesting to observe that so far the debate on environmental effects on trade has focused mainly on the so-called “negative externalities” of the agricultural systems such as pollution and less on the provision of public goods. In the case of agriculture, the standard line of argument is that liberalised trade in most countries will result in reduced product prices and, by implication, less environmental stress since lower product prices imply lower production and less intensive use of inputs. Further, environmental gains would follow indirectly from the redistribution of production between countries so that more production would be produced in countries with the best natural conditions and higher production efficiency (Anderson and Blackhurst, 1992; Anderson, 1999).

The current approach to EU policies is based on the hypothesis that a substantial reduction of farm subsidies in the heavily supported crops in some European regions, or, at least, the introduction of environmental conditions pertaining to such subsidies, would yield environmental benefits.

However, recent experience in the European Union suggests that improvements in the eco-efficiency of the agricultural sector are largely due to independent developments in production efficiency as a result of agricultural research and farmers' behaviour. As a matter of fact, the quantity of inputs per hectare in Northern Mediterranean agriculture has remained relatively stable in recent years, with diverse patterns between countries (see Table 1.1). This is due to two trends: a steady decrease in the area of agricultural land and more intensive production.

Such a development is fully in line with the CAP. At the start of the CAP, the major issue was product price support; since the 1992 and 1999 revisions, most CAP funds have been allocated to supporting farm incomes and providing compensatory payments, with agri-environmental programmes receiving only a relatively small share of the budget.

While agricultural price support encourage farmers to plant on marginal lands which often require more intensive and pollutant production techniques, agricultural trade liberalisation could provoke a reduction of agricultural activity in marginal lands. This could have the effect of abandonment of cultivated areas and could therefore lead to increased erosion and deforestation.

In contrast, in some Southern and Eastern Mediterranean countries, where agriculture is less protected, enhanced market access in the EU countries could increase exports of products from irrigated areas. The average use of fertilisers per hectare in the Southern Mediterranean countries is less than half that in Europe (see Table 1.1). However, trade liberalisation could lead immediately to a negative effect, normally concentrated locally, with an impact on the local population, as a result of the pressure on water resources and bio-diversity and of the pollution caused by the increased demand for cash products.

Assuming that trade liberalisation will cause the reallocation of agricultural production away from countries with comparatively high levels of trade protection to developing countries, it is difficult to forecast any clear net effect in the levels of environmental degradation as the result of agricultural reform. As discussed above, in developing countries, agricultural production is less intensive and it is rural poverty that is responsible for the degradation of rural and urban environment.

Table 1.1 - Fertilizers per hectare

	1981-85	1991-95	Tx 1983-93
	Kg/ha		(%)
Mediterranean countries	109	107	-0.2
Northern Med	134	130	-0.3
Southern Med	51	62	2.0
Spain	75	91	2.0
France	298	251	-1.7
Greece	160	145	-1.0
Italy	168	167	-0.1
Portugal	77	82	0.6
Albania	133	29	-14.1
Cyprus	110	173	4.7
Turkey	54	66	2.1
Algeria	25	12	-7.0
Libyan A J	39	43	0.9
Morocco	31	32	0.2
Tunisia	17	20	1.3
Egypt	334	313	-0.7
Israel	204	231	1.3
Jordan	40	34	-1.4
Lebanon	135	123	-0.9
Syrian A R	32	65	7.3

Source: MED AGRI 2000

The relationship between trade liberalisation and the environment is thus somewhat unclear. Even if agricultural policy reform, including trade liberalisation, enhances the potential for environmental improvement it does not guarantee it, because of the need to implement appropriate policies for the environmental targets (Ervin, 1997).

Furthermore, while free trade may or may not contribute to an overall reduction in pollution, it cannot produce incentives securing the provision of public goods from agriculture. These must either be paid for directly (the case of competition with other resource use), or provided indirectly through the level and form of agricultural production (the case of joint production).

A second question concerns the possible conflict between trade and environmental policies. These links between trade and environment have to be recognised by policy-makers as economic integration deepens, as is happening in the Mediterranean area.

In the Mediterranean context**,** the fear of competitive disadvantage in an integrated Mediterranean marketplace focuses the attention of industrialists, environmentalists and politicians. In fact, some governments may tend to relax the enforcement of their standards or fail to raise standards for fear of exposing their industries to higher costs than those of their competitors (Barron and Cottrell, 1996). The likelihood of a competition dynamic increases as economic integration progresses.

There is still a great deal to be done, however, particularly in the field of « grey protectionism », which industrialised countries resort to in order to limit access to their markets for more or less “sensitive” products from developing countries. Developing countries fear that high-income countries enforce stricter national standards and laws extraterritorially. Is this possible within the WTO framework?

While the WTO has no specific agreement dealing with the environment, a number of agreements include provisions dealing with environmental concerns. These provisions include: (i) GATT Article 20, which exempts policies affecting trade in goods for human, animal and plan protection from GATT disciplines; (ii) the explicit recognition of environmental objectives under Technical Barriers to Trade; (iii) the exemption of environmental programs from cuts in agricultural subsidies (the so-called “green box”). Considering the harsh and water-scarce environments in which agricultural productivity improvements and poverty alleviation have to be sought as well as the strong linkages between agriculture and the natural resource base, Mediterranean countries should seek active involvement in the decision-making process of the WTO Committee on Trade and the Environment (CTE) and to pay close attention to the provisions dealing with the relation between trade and the environment.

Farm trade and the environment are two of the most controversial issues to be discussed in forthcoming negotiations on agricultural trade liberalisation. With regard to the responsibilities assigned to the WTO, it is recognised that the organisation is only competent to deal with questions that arise when environmental polices have a significant impact on trade. The position of the CTE is that the basic WTO principles of non-discrimination and transparency are not incompatible with trade measures needed to protect the environment including actions taken under the environmental agreements.

Current WTO rules only allow “production process” standards to be applied to imports when it can be demonstrated that the processes targeted have repercussions for the physical characteristics (quality) of the product concerned. But in many cases the process standards cannot be justified under this criterion,

and this has given rise to disputes at the WTO level. The fear of low-income exporters is that such standards could eliminate their ability to exploit their comparative advantage.

The demand for higher quality and safer food rises in tandem with per capita incomes. However, both perceptions of the safety of different foods and food production and processing methods and conformity assessment procedures differ widely - even among countries with similar income levels. The WTO Dispute Settlement case between the US and the EU on beef hormones showed that standards differences are difficult to resolve even with the best scientific advice. Other examples are irradiated food, cheese made from unpasturised milk, and genetically modified organisms. Over time such issues will arise increasingly under the Uruguay Round's SPS and Technical Barriers to Trade agreements.

As the pace of economic integration increases, so do the number of trade-environment conflicts. The pressure for a more systematic commitment to building environmental considerations into the international trading system shows little sign of decline. In fact, the WTO has been criticised for failing to advance trade-environment harmony and, more specifically, for focusing almost exclusively on the trade effects of environmental policies with little attention being paid to the environmental consequences of trade policy. Some authors believe that the call for the separation of economic and environmental concerns is simply practically impossible (Esty 1999). Environmental questions and trade policy cannot be regarded as separate issues. Ignoring the environmental implications of trade policy-making poses a serious threat to current and future integration efforts.

The authorities concerned remain optimistic. In the opinion of the previous Director General of the WTO, trade liberalisation and environmental protection are not only becoming increasingly compatible objectives but must also constitute the two sides of the same strategic coin aiming to implement sustainable development on the global scale (Ruggiero, 1998). Working to reduce market access restrictions and export subsidies would amount to creating favourable conditions for better environmental protection. However, as M. Ruggiero adds, measures must go further; global consensus must be reached on the trade and environment issues, agreements must be concluded and binding standards must be laid down at the world level. The some 185 multilateral environment agreements that have already been concluded would then constitute "the best means of tackling world ecology problems". Provided that the non-discrimination clause is respected, the WTO rules would not impose any constraints on countries in their choices for protecting their environmental standards or preserving their resources[2].

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[2] It must be pointed out in this context that, according to the Marrakesh Agreement, the subsidies which have not been reduced include those which are designed to encourage the adaptation of existing facilities to new environmental prescriptions. Cf. WTO, 1998.

In the long term, the WTO must find a more rational way of balancing trade and environmental goals. The current mechanism (found in Article 20 of the GATT) requires countries whose environmental policies have been challenged as trade barriers to demonstrate that they have selected the “minimally trade-distorting” or “least inconsistent GATT” policy tool available. This standard sets an almost impossibly high impediment for environmental policies because, in almost every case, there is some environmental strategy or approach that would interfere less with trade.

A common background of concern for the effects that trade liberalisation may have on the environment is not trade expansion per se, but the consequences of economic growth derived from the development of trade flows and the possible international reallocation of production. Therefore, the most appropriate way to prevent the possible negative impacts is not to be found in the use of trade policy measures, but in the adoption of policies that focus on the specific problems. If rural poverty is the issue, then economic growth, income distribution and rural development will become the long-term strategies for reducing negative environmental impacts. However when the effects of environmental problems and policies go beyond the borders of a specific country, international co-operation in response to environmental challenges can be of interest to improve policy outcomes. The Euro-Mediterranean Partnership established a new framework which will shape economic and political relations across the Mediterranean basin and increasingly provide new forms of regional co-operation, which will obviously cover the environment issue.

1.5 - Sustainable agriculture and the Euro-Mediterranean partnership

In the longer term, the Barcelona process aims to create a "shared zone of prosperity through the establishment of a free trade area". While the benefits that can be expected from the FTA can be significant in terms of economic growth, infrastructure developments and the integration of Mediterranean countries into regional economic flows, how such benefits will be distributed (e.g. potential winners and losers) needs to be taken into account. Similarly, structural adjustment and trade liberalisation will lead to the reallocation of resources, changes in relative prices, and the transformation of the role of the state and of the private sector, which will be expected to fulfil functions previously performed by the state.

Although the Euro-Mediterranean Partners have committed themselves to “assessing the environmental problems in the Mediterranean region and defining the initiatives to be taken” (Work Programme, Euro-Mediterranean Partnership), so far little assessment has been carried out of the potential environmental effects of the Association Agreements. There is a risk that the FTA will intensify the pressure on already scarce natural resources (water, arable land, forests), lead to

increased pollution of water, air and soil, increase the generation of industrial and hazardous wastes, and result in a loss of bio-diversity.

The Euro-Mediterranean Partners have emphasised the importance of achieving a sustainable and balanced economic and social development and integrating environmental concerns into all policy areas. This will require that trade and environmental policy objectives be integrated into the implementation of the Euro-Mediterranean Association Agreements from the outset.

Is the Mediterranean FTA sustainable from the environmental point of view? A series of potential trade-environment conflicts can be argued, including:

- Agricultural areas likely to see increased activity lack sufficient infrastructures to handle the expected increase in water use, waste production and pollution.
- Differences in levels of environmental legislation and enforcement between Mediterranean countries cause the potential danger of the establishment and/or relocation of polluting activities in the EU to the South, where environmental standards and enforcement levels are lower. There is a corollary threat that environmental standards might bee deliberately loweredin an effort to attract capital investment, creating a so-called “pollution refuge” (Hesselberg and Knutsen, 1994).
- As tariff measures become less important as an intra-regional trade barrier, there is a risk that they might be replaced by non-tariff measures. Standards could become a sort of new-protectionism based on sanitary and pest control measures.

However, the pro-FTA stance would include the following arguments on the environmental benefits of the Association Agreements:

- Increased economic growth would help to fight poverty, a source of resource degradation.
- Since environmental awareness tends to increase with socio-economic status, a rise in the average living standards would, in turn, result in stronger demands for environmental protection and more funding available for that purpose.
- Reduction of tariffs, quotas, and other protectionist measures would mean a more efficient allocation of resources.
- The free exchange of goods would facilitate the transfer of environmental technologies and other forms of environmental co-operation.
- Given that the previous Co-operation Agreements already granted Mediterranean countries virtually duty-free access to EU markets for industrial goods, there is little room for further reallocation of industrial production from the North to the South. In any case, the potential for environmental damage would be limited to extending the FTA to agricultural products, whose environmental impact is of a local nature, that is, more easily managed through appropriate environmental strategies.

Notwithstanding the broad Euro-Mediterranean Partnership agenda set in the subsequent Ministerial Conferences, the economic provisions of the Euro-Mediterranean Agreements (EMAs) already signed include only a few detailed commitments, most of them related to trade liberalisation. The key commitment concerns the establishment of a free trade area in industrial goods over a 12-year period. In the field of agricultural and fisheries trade the EMAs call for gradual and reciprocal liberalisation while offering very limited improvements in access to the EU markets. Talks to improve agricultural concessions are scheduled to start five years after the signing of the EMAs.

Box 1.3 - The environmental dimension in the EU-Morocco Association Agreement

Whereas the Barcelona Declaration underlined the importance "of reconciling economic development with environmental protection, of integrating environmental concerns into the relevant aspects of economic policy and of mitigating the negative environmental consequences which might result.", the Association Agreement between Morocco and the EU - although signed only a few days later - curiously lags behind on the environmental issue.

The environment question seems to be only partially broached in this agreement as a subsidiary, or even incidental, issue. The preamble to the agreement does not even allude to environmental protection or the safeguarding of natural resources. Nor do the declared aims of the agreement, in which any ecological dimension is completely ignored. Even in aim no. 5, which merely mentions promoting "economic, social, cultural and financial co-operation", the environmental field - which could have been introduced here quite naturally - hardly seems to have occurred to the drafters of the agreement.

This being so, the environment question is mentioned here and there in the agreement, often in fairly general terms and thus hardly involving any specific or significant commitment. And it is actually in the context of the chapter devoted to economic co-operation that the 4th of the 5 points specifying the scope of that co-operation is formulated as follows: "Preservation of the environment and ecological balances shall constitute a central component of the various fields of economic co-operation." A little further on, the only article devoted entirely to the question (Article 48) merely lists the objectives to be achieved by co-operation in the field and indicates several possible fields of co-operation: soil and water quality, the consequences of development, particularly industrial development (especially safety of installations and waste), and the monitoring and prevention of marine pollution. Other articles deal with various questions mentioning certain aspects relating more or less directly to the environment. Article 45, for example, which deals with regional co-operation, considers the environment to be one of the fields in which co-operation should be promoted. In the energy field, Article 57 considers that co-operation measures should focus on renewable energy and action to promote energy saving.

As regards quality standards, on the other hand, the European party seems particularly anxious to induce Morocco to adopt its norms and standards and bring Moroccan legislation up to the European level. Article 40 specifies that "The parties shall take appropriate steps to promote the use by Morocco of Community technical rules and European standards for industrial and agri-food products and certification procedures." With regard to standardisation and the evaluation of conformity, Article 51 stipulates that the Parties cooperate in developing the use of Community rules in standardisation, metrology, quality control and conformity assessment.

A comparative analysis of the EMAs and the intra-Arab Association Agreements has revealed that many of the concluded bilateral FTAs consist of a wide range of preferential arrangements that focus on the "traditional" trade agenda: elimination of tariffs and other import charges. This is not enough for achieving a strategy of deep integration that will enhance the potential gains for regional integration (Zarrouk and Zallio, 2000). However, recent steps have been taken to speed up the deep integration process beyond the purely commercial aspects (see Box 1.4).

Box 1.4 - Recent steps towards a broader agenda

The broad agenda proposed by the European Commission aims at activating many co-operation areas which the EMAs left without any detailed commitment. The fields of action suggested by the European Commission were endorsed in principle by partner countries and approved, with minor exceptions, by the Euro-Mediterranean Conference on Regional Co-operation held in Valencia on 28-29 January 1999. The Conference "*welcomed the proposal by the Commission for accompanying measures at the regional level to permit greater harmonisation and greater compatibility*" and identified the following areas for a strengthened co-operation: "*customs co-operation, free movement of goods, public procurement, harmonisation and certification of standards, intellectual property rights, taxation, data protection, competition rules, accounting and auditing.*"

The field of standards certification and harmonisation was added to the previous priorities of the Euro-Mediterranean Partnership, increasing the role of deep integration in the EMAs. The agenda was further approved by the Third Euro-Mediterranean Conference of Foreign Ministers held in Stuttgart on 15-16 April 1999, which endorsed the list adopted by the Regional Co-operation Conference. Moreover, with reference to another subject raised by the European Commission, the Conference mentioned the "*central role that cumulation of origin has to play in enhancing effective economic integration in the region. [Ministers] called for all necessary measures to be taken to ensure that a system with identical rules of origin opens the way to full cumulation throughout the Euro-Mediterranean area as soon as possible.*" Therefore, far-reaching integration is now high on the Euro-Med agenda; the fields of action agreed upon last year go far beyond the scope of the bilateral FTAs signed by the Mediterranean Arab Countries. However, if deep integration makes progress in the Euro-Med context, pressure will grow for a deepening of the inter-Arab FTAs.

In a recent communication, the European Commission (2000) insists in defining by 2002 a time-table for single-market type harmonisation measures of certain priority sectors such as rules of origin, customs matters, norms and standards, and Intellectual property protection. The implementation of this harmonisation programme, which would cover both convergence with the EU and intra-Mediterranean harmonisation,would take place as of 2004.

Source: Zarrouk and Zallio (2000) and European Commission (2000)

The EMAs mention a number of issues that go beyond trade liberalisation, such as the liberalisation of public procurement and the adoption by partner countries of EU technical rules, standards, and certification procedures but without detailed

commitments or target dates. The EMAs thus have the potential to achieve far-reaching regional integration, but their limited commitments may reduce the Euro-Med partnership to a single FTA. This remark also refers to environmental standards. The Association Agreements themselves (those signed so far) contain a generic article referring to co-operation on a series of environmental issues. It thus is not explicitly recognised that the trade liberalisation process might itself affect the environment and the use of natural resources (most notably water and land use). Failure to address environment issues through regulatory harmonisation will leave future trade open to conflicts.

This is due partly to the following factors:

- There is no unambiguous multilateral WTO doctrine integrating environmental concerns into trade policies.
- Each country can claim the right to implement its own standards. In the Mediterranean regions, harmonisation of environmental standards will require a great deal of effort due to the large number of countries involved and the greater disparity between existing regulatory systems.
- Regulations on European standards are usually complex. However, with the exclusion of Turkey, Cyprus and Malta, countries participating in the Customs Union and accession candidates, European standards are not binding for the remaining Mediterranean partners.

Five years after its launching in Barcelona, the Euro-Mediterranean Partnership displays remarkable resilience, having managed to survive during a politically difficult phase in the Middle East which seems to be coming to an end only now. However, the economic side of the Euro-Mediterranean Partnership is facing serious delays and difficulties. Delays in ratification and implementation have also been worrying. Apart from the interim association greement with the PLO and an interim agreement on trade and trade-related matters with Israel (pending the entry into force of its EMA), only the EMA with Tunisia was already in force as of March 1998, 33 months after the signing. The EMA with Morocco came into force in March 2000, 48 months after the signing, but with significant discrepancies, not yet resolved, over issues such as the re-negotiation of access to EU agricultural markets and the fisheries agreement. Delays in the conclusion and ratification of the agreements may extend the time horizon of the Euro-Mediterranean Free Trade Area, weakening the policy credibility effect of the agreements.

Taking avoidance of the abuse of environmental standards as a new source of protectionism as a general principle, the harmonisation of standards could yield significant gains for the partner countries due to the positive impetus it gives technological transfer from the North to the South. However, to achieve this positive result, there is a need for measures to strengthen regional co-operation in order to make those standards a real opportunity rather than a constraint for the region's development. While commitments on environmental standards are few

and far between within the Euro-Mediterranean Partnership framework, a little more progress has been made in regional co-operation in the field of environmental policy.

In the field of environmental policy, co-operation has responded to the need for softening the environmental impact of growth, and has included the building of basic infrastructures, the training of personnel in environmental fields, and the provision of financing for enforcing measures for reducing the environmental damage entailed in the intensification of production. A Short and Medium-Term Priority Environmental Action Plan (SMAP) was adopted by the Euro-Mediterranean Partners at the Helsinki Ministerial Conference for the Environment, on 28 November 1997. The SMAP provides a framework for environmental co-operation at the regional level, and it is intended to direct investments in the region to several priority areas: waste and water management, coastal zone management, desertification, and bio-diversity loss in specific hot spots. However, the regional funds allocated to the SMAP are clearly insufficient to address the existing environmental challenges on a significant scale. The SMAP should receive much more funds, partly because of the failure of Association Agreements to mainstream environmental issues as part of the package to be funded through MEDA funds (see box 1.5).

The World Bank has identified a number of actions at the regional level which, even in the absence of the FTA, will help alleviate the pressing environmental problems the region is currently facing (World Bank, 1995a). The costs of "no action" (i.e. environmental neglect) are estimated to be in the range of $12 to $14 billion (almost 3% of the GDP of MENA countries).

Promoting a pattern of development which fulfils the needs of the population and at the same time ensures that the environmental resource base is maintained for future generations is therefore a long-term goal. In order to achieve this goal a comprehensive approach integrating rural development and environmental protection must be adopted. This implies working with local communities (where appropriate, with the support of local NGOs), building capacities, launching model projects and influencing the policy frameworks operating in the region. Such an approach requires working from the local, through the regional and up to the national level.

Box 1.5 - MEDA and the environment

Based on the experience of the past five years, the EU is currently in the process of revising and reforming its procedures for the execution of its Mediterranean policy (see European Commission, 2000). The centrepiece of a reinvigorated Barcelona Process will be the MEDA II Regulation, which will involve a budget of 5,350 million euros for the 2000-2006 period, as confirmed in the recent Euro Mediterranean Conference held in Marseille (15-16 November 2000). Ponderous administrative procedures for implementing projects had led to a low disbursement rate under the MEDA I Programme, and the MEDA II Programme will continue the financial engagement of the Union in the Mediterranean region on a more efficient basis. The MEDA budget has devoted some attention to environmental projects, but to a limited extent. As far as the MEDA national indicative programmes are concerned, environment activities have been supported in Morocco and Jordan; in addition all partners except Syria have benefited from interest rate subsidies on EIB loans for environmental projects - a total of 235 million euros or 7% of total MEDA commitments in the 1995-1999 period. As a regional MEDA programme, the Short and Medium Term Priority Action Programme (SMAP) has launched a first series of projects (7 million euros) and a second round is to be launched in 2000 (20 million euros). The priority areas aim to address integrated water management, waste management, hot spots (polluted areas and threats to bio-diversity), integrated coastal zone management and measures to combat desertification. The European Commission (2000) believes that the link between the implementation of the Association Agreements and funding under MEDA should be made more explicit and future financial allocations should reflect the willingness of partners to pursue the economic transition objectives of the Agreements. Similarly, a sustainability impact assessment of the future Euro-Mediterranean free trade area will be carried out, on the basis of which the Commission will make recommendations for future action.

Source: European Commission (2000).

2 Structural adjustment policy and natural resources management

2.1 - Introduction

Although there is abundant literature on the analysis of micro-economic measures designed to protect the environment, is a fact that studies endeavouring to integrate the environmental dimension into macro-economic policies and to examine the connections between the two, on the other hand, are fairly rare (Miranda & Muzondo, 1991). Yet it is easy to see how economic policy measures can considerably affect the state and development of natural resources, just as measures for protecting those resources can have a more or less marked impact on major macro-economic variables (connection, employment, prices, budget, balance of payments, etc.). However, having said this, it is actually difficult to agree on general rules and clear and consensual conclusions, since it would seem that the connections in question are not yet well known and are thus uncertain and variable, depending on numerous conditions.

The impact of a macro-economic growth policy on the state of natural resources is difficult to identify precisely: a high growth rate is doubtless liable to accelerate the exhaustion of natural resources and in particular to exacerbate pollution phenomena (generated by the intensive utilisation of energy and the increase in waste materials); on the other hand, however, growth rate can make it easier to release the means which will finance action to protect the environment. A policy which disregards the growth imperative - in order to achieve other objectives - would thus actually deprive the country concerned of the fundamental means of safeguarding its natural environment. And the issue proves even more difficult to assess when one knows that the national accounting systems in operation are weak and cannot take account of the value of the natural heritage, the consumption of environmental resources and the cost of renewing them.

We shall broach three issues in this section. We shall first present the framework and content of the reform policies in developing countries; we shall then examine the impact of transversal economic policies, and in this specific case the structural adjustment policies which have prevailed since the beginning of the 1980s; and finally, we shall devote special attention to a sectoral policy, that is to say, specifically to agricultural policy, in order to examine how it is inter-related with the natural resources situation.

2.2 - Reform policies in the developing Mediterranean countries

Most developing countries, including those in the Southern and Eastern Mediterranean, have been pursuing reform policies since the 1980s which are based on structural adjustment policies and are implemented in coordination with certain international financial institutions, in particular the International Monetary Fund and the World Bank. In order to have a better understanding of how these policies are inter-related and of the natural resources issue, the reader should first be briefly reminded of the content.

It is known that although, traditionally, the reference model of the International Monetary Fund was monetarist and short-term in nature, whereas the World Bank tended to give precedence to the sectoral aspects of policies in the medium and long term, these two approaches have gradually converged. The IMF models have thus gradually integrated supply and the structure of relative prices, and the WB has been integrating macro-economic data into development projects to a greater extent (Hugon, 1989). With the result that the models have progressively integrated the role of global demand or of "absorption" and have become "eclectic monetaro-classical and keynesian models" (see also L'Hériteau, 1996 and Raffinot, 1991). Two approaches are thus used as concomitant and complementary factors: a macro-economic approach leading to traditional policies for regulating demand, and a micro-economic approach characterised by supply-side economics.

The assessment carried out prior to the implementation of a structural adjustment policy attributes the imbalances mainly to internal factors aggregated diagrammatically around the fact that demand exceeds supply. This excess demand is reflected in more rapid development of consumption than of production and a growing gap between savings and investment on the one hand and between expenditure and public resources on the other. It is the financing of the budget deficit by means of inflationary finance and/or of the external loans which it generates that is considered responsible for the balance of payments deficit.

The remedy that is advocated consists of a stabilisation policy aiming to curb domestic demand in order to resorb the deficits - both budgetary and external - and to reduce inflation on the one hand (this is the macro-economic and Keynesian aspect), and on the other hand a policy for boosting supply through a strategy for reorganising the production structures of the national economy (the micro-economic and neo-classical aspect). This strategy in turn develops in two directions: the first leads to the opening of the economy to the world market; the second leads to divestiture and thus to the promotion of the private sector and the strengthening of market logic, which in the final analysis determines the allocation of resources and the regulation of the mechanisms of the economy.

In concrete terms, adjustment policies, which are more or less "negotiated" within the framework of the conditionality rules of the Bretton Woods Institutions, begin in the short term by implementing a whole range of measures relating to budget

policy (reduction of public investments and expenditure in the social field, freezing of civil servants' salaries, dismissal of superfluous members of staff, raising of taxes and levies and public charges, etc.), monetary policy (credit restrictions, raising of interest rates, etc.), foreign trade and exchange rate policy (reduction of imports, devaluation of the national currency, exchange restrictions, etc.).

The "structural adjustment" policies proper are implemented in the medium term; they focus more on supply and are designed to restructure the economic fabric in order to promote the integration of the economy into the world market (dismantling of customs barriers to imports, liberalisation of exchange control, promotion of exports, reorganisation of the conditions for accommodating foreign investors), and to promote private rationality and the laws of the market (privatisation of the public sector, lifting of price controls, deregulation).

It is these adjustment policies which form the general framework of economic policy whose impact on natural resources management we shall now analyse. It must be pointed out from the outset, however, that adjustment programmes are above all economic and financial programmes, so that the principle of conditionality on which they are based still actually disregards environmental considerations (see box 2.1).

Box 2.1 - Environmental protection: a form of conditionality?

Whereas the principle of conditionality did not yet exist when the two Bretton Woods institutions were created and in fact was not officially integrated into the articles of the IMF until 1969, it has gradually evolved through the impetus of the successive waves of criticism levelled at the measures taken by the bodies in question. When developing countries have complained about IMF intervention being geared too closely to the economic cycle, the IMF has responded by creating structural adjustment programmes. When the same developing countries have started to complain of the harmful effects of structural adjustment on their environment and on the social conditions of their populations, the World Bank has responded with efforts to institutionalise new environmental and social conditionalities. Furthermore, when accused of supporting corrupt regimes with little respect for human rights, the IMF and World Bank eventually added the principle of political conditionality to the debate.

The discrepancy between words and acts has in fact become increasingly apparent. At all events, the principle of an ecological constraint was rapidly abandoned in favour of better efforts to take account of the effects on the environment and population displacement.

Source: Ch. Chavagneux, Les différents visages de la conditionnalité, Alternatives Economiques, hors-série no. 35, premier trimestre 1998.

2.3 - The impact of adjustment policies on natural resources

Any assessment of structural adjustment policies (SAPs) is a difficult exercise because the results obtained are often differential or mixed and therefore controversial. But what can be said is that the SAPs have undoubtedly been successful to a certain extent - in terms of balance of payments and growth in exports - in certain countries which have the necessary infrastructures, substantial human resources and appropriate institutions (particularly in Asia and Latin America). On the other hand, they have generally failed in most developing countries, which do not fulfil these conditions and are still facing specific structural problems (as in Africa and the Mediterranean). At all events, practically no reliable and sustainable solution has been found anywhere to the debt problem - which justified their implementation. This is demonstrated by the fact that almost 2 decades after the crisis of the early 1980s the foreign debt of developing countries is constantly beating records, amounting to almost 2465 billion dollars in 1998, whereas debt service alone continues to absorb almost one-fifth of their export revenue (L'Etat du Monde 2000, and the Human Development Report 1999). From the point of view of experience, it has transpired than the policies in question have not only failed to achieve some of their most important objectives but have actually produced negative, and even adverse, effects at several levels.

In order to analyse the impact of these policies we shall follow the chronological order of their implementation. As we explained above, the initial phase is the stabilisation phase, where efforts focus primarily on reducing domestic demand in order to restore macro-economic balances. We shall thus begin with the effect produced - or which can be produced - during this phase.

2.3.1 - Natural resources, victims of micro-economic stabilisation

The effects of the stabilisation programmes can be felt at roughly three levels - economic, social and environmental. Since it is the latter level on which we shall be focusing our attention, we shall begin by briefly examining the first two levels. The distinction is in fact purely formal, since, as we shall see, these three levels are very closely inter-related.

2.3.1.1 - The economic and social effects of the stabilisation programmes

In view of the state's traditional role as a driving force in the economy, the reduction of its budgetary possibilities has handicapped that economy since it has meant reducing a major support for its growth. The sudden drop in investments and the decrease in public expenditure as well as the credit restrictions and the raising of interest rates accentuated the recessive dynamic and mortgaged the

opportunities regaining growth[3]. Staff reductions and wage freezes accentuated the deterioration in the population' s purchasing power and thus contributed to the further restriction of the possibilities for recovery through the domestic market. The reduction of imports often had an unfortunate effect on production structures, which are generally highly dependant on foreign inputs (bottlenecks, equipment maintenance problems, etc.). There was a further drop in the utilisation rates of production capacities in industry, resulting in a loss of productivity, incomes and jobs. As a reflection of the drop in consumption and investments, the reduction of imports in turn acted as a further disincentive for any tentative entrepreneurial plans of native or foreign investors. And the devaluation of the national currencies rarely had the expected effects, resulting less in the encouragement of exports than in the increase in import prices and in the cost of consolidated stock (Jacquemot, 1989).

The sharp decrease in social expenditure (causing cutbacks in health and education expenditure and in the subsidisation of staple foodstuffs), stagnating incomes, the lifting of price controls and the increase in unemployment all combined to aggravate the degradation of the living conditions of the majority of the population and to exacerbate social and regional disparities. Whereas at the end of the 1980s, the World Bank talked about a "lost decade" and noted that very many developing countries had not only lost ground compared to the industrialised countries but had even seen their per capita income decrease in absolute value (World Bank, 1990), by the end of the 1990s it was the UNDP which stated that in over 80 developing countries, the per capita income was lower than it had been 10 or more years previously (UNDP, 1999).

2.3.1.2 - The ecological effects

When one acknowledges that in developing countries, and particularly in the Mediterranean region, the protection of natural resources is still perceived - wrongly, of course - as a matter falling within the field of responsibility of the state, and if one bears in mind that the initial measures taken in a structural adjustment programme - during the stabilisation phase - almost always concern the state budget, whose deficit must be reduced, it is then understandable that the first negative effects on the environment are of budgetary origin. It follows that the ecological cost of "budgetary cutbacks" will be very high.

For the reduction of public expenditure begins with expenditure which is considered less urgent or less essential. And decision-makers are unfortunately

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[3] During the 1980s, there was a sharp drop in gross fixed capital formation, particularly in Africa and Latin America, within mean annual rates have declined where 7.3% and 3.2% respectively. Cf. World Bank, 1990.

often inclined to consider that "green" expenditure belongs to that category. So they begin with cutbacks in expenditure on soil protection and rehabilitation, re-afforestation or anti-pollution installations. But even if one is convinced of the need for green expenditure, how are resources to be appropriated whenever vital needs in terms of food, health or education have barely been satisfied? In these circumstances, is not environmental protection regarded as "luxury expenditure"? As F. Cairncross (1992) states so astutely, when faced with the choice between the cleaner air and the reduction of poverty, many poor countries will rightly accept more pollution in exchange for a higher growth rate, and they will do so more easily than rich countries.

This direct impact is not the only effect; certain "indirect" effects can have even more serious consequences. This is the case, for example, with social expenditure, which, as we have already underlined, is one of the categories of expenditure where reductions are the most drastic. The disastrous effect of these cutbacks on the situation of the poor in developing countries is already known. And it must be added that it is now a fact acknowledged by all that poverty and environmental degradation are closely related. The Brundtland Report of the 1980s already stated that increased poverty – particularly in rural zones – is the major cause of environmental degradation in developing countries and explained that the urgent needs of the poor were preventing them from caring about the long-term cost of their actions. The World Bank for its part has been aware of the harmful impact of adjustment programmes on the environment since 1998, and particularly their impact in the initial phase. These "traditional stabilising programmes" are considered to be the result of short-sighted policy, whereas development and efforts to combat poverty and protect the environment "are objectives which are mutually supportive in the long-term" (Rich, 1989).

In the field of monetary policy credit restrictions or the raising of interest rates are having the effect of making it more difficult to invest and thus of allowing rates whose profitability can sustain high levels of return on capital. Since this is rarely the case with "green investments", it is easy to see that these investments are highly likely to be deferred or even cancelled in such circumstances.

The restrictions imposed on imports also inevitably begin with what seems to be relatively "secondary" in that context, where foreign exchange shortage leaves very little leeway. But the volume of priority imports which are incompressible (foodstuffs, energy, spare parts, etc.) is generally so great that other acquisitions are practically impossible, particularly when decision-makers are not convinced that they are urgently needed. As we have already stated, the main effect of the devaluation of national currency is to increase the cost of access to imported goods and services; the resulting scenario is similar to that resulting from an increase in interest rates. It is also a fact that even if devaluation succeeds in appreciably improving export competitiveness, in doing so it can lead to a certain degree of overtapping of exportable natural resources.

However, all of these remarks must be qualified and brought into perspective. For there is in fact always an alternative for overcoming such obstacles provided that from the outset there is a firm will to invest in the "things green": self-financing can be sought instead of resorting systematically to borrowing; the difficulty in obtaining supplies from abroad can prompt efforts to seek local solutions or even to "return" to age-old local know-how which has been abandoned but from which many lessons can often be drawn, particularly in the field of the management of abundant natural resources; devaluation also increases the domestic price of imported oil products, which can lead to a drop in consumption and thus to the reduction of atmospheric pollution.

2.3.2 - The restructuring of economies and the evolution of natural resources

The stabilisation phase is followed by restructuring measures. Numerous economic reforms have been carried out within the framework of structural adjustment policies with a view to restructuring the economies of developing countries. Since we cannot discuss all of the aspects involved, we shall confine ourselves here to examining those whose impact on the state and evolution of natural resources seems to be the most convincing or even the most incisive. We shall review the policies concerning taxation, prices and subsidies, the opening of the economy and liberalisation of trade, and continuing indebtedness, in that order.

2.3.2.1 - Taxation, prices and subsidies

The tax reforms recommended to developing countries are based on the idea that simplification and rationalisation of the taxation system, restructuring and measures to broaden the tax base accompanied by the reduction of tax pressure should stimulate growth and generate an increase in revenue which will reconcile economic and financial objectives. In practice, the model advocated is based primarily on several taxes on domestic consumption which are extremely productive (VAT and specific levies) and comprehensive and slightly progressive income taxes. The external taxation system, on the other hand, is liable to decrease progressively until it is finally abolished (Akesbi, 1993).

Virtual absence of ecological considerations

Where the fiscal reforms that have been carried out may have been inspired by financial, economic or even social considerations, it has to be stated that they virtually ignore any environmental concerns. "Green taxation" evidently does not yet appear to arouse enough interest to enable it also to become a tool for action and regulation. It must be said that the international financial institutions which instigate these policies remain reluctant, considering that the application of environment levies in development countries would be a "laborious" task for

various reasons, particularly from the administrative and political point of view (Kelly & Ghandi, 1993).

Of course the existing mechanisms or those which are currently being established can produce effects. For example, a "traditional" tax - whether on value added or not – or a customs duty can, by influencing the cost or profitability of ecologically desirable activities, act as an incentive or, on the contrary, a disincentive for wise natural resources management. But this is part of the broader, more general, issue of tax incidence; it does not come from the specific attention devoted to natural resources. At all events, when one observes the present taxation systems - even after reform - in most developing countries, and particularly in the Southern and Eastern Mediterranean, it is difficult to pinpoint significant measures designed to promote environmental protection. What can be detected at the very most is the occasional reduction of an import duty on a specific piece of energy-saving equipment or supplementary taxation of fuel oils prompted, as is well known, by purely financial considerations and hardly an ecological measure.

Yet taxation specific to the broader issue of natural resources can offer tools that are particularly suitable for inducing the agents concerned to include ecological concerns in their economic calculations while at the same time procuring funds for the state for the financing of environmental measures. It can be developed as such (ecotaxes, for example), just as the same purpose can be achieved by fixing prices/tariffs which take account of the same considerations.

Resource pricing and "green taxation"

The principle of "internalising external ecological costs" and the "polluter-pays" principle were established in the Rio Declaration back in 1992. The basic idea is that when rare or non-renewable resources are not attributed their true value this gives the wrong signals to decision-makers, who then convey misleading information on how rare these resources are, and this does not act as an incentive to manage them properly and safeguard them. If this is to be avoided the price charged for these resources must be calculated so as to cover all of the costs incurred in their use, including the cost of the external effects related to their use and the cost of future use which will have to be forfeited (loss of value which a resource registers due to the fact that it is being tapped in relation to its value if it is not being tapped). This is what is known as the principle of the full costing of resources.

In practice, this full-costing principle has not been applied to any great extent, which has meant that considerable external ecological costs have developed. As regards the prices of certain agricultural commodities, for example, the states in industrialised countries generally intervene to maintain these prices above the current levels on the world market, whereas in developing countries intervention tends to keep prices below those levels. These two types of intervention can have the result that producers do not take account of the production capacity of the land

and indulge in overcropping. Likewise, whenever the state undervalues the price of water or of energy - which is thus supplied at a price lower than the marginal social cost of the resource - the demand for water or energy is higher than it would be if pricing were calculated on the marginal cost principle. The resources are thus badly allocated, and this accelerates their exhaustion and is thus detrimental to present and future generations.

It can be considered that from this point of view the structural adjustment programmes have made some progress, but this progress has been limited to certain specific resources such as energy and foodstuffs: by advocating the raising of prices, resource pricing tends to approach the internalisation of social costs.

The fiscal instrument per se often takes the form of a specific charge, which may be imposed either on the emissions of pollutants which degrade the environment (air, water, soil) or on environmentally dangerous products which are used for producing goods (fertilisers, pesticides, plastic bags, batteries)[4], or on services provided (utilisation of community recycling facilities, issuing of permits, etc.). Emission charges in particular are used by certain countries with some success: they constitute an incentive to reduce the degradation of natural resources rapidly, since the reduction of pollution entails a reduction in the charge paid by the polluters.

Subsidies are in fact simply the "negative" of taxation. They are frequently used to encourage certain types of behaviour or to stimulate the use of certain materials which did not prove to be environmentally harmful until some time had elapsed. This is the case with the subsidisation of certain agricultural production factors (pesticides, fertilisers, etc.), coal, hydrocarbons, gas and electricity. It thus now seems necessary to abolish these subsidies or at least to reduce them considerably. This should bring various economic and ecological advantages: more rational utilisation of natural resources, better conservation of the environment, reduction of atmospheric pollution and water pollution, improvement of people's health, etc.

Variable effects

However numerous and diverse they may be, all of these means of action produce effects whose impact is of course debatable. All in all, it is a fact that taxation/subsidisation measures designed to protect the environment are bound to influence essential macro-economic variables such as production, investments, foreign trade, prices, etc. The impact will of course differ according to the nature of these measures and to the specific economic and social conditions in which they are carried out. For example, substantial taxation of a pollutant form of production can

[4] This is the case, for example, with the tax on fertilisers which Finland has been levying since 1979, the surcharge applied to excise duties on hydrocarbons in the Netherlands, the tax on carbon dioxide emissions introduced for the first time in the world in Sweden in 1991, etc. Cf. UNCTAD, 1994.

cause its decline if it can be replaced by another form of production which thus becomes viable (5-star petrol as opposed to diesel oil, for example). On the other hand, the reduction of tax or even the subsidisation of equipment through which energy can be saved or renewable energies can be used, since they cost less to buy, can boost demand for such equipment or energy and thus promote their production.

In certain cases the effects can be less "direct" and more complex: supplementary taxation or the abolition of the subsidisation of a pollutant form of energy penalises industries which are intensive users, and this will induce them to adjust to the new situation, particularly by reducing the production concerned or adopting new technologies which are less dependant on the undesirable input (with all the consequences this can entail for employment, production systems, etc.). There will also be an impact on prices, which will probably have to be raised in consequence, and this is bound to provoke a chain reaction of effects on downstream undertakings, each of which will pass on the rise in price depending on its own circumstances and market conditions.

However, in view of the – alarming – evolution of the situation of natural resources in most Southern and Eastern Mediterranean countries, it has to be admitted that it is now urgently necessary to set about implementing active and considered tax and price policies in order to promote better management of natural resources and at the same time ensure a certain degree of equity between generations.

2.3.2.2 - Trade liberalisation and promotion of exports

Whereas, traditionally, developing countries were induced to specialise in the development and export of their natural resources, within the framework of the structural adjustment policies they are today still having to place even more emphasis than ever on opening their markets to the outside world and lay the wager of global market integration.

The fact is that the production of essential commodities for export is often an important source of ecological degradation in these countries. Wood is a typical example in this respect in the case of certain tropical countries, and one that speaks for itself. But it is unfortunately far from the only example. Around the Mediterranean itself, agricultural commodities which are produced for export are treated with pesticides, which are known to have negative effects on biodiversity, to tend to increase resistance to harmful organisms and to present direct health hazards. One can also mention the pollution problems that can be attributed to the export of minerals and the deforestation which is the corollary of efforts to seek arable land and pasturage. And in the field of fisheries one can deplore the catch volumes which are sometimes incompatible with the regeneration thresholds of fish resources...

This state of affairs is even worse in the context of the conditions determining the trading of goods at the global level. When exchange rates drop but commitments and foreign currency needs remain at the same level, the countries concerned often have no choice but to pursue the same policy in spite of all the evidence, i.e. to produce even more - and thus exacerbate the pressure on natural resources - simply in order to maintain the same level of income or to prevent it from collapsing completely.

During the 1970's, a trend towards a certain concerted international control of exchange rate development emerged - for certain commodities that are essential for developing countries - mainly through the "stabilisation funds" policy. However, that policy was unfortunately rapidly abandoned, since it was considered incompatible with the affirmation of market logic and the acceleration of globalisation established by the Marrakesh agreements and the creation of the WTO (see section 1.4).

The fact that the issues of exchange rate and market access instability (not to speak of the instability of " terms of trade") are still just as acute today indicates not only that the same causes are continuing to produce the same effects but also that developing countries, which nevertheless have no choice but to open their markets more and more, will have even greater difficulty in achieving equilibrium in their balance of payments. These growing foreign currency needs - exacerbated by debt repayment - would probably oblige a number of countries to sacrifice the imperative of conserving resources on the altar of the "export all" policy.

In the exacerbated competition conditions characterising many world markets for the products exported by the countries of the South, the question remains of whether environmental protection measures and investments would not dangerously affect the competitiveness of countries which agree to undertake them when others refrain from doing so. Though this hypothesis is debatable, since it can also be argued that this loss of competitiveness can be compensated: measures for protecting forestland, for example, can lead to a decrease in income from wood exports, but at the same time it can increase income from ecotourism...

As can be seen, the debate is far from over. But it can at least be said that, taken as a whole, the changes that have been brought about by measures for managing natural resources which influence local production will probably be bound to have indirect effects on the level and composition of external trade.

2.3.2.3 - Debt versus environment?

As we have underlined above, the debt of the Third World has not been reduced; and not only that: it has in fact continued to grow, breaking a new record every year. At the end of the 1990s, the problem is still unsolved for the vast majority of the countries concerned, which include a large proportion of the Eastern and

Southern Mediterranean countries (Watkins). All of the attempts to find solutions which have been made successively since the mid 1980s (Baker Plan, Brady Plan, Swap scheme, partial moratorium for the "the less developed countries", etc.) have been fairly inconclusive. The only tangible reality is still that of the excessiveness of the debt burdens and the interminable labyrinth of reschedulings which follow and precede other reschedulings.

Since the debt question is still so topical, its relation with the environment must be carefully examined. As S. George (1998) explains, "debt and environment can be associated at two levels: first of all, one borrows in order to finance disastrous projects for ecological balance and then in order to pay off the debt one gaily draws on natural resources". The primary projects concerned are the numerous projects which are financed through external debt and which have proved to be "ecological catastrophes in themselves" - to the extent that the author who has just been quoted barely hesitates to talk about "financing the ecocide". The examples are legion, from the Tuccurui Dam in the Brazilian Amazon (sedimentation and reduced fertility downstream, flooding of arable land and forest, destruction of the fauna and increase in soil salinity...) to the “Transmigrasi” programme in Indonesia (displacement of populations from certain islands to others where the forests have been devastated, the soil has been damaged, and animal and plant species have been exterminated...) And the gigantic deforestation projects in Africa...

As one of the principal sponsors of such projects, the World Bank has been widely blamed (Kleiner, 1996 and 1998, see also box 2.2). In 1992, at the Earth Summit in Rio de Janeiro, numerous non-governmental organisations demonstrated how a large proportion of the $22 billion of loans granted annually by "the Bank" were being used to finance activities which were destroying the environment. The results of the study conducted by the Environmental Defence Fund, an American NGO specialising in the analysis of environment policies, are even more revealing: in the case of one-third of the 158 World Bank agricultural projects examined for the period from 1990 to 1995, no environmental impact assessment whatever had been carried out. An exhaustive study of the impact on the natural environment including the consultation of the local communities and the examination of alternative solutions was only considered necessary for 5 of these 158 projects. And finally, a quarter of the agricultural loans granted by the World Bank concerned sectoral programmes for which no prior ecological analysis is required (Kleiner, 1996; World Bank, 1995b). In these circumstances the severe judgement expressed by Horowitz (1989) is understandable; that author considers that most of the development activities financed by the multilateral banks have ultimately deteriorated the environment and impoverished rural populations.

Where the debt can be "ecocidal" when it is contracted, it can also be "ecocidal" when it comes to repayment. For debt servicing obviously means so many resources less for financing development projects or protecting the environment. And what is more, this constraint of debt repayment is inducing more and more countries thus cornered to take measures which are clearly prejudicial to the

environment but are intended to bring in foreign currency or to release resources which will attenuate the extent of the difficulties. This is the case, for example, when some countries have to extend environmentally aggressive export crops excessively in order to release the foreign currency they need for honouring their commitments to their creditors.

Box 2.2 - The World Bank and pesticides

With regard to the question of pesticides, it is known that the promotion of integrated pest management (IPM) programmes has theoretically been one of the objectives of the World Bank since 1985. An internal report drawn up in 1996 on 150 projects reveals that only 22 of them contained real plans for implementing an approach of that nature. It also indicates that in 160 recent studies - conducted by "the Bank" - on the agricultural sector the pesticide problem is never broached. Yet if the World Bank wanted to, through the processes of contract awarding it would have the means of requiring that contracts on pesticides include information on the environmental impact and the effects on public health...

Source: Integrated Pest Management: strategy and policy options for promoting effective implementation, Department for Sustainable Development, World Bank, March 1996.

2.4 - Sectoral policies and natural resources management: the case of agriculture

Following the example of many developing countries, the Eastern and Southern Mediterranean countries adopted a production-oriented model supported by a project for modernising their agriculture, urged by the need to feed rapidly growing populations and to develop production for export. Although the results of this model have fallen short of expectations, the agricultural policy which it has involved has developed tools which have proved debatable from the point of view of good natural resources management. We shall first examine these tools and then focus on one of the most worrying problems for Eastern and Southern Mediterranean countries - that of desertification[5].

In the logic of the production-oriented model, improving yields and increasing production necessarily involved intensifying the latter and, more generally, modernising farming systems. In concrete terms, this meant irrigating the land, mechanising work, and using chemical fertilisers, selected seeds, pesticides, and so

[5] See Box 3 for the question of emissions of greenhouse gases and their connections with agricultural production.

on. However, as the experience of industrialised countries has already shown, intensification of this nature generally has harmful effects on the environment.

2.4.1 - The water problem

Water shortage is perhaps the most critical environmental problem of the Mediterranean area. It is in fact a global problem. The world is rapidly moving toward freshwater shortages . Global water use has increased fivefold this century, and today's per capita availability is predicted to decline by one-third over the next generation. Water shortages are rapidly emerging even in water-rich countries from the United States to China.

The water sector is a key area for the protection of the environment and sustainable development in the Mediterranean. Recent droughts in Southern Europe and North Africa have emphasised the precarious balance between water supply and demand. Water is a scarce and fragile resource, widely exploited and unequally distributed throughout the region. Rainfall is low, erratic, and poorly distributed. Droughts and deserts are common in several countries of the region. Water demand in the region is growing fast and the balance with supply needs to be taken seriously. Salinisation, overexploitation (often due to irrigation) and losses are different consequences of the irrational use and management of this natural resource. Water pollution can have negative effects on health, economic development and the overall protection of the environment in the region. It can lead to soil degradation as well as to loss of valuable wetlands and bio-diversity. The loss of agricultural habitats associated with the drier, traditionally less intensive farming systems of Southern Europe and North Africa is also a matter of concern.

Agriculture is a major consumer of water compared with other sectors. Between 1981-85 and 1997, the area of irrigated land expanded significantly in the Mediterranean countries (by about 37 %), particularly in the Southern Mediterranean (57%, see Table 2.1). Irrigation is used mainly on annual and permanent crops to boost or stabilise yields as well as to ensure high-quality produce. The expansion of the irrigated area has increased the demand and use of non-farm resources, thus placing other burdens on the environment besides water stress.

Precedence has often been given in irrigation systems to the "large-scale water project" model involving vast conventional irrigation networks incorporated into areas where demarcation can comply with numerous considerations and nevertheless take little account of ecological imperatives. It is easy to imagine, as Sh. Barghouti and G. Le Moigne (1991) pointed out, that "badly designed, badly constructed and badly managed irrigation facilities have serious negative effects on the environment". Many years of experience in the field have shown that in addition to the fact that dams and irrigation networks can begin by causing population displacement in the zones that are submerged – they also result in the

water-logging and salinification of the soil, cause groundwater imbalance and damage downstream fishing, flora and fauna as well as water supply networks. The data collected in the major irrigated regions of India, Egypt or Mexico, for example, indicate that the irrigated land is losing its productivity due to the progressive deterioration of the soil caused by water-logging and salinification[6]. Irrigation using groundwater also poses problems. In many semi-arid regions, the creation of irrigated areas requires the drilling of cased wells, which draw the water from the deeper levels of ground water. Their output is often excessive and lowers the groundwater level, thus involving the threat that village wells that are less deep will dry up.

Furthermore, irrigation can have other detrimental effects when inhabited regions are supplied with standing water from canals and drainage zones: this gives rise to public health problems such as schistosomiasis, malaria, yellow fever and other diseases. People who live and work near irrigation canals run the risk of contracting these diseases which are associated with irrigation works.

Irrigation efficiency is a crucial area in future water-use. Irrigation efficiency is extremely low in most Southern and Eastern Mediterranean countries. Throughout the region, only about one-third of water applied in irrigation actually reaches the crops. The technical efficiency of irrigation can be improved. Drip irrigation, plastic housing and the covering of canals to reduce evaporation and leakage can cut water use by 50% per ha and more than double crop yields, which shows that less can actually produce more. Irrigation water is usually priced at a fraction of its cost - little more than 2 cents/m^3 in the Jordan Valley - providing little or no incentive for efficient use.

Even small transfers of water out of agriculture can make a big difference. A 15% reduction in agricultural use in the region would double the water available for domestic use and industry. In Morocco, a 10% transfer from irrigation would provide enough water for all additional domestic use for more than a decade. Shifting water from agriculture is socially and politically sensitive, especially for rural communities, which see the risks but not the potential benefits. In some instances, informal markets have developed -- around Amman, Jordan, farmers truck water to the city but these transactions are uncoordinated and inefficient (World Bank, 1997a). Introducing farmers to this "win-win" situation will require participatory approaches involving local leaders in pilot schemes.

Rural areas in Europe generally have access to water resources, which they use for a variety of purposes including domestic, agricultural and industrial use. Southern European countries, however, have areas of water stress due to low rainfall but also to overdraft. Water quality reports for some rural areas reveal deficient water

[6] It is estimated that the salinification of hitherto fertile land affects between 1 and 1.5 million hectares each year... cf. Barghouti et Le Moigne 1991.

quality due mainly to a combination of contamination of groundwater by agricultural and domestic waste including pesticides (EPA, 1999).

More efficient ways of irrigating land such as drip irrigation have reduced measured volumes, but this improvement has often been offset by an increase in the total irrigated area.

Table 2.1 - Irrigated land

	1981-85	1997	Change
	1000 ha		%
World	218169	267727	22.7
Mediterranean countries	20352	27881	37.0
Northern Med	11802	14574	23.5
Southern Med	8551	13307	55.6
Spain	3149	3603	14.4
France	990	1670	68.7
Greece	1016	1385	36.3
Italy	2420	2698	11.5
Portugal	630	632	0.3
Albania	388	340	-12.4
Cyprus	30	40	33.3
Turkey	3020	4200	39.1
Algeria	295	560	89.8
Morocco	1234	1251	1.4
Tunisia	282	380	34.8
Egypt	2481	3300	33.0
Israel	221	199	-10.0
Jordan	43	75	74.4
Lebanon	86	117	36.0
Syrian A R	594	1168	96.6

Source: MED AGRI 2000.

Water scarcity constitutes the most alarming challenge to agriculture in almost all countries of the Mediterranean Region. All of the Southern and Eastern Mediterranean countries, except for Turkey, have annual per capita freshwater resources below 1,500 m^3. The present overuse and degradation of water resources and growing competition from non-agricultural water users are expected to influence the cost and availability of water for food production. Inevitable population growth and associated water usage have reduced the region's limited percapita supply.

The picture for 2025 shows that much less water will be available in the Southern and Eastern part of the Mediterranean than in the Northern part (Hamdy and Lacirignola, 1999). In the Southern and eastern mediterranean countries percapita water availability is expected to decrease by half over the next 30 years, exposing all but one or two countries to severe problems of water scarcity. Unless there are fundamental changes in the way water resources are managed and used, most Southern and Eastern Mediterranean countries will experience a worsening crisis of water scarcity and economic decline. Severe water shortages adversely affect economic growth, and slower growth in turn constrains the investments allocated to improving water availability. This draws a pessimistic picture despite substantial scope for greater efficiency in water use in the region.

Groundwater resources throughout the driest Mediterranean regions are overexploited. Jordan withdraws 25 to 30% more from aquifers than is being returned, and in Gaza aquifers are being exploited even faster. Such over-exploitation risks further damage to underground water reserves through the intrusion of seawater or the leaking of pollutants. Though not yet as dramatic, shortages due to over-extraction of groundwater are imminent in some areas of Spain and the Maghreb countries.

Shortages are compounded by pollution. Contamination by fertilisers and pesticides, the dumping of municipal and industrial wastewater into rivers and lakes, solid waste deposits along river banks, and uncontrolled leakage from contaminated landfills - all of these factors are degrading freshwater resources and imposing health risks, especially for children, who are the primary victims of waterborne diseases. In the European Union, despite greater awareness of the harm pesticides cause to the environment and human health, dependence on pesticides has not diminished.

Non-agricultural pollution also degrades water quality. Morocco's most important river, the Sebou, has become a waste deposit for the cities along its banks. Tunisia's largest reservoir, the Sidi Salem, and Algeria's Mitidja and Saida aquifers are threatened by pollution from cities, industrial effluents and agricultural residues. The Nile waters in Egypt are contaminated by uncontrolled industrial and agricultural runoffs.

Loss of water quality also involves risks for rural populations, i.e. only 15% of the rural population in Morocco has access to potable water, and contaminated water is the major cause of disease in rural areas.

Recent co-operation initiatives have been taken among Mediterranean countries, although by mid 2000 there was no real regional co-operation programme on local water management, despite the Stuttgart Conference agreement to consider this sector as a priority for regional co-operation. The meeting of the Mediterranean Water Forum held in Brussels (7 June 2000) agreed on the guidelines for this programme based on the Action Plan agreed at the Euro-Mediterranean Ministerial

Conference on Local Water Management held in Turin on 17-18 October 1999 (Box 2.3).

Box 2.3 – Local Water Management: six objectives

The second Euro-Mediterranean Ministerial Conference on Local Water Management took place in Turin (Octobet 1999) with a view to taking decision on new proposals in the priority sectors of the Partnership. The six themes identified in Turin were:

- Integrated management of local drinking water supply, sanitation and sewage services;
- Local water resources and water demand management (quantity and quality) within catchment areas and on islands;
- Water scarcity management and combating drought;
- Use of non-conventional water resources;
- Preparation of national and local scenarios for the period until 2005 which enable precise objectives to be set and action to be taken for sustainable water management.

Source: European Commission, DG External Relations (Unit F.1), Brussels, May 2000.

Agricultural intensification and the environment

In addition to the question of water control, improving agricultural performance in the production-oriented model has also necessarily involved mechanising work, using chemical fertilisers, selected seeds, pesticides, and so on.

The encouragement of mechanisation - in particular by subsidising farming equipment - sometimes promoted the practice of clearing and cultivation in marginal zones, and this has accelerated the desertification process in those zones. The case of the steppes in the Maghreb is one which speaks for itself in this respect (see 2.4.2 below). With the structural adjustment policies, the authorities tended to abolish this type of subsidy indiscriminately. But this abolition sometimes also proved to be a disadvantage for the equipment for protecting the natural environment! In Algeria, for example (Bedrani & Elloumi, 1994), this elimination of subsidies penalised the efforts for combating desertification, in which equipment was used for facilities for combating erosion (construction of embankments and djessours, development of flooding zones, etc.).

With regard to artificial fertilisers, it has been established that excessive use of these chemicals causes the loss of organic material in the soil. The eutrophication

of streams, rivers and waterways with phosphates has already caused a great deal of damage in many countries. What is more, these substances are harmful for fish and thus deprive the population of precious proteins and promote the proliferation of anopheles (Bouguerra, 1996).

The use of chemical pesticides is also steadily progressing, particularly whenever it is subsidised and concerns cash crops for export[7]. Although the use of these chemicals is dictated by economic imperatives, it raises environmental, social and even ethical questions. It actually stems from the will to blindly eradicate all organisms that are considered harmful to the crop in question, and this can wipe out many other species which are necessary to the balance of the ecosystems (Philogène, 1996). And in fact the effective use of the same pesticide can be called in question with regard to its main objective, since the insects that are targeted can rapidly develop high resistance to the pesticides that are intended to combat them.

Furthermore, many pesticides are suspected of damaging the immune system or disturbing the hormone balance. Developing countries only use 20% of the pesticides produced in the world, yet they suffer the majority of the cases of poisoning and deaths caused by these compounds. Some insecticides which are toxic and outmoded and have thus been prohibited in the producer countries are still imported by developing countries under the pressure of several multinationals which dominate this sector and can afford huge publicity budgets to promote their products. Countries such as China, Indonesia or India are even still producing organochlorine pesticides whose harmful effects for the entire biosphere in the long term have been established.

So although intensification in the form in which it is being carried out is often a source of pollution of natural resources, the fact remains that its impact and importance with regard to the "real problems" of the countries of the South is still an open question. Some even consider that this is a non-debate sustained by hard-line "ecologists". It can of course be acknowledged that there are abuses in the use of imports such as fertilisers and pesticides: "This abuse is particularly absurd in Europe, where the problem is more one of overproduction. In Africa, on the other hand, the use of chemicals in agriculture is not the main environmental problem." Other mechanisms which are much more "treacherous and adverse" than the use of fertilisers are at work, such as the general extension of crop-grown areas and the relative extension of crops with a high erosion potential: in the first case, the absolute extension of crop-grown areas is being carried out to the detriment of other uses of the soil, and often to that of forestland; in the second case, crops which hold the soil well are being replaced by crops which "allow" erosion (J.R. Mercier, 1991).

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[7] Throughout the third world almost 70% of pesticides are used on export crops of such as coffee, sugar cane, tea, bananas, etc. so that the argument that pesticides are essential for fighting famine and achieving food security does not stand up to analysis. Cf. Thiam, 1992.

2.4.2 - Agricultural policy and desertification

The United Nations Convention to Combat Desertification defines the latter as "the degradation of the land in arid, semi-arid and sub-humid dry zones as the result of various factors including variations in climate and human activities"[8]. Desertification, the rapid disappearance of arable land and deforestation are jeopardising many regions throughout the world: according to the Worldwatch Institute in Washington, 50% of the agricultural land throughout the planet have been moderately degraded and 16% are highly degraded; 3.5 billion hectares are gradually turning into desert (Van Den Hove, 1998).

After many years of experience it has transpired that human action is at the core of the process: desertification, deforestation and poverty - particularly in rural zones – constitute a triptyque which must be analysed interactively (Lo & Diagne, 1996; Chanteau, Soussana & Tubiana, 1993). There are two series of factors which cause desertification: physico-ecological factors and socio-economic factors. The former, which are mainly related to soil and climate - droughts or floods - can often produce the same result, i.e. erosion and soil degradation as well as loss of fertility. And then socio-economic factors such as the agricultural policies (choices of crop and crop-growing systems) and the trade policies pursued during the colonial period and maintained by the states after independence have led to overcropping and soil depletion. This is the case with the precedence given hitherto to cash crops to the detriment of food crops. But given the deterioration in terms of trade, the population explosion and the decrease in agricultural yields, the only strategy remaining for the populations concerned is to clear land for crops, extend the arable areas, and resort to overgrazing... And as for energy, wood remains the only source that this still accessible to most rural and suburban households, who are on the verge of destitution.

There can be further factors, such as ownership, which are not recognised in inappropriate land laws (why plant or protect trees which one does not really own?), absence of measures to delegate responsibility to the populations in the management of natural resources (how is one to comply with forestry regulations when a charcoal merchant from the capital can arrive at any time with a permit issued by the forestry services and use the forest resources?), very inegalitarian distribution of natural resources and illegal appropriation of those resources (how can there be long-term investments when three-quarters of small farmers own less than one-tenth of the land?).

But amongst all of these factors which foster the desertification process it is the poverty factor which seems to be the major one and structural in nature (see

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[8] This convention, which was recommended by the Earth Summit in Rio in 1992, entered into effect on 26 December 1996, and was ratified - in early 1998 - by 113 countries including 43 African countries. Cf. Bessis, 1998.

section 1.3). Desertification, one of the consequences of deforestation and forest clearing, is sustained by poverty, which it in turn fosters and accentuates. In rural zones, poverty is reducing peasants to forms of subsistence where the production system is based almost exclusively on natural resources and on practices which destroy the environment. The food, fodder, fuel and building materials used by the poor come from the biomass available in their immediate environment (dung, firewood, harvest residue, etc. – A. Agarwal, 1992). Peasants are seeking to use increasingly barren land to maximum (rather than best) advantage, and this is leading to degradation in the form of (wind or water) erosion and salinification and acidification of the soil. This vicious circle of poverty and pressure on resources is dramatically affecting vulnerable groups, and women and children in particular.

According to S. Bedrani and to M. Elloumi (1994), there are three causes of desertification in the Maghreb: excessive human pressure, excessive orientation of a certain type of capital to extensive farming, and inadequate and inefficient state investment in efforts to combat desertification. Demographic pressure takes the form of strong pressure on the land, whether it is used for crops or for pasture. Since the populations have to produce their means of subsistence, cost what it may, they have very little other opportunity to do so than by raising stock on pastureland and growing crops (the only areas of activity which are still relatively accessible to them). But this animal husbandry is proving to be too extensive for the fodder resources that are naturally available. It is destroying the protective plant cover while making the ground surface pulverulent since the animals stamp on it.

Furthermore, efforts to seek supplementary food have not led to the intensification of fodder crops but rather have led to the frenzied clearing of steppe rangelands. Within 2 or 3 decades, the ploughing of fragile land which is sandy and very exposed to wind and water erosion and a crop-growing system which is tending more and more to exclude the practice of fallowing due to the lack of arable land have been transforming relatively prosperous rangelands into stony fields and former grasslands - or mountain scrub - into vast aprons where the bed rock is showing on the surface. The ploughing technique generally used by peasant farmers is particularly erosive (consisting of covering seeds strewn on unprepared soil by going over them with a skim plough). The second category of causes concerns the pronounced tendency of certain holders of capital to develop extensive farming on the steppes - a tendency which is to be explained by the profitability that is guaranteed, since the fodder is free -, tax exemptions in the sector, and ignorance or lack of opportunities for alternative investments. And finally, the inadequacy and inefficiency of the public resources allocated to the zones concerned and the efforts to combat desertification are also in question (meagre shares of investment budgets, bad choices, non-participation of the populations concerned, etc.).

2.5 - Economy first, ecology afterwards?

Throughout this section we have endeavoured to highlight the impact of public policies on the state and evolution of natural resources, particularly in the developing countries of the Eastern and Southern Mediterranean. Several broad conclusions must now be drawn.

The first is that, although the environment situation has no doubt deteriorated throughout the world despite the commitments undertaken in Rio de Janeiro in 1992 - but not honoured -, the capacity for analysing and controlling situations has improved on the other hand. In many fields scientific knowledge is progressing rapidly and, as it accumulates, it is providing means of better formulating appropriate solutions to the various ills which are threatening our ecosystems. At the same time, each party has been convinced by both facts and experience that the phenomena are global and that they are inter-related. In particular, one of the most decisive advancements has been the realisation by the various (public and private, local, national and international) actors involved that environment, poverty, population and development problems are inter-related to a very great extent.

The second conclusion concerns more specifically the knowledge of aspects of economic policy. It is now agreed by all, including the experts from the international organisations concerned, that ecological problems are the result of market shortcomings – external factors - or policies implemented by governments. The market weaknesses are due to the inability of the market to fix the price of limited natural resources according to their real value for the individual and for society; and the policies concern political measures which are taken by governments with a view to promoting development or providing economic and social regulations and which have certain implications that are proving harmful from the point of view of safeguarding natural resources (producer subsidies on pesticides or fertilisers, for example). Having said this, the solutions seem to lie both in calling in question measures which are so detrimental to the environment and in implementing new policies through which distortions can be eliminated and social and environmental costs can be internalised (Kelly & Ghandi, 1993; Faucheau & Noël, 1995. See also Boxes 2.5, 2.6 and 2.7).

As for the structural adjustment policies, which to some extent constitute the "new standard" of the macro-economic policies recommended to the countries of the South, it must be stated that they are still highly controversial. Those who criticise them consider at all events that the remedies they advocate take no account whatever of the environment and that they are consequently to a large extent responsible for the degradation of the ecosystems and natural resources of the planet which have been taking place since the 1980s. We have presented adequate explanations and concrete examples in the above sections to substantiate this theory. It must be added that things cannot be generalised or systematized. In certain cases, stabilisation measures can have positive "repercussions" (rises in prices which prompt more sparing use of resources). In other cases, the "net" effect

will be difficult to determine (a reduction in investments which aggravates unemployment and attenuates the overtapping of natural resources which are being exhausted, the abolition of a subsidy which discourages the utilisation of ecologically harmful inputs but in so doing affects yields or even leads to farming practices which are just as detrimental to the environment...).

At all events, what is certain is that the environmental impact of a measure of economic policy is unfortunately virtually never taken into account for the approval or rejection of that policy. At most, the constraints of good natural resources management are only taken into account at the stage of the consequences rather than that of determining an economic policy. Moreover, K. Miranda and R. Muzondo (1991) of the World Bank are absolutely clear on this point when they say that an instrument of economic policy must not be abandoned because the project is liable to have negative effects on the environment. The authorities prefer to consider that the negative effect can be better dealt with through appropriate intervention at the micro-economic level: for example, in order to offset the effect of devaluation on the overtapping of non-renewable resources the taxes imposed on the mining activities concerned can be increased. In the last analysis, it would be more a question of seeking to “dose” measures and instruments more or less judiciously depending on the objectives pursued in order to find an acceptable compromise.

In short, processes are nevertheless marked by the classical order of things: the economy first, ecology afterwards... The question is now whether this "order" is still tenable at the current rate of degradation of natural resources.

Box 2.4 - Greenhouse gases and agricultural production

Above a certain limit, the concentration of carbon dioxide in the atmosphere could dangerously change the global climate and thus agricultural production. Yet, although there is growing awareness, greenhouse gas emissions are continuing to increase - carbon dioxide emissions from fossil sources of energy increased from 5.926 billion tonnes in 1992 to 6.250 billion tonnes in 1996 (S. Van Den Hove, 1998). Quite apart from the peril which the rise in sea level would mean for many populations, climate warming could well drastically change agricultural production systems. According to the 1990 Human Development Report, if sea level rises by 1 meter, countries such as Bangladesh and Egypt would lose 17% and 12% of their area respectively. In Europe, the limit for growing maize or even soy beans would move several hundred kilometres towards the north and east, and vineyards could be established in a large proportion of the British Isles. In the south of Europe, the increase in temperatures would reduce yields and the length of crop cycles. In many regions, mild winters would bring a proliferation of fungal diseases and even invasion by sub-tropical weeds. Furthermore, climate variability could increase, bringing an appreciable increase in the risks of agricultural disasters (temperatures below 40° C, prolonged droughts, fires, but also tropical storms and cyclones). However, the most important effects of the warming would probably concern the hydrological cycle: despite the high level of CO2 concentration in the atmosphere, the water needs of crops and thus recourse to irrigation would increase considerably, and this would limit the groundwater recharge accordingly.

"Will policy-makers take decisions rapidly on measures which can significantly reduce greenhouse gas emissions? The problem is that there is no consensus either on the respective responsibilities of the countries in the North and South or on the best means of achieving the limitation of emissions." (S. Bessis, 1998). Quite apart from these differences, the question is how a reduction of this nature can be achieved without encouraging the nuclear industry. Is the taxation of polluting energy - currently a subject of heated debate in Europe - the best solution? At all events, it is not on the agenda across the Atlantic, where the American administration is subject to tremendous pressure from energy and automobile industrialists, who are resolutely opposed to any measure to limit pollutant emissions. These pressure groups have spent 13 million dollars on financing a publicity campaign intended to persuade Americans that their lifestyle is being questioned, whereas the main parties responsible for the greenhouse effect are in the developing world. Yet when addressing the United Nations last June, President Clinton acknowledged the overwhelming responsibility of the United States which, with 4% of the world population, is responsible for almost 25% of emissions: one American discharges 19 tonnes of carbon dioxide into the atmosphere every year as against 2.27 tonnes per Chinese and 0.88 tonnes per Indian. The OECD countries are probably responsible for 75% of emissions. Yet any concept of “ecological debt” is still being challenged...

Sources: JF. Soussana, Danger de réchauffement, *Vivre Autrement*, no. 13, 15 Nov. 1996 ; S. Bessis, Environnement : une stagnation, et S. Van Den Hove, L’état de la planète apr,ès Rio: cinq années pour rien ?, *Alternatives Economiques*, Hors-série no. 35, premier trimestre 1998 ; UNDP, Human Devlopment Report 1998.

Box 2.5 - The agri-environment in the European Union

The agri-environment regulation of the European Union (Articles 21 to 24 of Regulation 2078/92), the nerve of the environment component of Common Agricultural Policy reform, has been successful to a certain extent. Within several months of its promulgation, the EEC approved 13 programmes proposed by Germany, the United Kingdom, France, the Netherlands and Spain. In doing so, it agreed to co-finance them at a rate of up to 50 to 75%, depending on the individual programme. Programmes of this nature aim to integrate environmental protection into agriculture more efficiently by promoting certain practices such as extensive farming, the reduction of chemical inputs, or long-term set-aside. The objectives include constants such as maintaining landscapes, safeguarding biotopes or protecting fragile zones. The application of agri-environment contracts concerning 1 farmer in every 7 and delivering environmental services of 20% of European farmland marks a very significant step towards sustainability. The evidence presented from programmes is on the whole positive and shows that substantiaal environmental benefits accrue from agri-environment programmes: reductions in the use of N-fertiliser, better application techniques, positive activities for nature protection, and conservation of landscape features. An increase in employment is recorded in some cases, for example where labour-intensive environmental management replaces a low-labour intensive activity. Evaluation reports show that programmes provide value in terms of environmental benefits for a relativelt modest cost to the Community budget: 4% of the EAGGF guarantee section. The complexity of maintaining the European faramed landscape and its associated biodiversity are shown by the immense range of agri-environment actions developed by Member States.

Source : F. Sénéchal, Nouvelle vague agri-environnementale : « l'an vert du décor », Courrier de la Planète, n0. 20, décembre 1993 ; European Commission (1999): *Agriculture, Environment, Rural Development : Facts and Figures* – A Challenge for Agriculture (collated by Frank Fay). Brussels.

Box 2.6 - An environment strategy for the Mena zone

The Middle East and North Africa region only has 6% of arable land, and water availability is also limited. The progress that has been made is liable to be jeopardised by the environmental degradation with which it is accompanied: growing water scarcity, progressive degradation of arable land, polluted air and water and poorer hygiene conditions are threatening the region's capacity to continue its economic growth. It is imperative that an environment strategy exploit the correlations between economic growth, reduction of poverty and conservation of the natural environment. Such a strategy should implement the following 5 measures:

1. re-evaluation of national environment strategies: the measures to be carried out urgently should be defined as priorities, the mechanisms to be implemented in order to mobilise resources should be identified and the effect which the country's economic and sectoral policies can have on the environment should be examined;

2. application of appropriate policies: subsidies should be abolished, a system for recovering the cost of providing services should be introduced, the feasibility of a system of ecotaxes and pollution charges should be examined and the obstacles to the adoption of non-polluting energy-saving technologies should be removed;

3. implementation of the next stages for improving environmental institutions: environmental legislation should be strengthened as should the legal capacity for monitoring and enforcing its application;

4. with the assistance of the competent NGOs, public awareness of the needs to preserve water, energy and land resources should be raised and people should be encouraged to participate;

5. targeted investment plans should be drawn up for priority projects for providing clean water and sanitation services, particularly in rural areas, pollution should be eliminated in the "hot points" where problems of air quality, industrial and municipal water pollution and solid waste tend to be concentrated.

Source : World Bank, Forger un partenariat pour une action environnementale; Stratégie environnementale pour le Moyen-Orient et l'Afrique du Nord: vers un développement durable, décembre 1994.

Box 2.7 - Which financial transfers to promote the environment?

In view of the burden of the debt of developing countries and the handicap which debt servicing represents for them, one of the most interesting and most original schemes is without a doubt the scheme known as the debt-for-nature swap, or the conversion of debts into green investments. This is a debt conversion scheme where, instead of acquiring the capital, the holder of the depreciated claim agrees to help the indebted country to safeguard a natural resource.

There are several modalities or variants of the scheme: "debt-for-sustainable-development" swaps, for example, which consist of exchanging debts for a more general agreement in which the debtor undertakes to take measures to protect the environment or to conserve resources or a heritage of universal interest, thus effecting a sort of "repayment in kind": the collection, conservation and reproduction of genetic types and varieties (in both the animal and the plant kingdom); soil conservation and measures to prevent erosion; re-afforestation on the basis of local tree and shrub species, development of biomass sources as sources of energy with a view to replacing wood and charcoal and as an alternative source of income for the poor, etc.

Debt-for-environmental-protection conversions have been carried out in certain developing countries: the Weeden Foundation, for example, purchased $650,000 of the Bolivian debt discounted to $ 100 000 on the secondary market and, in return, the Bolivian government undertook to safeguard 1.5 million hectares of forestland for measures to turn it into a nature reserve of plant and animal species and for the indigenous populations who live there.

In addition to "solutions through debt", there is another form of transfer - as yet rare - similar to the above, which is known as "additional payments": a lump sum is transferred directly to a country as compensation for refraining from developing a resource following an international environmental agreement. This is the case with the Convention for the Protection of the World Cultural and Natural Heritage, which has set up a fund for protecting that heritage in order to help to protect common environments of "exceptional universal value". A further form of financial transfer consists of providing aid or loans for projects which have a beneficial effect on the environment and of bridge financing to enable countries to change production methods. This is the particular mission of the Global Environmental Facility Instrument.

Internationally negotiable emission permits would also be conceivable. These could take the form of international levies imposed on emissions, through which prices could be raised by incorporating external factors. The amount of the levies could be calculated in proportion to the emissions and re-distributed in order to ensure a net transfer from rich countries to poor countries. The income thus generated could go through a Central International Compensation Fund which would be to the environment what the Bank for International Settlements is to the financial sector. An interesting additional instrument could consist of applying a VAT calculated on broad tax bases and designed to compensate the underpricing of resources through the market ("eco-VAT" or "green VAT").

There is a further scheme of more limited scope but nonetheless interesting which could also be imagined: the levying of an international tax on air travel, the amount of which would be low and the proceeds of which would be earmarked for objectives relating to sustainable development...

Sources : B.Rich, Les banques multilatérales de développement, le fonds monétaire international et la protection de l'environnement, in Environnement Africain, Enda, n°spécial 25-28, Dakar, 1989; J R Mercier, La déforestation en Afrique, éd. Edisud, Aix-en-Provence, 1991; S.George, Jusqu'au cou: enquête sur la dette du tiers monde, éd. La Découverte, Paris, 1988.

3 Multifunctionality and rural development

3.1 - Introduction

The idea that agriculture affects the well-being of society beyond the value of its food production is not new. The 1994 WTO agreement expressed this issue in a paragraph on so-called “non-trade concerns”. The concept of multifunctionality has also gained ground lately, especially within the OECD (OECD 1998). Language is significant here. While the concept of non-trade concerns may be understood to establish a link between production and “social issues”, the concept of multifunctionality may be perceived to establish a link between the production of food and the production of public goods (Vatn, 1999).

The 1999 CIHEAM Report argued that the liberalisation of agricultural trade should be consistent with the defence of the “multifunctionality” of the Mediterranean agricultural systems. Although the use of the term “multifunctionality” is currently under debate, especially when it is used to protect agriculture from a liberalisation process. Yet the term still lacks any clear definition and thus has relatively few advocates, rousing quick suspicion amongst its opponents, in whose view multifunctionality is merely a convenient pretext which the European Union has found for justifying the long-standing use of farm support, including export subsidies.

Conceptually, the “public goods” implicit in the term “multifunctionality” comprise the various environmental challenges for the sector: not only that of producing food, fibres and energy sources, but also preserving the rural environment and landscape and contributing to the viability of rural areas and to balanced regional development.

From the environmental point of view, the term “multifunctionality” should be complemented with the term “eco-efficiency”. This is a matter of balance between negative and positive externalities of the agricultural systems. The challenge is how (which instruments?) to enhance the positive externalities of the agricultural systems while at the same time reducing the burdens on the environment, i.e. overexploitation of water resources, or continuing intensification — and the resultant use of large and environmentally critical amounts of pesticides and fertilisers.

The three central questions are as follows:

(i) the extent to which multifunctionality is a meaningful concept for the Mediterranean area;
(ii) the extent to which the agricultural trade liberalisation is compatible with multifunctionality; and
(iii) the extent to which current agricultural policies are consistent with multifunctionality.

(i) - Is "multifunctionality" a meaningful concept?

The debate over non-trade concerns or multifunctionality is basically a debate over the legitimacy of various goals and measures within agricultural policy. The upcoming WTO negotiations will define what in the end become legitimate goals for the member countries. The use made of the definition of multifunctionality becomes crucial to the result.

There is a fundamental distinction between negative and positive externalities as regards their relationship to the multilateral trading system. The former can be tackled through national measures for which there are few limits or restrictions in multilateral commitments. This is not the case regarding positive externalities which are considered a non-trade concern. The correction of such market failures is commonly done through subsidies, which may contravene WTO commitments.

The position of the US and the Cairns Group (Anderson, 1992; Bohman et al. 1999) is clearly against linking multifunctionality with trade protection measures. Following the principle of targeting policies to their specific objectives, the most efficient and potentially most effective approach to achieving multifunctionality objectives is to use specific payments targeted at specific multifunctional objectives. Consequently, there is no need to use broad-based agricultural protection. Since protection is not being targeted at the specific objective, it is unlikely to be effective or efficient.

A further argument against treating agriculture as a uniquely "multifunctional" sector is that "multifunctional" effects apply to all economic activities. Acknowledging their significance specifically in international agreements on agriculture could thus be misused as a means of continuing the kinds of exemptions that have so far largely excluded agriculture from the benefits of multilateral trade reform.

Consequently, according to this view, multifunctionality does not constitute a sufficient basis for continuing to pursue trade-distorting agricultural policies.

One of the most difficult issues in the present debate on the term "multifunctionality" concerns the possible relationships between commodity production and the production of public goods (bads). The stronger the

connections, the more difficult it will be to keep trade and "non-trade concerns" apart. Some countries have argued that the production of food outputs and that of non-food outputs are closely linked. These countries have used the economic term "joint products" to describe the fact that the production of one output is linked to that of the other. Thus, advocates of this argument claim that, instead of a targeted policy, production-linked payments are necessary to obtain socially desired non-food outputs.

The question of the kind of linkages between food production and production of public goods becomes crucial here. Linkages between the production of food and the production of externalities can in principle be both positive and negative. Furthermore, many public goods can be produced without any connection with agriculture. Rural settlement is one example, some aesthetic landscapes may be another. Actually there are two important issues at stake here.

First, one must consider whether the production of each function is directly linked to agriculture or whether the good can be produced separately. This issue is easily illustrated by looking at the issue of landscaping. Is the product valued differently if it is part of an agricultural system compared to an open landscape produced without any connection with agriculture whatever?

In the Mediterranean area, only a minority of rural landscapes are not the result of the formative influence of agriculture — these landscapes are often largely uninhabited. The rise of agriculture enabled and fostered the development of civilisations, and in so doing it became the dominant land use. This heritage is manifest in various ways, such as the pattern and size of fields, the extent and type of grasslands, the existence of landscape features, the use of terracing, crop rotations, and settlement patterns.

Secondly, costs assessment is important. How can these kinds of public goods be provided most cheaply? Several rural public goods can be produced outside agriculture. Many of them can further be produced more cheaply if supplied separately, though this does not mean that supporting agriculture is always the most costly solution (Vatn, 1999). Given that agriculture already produces some public goods, the extra cost of adding others to the list may be low.

The cost of formulating and operating a policy is also important in relation to the question of what is the best and cheapest solution. Is it possible to produce public goods by redirecting agricultural policy through changes in input/output prices, restrictions on technology etc., or is it better to use instruments directly focused on the production of the public good? In reality, many non-food outputs can be produced independently of agriculture, and a range of policy instruments and private actions are available for achieving each objective related to non-food outputs. Each external function of agriculture deserves a special measure, and treating all of the functions jointly would entail the possibility of producing failures.

(ii) - Multifunctionality and trade

The increased focus on the multifunctional role of agriculture has evolved in parallel with the development towards freer trade in agricultural products. The next immediate question is: does free trade hinder the possibilities for supplying the various public goods related to agriculture?

In the WTO context, agricultural multifunctionality has been linked to the so-called "*non-trade concerns*" addressed in Article 20 of the Uruguay Round *Agreement on Agriculture* (see Box 3.1). The term is frequently used by some countries such as Norway, Japan and the EU as an argument in the WTO. Nevertheless, it is not yet clear how the concept will be used during the forthcoming negotiations.

Multifunctionality can thereby be understood as:

i. an excuse in favour of greater border protection justified by the specific nature of the agricultural sector.

ii. an argument in favour of greater use of rural development measures (within the "so-called" "green box" measures).

iii. recognition of the links between trade and non-economic objectives (environment, social conditions, food safety).

Box 3.1 - Multifunctionality and non-trade concern

Article 20 of the AoA refers to the continuation of the reform proces and to the "non-trade concerns":

"*Recognizing that the long-term objective of substantial progressive reductions in support and protection resulting in fundamental reform is an ongoing process, Members agree that negotiations for continuing the process will be initiated one year before the end of the implementation period, taking into account:*

a. the experience to that date from implementing the reduction commitments;
b. the effects of the reduction commitments on world trade in agriculture;
c. non-trade concerns, special and differential treatment to developing country Members, and the objective to establish a fair and market-oriented agricultural trading system, and the other objectives and concerns mentioned in the preamble to this Agreement; and
d. what further commitments are necessary to achieve the above-mentioned long-term objectives".

In the preamble to the AoA, the relevant paragraph reads:

"Noting that commitments under the reform programme should be made in an ***equitable*** *way* ***among all Members****, having regard to non-trade concerns,* ***including*** *food security and the need to* ***protect the environment****, having regard to the agreement that* ***special and differential treatment*** *for developing countries is an integral element of the negotiations, and taking into account the possible* ***negative effects of the implementation of the reform programme on least developed and net food importing developing countries."***

The debates on the role of agriculture did not end with the conclusion of the Uruguay Round. Indeed, discussions in FAO and the OECD, resulted in significant policy statements. In December 1996, the World Food Summit approved the Rome Declaration on world food security and the World Food Summit Plan of Action. Commitment Three reads:

"*We will pursue participatory and sustainable food, agriculture, fisheries, forestry and rural development policies and practices in* ***high and low-potential areas****, which are essential to* ***adequate and reliable food*** *supplies at the household, national, regional and global levels, and combat pests, drought and desertification, considering the* ***multifunctional*** *character of agriculture*".

Two years later, the OECD came up with a position on the role of agriculture in a Ministerial Communiqué:

"*Beyond its primary function of supplying food and fibre, agricultural activity can also shape the landscape, provide environmental benefits such as land conservation, the sustainable management of renewable natural resources and the preservation of bio-diversity, and contribute to the viability of many rural areas. In many OECD countries, because of its* ***multifunctional character****, agriculture* ***plays a particularly important role in the economic life of rural areas***".

The debate continues in the WTO as to which of the three interpretations will prevail during the agricultural trade negotiations.

Evidence of the lack of clarification of the multifunctionality concept can be found in the interpretation given to it by countries such as Japan and Korea. For these countries, non-trade concerns are orientated towards reaching a sufficient level of food security, or rather, food self-sufficiency. In the case of these countries, there appears to be a certain correspondence between multifunctionality and a negotiating position with a view to maintaining "sufficient" levels of border protection (approach i).

The EU does not appear to follow only one interpretation of multifunctionality but a combination of the three approaches.

One possibility would be to conceive "multifunctionality" as a defence of the "green box" (approach ii). The principal requirement for "green box" policies is that they have no, or minimal, effect on trade. The "green box" contains specific provisions for addressing non-trade concerns, including public stockholding for food security purposes and payments for environmental programmes. Other non-trade concerns, such as support for rural communities and services, as well as other general environmental and bio-diversity goals (such as resource retirement, pest and disease control, and environmental programmes) are also provided for in the "green box" (see Box 3.2).

Box 3.2 - "Green box" measures

The UR Agreement on Agriculture, Annex II spells out in para. 1 that: "all measures for which exemption is claimed shall conform to the following basic criteria:

- *the support in question shall be provided through a publicly funded government programme (**including government revenue foregone**) not involving transfers from consumers; and*
- *the support in question shall not have the effect of providing price support to producers;*

plus policy-specific criteria and conditions as set out below ..."

The policy-specific criteria and conditions as contained in Annex I (Domestic supports the basis for exemption from the reduction commitments) to the AoA, commonly known as the "green box", relates to general services (research, training, infrastructural services etc.), public stockholding for food security purposes, domestic food aid, direct payments to producers, decoupled income support, government financial participation in income insurance and income safety-net programmes, payments for relief from natural disasters, structural adjustment assistance through either producer retirement programmes or resource retirement programmes or investment aids, payments under environmental programmes and payments under regional assistance programmes.

Concerns have been raised as to the adequacy of Annex II measures which, in any case, are not generally within the financial capacities of governments of developing countries.

As a matter of fact, formal recognition of the "green box" would implicitly contribute to the political acceptance of rural specificity at the WTO level. However, the explicit position of the European Communities in the international talks has

gradually moved towards the introduction of other issues beyond the "green box" and rural development (approach iii). The Commission, in the proposal for Agenda 2000, already stated the need to introduce social and environmental concerns and to take consumer interests into consideration (European Commission, 1997). More recently, in its statement on the EU's approach to the Millennium Round, the Commission referred to "multifunctionality" together with issues such as the preservation of human life and health, of fauna and flora, the links between trade and environment, animal welfare, food security; food quality and other consumer concerns (European Commission, 1999).

The Cairns Group argues against "multifunctionality" as an excuse for special treatment for the rural sector in the WTO context. A related question is whether it is possible to promote multifunctionality without using trade-distorting measures**. However, what is questionable is whether all the external positive functions of agriculture can be promoted without distortion of production and trade ("joint production").** For example, in some places, the rural landscape is shaped by agricultural activities. Should citizens wish to preserve vineyards, whatever type of payments the public sector may wish to use will obviously influence the continuity of that crop. A narrower view would not consider this measure as strictly a "green box" measure.

The European Union's position does not appear to show any explicit recognition that "multifunctionality" would justify high levels of support for agriculture or that border protection is the effective way of achieving non-economic objectives. Some groups of producers in the European Union would advocate higher tariffs on the basis of "multifunctionality" (approach "i"). However, the Commission seems rather to be aiming for a freer trade system, while remaining sensitive to areas that are not strictly commercial, such as the environment, social conditions or consumer interests.

Even though the analysis can be simplified, the picture of multifunctional agriculture and the related policy options has become a complex one. A policy in this field has to take account of the fact that agriculture has both positive and negative effects on the environment, that public goods may be a joint product with food production, but that it may also be competing, and that, in terms of economic efficiency, there can be cheaper policy instruments for achieving some multifunctional goals.

As far as agricultural policy is concerned, one principle is to use policies associated with minimal distortions and target the specific objectives associated with the non-food output. These policies are called "decoupled" in the sense that their impact on production and trade is minimal.

However, some of the aims of Mediterranean agriculture will be very difficult to achieve through measures totally decoupled from production. For example, in some regions where agriculture is unable to compete with imports, securing the

existence of a certain level of agricultural production may be an important element in securing its multifunctional role.

As a consequence, multifunctionality should be compatible with substantial trade liberalisation but not with total trade liberalisation. On the other hand, **a restrictive interpretation of public intervention in the agricultural sector would eliminate many opportunities to promote multifunctionality**. The new WTO Round might end up rejecting the conformity of multifuncionality with the trading system, since no payment would fit a "green box" built on restrictive definitions and strict control. The question is whether it is possible to find adequate instruments for multifunctionality without fear of a complaint about distorting trade and production.

If multifunctionality were accepted as part of a new Agreement on Agriculture in the WTO, a special treatment for the agricultural sector could be recognised. However, current agricultural policies in most Mediterranean countries are far from being designed to achieve multifunctionality. This is the case, for example, with the European Union's CAP. Multifunctionality could be a fine principle with which to continue CAP reform.

(iii) Multifunctionality and current policies

From the domestic point of view, in the European Union, the multifunctionality argument has served as justification for introducing Agenda 2000 to European society. Perhaps one of the first and clearest declarations on this was that made at the Cork Conference on Rural Development (1996). The ideas expressed in this document were supported enthusiastically by those in favour of a rural development approach for the Common Agricultural Policy. The new financial strategy of Directorate General VI (Agriculture) regarding Agenda 2000 supported this move. This strategy led to a new view of the EAGGF – guarantee as a "rural fund" which, following the Berlin agreement, has ensured a certain degree of inflexibility against the reduction of the EU agricultural budget. Paradoxically, this budget is facing serious restrictions with regard to giving substance to the rural development approach, beyond the rhetoric.

Table 3.1 - Financial perspectives for the CAP (EU-15)

EUR million - 1999 prices Appropriations for commitments	2000	2006
AGRICULTURE	40920	41660
CAP expenditure excluding Rural Development (RD)	36620	37290
Rural Development (RD) and accompanying measures	4300	4370
RD as a percentage of total CAP expenditure (%)	10.5	10.5

Source: Berlin Summit Agreement.

Rural development seems to be an approach that would facilitate the adaptation of agricultural policies to a more liberal trade environment. However, this does not mean that rural development policies are a direct consequence of trade liberalisation. Rural development policies are rather shaped as a result of a domestic-decision making process influenced by budget constraints, political lobbies, and the interests of various social groups including farmers, environmentalists and consumers. It is true that trade liberalisation is a driving force for policy reform. However, there are many ways in which governments can react to a freer trade environment.

After the Uruguay Round the foundations of traditional agricultural policies based on price interventions began to be questioned. As a result of the changes in the international climate, Mediterranean agriculture is under increasing pressure to adopt a more liberal commercial policy framework, which means that it is necessary to change the model of state intervention in rural areas. Is rural development policy such a model? It seems clear that agricultural policy should be consistent with competitive, market-orientated agriculture, but many would see Mediterranean agriculture as something closely linked to quality, rural landscape, environmental benefits and so on. This view seems to be widely accepted in the European Union, where agricultural reform has not only been influenced by external pressures but also by domestic social "non-trade concerns". Is the EU CAP leading to a rural development approach?

A recent study (Tangermann 1999) showed that the new regulations adopted by the EU within the Agenda 2000 framework could serve as a basis for guaranteeing the defence of the European stance in the forthcoming international negotiations. With Agenda 2000, the international competitive position of the EU agriculture will be strengthen and even an export position, without subsidies, will be maintained in cereals and pigmeat. EU agriculture has thus anticipated the liberalisation

commitments that will come about sooner or later. The next round of negotiations will bring the elimination or substantial reduction of export subsidies, which will only be possible by means of a reduction in intervention prices, a consequence of Agenda 2000. In addition, the next international Round may impose substantive constraints on "amber box" and "blue box" payments and push to transform them into "decoupled" support. As described in the 1999 CIHEAM Reports, Agenda 2000 has already taken several steps in that direction.

A possible criticism of Agenda 2000 is that this reform aims to achieve the compatibility of the CAP with the WTO provisions simply by making some "technical changes" to the previous market regulations. At the moment, the CAP has not been forced into taking any more fara-reaching steps towards the concept of an integrated rural policy, that is to say, towards a purely rural development framework: for many it is rather a declaration of good intentions. According to Massot (1998), with Agenda 2000 the European Commission chose "the easy option": slow reform but in the right direction. This consists of closing the gap between domestic and international prices, introducing the principle of modulation (with its application delegated to the Member States) and timidly converting the guarantee section of the EAGGF –into a Fund for rural development.

Agenda 2000 can be seen as partial "ruralisation" of the EAGGF guarantee section, which constitutes some progress towards an integral rural policy that would devote sufficient attention to the multifunctional objectives of rural economies. However, these reforms are still limited and full of rhetoric (Buckwell, 1998). By the year 2006 rural development policies will only account for 10.5% of total CAP expenditure (see Table 3.1). Agenda 2000 can be expected to open the door to a rural development policy that could be put into practice in the next decade.

It is important to observe that the existing greening of agricultural policy in both the US and the EU seems to be evolving more as a response to old problems such as "overproduction" than to genuine care for the environment and rural development. There is a substantial need for measures to redirect policy. A policy addressing future problems related to the environment and public goods provision must be formulated much more consistently. **The EU must resolve its ambiguity in the matter and stop arguing for multifunctional farming while at the same time maintaining the standard approach to export subsidies**. In order for multifunctional policies to gain legitimacy, there needs to be a reduction of the distorsions in the CAP, which are severely affecting non-EU economies. Once free of ambiguities, and with increased recognition of its legitimacy for the revised forms of public support, multifunctionality could present a clear strategy for all countries wishing to defend sustainable modes of production and democratic decision-making as to how their societies should develop a fair agricultural trade policy.

The Mediterranean countries' right to pursue rural development policies in which agriculture plays a key role must be recognised. In regions of the world where

farming represents a dominant rural economic activity, countries should have the means at their disposal of preventing social and political upheavals caused by a rapid decline in economic conditions in the farming sector. In other rural areas, where farm employment accounts for a small portion of the workforce, a broader approach to rural development and the role of farming in the process, including policies to diversify income sources, may be needed. In peripheral regions, the continued viability of rural areas depends to a large extent on policies for maintaining the agricultural sector.

However, rural development policies which affect the agricultural sector should follow the principle of being no more than minimally trade-distorting and allow structural changes to occur. In the context of agricultural reform, WTO rules should contain sufficient flexibility to allow countries to promote rural development and preserve social and political stability. Multifunctionality should thus be compatible with a world trading system.

3.2 - The greening of agricultural policies does not prevent asymmetries

One of the key problems since the implementation of the UR Agreement on Agriculture in 1995 is that the overall level of support has increased in general, rather than decreased. This is evident both from the “green box” subsidies, which countries have declared, as well as from Producer Subsidy Equivalent (PSE) figures supplied by the OECD. Table 3.2 illustrates the subsidies provided by the world's largest agricultural trading powers, the US and the EU. Calculation of total domestic support (notified to WTO) including the “green box”, blue box, Aggregate Measure of Support (AMS) and “de minimis” clause reveals similar increases in support levels since implementation of the Agreement on Agriculture.

In the case of many developed countries, especially the EU and the US, “green box” supports have allowed them to channel their domestic support programmes into the undisciplined “green box”, hence avoiding the need to make real domestic support reductions. Thus the “green box” seems to be a sort of “subsidy refuge”. **This constitutes a new source of asymmetry between developed and developing countries**. While the “green box” is often seen as the opportunity that allows governments to provide for the non-trade concerns and could provide a basis for financing multifunctionality, it provides leeway for abuse by those who can afford to provide outright financial supports. Developed countries will be able to finance multifunctionality while developing countries face difficulties in financing their own non-trade concerns such as the protection of small farmers' livelihoods, and food security. In fact, in 1996, developing countries provided only 12.5% of all “green box” supports, with developed countries providing the other 87.5%. In the final analysis, from the point of view of developing countries, these countries consider that they have been virtually ignored by the "green box", which they see as having been designed essentially to serve the interests of developed countries, whether advocates or opponents of multifunctionality.

Table 3.2 - Total agricultural support in the EU and US

	(1986-88)	1995	1996	1997	1998
European Union **(million ECU)**					
"Green box"	9,233	18,779	22,130		
Total domestic support	82,878	90,222	95,131		
PSE	90,392	83,442	74,970	96,729	116,075
United States **(million $)**					
"Green box"	24,098	46,041	51,825	51,249	
Blue Box	--	7,030	--	--	
Total domestic support	49,658	60,767	58,807	58,291	
PSE	41,428	15,205	23,500	30,616	46,960

Sources: OECD in Figures, 1999; WTO, 'Domestic Support' , AIE/S2/Rev.2, 23 September 1999; OECD in Figures, 1996.

This asymmetry holds true amongst Mediterranean countries, as seen in Table 3.3, which shows that "green box" expenditure per agricultural worker is lower in selected Southern and Eastern Mediterranean countries than in the EU, although the difference is markedly higher with respect to developing Mediterranean countries.

Table 3.3 - Total expenditure on "green box" measures in selected countries

	"Green box" expenditure (million US dollars)		Expenditure per agricultural worker $		GDP per capita $
	1995	1996	1995	1996	1997
EU	24110	28378	3258	3835	22046
Morocco	157	378	38	92	1246
Tunisia	30	39	33	43	2052
Slovenia	85	91	2833	3033	18202
Israel	292	414	1460	2070	16820

Source: MEDAGRI 2000 and FAO 1999, FAO Symposium on Agriculture, Trade and Food Security: Issues and Options in the Forthcoming WTO Negotiations From the Perspective of Developing Countries. 'Issues at stake relating to agricultural development, trade and food security', Paper No. 4.

The trend in the current agricultural negotiation process could confirm this asymmetry. Agricultural reforms in developed countries will lead to a further "greening" of their domestic support in order to achieve their multifunctional goals. The definition of the "green box", as claimed by the EU, will probably be flexible enough to include a wide range of measures within the "green box". In fact, the term "minimally distorting" will require value judgements, even where some indicators for monitoring can be suggested. Thus, the "green box" could include some measures which pursue multifunctional goals but which may at the same time have trade-distorting effects. This is due to the virtually impossible task of breaking the links between non-trade concerns and food production. Huge amounts of decoupled payments will inevitably increase farm incomes, allow access to improved technology and increase farm investment and production. Furthermore, decoupled payments are often provided in such a manner as to increase land values. This maintains land in farming which might otherwise have been diverted for other purposes. Production is therefore indirectly increased (ABARE 1998 Current Issues, Aug. 1998, No. 98.4).

Some developing countries have criticised this situation by requesting a stricter control over all types of subsidies and agricultural payments, and request instead the creation of a "development box" for developing countries to address their rural employment and food security concerns. As far as Mediterranean countries are concerned, a possible way out of the potential conflict between developed and developing countries in this area, would be:

(i) to re-direct the CAP towards a real "rural fund" with minimal production and trade-distorting impacts, with the aim of achieving multifunctional goals;

(ii) to help to nourish the "development box" of the Southern and Eastern Mediterranean countries, through the use of current financial instruments, i.e. MEDA and EIB, with adequate emphasis on rural poverty reduction and environmental protection.

The MEDA programme has indeed represented a sort of EU development fund, with around 17% of its budget allocated to projects related to the environment and rural development during the 1995-1999 period.

However, the hope that the Southern and Eastern Mediterranean countries will be able to finance development programmes is constrained by several problems:

- The MEDA II programme for the 2000-2006 period (continuation of the MEDA programme for 1995-1999) has to compete with other financial priorities of the Union such as Eastern Enlargement.
- The Euro-Mediterranean Association will require that several Mediterranean countries accept a significant loss of import tariff revenue. For example, it is calculated that tariff revenue accounts for 46% of Lebanon's budget (CGP,

2000). Although, in the medium term, the Association's strategy should involve the financial sustainability of the States, the question remains as to the possibility of generating the resources needed for rural development.

- Only a small share of the MEDA budget (27%) was actually paid out between 1995 and 1999. The effectiveness of the European Investment Bank allocations was a little higher (32% between 1997 and 2000). The operation of the MEDA funds will probably improve in the future with the introduction of more automatic procedures and human resources for the financial execution of funds. However, in spite of the conclusions adopted by the Stuttgart Euro-Mediterranean Conference, the simplification of procedures is liable to be slow.

- European interests are biassed against financial solidarity. The weight of the Euro-Mediterranean Association strategy is orientated towards trade relations and commercial interests.

- Private investment will probably not do much to counteract the eventual fall in public investments. The 1999 CIHEAM Report stressed the risks of a "hub and spoke" effect of the FTA, giving rise to the re-concentration of Foreign Direct Investment (FDI) into the European Union (the hub) at the expense of the Third Mediterranean Countries (the spokes).

- Overall public development aid to Mediterranean countries has decreased significantly in recent years. For the three Maghreb countries, Egypt, Jordan, Israel and Turkey, total aid decreased from 39.6 billion dollars in 1989-93 to 22.6 billion dollars in 1994-98. Private investment has not counteracted that decrease. However, the share of EU and Member States in total public aid to Third Mediterranean countries increased from 30% to 44% between the two periods.

- There are significant handicaps to attracting private FDI such as the institutional environment, human capital and the administrative burden. For local investments there is a lack of access to financial channels. The weakness of private investment also reduces the effectiveness of rural development policies.

- The absorption capacity for foreign aid and credit is limited in the recipient countries and is close to saturation point.

All of these constraints lead to the conclusion that the benefits derived from market openness and the FTA could be delayed due to the existing restrictions employed to finance the financial and social costs of transition in the Southern and Eastern Mediterranean countries. It is a sort of vicious circle, which can only be broken with more, and not less, co-operation between the various sides of the Mediterranean Basin.

4 Agriculture and the economy

4.1 - Development of national economies in 1999

1998 was marked by the consequences of the 1997 crisis in Asia. Taken as a whole, 1999 appears to have been under more favourable auspices, with a regain in the growth of the world economy, the American pacemaker making up for Japan, which was still recovering. The growth of the world economy recovered, yet signs of tension were beginning to be felt on the hydrocarbons market.

For 4 of the 5 Mediterranean countries in the European Union, 1999 also began with the effective implementation of the single currency. Spain, France, Italy and Portugal thus now belonged to the euro zone, their currencies being merely fractions of the European single currency since 1 January 1999[9].

The depreciation of the euro against the other major currencies (the dollar, but also the pound sterling) reached a level of –15% against the dollar in 1999. One of the consequences was that the external competitiveness of goods improved; conversely, depreciation also resulted in a rise in the prices of imported oil and gas, but the effects of that price increase were still moderate in 1999.

Admission to the euro zone had required from the outset that the applicant countries fulfil macro-economic criteria (the "convergence criteria"). That compliance was then no longer considered to be a precondition for belonging to the zone, since the replacement of the national currencies with the euro is in principle irreversible. It is supposed, on the other hand, that the monetary union will have the effect of maintaining this convergence of macro-economic policies and that it will thus be possible to continue to meet these criteria in the future; they concern inflation, the public deficit, the national debt, interest rates and the balance of payments.

In 1999, these 4 countries continued to operate in line with these criteria from the macro-economic point of view, particularly with a very low inflation rate and public accounts approaching a balance, a factor which was facilitated by economic growth. In the case of Portugal in particular, the considerable decrease in interest rates required for accession to the monetary union had a very favourable impact

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[9] **EURO: conversion rates**

1 euro = 166,386 pesetas
1 euro = 6,55957 French francs
1 euro = 200,482 escudos
1 euro = 1936,27 lires
1 euro = 340,750 drachmas

on agricultural investments. The growth and inflation rates of the 4 countries are now very similar with no major variations from one year to the next.

In **France**, the main economic indicators maintained a satisfactory level in 1999. Growth continued on the basis of the previous year, GDP progressing by 2.9% (3.1% in 1998), and the household consumption rate progressing by 2.2% (as against 3.1%).

An exceptional number of jobs were created (+ 400 000, i.e. + 2.2%) when compared with the previous years. There was a slight rise in employment in industry in 1999, as was the case in 1990. This increase is admittedly very modest (+ 0.2%), but it is nevertheless significant after several decades of steady decrease. The effects of economic growth in France were combined with those of specific economic policies, such as the law on the 35-hour week in particular, which seems to have had an impact, particularly in industry.

The substantial volume of jobs created in 1999 had favourable effects on incomes and consumption, the major impact being in the social field: a new decrease in unemployment, which dropped from 3 million to 2.8 million persons in the period from January to December 1999 (ILO definition). (Unemployment rate finally dropped back below the symbolic threshold of 10% of the active population in April 2000).

Similarly, the **Portuguese** economy again achieved a high growth rate in GDP (+ 3.1%, after the increase of + 3.7% in 1998). All of the estimates for the years that lie ahead are even counting on an acceleration in this growth rate. Agriculture contributed significantly to that increase in 1999, after 2 consecutive years of decrease in production.

Household consumption, which had been rising sharply in the previous few years, was still rising, but at a slower pace in comparison (nevertheless + 4.6 %!), but this was compensated by a rise in investments. If this slowdown is confirmed, a recession in import growth would also be conceivable - one of the main threats hanging over the economy in Portugal, which has a balance of trade deficit.

The employment situation improved as a result of this growth, unemployment rate, which was already low, reaching the level of 4.4% on average in 1999.

The figures for **Spain** are very comparable, with an economic growth rate of 3.7% in 1999. Spain took full advantage of the growth in the world economy, and this favourable result boosted both consumption and investments, household consumption rising by 3.7% and gross investments by 9%. There was a considerable rise in imports on the other hand.

There was a significant rise in employment in Spain in 1999, 450,000 new jobs being created, i.e. +3.2% - a figure almost as high as in 1998. Unemployment continued to decrease in this country, but it was still the highest unemployment rate in the European Union, at a level of 15.7% (compared to 18.9% in 1998). However, underemployment in Spain is known to have specific characteristics, the figures being inflated in particular by the existence of insecure jobs or of underemployment in agriculture. There were 207,000 unemployed in the primary sector in 1999, for example, i.e. 20% of total employment in that sector.

In **Italy**, the nominal growth rate of GDP was 2.9% in 1999, which was lower than the rates of the previous years (approximately 4%). However, in real terms, growth (evaluated at 1995 constant prices) was only 1.4%, identical to that of the previous year.

This modest rate is to be explained by both internal and external factors. The internal factors are the recession in the growth of aggregate value added (1.3% in 1999 as against 1.6% in 1998, at constant prices) and the decline in household consumption (1.7 % in 1999 as against 2.3% in 1998). With regard to external factors, the restrictive policies aiming to maintain the level of the national debt within the limits allowed by European monetary policy and the decrease in exports. The share of Italian products in the exports of all of the countries of the Economic and Monetary Union (the 11) dropped from 15.6% in 1997 to 14% in 1999: Italy benefited less from the depreciation of the euro than did the other countries. The only positive factor was the increase in investments, which rose by 5.6% at current prices and by 4.3% at constant prices compared to the previous year.

From the sectoral point of view, the main contribution to the expansion of national wealth was provided this year by the agricultural sector, in which growth was significant compared to 1998 (in value added, + 3.1% at current prices and + 5.1% at constant prices); the sector thus maintained its relative importance in the formation of global value added at 3.2%. The services sector and the industrial sector, on the other hand, registered a drop in growth rate (which reached a level of 1% and 1.6% respectively).

Despite the depressed growth in economic activity, the unemployment rate (11.5% of the active population) dropped by 1% as the result of the growth in employment in the services (+ 2%). Agricultural employment continued to decrease (-5.6%) but still amounted to 5.9% of total employment. Employment in industry stagnated, amounting to approximately 29% of total employment in that sector.

With regard to the development of demand in 1999, the subdued growth in household consumption has already been mentioned. The trend of food consumption in this field was slightly negative (-0.01% compared to 1998 in constant money), expenditure in this field now amounting to only 15% of total household consumption and approximately 9% of GDP. For the third year in

succession there was a considerable decrease in the balance of trade. Imports grew in 1999 by 4.1% in current prices and by 3.3% in constant prices due mainly to the appreciation of the dollar and the rise in raw material prices. There was a downward trend in exports both in current terms (-1.7%) and in constant terms (-0.7 %). After a sharp decline in the first half of 1999 exports then recovered as the result of the purchases of extra-European countries (encouraged by the depreciation of the euro); this was the case in particular with food exports (+ 1.8%).

Greece was not part of the euro zone in 1999. The country's efforts to move closer to that zone did not negatively affect growth, which maintained at a very high level. In 1999, Greece came close to its goal[10], and the economy continued to flourish.

In June 1999, the Greek economy complied with 4 of the 5 convergence criteria of the Treaty of Maastricht. In the period from 1993 to 1999, it reduced the:

- budget deficit by 13.6% of GDP to 1.5%,
- national debt by 110.1% of GDP to 104.2%,
- annual inflation rate by 14.4% to 3.1%.

The annual growth rate of GDP in real terms came close to 3.5% in 1999, a much higher rate than those achieved at the beginning of the 1990s. 1999 was thus the 6th consecutive year of high growth. There were 3 contributing factors: demand (3.9%), fixed capital investments, and private consumption, which increased by 8.3% and 2.6% respectively. These growth rates are expected to be maintained in the future due to the increase in production capacities (as the result of recent investments), the planned decrease in interest rates, and the start of the third Community Support Framework (2000-2006, which will bring substantial funds for investments).

In the case of the other countries, developments were much less regular. In particular, economic growth in the Southern Mediterranean countries was relatively modest on average.

Tunisia registered the best growth rate (6.2%), followed by **Egypt** (6%) and **Algeria** (3.2%), **Morocco** registering negative growth (-0.7%). These results are to be explained in the case of the letter 2 countries by a very poor farming year (in Morocco the growth rate for agricultural production was negative, reaching a level of almost - 20%!), very low (average annual) prices of oil and mining exports, and low performances in the other economic sectors. The growth rate in Tunisia, on

[10] which it finally attained in 2000. Greece's entry into the euro zone is scheduled for 1 January 2001, and the fixed conversion rate as of 1 June 2000 is:
1 euro = 340,750 drachmas.

the other hand, is to be explained by a good farming year and by reasonable results in the growth of sectors other than agriculture. As for Egypt, the economic growth rate was less the result of performances in the agricultural sector (where the growth rate was only 3.7%) than of those in the other sectors. It can thus be said that the economies of the Southern Mediterranean countries continue to be highly dependant - more so than the countries of the North - on changes in weather and/or the ups and downs of the world market.

Inflation rate was relatively well controlled by the countries under review. The decrease in this rate was general, with spectacular results in Morocco (0.7 % in 1999!) and in Algeria, where the rate dropped from 6.2% in 1998 to 2.1% in 1999. It can thus be said in this respect that the (past or present) structural adjustment programmes are continuing to achieve their objectives.

All of the countries have a major unemployment problem. Unemployment ratio in Tunisia was estimated around 16% in 1999 ; a special program for young people employment was set up in 1999 with the contribution of the found “fonds national de l’emploi” based on training and creation of small companies. Urban unemployment in Morocco (the only unemployment rate which is officially estimated) rose from 17% to 22% in the period from 1997 to 1999. In Algeria, the total unemployment rate increased from 28.6% in 1998 to 29% in 1999. Numerous populations are affected by poverty, which is the result of this phenomenon. According to the World Bank, 19% of the population in Morocco and 22.9% of the population in Egypt is below the poverty line, and in Algeria 22.6% of the population was below the upper poverty line in 1995.

Albania registered a sustained rate of economic growth (8%) and a restrained inflation rate (1.5%) in 1999 - for the second year in succession. Despite the repercussions of the massive influx of immigrants from Kosovo, the government honoured its commitments with the IMF at the macro-economic level concerning the stabilisation of policies and the implementation of economic reforms.

The share of agriculture in GDP has ranged from 50% to 55% in this country over the last few years, whereas the contribution of industry has only amounted to 15% and that of the building trade and public works has also been low: 11%. Exports have increased by approximately 25% over the last 3 years, agricultural exports decreasing by 30% and accounting for 10% of total exports. Total imports have increased by 27% over the same period, agricultural imports amounting to 27% of total exports.

Following the elections in 1999, the Turkish government drew up an economic programme (2000-2001) with the ambitious objective of freeing **Turkey** from inflation and improving the prospects of a rise in the standard of living for all classes of society.

The population growth rate was still very high, moving from 1.48% to 1.41%. Unemployment rate rose in 1999 to 7.2%. In 1999, approximately 89% of total experts concerned industrial goods, whereas only 10% concerned agricultural commodities. The composition of exports has thus changed considerably over the past few years. Furthermore, the share of consumer goods (generally agri-food products) in total imports was 12%.

From the second half of 1998 onwards, the Turkish economy suffered marked recession due to the contraction of domestic and external demand and to the earthquake in August 1999. The volume of exports and imports dropped by 1.4% and 11.4% respectively in 1999. Due to inadequate domestic demand, the import of intermediate products, capital goods and consumer goods dropped by 10.9%, 19.5% and 6.9% respectively. Imports of bulk commodities and agri-food products dropped by 22.3% and 13.1% respectively.

4.2 - Agriculture and food in the national economies

In the countries of the European Union, the relative place of agriculture in terms of employment and in terms of value added has been declining for years and this trend is continuing.

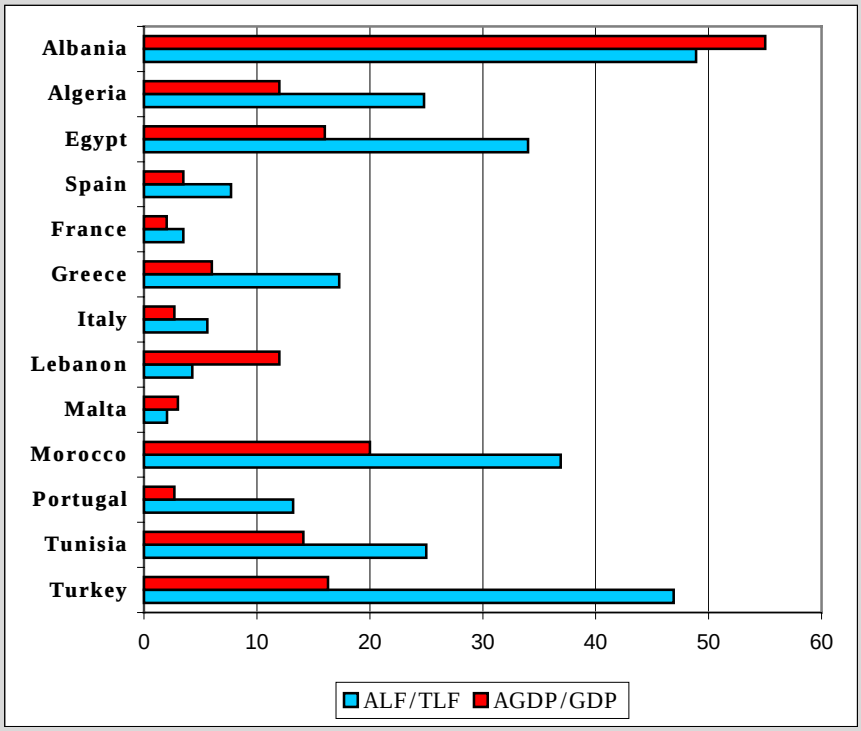
Portugal was a notable exception in 1999. The considerable growth in the volume of agricultural production that year (+ 17.7%, and + 30.6% for arable crop production!) and thus the value added of that sector (+ 28.0%) brought an increase in the share of agriculture in the national economy, which reached a level of 3.4% of GDP in 1999.

On the other hand, the quantity of agricultural work (expressed as a full-time equivalent, i.e. in YWU)[11] continued to decrease in Portugal as in other countries: -2.6 % in 1999, compared to -5.7% in 1998. There has been an overall decrease of 40 % in the last 10 years, but agriculture still accounted for 10.3% of the total active population (10.8% in 1998), a figure which in the European Union was only exceeded by Greece. Labour productivity was still low when compared to the other countries of the Union. This contraction of agricultural work was fairly subdued in 1999, and this figure must be related to the exceptional results achieved by the sector that year. It is to be anticipated that in view of the general favourable employment situation in this country agricultural workers will be able to find jobs in other sectors.

[11] A considerable proportion of work in Portugal is performed by part-time or seasonal workers or by retired persons.

Another remarkable feature of the Portuguese economy is the size of the AFI sector, which accounts for 2.5% of total employment but 5.5% of gross value added; it is one of the leading high-performance sectors of the national economy.

Graph 4.1 – Agricultural labour force/Total labour force and Agricultural GDP/Total GDP, 1999



In **France**, the share of the agricultural and agri-food sectors developed in line with the usual trends. The negative growth in agriculture continued in terms of employment (agricultural employment dropped by 1.9% in 1999, accounting for only 3.4% of the total number of jobs, as against 3.5% in 1998) and GDP. The decrease in the gross agricultural product in 1999, which was due to the economic cycle, further accentuated this phenomenon (2.5% of GDP in 1998, only 2.3% in 1999).

As regards the agri-food industries, on the other hand, the continuing growth (a 1.4 increase in production in 1999) enabled the sector to maintain its place in the economy (2.7% of GDP) and, above all, to create jobs. It should be noted that

in terms of value added the AFIs caught up with the agricultural sector in 1998 and overtook it in 1999. The growth in exports fell off, but the 2 sectors still account for a substantial share of the country's trade surplus (almost half in 1999).

This trend also continued in **Spain** in 1999, where the agricultural sector still accounted for 7.5% of jobs (7.7 % in 1998); the exact 1999 figure for value added is not yet known, but it should be around 3%, which shows that the rate of labour productivity in the agricultural sector is still low. Recent studies show that agricultural employment has increased in regions where agriculture is most dynamic and competitive (horticulture, intensive animal farming); labour needs are significant and immigrant labour is used.

The agri-food industries maintained their share of the Spanish economy (2.9% of jobs, 4.2% of GDP in 1998). As is the case in Portugal, this sector is apparently characterised by a rate of labour productivity that is higher than the average of the other sectors.

In **Italy**, it was the agricultural sector which registered the highest growth rate of all in 1999. Expressed in current prices, its value added increased by 2.8 %, but in view of the fall in agricultural prices this figure is 3.1% in constant prices.

Agricultural production registered an increase in value of 0.6% compared to the previous year. This increase was related to the sharp rise in output (+ 3.3%) combined with the downward price trend (-2.6%). Fisheries and forestry only accounted for 2.8% and 1.3% of agricultural production.

The most significant event of the year in the agricultural sector was the downward price trend (-2.6% on average, the only exception being fisheries: + 6%), which, although provoking discontent amongst producers, helped to reduce inflation. Agricultural terms of trade deteriorated (intermediate consumption: - 0.5%, essential commodities: - 2.6%).

In the course of 1999, expenditure on immediate consumption dropped by -1.1%, a downward trend which was no doubt due to the agro-environmental aids connected with Regulation 2078/92 concerning environmentally sustainable farming practices. It must be added that these special income aids were considerably increased this year (+ 41.1%).

Consequently, the gross product of agriculture, forestry and fisheries increased by 1.4% that year.

In **Greece**, agriculture is still an extremely important sector, despite the fact that its relative role has continued to diminish over the past few years. The share of agriculture in total employment was approximately 17%, and it still accounted for 7.9% of GDP in 1999. However in many disadvantaged prefectures (regions) agriculture accounts for over 50% of GDP and employment.

The level of competitiveness of the sector followed a downward trend on the whole, which was reflected both in the stagnation of output (with the exception of cotton) and in the unfavourable trend of international trade in agricultural commodities.

The development of the other 2 countries in the north presents a marked contrast. **Turkey**'s macro-economic stabilisation policy resulted in a recession which also affected the agricultural sector, whereas in Albania austerity measures and growth managed to stay abreast in an admittedly very different production context.

We would point out that in **Albania** the GAP still accounts for half of the country' s creation of wealth. Throughout the period of transition from a planned economy to a market economy agriculture was the "driving force" of the economy. It has been a priority sector in the programmes of all governments over the last 10 years and has thus produced a large proportion of staple foodstuffs for the population and has absorbed a considerable share of labour - approximately 60%-70% -, thus reducing the social tensions related to unemployment. Employment in agriculture accounts for 64% of total employment essentially in the private sector.

In the last 3 years agricultural production has registered a growth rate of approximately 5% in value and 4% in volume.

In 1999, agriculture accounted for 14% of GDP in **Turkey**, and the agricultural sector was still the major sector for employment (45.1%). However, there was a 4.6% decrease in gross agricultural product at constant prices from 1998 to 1999 due both to the decrease in production and to the drop in prices. There were still 4.5 million farms of widely varying acreage.

In **Malta**, the agricultural sector plays a modest role in the economy. The gross agricultural product, which is showing a downward trend in relative terms, reached a level of 2.5% of total GDP in 1999. The agricultural population likewise amounts to only 2% of the total active population. In constant values, value added registered a decrease of - 2.7% in 1999, after showing a modest growth rate of 0.2% in 1998. In relative terms, trade in agri-food products is insignificant, exports accounting for approximately 0.5% of total exports, and imports accounting for 3.3% of total imports.

In the **Southern Mediterranean countries** the agricultural population is still relatively large compared to the situation in the Northern countries; their level of industrialisation is still fairly low. In Morocco the percentage of the working farm population in the total working population is the highest in the region (37.7% in 1998), followed by Egypt (29.1% in 1999). Algeria and Tunisia registered a drop in this percentage from 1998 to 1999, although the rate was still high in 1999 (20.8% and 22% respectively).

With regard to GDP, agriculture continued to account for a relatively large share in all of the Southern Mediterranean countries, varying according to changes in weather.

In **Morocco**, for example, the share of agriculture in GDP dropped from 16.3% to 13% due to a mediocre harvest in 1999. A similar decrease was registered in **Algeria** for the same reason, although it was less marked (from 11.1% to 10.6%). The fact that this percentage was maintained at the same level in **Tunisia** from 1998 to 1999 is to be explained by the better weather conditions in that country. As for **Egypt**, the share of agriculture in GDP dropped slightly from 17.3% to 17% due to more marked growth in the other sectors of the economy.

The share of agriculture and food in foreign trade reflects the importance of these sectors in production and employment. Agricultural exports constitute an appreciable, and indeed decisive, share of total exports in all of the countries, a fact which explains these countries' irritation whenever the European Union imposes the exception of agriculture in negotiations on the free trade zone.

This is the case with **Lebanon**, **Morocco**, and **Egypt**, which registered 20%, 16% and 10.9% respectively. The percentage is lower in **Tunisia** (10.1%) and virtually nil in Algeria. With regard to imports, Algeria seems to be the most dependant on foreign products, its agricultural and food imports constituting 29.3% of its total imports in 1999 (a figure which marked a decrease compared to 1998 due to certain import restrictions). Although, relatively speaking, the other countries are less dependant than **Algeria**, their agricultural and food imports nevertheless also account for a considerable share of total imports: 19%, 15%, and 11.3% for **Morocco**, **Lebanon** and **Egypt** respectively.

5 *Agri-food production, consumption and foreign trade*

5.1 - Land use and agricultural structures

There are rarely any sudden changes from one year to the next in these two fields, and it is in fact for that very reason that detailed statistics are not always available every year. A large-scale survey on structures was therefore conducted by all of the countries in the European Union in 1997. Due to the ponderous sampling procedures and the volume of data collected, some of these results have not yet been published the figures available are thus only exact and comparable from one country to another in the case of certain countries concerned by the report.

It is therefore of particular interest to present the case of **Albania** in this field, a country where the privatisation process is still underway, despite the lack of precision of the statistics that have been published. The agricultural area in use amounts to 24% of the entire area of the country (699,000 ha) and has been virtually totally privatised (97%); it is distributed over 460,000 holdings, 20,000 ha of which are still state-owned. The rest of the total area of the country is made up of forestland (36%), grassland and pastureland (15%) and other areas (25%).

Table 5.1 - Acreage broken down according to form of land ownership in Albania

	1990	1993	1997	1999
	in 1000 ha			
Acreage	704	702	700	699
a. State sector	170	170	20	20
b. Agricultural cooperatives	504	-	-	-
c. Private sector	30	533	680	679

Source: MAA, statistiques 2000.

Only 11% of holdings have more than 2 ha, and the largest ones are situated in the plains.

It must be stressed that land use has remained extensive. The statistics for the 1997-1999 period show that derelict land is a fairly widespread phenomenon in Albanian agriculture (42.9% of arable farms have idle areas covering 14% of the

AAU), the idle acreage varying positively with farm acreage. This phenomenon is to be explained by the following factors:

- the marked fragmentation of freeholds;
- insufficient infrastructures or infrastructures which are not suited to the new production structures;
- the influx of financial income from foreign sources, which means that interest in agricultural work is waning (particularly in the south of the country);
- the poor quality of the land and mediocre yields.

If holdings are classed to take account of the proportions of production and the market, 3 categories of farms can be identified:

- **subsistence farms**, approximately 48% of the total, situated mainly in mountainous zones and marginal zones in the interior;
- **semi-subsistence** farms, approximately 36% of the total, scattered throughout Albania and selling approximately 20% - 30 % of their produce (milk, cheese, butter, honey, vegetables, fruit, etc.);
- **market-related farms**, approximately 16% of the total. These farms can plan a broader reproduction process; they develop production for sale specialising in vegetable and fruit-growing and/or grape or milk-processing.

The depopulation of rural areas began only recently in Albania but it is currently extensive. The rural population decreased from 64% of the total population in 1990 to 46% in 1999, concentrated around the major towns and cities or coastal zones. Approximately 33% of the rural population in Albania is under 15 years of age and only 5.3% is over 62 years of age. An average of 2.6 persons work on each holding, where as 5 or 6 persons live on the farm.

Farm structures still show marked contrasts amongst the countries of the **European Union**. The average acreage per holding (in 1997), for example, was 42 ha in France, 20 in Spain, 9.7 in Portugal, 6.7 in Italy (in 1998) and 4.7 in Greece. In Italy, Spain and Portugal, farm structures are marked by a higher level of duality, with a small number of large farms and a large number of micro-structures rarely employing 1 worker full-time. The number of the latter is decreasing rapidly, and succession is rarely ensured.

Farmers in these 5 countries are always fairly old, although there as been an increase in the number of younger farmers. The sharp drop in the number of farmers, although varying in degree from one country to another, can still be interpreted as the progressive disappearance of small marginal holdings to the benefit of more professional farms. The development of farms run on the basis of multi-functionality is not yet reflected in the statistics.

In **France**, the information available for 1999 shows that the number of holdings is continuing to decrease, but at a slower pace than in the period from 1988 to 1997, when it was -4.4%.

Furthermore, there has been a decrease in the number of entries of young farmers. The number of Young Farmer Grants allocated dropped from 8,200 in 1998 to 6,900 in 1999, whereas this figure was regularly above 9,000 in the 1980s and 1990s. It is a fact that more and more farmers are setting up in activities "outside the European standards", in multiple jobholding, for example, or by progressively taking over small holdings; France hopes to be able to accompany these situations in the context of new measures following the reform of the CAP in 1999.

In **Spain**, the number of holdings decreased by 4% per year in the period from 1988 to 1997.

Taken as a whole, this rate of decrease has been much more rapid in the 5 Mediterranean countries of the Union than in those in the north.

In **Italy**, the structural situation in the agricultural sector in 1998 (most recent statistics available) indicates an average acreage of 6.7 ha per holding and a tenant farming area of slightly more than 10% of the agricultural area in use. The farms are mainly family-run (97.6%) and owner-operated (77.3%); 82.1% of these farms use family labour exclusively.

Of the 20.4 million ha of total area belonging to agricultural holdings 74% is agricultural. Arable land constitutes 55.4% of the AAU, tree-farming 18.5% and grassland 25.8%. Woods and poplar trees account for 19% of the total area, covering 3.8 million ha of farmland; the remaining 1.5 million hectares are made up of agricultural area that is not in use and areas used for various purposes (7.3% of the total area). Compared to 1997, the AAU increased by 1.8%, whereas the arable acreage increased by 2.1%, the acreage under perennial crops increased by 2.3%, and, finally, the acreage of grassland and pasture increased by 0.8%.

37.2% of the farms grow cereals on 28.7% of the AAU; 2.5 million ha are under wheat crops and 1 million under maize.

Despite the operating operations that are being encouraged by the Community arrangements, 771,000 holdings (34.4% of the total number) still engage in wine-growing covering a total area of 836,000 ha (4.1%). The reduction has concerned mainly holdings growing grapes for the production of "other wines" (i.e. table wines), which account for 28.0% (with a drop of 37.3% compared to 1990). Holdings producing DOC and DOCG wines account for 6.4%.

Olive-growing concerns approximately 956,000 holdings (42.6%), with an acreage of 1.1 million ha, i.e. an average of 1.2 ha per holding.

The number of farms practising animal husbandry increased in 1999 by 3.9% compared to the previous year. However, comparison with the 1990 census reveals a decrease of 240,000 (-24.8%) affecting all species: goats (-43.7%), poultry (-37.3%), horses (-18.3%).

In **Greece**, of the country's total area of 13.2 million ha the area used for agriculture amounts to 9.1 million ha and the forestland area to 2.9 million ha. This includes 3.9 million ha of arable land and 5.2 million ha of pastureland. Approximately 0.5 million ha of arable land are left fallow each year. 56% of the arable land is situated in zones in the plains, and the remainder is situated in mountainous or semi-mountainous zones. One-third (35%) of the arable land is under irrigation. Taken as a whole, a significant proportion of the agricultural land is of poor quality, and large areas of land have been abandoned in the last 4 decades in depopulated and less advantaged zones.

The agricultural land is used as follows: annual crops: 65%, horticultural crops: 3.6%, vineyards: 4.1%, and orchards: 27 %. Animal husbandry is distributed as follows: 9.2 million sheep, 5.5 million goats, 0.6 million cows located mainly in the mountainous zones.

As regards agrarian structures, one observes fragmentation and the very small acreage of holdings (approximately 4.7 ha on average); 89% of the holdings have less than 10 ha, and it is mainly these holdings which account for 53% of the crop acreage – a factor which constitutes an exception in the European Union.

Taken as a whole, agricultural structures in the European Union are developing steadily, and changes in land use are very slow. Any major changes that are made concern annual crops and are often to be explained by Common Agricultural Policy mechanisms.

Thus, a trend in arable crop production totally contradictory to the situation in **France** and **Spain** was observed in 1999. In Spain, oil crops (mainly sunflower) decreased and cereal crops, particularly wheat, increased. In France, on the contrary, there was a marked progression in rapeseed production to the detriment of cereals. Yet in both cases these trends were due essentially to the effects of the CAP.

As had previously been the case in France, the trend in Spain was due to the effects of the 1992 reform, in which price support was abolished in the oilseed sector. When there is a downward trend in prices on the world market, the area under oil crops decreases, albeit in relatively moderate proportions, due to the role of the crops in the rotation system, and this decrease generally benefits cereals. In addition to this, there was the effect of the drought in Spain, to which cereals resist better than sunflowers - hence the decision to reduce the latter crop.

In France, the major factor was the increase in the compulsory set-aside rate for arable crop production, which was increased from 5% to 10% of the total area ("SCOP": area under cereals, oil crops and oil-protein crops). Contrary to their Spanish counterparts, the vast majority of French cereal-growers are subject to this compulsory set-aside due to the size of their holdings.

Since farmers are allowed to grow non-food crops under contract on the land that has been idled, there was thus a very marked development in rapeseed production in 1999 for the production of fuel (diester), which constitutes the bulk of the acreages devoted to this "industrial set-aside". The total acreage under rapeseed increased from 1.15 to 1.4 million ha.

The situation in Italy was very similar to that in Spain; the reduction of acreages under oil crops was less marked (although it amounted to 22% of the total acreage), and the changeover benefited maize and durum wheat.

The drought which prevailed in the Western Mediterranean in 1999 considerably affected the agricultural economy in Morocco. It also revealed a problem specific to agriculture in **Spain**. The acreage under irrigation in Spain accounts for an important proportion of the agricultural area in use: 3.5 million ha, i.e. 13% of the AAU, due largely to the tremendous public investment efforts made in the 1950's and 1960's. With irrigation, a level of productivity per hectare can be achieved which is 6 times higher than that of non-irrigated crops, which means that almost half of Spain's gross agricultural product is the result of irrigation.

It is estimated, however, that the infrastructure is in a poor state of repair on two-thirds of the acreage under irrigation, and water losses are a major problem in Spain and one which was particularly serious in 1999, where many areas under irrigation suffered water shortages. And new national irrigation plan has thus been under discussion since 1998.

And finally, a factor concerning the demographic trend should be pointed out. In **France**, 1999 was marked by a general population census, probably the last in the history of the country. Population development in rural zones is always observed in detail in a country where population density is one of the lowest in Europe and where the risk of desertification is a constant matter of concern in certain areas. Analysis of these results shows a population growth and a positive migration balance in all types of areas, except in the major urban centres. In the case of the zones farthest from the influence of those urban centres, the positive trend is confirmed on the whole, despite continuing regional differences, with a trend which is still worrying along a north-east/south-west axis including a large part of the Massif Central and the Pyrenees.

The main feature for French agriculture is the fact that the proportion of agricultural population in rural areas is continuing to decrease, dropping below 20%.

The trend in **Spain** is very similar: the general population growth is continuing, although at a lower rate, but the depopulation of rural areas, which had continued for decades, seems to have stopped in 1999, and the population is beginning to increase again in many rural villages.

In **Turkey**, agricultural land and forestland cover approximately 82.8% of the total area, and field crops 39%.One-third of the crop acreage is fallow. Orchards, olive groves, market gardens and vineyards cover the same area as arable land.

75% of the arable land is under cereals, the remainder being distributed over leguminous food crops, oil crops, tubers and fodder crops.

A further crucial problem of the agricultural sector is the distribution of the 4.5 million crop farms according to acreage and type: 25% of holdings practice agriculture on less than 10 ha, the average acreage being 5.6 ha.

In 1999, there was no significant change in land use in any of the **Southern Mediterranean countries** compared to the previous year, although it is true that things only change in the medium and long-term in this field. When one considers the utilisation of AAU (including rangelands), the 3 countries of the **Maghreb,** which have a much larger proportion of arable land, are quite different to **Egypt** and **Lebanon**.

In the former countries, rangelands are continuing to be cleared - mainly for growing cereals in **Morocco** and **Algeria**, and for growing olives combined with cereals in **Tunisia**. As regards the utilisation of arable land, its allocation to a particular crop depends mainly on the availability of irrigation water and rainfall. In the countries of the Maghreb, dry farming predominates, the main crops being cereals and fodder crops but also hardy tree crops (olive trees, fig trees, almond trees, etc.).

Arable acreage under irrigation remains low, except of course in **Egypt**, where it forms the essential part of the total acreage. *The intensification rate of farming on this land remains low except in the case of Egypt, where it reached a level of 181% in 1998.*

As regards land structures, there was no recent study bringing any new factors in 1999 (except for a survey on small farming in Tunisia). The vast majority of holdings are small (73% of holdings in Tunisia) and there is still a great deal of fragmentation, which is explained mainly by the low dynamism of non-agricultural activities, which are unable to absorb surplus agricultural labour at an adequate pace. It is surprising that so few studies are carried out on land structures when knowledge of the development of the structures is so essential to designing more effective agricultural and rural development policies. Whereas **Morocco** conducted an agricultural census in 1996-97, for example, **Algeria**, on the other hand, has not carried out a single census since 1973. **Tunisia** conducts an annual

survey on a representative selection of holdings, which enables the authorities to have a relatively reliable evaluation of each farm year. The only survey conducted regularly in **Algeria** is a survey on cereal yields.

5.2 - Agricultural production

Agricultural output in 1999 and its development compared to the previous year showed a marked contrast between the countries of the Maghreb and Spain, which were affected by drought, and the other countries; incentive policies and international markets also had their effects (particularly in France, a major exporting country), so that the final overall picture is one of contrasts.

Agricultural production in **Spain** decreased in volume by 2.1% in 1999. This decrease is to be explained essentially by the drought; crop husbandry was affected in particular, decreasing by 6.3%, and cereal output was very low (-23%), despite an appreciable increase in grain-sown area. The average yield for small-grain cereals thus dropped from 2.9 tn/ha in 1998 to 2.18 tn/ha in 1999. A further crop that was also seriously affected: sunflowers, output decreasing by 47% compared to 1998. Even in the case of crops which are systematically irrigated, such as maize or sugarbeet, harvests were mediocre due to water shortages in certain regions.

Animal husbandry showed a good growth rate on the other hand (+ 4.1%), including pigmeat (+ 5.4%), despite the crisis. The growth in this sector has been remarkable, with Spain becoming the second largest European producer in the middle of the 1990's, behind Germany but ahead of France, where production stagnated in 1999. Growth also continued in the poultry production sector, despite the difficulties on the world market. Sheepmeat production was the only sector to show a decline: - 5.5%; this sector depends to a large extent on the state of non-irrigated pastureland.

The decrease in agricultural incomes[12] in Spain was the highest rate registered in Europe in 1999: - 8%.

[12] measured in the system of the European Accounts for Agriculture as the variation of the real net value added (i.e. deflated) at factor cost in relation to the variation of the volume of total labour.

Box 5.1 - New presentation of the Accounts for Agriculture: European System of Accounts 95

From 1999 onwards, the countries of the European Union have undertaken to present their national accounts for agriculture in compliance with the European System of Accounts (base year 1995). The statistics on the value of agricultural production, the gross agricultural product, and agricultural incomes of the 5 Mediterranean countries of the EU are thus presented here in that manner.
This introduces a number of changes compared to the statistics presented in previous years. There are three such changes:

- Field covered by the accounts: exclusion of family gardens, and, more important, introduction of diversification activities, agri-tourism, on-farm processing, in-plant work.
- Only the "production" perspective has been retained (no more double accounts with the "deliveries" perspective), and all sectoral intraconsumption has been integrated (cereals produced on a farm and consumed by the animals on that farm or on another farm, for example, are counted).
- Calculation of the value of commodities at "basic price": any amount of product subsidies is added to the market price paid to farmers (and the amount of levies imposed on products is subtracted). Product subsidies are not defined precisely; these are subsidies paid to farmers or purchasers to compensate for market prices which are considered to be inadequate. The subsidies are not necessarily proportionate to the quantity or value of production. Flat-rate animal or per hectare aids resulting essentially from the 1992 CAP reform are included, because the payment of these aids depends on the nature of production. Totally "decoupled" aids, on the other hand, such as agri-environmental aids or the set-aside premium, do not come under this category. The "theoretical" justification of this calculation is that all of these aids are considered to be a subsidy granted to the purchasers of the products which is deducted from the normal price, the "basic price".

It thus is not possible to compare the 1999 statistics directly with those of the previous years, when other rules applied, particularly as regards production value. For example, cereal production value in France increased by almost 60% from 1998 to 1999! However, national accountants publish a base year 95 estimate of the results of the previous years with which such comparison is possible. The results concerning incomes show less difference on the other hand.

In **Morocco**, the weather conditions in 1999 made it impossible even to plant cereals on as many areas as in 1998 (decrease of approximately 700,000 ha, i.e. approximately 10% of the 1998 grain-sown acreage. There was consequently an

increase in areas of fallow land. Cereal output was more than mediocre on the whole, decreasing by 42% in 1999 compared to 1998.

As regards fruit crops, the only very good results achieved in Morocco were in the grape sector (+ 25%). Growth was less pronounced in the case of almond trees and other fruit crops (+ 9% and + 12% respectively). There was a sharp decrease in olive and date production on the other hand (-33% and -90%). Fruit-growing was less affected by the lack of rainfall than were annual crops. Growth was positive in the case of all crops and particularly high in the case of stone and seed fruit (+ 25%), wine grapes (+ 61%), olives (+ 39%), and fresh grapes (+ 14%).

Animal husbandry also suffered less from the drought in Morocco, no doubt due to the fact the fodder units from the unharvested cereal crops served as animal fodder. Milk production thus increased by almost 11% and goatmeat production by 36%, whereas beef and veal production dropped by 5%, sheepmeat production having stagnated, and egg production having progressed by 3%.

In **Algeria**, the weather conditions were fairly similar, with the same consequence; cereal production dropped by 33%, red meats progressed by 4%, but milk production increased by 42% and white meat production by 25%.

On the whole, the cereal yields in the 3 countries of the Maghreb were below what can be achieved with the technologies available. This is demonstrated by the disparities in yield between producers in the same agronomic zone, due no doubt to the varying possibilities of access to producer goods enjoyed by the various types of producers and their capacity to take risks.

Milk production in **Tunisia** continued to grow (+ 11.3% in 1999 against + 13 % in 1998, as did white meat production (+ 11.4% compared to + 19.5% in 1998). However, red meat production stagnated.

The feature common to all of the countries of the Maghreb thus seems to be their will to increase milk production in order to reduce pressure on their balance of payments, and their success in this field, the case of Tunisia being a particularly good example.

Thanks to irrigation, Egypt does not suffer from marked instability in output, but its yields are still low, no doubt due here again to the low level of utilisation of producer goods (fertilisers, pest control products).

There was a significant increase in fruit output in 1999: + 8%.

Production in **France** developed favourably on the whole, with major differences from one product to another. Crop production increased appreciably - by 3.5% compared to the 1998 figure, which was already high, whereas animal production

remained at the same level (-0.1%); taken together, crop and animal husbandry showed a slight increase (+ 2.1%).

The biggest increases concerned fruit output (+ 16.5%), which had been affected by spring frost the previous year, and oil crops (16.3%), where there was a slight increase in yields but a large increase in acreage under rapeseed. There was also a considerable increase in potato output (+ 9%), where production is very cyclical and does not benefit from support mechanisms within the framework of the CAP; in 1998, output had been low and prices high; both acreage under crop and yields increased in 1999.

And finally, after the bumper harvest in 1998 it is not surprising that there was an appreciable decrease in the cereals sector. There was a slight decrease in yields, but the main cause of the drop in output was the reduction of acreage under crop due to the increase in the rate of compulsory set-aside.

Box 5.2 - Tunisia: self-sufficiency in milk production achieved in 1999

Milk output achieved the level of 817,000 tn in 1999 as against 734,000 tn in 1998. This production came from livestock consisting of 188,000 pedigree dairy cows, 296,000 local cows and 765,000 milking goats and sheep. The quantities collected by the national network exceeded 385,000 tn in 1999 compared to 350,000 tn in 1998, i.e. a growth rate of 7.5%. This collection was carried out by 258 centres with a total capacity of 1566 million litres. The quantities of milk received by the milk-processing plants amounted to 428,000 tn in 1999 as against 403,000 tn in 1998, i.e. a growth rate of the order of 6%. The quantities used for producing pasteurised milk amounted to 265,000 tn, and the remainder, i.e. 163,000 tn, was used for manufacturing milk derivatives (cheese, yoghurt, butter, etc.). Per capita consumption was around 87 litres for 1999.

The next stage requires greater efforts to maintain this development and to seek appropriate solutions for resorbing the production surpluses which will be structural as of the year 2000.

The milk sector managed to achieve the objectives it had been set as the result of a policy whose main elements have existed for many years: establishment of the first collection centres by 1980 and, as of 1980, allocation of a subsidy of 40 millimes/litre milk collected and cooled to approved collection centres. But it was in particular the measures taken in 1989 which changed things radically in the milk production sector:

i) the introduction of a supplementary levy on imported milk powder in order to ensure 15% protection of local production;
ii) application of the consumer subsidy allocated to reconstituted milk and to fresh industrialised milk (8 millimes/litre until 1994 and 40 thereafter;
iii) abolition of the 3% levy on milk production; iv) a steeper increase in milk producer prices (which rose by 85% in the period between 1990 and 1996). Further measures were then subsequently taken: facilities for the import of dairy cows, increase in the number of collection centres, efforts to ensure regular feeding with compound feeds.

In the animal husbandry sector, there was a slight increase in cattle and pig output. In the latter case there was marked recession in growth after the major investments effected by producers the previous years with a view to taking advantage of the decrease in output in the Netherlands and Germany as the result of the health problems in those countries. It must also be noted that the constraints related to the risk of water pollution (the need for large areas for spreading livestock manure) are very great for this sector, which is geographically very concentrated (although of course the major part of it is situated outside the Mediterranean zone).

The 0.9% decrease in milk production indicates that the trend which started with the introduction of the milk quotas in 1985 is continuing; this trend is the mechanical effect of the application of these quotas: the quotas of producers who stop producing are not transferred to other stockfarmers in their entirety.

And finally, the poultry sector, which was particularly dynamic in the 1990s, registered its first decrease in production in 15 years, suffering the effects of the global overproduction crisis, which are sorely felt by a sector that is geared very much to export and enjoys little support at the European level.

In terms of prices France also registered a fairly marked fall (-3.8%, or-4.4% non-subsidised[13]), which also affected crop and animal production (-4.1% and-3.7% respectively). In these 2 countries the overall economic result was mediocre. The gross agricultural product decreased in France by 3.6%. These statistics include producer subsidies, which increased by 2.3% in 1999 and thus limited this decrease which, without subsidies, would have been 5.5 % in France. There was thus a downward trend in farmers' incomes. The average income per agricultural worker dropped in France for the first time since the 1992 reform.

Contrary to its neighbours, **Portugal** had an extremely successful farming year with a particularly spectacular increase in crop production (+ 30.6%), although it is true that crop output had decreased by 13% over the previous 2 years. The development of animal products was much more subdued, with an increase of 2.4%.

[13] See the methodological note on the European System of Accounts, base year 1995, applied from 1999 onwards in the accounts for agriculture of all of the countries of the EU.

Box 5.3 - An exceptional year in Portugal after 2 consecutive years of decrease in production

Portugal registered a considerable increase in production in 1999; this growth was particularly spectacular in the case of crop products, especially wine production, which doubled, fruit production (+36%) and cereal production (+19%). Animal product development was more normal, with an overall increase in volume of 2.4% (the two extreme trends being +5% for pigmeat and -3% for poultrymeat).

The increase in crop products may well be slightly due to the calculation method, for the use of EAAs in line with the European System of Accounts 95 means that a larger field is taken into account than was previously the case; however, the figures on development from one year to the next are, in principle, calculated on an equal basis.

In actual fact, one should say that it was a good year rather than an exceptional year, which, after two years of considerable decrease in production, enabled Portuguese agriculture to regain the upward trend which it had registered over the previous decade. In terms of value, 1999 production reached exactly the same level as was achieved in 1996 (4842 million euros, as against 4843 million); in terms of volume, this represents a slight increase; it is a fact that whereas Portugal registered a more marked average drop in prices than the European average (-3.8% as against –2.8% on average), the low harvests in 1997 and 1998 resulted in significant rises in prices, particularly in the case of fruit and vegetables (+20.1% for crop products between 1997 and 1998).

From the economic point of view it can be said that the gross agricultural product in Portugal increased this year by 28% and the agricultural income by 14%, which is by far the largest increase in all of the countries of the European Union.

The agricultural production situation in the other 2 countries of the European Union was favourable on the whole.

In 1999, the final production figures for **Greek agriculture** showed an increase in volume of approximately 0.9% with an increase in crop production (1.7%) representing the bulk of output (73%) and a decrease in animal production of approximately 1.3%.

Producer prices increased slightly (0.28%) as the result of the 0.87% decrease in crop production prices and a 3.43% increase in animal product prices. Expenditure on intermediaries increased by 2.36% due to a 1.99% rise in prices and an increase in volume of 0.36%.

The most important crop production items were horticultural crops (17.5% of total output) and fruit (16.7%), followed by olive oil (10.5%), cereals (10.4%), milk (9.8%), industrial crops (8.7%) and sheepmeat and goatmeat (7.3%).

Cereals constituted the main crop (1.3 million ha, 4.5 million tn). The principle commodities were maize and durum wheat (which has gradually replaced common wheat). Rice production has also recently increased significantly. In the period from 1998 to 1999 a decrease in cereals of 2.1 % was registered which can be attributed to the decrease in barley, rice and maize output. Cotton, another very important crop (450,000 ha and 1.4 million tn), covers a large proportion of the area under irrigation. Tobacco creates a large number of jobs for small farmers in various areas of rural Greece, but, given the current quota, production has decreased by approximately 125,000 tn per year. There was an increase in sugarbeet output (18.4%) in 1999.

Output in the tree-growing sector increased by 16.7 % in 1999 with a 37% increase in fresh fruit production in particular. The main crops were peaches (where production levels were low in 1997 in 1998 as the result of extensive damage), oranges and citrus fruit. The production of olive oil - generally of high quality -, which is considered an important source of income in disadvantaged mountainous areas, increased by 163% compared to the previous year, with an output of 380,000 tn. And finally, wine production has been decreasing in the past few years despite a significant improvement in terms of quality.

The downward trend in meat production continued, reaching a level of 6.4% of total production in 1999, poultry, pig and sheepmeat being the predominant products.

There was a slight increase in milk production in 1999, although the sector is still confronted with major production capacity problems related to structural weaknesses. Animal husbandry is suffering both from competition from the more specialised countries in the north of Europe and from unfavourable natural conditions in the mountainous regions, to which it is generally confined. Furthermore, in view of the working conditions in traditional animal husbandry (herding) few stockfarmers find a successor when they retire from farming.

On the whole, the agricultural income in Greece remained stable in 1999.

In **Italy**, 1999 can be considered a satisfactory year with a growth rate of 3.4% - the best rate registered in the last 10 years. It was mainly olive, fruit and citrus fruit production which contributed to this result and, to a lesser extent, wine-growing and wine-making. Poultry production, on the other hand, suffered from the effects of the dioxin crisis on demand and from the hen flu epidemic which destroyed numerous poultry farms in the north-east of the country.

Taken as a whole, there was subdued growth in annual crops (+ 0.8%), except in the case of maize (+ 11%). There was a marked drop in durum wheat output (-5%), common wheat (-4.7%) and barley (-3.9%) due to the decrease in yields. Industrial crop output decreased by 5.9%. The acreage under sunflower, Soya bean and rapeseed decreased by 10%, 28% and 15% respectively, due to a large extent to the reduction of aids per hectare. The acreages under maize, durum wheat and sugarbeet increased by 5%, 6% and 4% respectively.

A good recovery rate was registered for high-protein crops (+ 2%), as the result of the positive signals from the EU through the payment of specific producer aids. In the horticultural crop sector production was fairly stationary except for tomatoes, where there was an increase both in acreage and output. A remarkable growth rate was achieved in fruit-growing (+ 10%) except in the case of pears (-14%). Olive production increased by 27%, and citrus fruit production increased by 2%.

On the whole, the increase in animal production was due to the recovery in beef and veal (+ 4.5%) and pigmeat (+ 4.2%). There was a downswing in poultry production on the other hand (-1.5%), whereas mutton and lamb and goatmeat production was stationary. And finally, the increase in cow's milk output (+ 1.9%) is to be explained by the additional milk quotas allocated to Italy.

However, due to the fall in agricultural prices in 1999, Italy no longer escaped the general downward trend in agricultural incomes (-1%).

Attention must be drawn to the particularly marked recent development of organic farming in Italy involving 35,000 farms and firms (30,000 farms and 5,000 processing firms) covering 800,000 ha (5.5% of the AAU). The economic value of the organic market is estimated at around 1900 billion (approximately 1035 million US $) and the trend is upward; the main products are as follows: cereals, olive oil, milk, yoghurt, and fresh fruit and vegetables. A further specific phenomenon is the development of agri-tourism involving 9,000 farms and the turnover of 900 billion (490 million US $).

As has been seen, **Albanian** agriculture has undergone considerable changes over the last few years. In the period from 1990 to 1999 the acreage under wheat was reduced by 45%, whereas the acreage under vegetables increased by 140%. This is to be explained by the fall in cereal prices on the international market, which made it unprofitable to produce in a context where small individual farms are developing.

In the animal husbandry sector there has been an increase in cattle production (+ 10% in the period from 1990 to 1999) resulting in a surprising increase in milk production (244%) and a sharp decrease in the number of pigs (-60%).

Perennial crops were never considered a priority in the collective farming system and did not begin to develop until after 1993-1994. The most marked development

has been registered in vine production, an 86% increase in output being achieved in the period from 1992 to 1999.

And finally, in **Turkey**, where crop production accounts for 71% of agricultural production, the decrease in cereal, legume, fruit, olive, sugarbeet and tobacco output registered in 1999 led to a marked decrease in total production (-6%).

There was an increase in the production of the main livestock products in 1999, on the other hand, but yields were still low. For example, in the countries of the European Union the average weight of a beef carcass is approximately 250 kg, whereas in Turkey it is still only 116-170 kg.

5.3 - Agro-industrial production

The agri-food industries constitute a major industrial sector in all of the Mediterranean countries. In the most industrialised countries in the north, such as France, Spain or Italy, this is also a dynamic sector in which productivity and growth are comparable to those of the other most modern industrial sectors and which is geared very much to exports. The situation in the other countries shows more contrast, in particular the co-existence in most cases of a modern sector which is geared to exports but where production is often limited due to the difficulty in procuring regular local supplies - as is the case in Greece and Morocco, for example - and a traditional sector.

In **France**, output in the AFI sector increased by 1.4% in 1999 - a slightly higher growth rate than in 1998.

This increase is the result of the marked progression in beverage production in particular (+ 6%), a sector which is registering steady growth and where exports are also increasing significantly.

There was a particularly high demand for 2 products in this sector in 1999 - champagne, of course, but also water, where production is steadily progressing and exports to the European Union are developing.

The other sectors which are progressing significantly are as follows: canned fruit and vegetables, manufactured products, in particular meat products, ice cream and frozen foods, and sugar, where non-subsidised exports are continuing to develop (non-quota sugar) despite the fact that international prices are beginning to fall off.

Production in the milk industry increased slightly (+ 0.8%) as the result of the continuing growth in exports. The overall growth in the meat sector (+ 1.3%) conceals considerable disparities, in particular the poultrymeat crisis (-2.6%),

which became even more acute in the year 2000 resulting in the closure of one of the major operators in the sector.

The sectors registering a downward trend were: oils and fats (-4.8%), the grain-mill product manufacturing industries, and in particular those manufacturing animal feeds and closely related to the pig and poultry sectors, and tobacco, where the downward trend has been regular ever since the rise in prices has been compounded by dissuasive campaigns.

A further important factor in France in 1999 was that the AFIs created jobs; there were over 5,000 wage-earning jobs that year, i.e. an increase of 1.8% accounting to very large extent for the increase in French industry as a whole. The increase registered in 1998 thus was not accidental.

In **Spain**, the AFI sectors account for approximately 4% of the national economy and 2.9% of jobs. The main sectors are dairy products, oils and fats, meat and cereal products. The fact that the sector is flourishing in general is due mainly to the expansion and diversification of the domestic market. Spanish consumers have access to mass consumption but at the same time remain faithful to traditional products for which the AFI sector has an obvious advantage, particularly in the case of its small and medium-sized enterprises. This is also where the potential weakness of the sector lies: faced with globalisation or simply with the European single market, it is still relatively fragmented with very little differentiation in production geared to winning external markets.

The **Portuguese** AFIs registered an appreciable growth rate in 1999 (+ 3.8% in output); this can be related to the growth in the agricultural sector achieved that year: crop-product processing was the major activity, cereal products, beverages and tobacco together accounting for almost two-thirds of total production. This industry has assets and weaknesses comparable to those of its Spanish counterpart.

In **Greece**, the food-processing sub-sector is the most important branch of the manufacturing sector (3% of GDP). It furthermore accounts for 3.2% of total employment and almost 15% of total exports.

In terms of sales, the main food-processing industries concerned canned fruit and vegetables, milk and dairy products, processed cereals and non-alcoholic beverages.

The sector is very fragmented; 94% of the undertakings in the food-processing and beverage industry employ less than 10 workers, and 60% do not employ more than 2 workers. In terms of employment, the most important branches of the food-processing industry concern sugar, grain-mill products, canned fruit and vegetables, non-alcoholic beverages, milk, wine, cereals and vegetables. Greece is

the second largest canned-peach-producing country in the world and the leading exporter.

In **Italy** there is still a very high percentage of small undertakings in this sector, where firms employing less than 10 workers account for 90% of total employment and 40% of employment in the sector. Businesses employing over 100 workers, on the other hand, account for 0.7% of undertakings and 30% of employees. The latter larger undertakings operate mainly in the meat, fish and fruit and vegetable-processing industry (although in the fruit and vegetable-processing sector businesses employ only 15 workers on average).

With 69,000 undertakings and 442,000 employees the agri-food industry accounts for approximately 12% of undertakings and 9% of employees in the manufacturing industry.

As regards production, an 1.4% increase was registered in 1999 compared to 1998, whereas production in the manufacturing industry as a whole only increased by 0.4%. This increase was due to the rise in domestic demand (+ 1.2%) and in external demand (+ 1.8%). The increase in exports was greater than the increase in imports (3.3% and -1.2%).

Value added (including tobacco) increased by 4.9% in constant lire, which was higher than the 1998 increase (3.1%). In the manufacturing industry as a whole the value added of the agri-food and beverages industry was 10.6%.

The 1999 production figures reveal a good dynamic in certain sectors such as the fish-processing and fish derivatives sector (+ 11%), beverages (+ 4.6%), meat-processing (+ 4%) and fruit and vegetable processing (+ 5.2%). The above-mentioned increases made it possible to offset and overcome the downward trend registered in other sectors such as the vegetable and animal oils and fats manufacturing sector (-1.1%), the grain-milling sector (-1.2%) and products for animal husbandry (-0.8%).

The typical Italian products included within the framework of Community Regulation 2081/92 carried considerable economic weight. These are agri-food products which are recognised by the national and Community authorities as having specific intrinsic features and being closely linked to the country and its traditions and which benefit from a PDO (Protected Designation of Origin) or PGI (Protected Geographical Indication) label. In 1999, 49 new products were thus recognised, bringing the number of designations up to 100. These labelled products account for 10% of agri-food turnover.

In **Albania**, the food industry is represented by 2,000 small and medium-sized enterprises with low product quality and obsolete technology. These firms are having to face stiff external competition. Eight large-scale food-processing enterprises are still state-owned and cover a large number of sectors: bread,

macaroni, spaghetti & similar products, oils and fats, milk-processing, beverage-processing (beer, wine, alcoholic beverages), tobacco.

Over the last 3 years production has decreased in terms of current value in all sectors with the exception of tobacco, sparkling mineral water and chocolate.

The agri-food industry in Turkey has the specific characteristic of a large number of state-owned enterprises accounting for 22% of enterprises, 31% of jobs, and 34% of total production in the sector.

This industrial sector is the most important in the country accounting for approximately 20% of output value and 16% of industrial employment in Turkey. The value of output and sales in this sector increased by approximately 2.5% in real terms from 1998 to 1999, but jobs decreased by 5% over the same period. In the past 2 years there has been an upward trend in production in the case of all products except vegetable oils, sugar and products containing sugar.

In **Malta**, there are 43 undertakings and 1,447 employees in the agri-food sector, which accounts for 5.6% of the value added of the entire manufacturing industry. Processed fruit and vegetables account for approximately 50% of value added.

In all of the Southern Mediterranean countries the agri-food industries play an important, if not predominant, role in the industrial sector. In **Morocco**, for example, according to the results of the survey conducted by the Ministry of Trade and Industry in 1998, the sector continues to account for 25% of existing undertakings, 33% of production, 21% of jobs, and 24% of investments[14].

Activities geared to domestic demand and the processing of staple foodstuffs are predominant within this category of industries. The sub-sectors of grain-mill products, fats, sugar and dairy products thus together account for over 50% of the output of the country's agri-food industries. Fruit and vegetable-canning, which is partially geared to export, accounts for less than 10% of the total. Exports represent less than one-fifth of agri-food output and are in fact only carried out by a minority of firms (16% of the some 1640 establishments in 1997).

Similarly, in **Algeria** the AFI sector was the leading sector in the manufacturing industries in 1998, far ahead of the manufacturing industries. In **Tunisia**, the AFI sector ranks second amongst the manufacturing industries after the textile industries (1996). In 1999, its value added accounted for 19% of the value added of the manufacturing industries as a whole.

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14 based on the statistics published on the website of the Ministry of Trade and Industry, August 2000 (heading: key figures *[les chiffres clés]*.

All of the Southern Mediterranean countries are endeavouring to promote their agri-food industries - with varying degrees of success - by pursuing policies to encourage measures to improve quality and promote competitiveness. One of the main avenues advocated is that of seeking partnership agreements with major foreign firms so as to benefit from their experience, the provision of capital and, as the case may be, their markets.

In **Tunisia**, a national consultation on the agri-food industry was organised in 1999 with a view to studying and recommending measures to improve production and competitiveness in the sector. A 13-year programme was drawn up with a view to establishing and updating the standards concerning all agricultural commodities and improving the various sectoral upgrading programmes. This programme focuses in particular on the sector's exports through measures to improve the business environment (prices, taxation, research, financing). These policies seem to be producing favourable results in Tunisia, since the value added for these industries has progressed by + 10.9% (whereas the manufacturing industries have only grown by 6.1%).

In **Morocco**, whereas the processing industries only registered modest growth in 1999 (2.5%), the agri-food industries virtually stagnated, handicapped in their agro-support sectors by shortfalls in agricultural production and in their downstream sectors by the low level of both domestic and external demand. However, a certain amount of dynamism was nevertheless registered in some activities in these countries, where the growth rate was at all events higher than in the sector as a whole: canned fish, sugar, industrial grain-mill products and edible oils (where processing is based more on imports), baking products, milk and dairy products, and confectionery. On the other hand, fruit and vegetable-canning activities, sugar, oils and fishmeal, roasted coffee, poultry feeds, and tobacco tended more to decrease compared to the level reached in 1998.

In **Algeria**, the agri-food industries stagnated in 1999 (+ 1.5 % compared to 1998). It will be noted in the case of this country that the public sector AFIs registered poorer results in 1999 compared to 1998 (cf. table below) due to the decrease in demand and to competition from the private sector (particularly in the milk and grain-mill product sub-sectors), which is now considerable.

5.4 - Food consumption

Although there is very little variation in food consumption from one year to the next, on the basis of the data available one can detect trends or observe more cyclical developments whose effects can affect a particular sector. In the countries in the north, the health crises which have had successive impacts on consumer confidence in beef and veal and then poultrymeat had consequences in 1999.

The volume of food consumption in France increased by 1% in 1999, a rate of increase close to the overall rate for the decade and lower than that of overall household consumption. The share of food consumption is continuing to drop; in fact, on the basis of the statistics published by the INSEE it can be calculated that it decreased from 19.3% in 1998 to 19.2% in 1999.

Beef and veal consumption recovered (+ 1.4%); the effect of the BSE crisis seems to have been attenuated, but this does not alter the fact that beef and veal are one of the products which are regressing in the long-term due to competition from white meats, whose prices are dropping in comparison. Pigmeat consumption is progressing at the highest rate (+ 5.8%) due to the effect of the sharp decrease in prices. This progression has been partially to the detriment of poultrymeat consumption, a sector where prices are also falling considerably and which is suffering the combined effects of this competition, the saturated world market and the dioxin crisis (discovery of traces of this highly toxic substance in poultrymeat in Belgium).

The French example demonstrates the importance of health crises, and more generally of the problems of confidence in foodstuffs, in the development of consumption.

Box 5.4 - The new dimension of the health crises in Europe

Health and food security problems are not a new phenomenon.

Food poisoning due to inadequate hygiene in the food chain or the presence of impurities in products was part of everyday life for previous generations. The progress made in hygiene and in purification and disinfection techniques as well as the development of controls have practically eradicated such problems in the more developed countries. Safe products of regular quality have even become the primary food quality criterion in the Anglo-Saxon and Northern European countries, whereas the countries in the South are in fact lagging behind in this field.

This does not mean, however, that “typical” health crises have disappeared completely. There have been recent cases of listeriosis, salmonellosis and food-related botulism in Europe, which have often been caused by traditional or artisinal products. In these cases the administration and the actors concerned react immediately and provide information, and, as soon as the cause is known, very stringent precautionary measures are taken in which the products are destroyed and/or the workshops are closed down. But even when there are no victims, public opinion considers cases like these to be scandalaous, since they are below standard in a society where health risks of this nature have been reduced to practically zero, and immediately tries to find culprits or stigmatise controls as inadequate. It is a fact that the last major food-related health crisis in Europe – the case of adulterated oil in Spain (causing the death of at least 400 people in 1979) was the result of both large-scale criminal fraud and laxity on the part of the authorities.

A new situation has emerged as the result of the doubts relating to the consequences of certain modern and intensive agricultural production techniques for consumers. The problem has existed since the 1970s, with the crisis of veal containing hormones accompanied by calls for boycotts from consumer organisations.

In 1999, there were four such crises with very widespread effects in the European Union:

- The use of growth hormones in cattle-breeding in the United States and the ban on such hormones in Europe as a "precaution principle" was also the cause of a trade and political crisis between the US and the European Union. Revelations of trafficking are regular news items.
- The dioxin crisis occurred as the result of fraud or at least of poor control of the use of waste in poultry feeds.
- Although very different in nature, there were two more significant events causing concern for the future: the debate on the use of Genetically Modified Organisms in agriculture and in food, and the epizootic of Bovine Spongiform Encephalopathy, or "mad-cow disease"; these crises were contributory factors in the complete change in consumers' and citizens' attitude to food and agricultural production and also revealed once again how difficult collective decision-making is in Europe whenever countries' interests are not exactly identical.

The debate on GMOs concerns three factors: the environmental risk of transgenic crops ("genetic pollution" and development of self-propagating weedkiller-resistant species), the risk that farms in both the North and the South will be subject to seed suppliers who have an oligopoly or even a monopoly, and, thirdly, the fear – as yet unconfirmed – of the effects on man or or animals of the consumption of GMO-derived products. After lengthy discussions, the application of the precaution principle, which is defined differently in Europe and in Europe's main trading partners, and even within the Union, resulted in complex decisions: very limited cultivation permits differing from one country to another, compulsory foodstuff labelling. These decisions now have to be re-debated in the international bodies – WTO and bio-diversity agreement.

The BSE epizootic took on considerable proportions in the United Kingdom (over 150,000 cattle affected since 1986), but the extent of its effect varied in other countries; the figures presented are apparently debatable, since the disease is difficult to detect and detection methods differ from one country to another; however, France and Portugal seem to be the most affected, whereas no cases were yet detected in Spain or Italy in 1999.

The role played by animal feeds was recognised rapidly, and the use of animal meal in cattle feeds was immediately banned in the UK and subsequenttly also in the other countries.

A new stage was reached in 1996 with the discovery of possible transmission of the disease to man (a variant of Creuzfeld Jacob disease where the outcome is always fatal). Some 50 deaths have been attributed to this contamination in the UK and 3 in France, and the development of the epidemic could be very serious due to the length of the incubation period. From 1996 onwards, after difficult discussions, the EU has taken measures applying throughout the Union: ban on animal meals (extended to species other than cattle in the year 2000), embargo on British meat and animals – an embargo which has since been lifted, although France is still refusing to do so -, prohibition of the marketing of nerve

tissues or of tissues in contact with nerve tissues. After a marked drop in consumption, the decisions taken at the European level seem to have restored confidence, and considerable recovery in beef consumption was registered in most countries in 1999. A new crisis occurred in 2000 with the persistence of cases in animals which in principle are not vulnerable to the disease and in countries not hitherto affected has resulted in a new fall in consumption and the closing of several intra-Community frontiers. Collective decision-making in the Union has once again proved difficult. One wonders whether the countries which have made the most efforts to detect the disease and establish transparency and which have taken the most stringent measures have not been victims of their own action to some extent, since they have suffered the most extensive economic damage.

There are two possible solutions:

- in the case of all products, the general improvement of product control and monitoring ("traceability") and of efforts to combat fraud;
- the development of specific products instituting a more personalised link between the product and the consumer: labels, PGI and PDO, local products, organic farming, etc.

There are no statistics available in Greece for 1999, but the trends that have been observed over the past few years show that as the result of the rise in incomes the consumption of meat, dairy products and fruit and vegetables has increased tremendously, whereas the consumption of traditional products such as bread and olive oil is continuing to fall. It is estimated that these trends will continue steadily in the year 2000.

Food consumption in **Italy** is still sluggish. After the slight recovery registered from 1997 to 1998 in constant prices, consumption fell off in 1999 (-0.1%). Meat and dairy product consumption is stagnating and fat consumption is continuing to decrease.

The specificities of eating habits are still closely linked to the predominant lifestyles, the propensity for using typical products, and food distribution structures. The composition of household food consumption was as follows: bread and cereals 16.5%, meat 23.5%, potatoes, fruit and vegetables 16.9%, milk and cheese 14%, beverages 8.9%, and fish 7.7%. The share in expenditure of meals outside the home is also remarkable - 18% of the average monthly household expenditure, i.e. it now exceeds food expenditure in the home.

Food security improved slightly in **Albania** in 1999 as the result of international aid and a series of programmes for refugees, which helped to consolidate the national private sector. The prices of staple food commodities thus dropped considerably. Compared to the situation in 1990, it can be said that the level of food security has improved considerably for Albanians, although there are still

problems with essential commodities for the population in the north of the country.

There are no new statistics on consumption surveys in the Southern Mediterranean countries. On the whole, there seems to have been no change in food consumption structures: predominance of cereal consumption, low milk and dairy product consumption, low meat consumption (cf. table below).

Table 5.2 - Food consumption in 1998 (kg/person/year)

	Morocco	Algeria	Tunisia	Egypt
Cereals	252	237	219	245
Roots and tubers	33	33	30	25
Sweeteners	38	24	31	32
Dried beans	8	5	8	8
Vegetables	114	81	169	159
Fruit	78	40	73	79
Meat	18	17	20	20
Fish	8	3	9	10
Milk	34	110	79	43
Oils and fats	14	17	22	8

Source: Medagri 2001.

The most marked improvement in the food situation in 1999 was probably registered in **Algeria**. The variation in the foodstuffs price index was in fact only 10.9%, the prices of many products having dropped in 1999 (potatoes, white meats, fruit, sugar, oils, beverages...).

The consumption survey conducted in Morocco in 1998-1999 revealed that the structure of household expenditure is still geared to subsistence commodities, housing and energy consumption. Although there has been a comparative decrease in food expenditure, it nevertheless remains the main consumption item at 43.1% of the budget compared to 45.5% in 1991. This average actually conceals an appreciable difference between the urban and the rural environments, since the proportion in question drops to 38.4% in urban areas and rises to 54.2% in rural zones[15].

[15] Enquête nationale sur les niveaux de vie des ménages, 1998-99 ; premiers resultants. Direction de la Statistique, Ministère de la Prévision Economique et du Plan, Rabat, 2000, page 75.

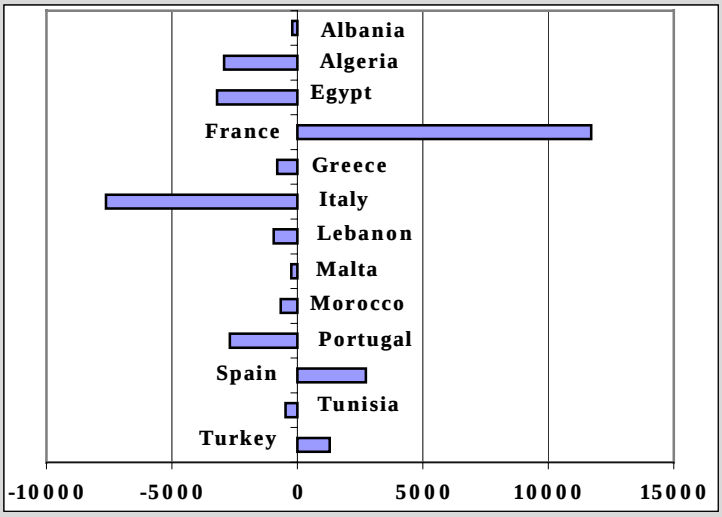
5.5 - Foreign trade

As was the case in previous years, only Spain, France and Tunisia achieved a positive foreign trade balance in 1999. The deficit is tending to decrease in Italy, Portugal and Turkey, where production progressed in 1999. In Greece, on the contrary, consumption is developing more rapidly than production. In the Southern Mediterranean countries, imports are often limited by efficient demand, and fluctuations in production are still resulting in differences in the population's food supply from one year to another.

In all of the countries of the European Union the bulk of trade is carried out with the rest of the Union. Spain and Portugal, which joined more recently, are no exception to this rule, and their external trade flows have been largely reoriented since their accession. In the food sector, for example, the Union accounts for 72% of exports in France, 77% in Spain, 67% in Italy and "only" 51% in Greece. As regards imports, the proportion is slightly lower in the case of the major exporting countries: 70 % in Spain and 55% in France; the importing countries, on the other hand, are very dependent on their Union partners: 74% of Italian imports and 67% of Greek imports come from EU countries.

Although the figures are lower, Turkey - which also has important trade flows with the United States - and the countries of the Maghreb realise approximately half of their foreign trade with the countries of the European Union.

Graph 5.1 – Agricultural trade balance (million $)



Although a recent tradition, **France** has now become one of the major world exporters, its agri-food trade contributing to a large extent to the favourable balance of payments. In particular, the balance of trade in goods decreased this year due to the rise in oil prices and the decrease in the export of military equipment. The agri-food sector resisted on the other hand, since its balance improved slightly, achieving + 61.8 billion francs in 1999 - half of the export balance and 26% of the value of agri-food exports. Both imports and exports decreased slightly, the latter less than the former.

The development of the sector was rather curious in 1999, since the first half of the year was very mediocre, whereas the situation was remedied in the second half. The "year 2000" effect, which boosted exports of champagne (+ 3.4 billion compared to 1998!) and spirits, obviously played a role in this trend, but various other sectors - fruit juice, ice cream, yoghurt and milk desserts, meat products - also had a good year, particularly in the second half. It was a bad year for poultry and sugar, on the other hand, 2 products whose situation deteriorated considerably in the course of the year.

Spain is also a net exporter of agri-food products with a positive balance accounting for 12.7% of exports (in 1998). The sectors registering the highest export figures are those of wine and beverages and all products processed from fruit and vegetables. On the other hand, although Spain is one of the most important countries in the fisheries sector both in the European Union and amongst the Mediterranean countries in general, its fish imports and imports of products processed from seafood products amount to almost twice its exports, since the level of domestic consumption is also very high.

Portugal, on the other hand, is a net importer in the agri-food sector. Its agricultural commodity imports amount on average to almost 6 times the amount of exports; the ratio is 2:1 for finished products. All in all, the country's self-sufficiency rate is of the order of 80% for agricultural commodities with a slight upward trend in the last few years. The situation is approaching a balance in the case of the AFIs (92.3% in 1999).

Agri-food trade accounts for a very large share of foreign trade in these 3 countries, a share which is much higher than the shares of the agricultural and agri-food sectors in the national economies.

Total agri-food exports and imports in France in 1999, for example, amounted to 11.5% of all foreign trade in goods. The share was 12.2% in Spain (15% in the case of exports), and 6% in Portugal.

In **Italy**, the agri-food foreign trade balance in 1999 was 14% lower than the balance in 1998 due to a 4% decrease in imports and an 1.6% increase in exports compared to 1998.

Trade in agricultural and forestry products decreased in the case of both imports and exports causing a 10% decrease in the trade balance. In the case of food products, on the other hand, exports increased (+ 2.6%) and imports decreased (3%); the situation thus improved with a 22% decrease in the negative balance.

There was thus a decrease in trade in agricultural raw materials, whereas trade in finished products increased.

Cattle feed and dairy product imports accounted for 18% and 11% of agri-food imports respectively, with a decrease in value of 5.8% and 2.5% compared to 1998. The drop in prices on international markets and competition from Mediterranean countries resulted in an increase in the import of fresh and processed fruit and vegetables in both monetary and physical terms (+ 3%), particularly in the case of fresh fruit and citrus fruit, which accounted for 12% of imports this year. The cereals sector also registered a noticeable decrease in imports in terms of value, particularly in the case of wheat (-19%). The decrease in wheat imports is to be attributed mainly to the bumper harvest in 1998 and the reasonable harvest in 1999.

Imports of vegetable oils and fats accounted for 6% of agri-food imports and increased in value by 3.7%.

The major export items - macaroni, spaghetti & similar products, cheese, fruit and vegetables - indicated a trend on foreign markets towards the supply of specialised high-quality products with a high value added. The fruit and vegetables sector was confirmed as the most important export item (28% of total exports). Its exports increased by 5.5% in quantity and 1.2% in value. The increase in wine exports continued: 8.5% compared to 1998 due mainly to a sharp increase in exports to the EU (+ 12.6%).

Despite the persistence of stiff competition from Spain, Greece and the North African countries, the vegetable oils and fats sector, i.e. essentially the olive oil sector, registered the most remarkable increase in the entire agricultural sector in relative terms (+ 24%). The abolition of the lump-sum aid for small producers (average production per farm year less than 500 kg) from the 1998/99 farm year onwards does not seem to have excessively penalised the sector.

The European Union is of course still Italy's main supplier and main client; as regards extra-community partners, the United States accounted for approximately 8% of exports and 7% of imports, followed by Japan and Switzerland, with which trade decreased this year.

Greece registered a structural deficit in the agri-food trade balance of approximately 1 billion euros this year.

Trade deficit in agricultural products increased significantly both in 1998 and in 1999, reaching a level of 6.5% and then 7% of the total deficit (whereas it was only 3.5% in 1996). Fruit and vegetables, tobacco, cotton and olive oil are the only products for which a trade surplus was registered. There was a considerable deficit in trade in meat, milk and dairy products, on the other hand, followed by fodder for animal farming, coffee, other foodstuffs and beverages.

The growing foreign trade deficit in the sector can be attributed to the difficulties which Greek agriculture is having in adjusting production structures to consumption structures as well as to the intensification of foreign competition (particularly from the countries of the European Union, where exports are becoming increasingly difficult).

Greece exports mainly fruit and vegetables, tobacco, cotton, olive oil and cereals. Its principal imports are meat, milk and dairy products, cereals, fruit and vegetables, coffee and tea. The share of meat and dairy products in total imports diminished, whereas that of fruit and vegetables increased. In terms of exports, the share of fruit and vegetables in the total value decreased considerably and that of tobacco remained more or less constant, whereas cotton and olive oil progressed significantly.

The decrease in fruit and vegetable exports can be attributed essentially to the crisis in the former Yugoslavia, which cut off the export routes to Central Europe causing a considerable increase in transport costs, with the result that Greece's presence on several important export markets has diminished.

Analysis of the foreign agri-food trade balance in **Albania** reveals first and foremost that the countries of the European Union play a predominant role in exports: Italy 27% of the total, Greece 23%, and Germany 21%. The import figures are also very comparable: Greece is the main partner with 37%, followed by Italy with 24%, France with 4% and Germany with 3.4%.

In the period from 1990 to 2000, the Albanian trade balance in agri-food products was very negative. The ratio of imports to exports was 9:1, and the deficit amounted to 200 million US $.

Crop products (in particular vegetables) and the products of the food-processing industries such as fish, tobacco and vegetable oils constitute the bulk of exports. Albania has always had great difficulty in exporting animal products, on the other hand, particularly live animals, since it is on the list of countries affected by foot-and-mouth disease.

The experts consider that the country has considerable potential for developing exports but that the main obstacle is still that of improving the quality of agricultural commodities and animal farming products and bringing them up to the European standards. Markets still lack organisation and investments in this

field are inadequate. Production is still irregular as regards both quantity and quality due to the lack of adequate means for an agricultural development policy but also to the lack of appropriate legislation.

Agri-food products and fresh fruit and vegetables constitute the main imports. Despite the importance which the Albanian government attaches to the agri-food sector and the means that are being implemented, it will be a long time before Albania will be able to register a trade balance approaching equilibrium in the field of agriculture and foodstuffs.

The agricultural trade balance in **Turkey** improved in 1999 compared to the previous year. The estimates for the year 2000 predict a slight surplus of exports over imports.

The trend observed in the period from 1996 to 1998 continued in the period under review; fruit and vegetable exports increased again in the 1998-1999 period, and a slight surplus was registered for animal farming and fish products, which is on the increase.

When one examines the exports of the main crop products in detail one observes a decrease the exports of barley, chick peas, lentils, dried beans, potatoes, onions, apples, and tomatoes, and a very marked increase in the export of citrus fruits.

The OECD countries, and particularly the countries of the European Union, absorb the bulk of exports. Turkey's export performance is directly related to the economic situation in the European Union, especially Germany, and to the region's trade relations with other trading blocs.

The importance of the Russian market, which is Turkey's fourth largest export market, diminished to a large extent after the crisis of August 1998, but, remarkably, trade relations between Russia and Turkey continued nevertheless. Exports to Russia began to register moderate growth in the second half of 1999.

The United States is Turkey's second largest export market. Turkey enjoys the benefits of the US GSP programme; its exports to the US within the framework of that programme amounted to 360 million dollars in 1998, i.e. 18% of Turkey's total exports to that country the same year. The GSP programme is helping to stimulate trade and enabling Turkey to reduce its external deficit.

The import situation is similar: agri-food imports come essentially from the OECD, the countries of the European Union and Germany.

The **Southern Mediterranean** countries still register major agri-food trade deficits on the whole, particularly with regard to essential commodities (cereals and cereal products, milk, oils, sugar, etc.). With regard to agricultural imports, however, certain countries register relatively high import-export ratios when one

considers the prevailing climatic conditions. Tunisia achieved a rate of 107% in 1999, for instance, and Morocco a rate of 52% despite the disastrous rainfall situation in the country., The ratio of local production to consumer needs in Morocco deteriorated further in 1999 compared to the previous year in the case of many foodstuffs. As the following table indicates, this rate amounted to 44% for cereals, 54% for sugar, 21% for table oils and 98% for dairy products.

Table 5.3 - Morocco : Ratio of local production to demand

Products	Demand 1000 T	Production 1000 T	Rate of coverage %
Cereals	8 500	3 700	44
Oils	380	80	21
Sugar	920	500	54
Red meat	240	270	113
White meat	230	230	100
Milk and milk derivatives	1 150	1 130	98

Source: Bilan de la campagne agricole 1998/99, Direction de la production végétal , Ministère de l'Agriculture, du Développement Rural et des Pêches Maritimes, December 1999.

Algeria is still lagging far behind. The country exports very little in this sector, and the export-import ratio is less than 1% for various reasons: low level of available competence in the export field, organisational difficulties, strong absorption capacity of the domestic market.

In the period from 1998 to 1999 the value of agri-food exports in **Tunisia** increased considerably (+ 29%) due to a 32% increase in the volume of olive oil exports and an 80% increase in the value of that product. Exports in Algeria - already very low - decreased by 5% due to the low date and wine prices.

Imports for the same period showed a downward trend in Tunisia (-17.6%) and Algeria (-13.6%). This decrease is to be explained both by the drop in cereal, oil, tea and coffee prices on the world market and by the import restrictions in Algeria.

The structure of the exports of the Southern Mediterranean countries is not always dominated by fresh products. Tunisian exports, for example, are composed of olive oil (63%) (54% of exports in value) and of "grain preparations and flour/meal" (9%), the remainder being made up of seafood products (14%), citrus fruit and dates (9%) and various other commodities. Just under 50% of Moroccan exports are composed of fresh products and bulk raw materials: citrus fruit (27%), early fruit (17%), food legumes (1%), wood and cork (5%), the remainder being

processed products: canned vegetables (19%), leather and hide (2%), etc. As for Algeria, exports comprise mainly dates (55%) and wine (12%).

Import structures show the predominance of bulk or semi-processed staple foodstuffs (cereals, oils and oilseeds, sugar, tea, coffee, etc.) and non-food products (wood, leather and hide, tobacco, etc.). The available statistics are not sufficiently detailed to analyse import structures more specifically, but it would be interesting to know why certain Southern Mediterranean countries are still importing substantial quantities of processed products instead of importing raw materials and developing them themselves in order to realise value added and create the jobs so urgently needed by their populations. Similarly, some countries export raw materials and products in bulk instead of seeking means of processing and conditioning them locally.

And finally, it is to be observed in the Southern Mediterranean countries that, since the adequate purchasing power is lacking, the level of efficient demand is so low that even weak production does not necessarily lead to an increase in imports or to serious tensions on the market. The red meat situation in Morocco, for example, is a perfect illustration of this phenomenon. The production of beef and veal and mutton and lamb progressed by 6% in 1999 compared to the previous year reaching a level of 270,000 to 280,000 tn, but this amounted to a supply of just under 9.9 kg per capita[16]. However mediocre it may be, this level nevertheless produced an "excess", since the demand expressed on the market amounted to only 240,000 tn, i.e. an average consumption rate of 8.5 kg per capita... The same applies to milk, where local production only covers a fair proportion of efficient demand because that demand is still dependent on a very low level of consumption (40.8 litres per capita per year).

Agri-food trade flows remain directed mainly to the countries of the European Union. Algeria, for example, obtains 44% of its imports from the EU and realises 52% of its exports in that area, whereas 24% of its imports come from the US/Canada zone.

[16] on the basis of a population estimated at 28,238,000 in 1999.

6 Agriculture and agri-food policies

6.1 – Major trends in agricultural policies

Of the Mediterranean countries, those to the North devote by far the most resources to support and aid for modernising their agriculture. Traditionally, the main vehicle for agricultural policy in these countries has been farm price support. However, the cost of this support for the budget and, more recently, the GATT and WTO negotiations, have led to these forms of support being brought into question. It is also in these countries that the most questions have recently been raised concerning the future of the farming sector and its place in the economy and within society. Criticism of "industrial" farming in the European Union, the most powerful symbol of which has been the BSE crisis, together with the increasingly manifest problems of pollution, and the risk of farm land being abandoned in the least productive regions are also militating in favour of a global reform of all of the principles of previous agricultural policies, which will take account of the whole range of functions fulfilled by farming within society.

1999 was thus characterised in the European Union, and also in Turkey, by major shifts in agricultural policy. Most of this chapter will be given over to an examination of these changes.

Thus, for the five Mediterranean countries of the European Union, the main event of 1999 was the decision taken in Berlin on 25 March by the Heads of State and of Government of the European Union to begin work on a new reform of the CAP.

Because member countries had not been able to follow their own initiatives in agricultural market management since 1993 ("Single market"), this reform has made provision for each country to have its own interpretation of market support measures. Through the Rural Development Regulation, it has also further strengthened the structural aspect of the CAP and its links with environmental and regional development policies.

Within this context, France was thus able to find the conditions for implementing the Agricultural Guidance Act, which had been in pipeline since 1996 and was finally approved in July 1999, and its main component, the Regional Farming Contracts, which it is hoped will represent a new approach to agricultural development.

The new reform voted on 25 March 1999[17] follows on from the 1992 reform.

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[17] The so-called "Agenda 2000" reform, from the title of a document first published in July 1997 setting out the first draft of this reform.

It should be pointed out that the 1992 CAP reform essentially consisted in a drastic cutting of the minimum guaranteed prices for cereals and beef meat. These guaranteed prices were even abolished in the case of oleo-proteins. To prevent these cuts from having catastrophic effects on their incomes, producers were granted compensation in the form of a premium paid out of the European budget which fully offset the average fall in earnings, but paid by the hectare or per head of cattle, regardless of the actual level of production. Furthermore, in the case of major crops, a compulsory "set-aside for land", backed by a premium, was also set up on a percentage of land depending on the market. This represented an additional component of supply management.

Following on from the 1992 reform, the "Agenda 2000" reform is aimed at making the CAP completely compatible with the World Trade Organisation rules (whereas the straightforward application of the current agricultural Common Market Organisation threatened to lead to an increase in subsidised exports), thereby paving the way for the forthcoming negotiations in the Millennium round and making it possible for the countries of Central and Eastern Europe to join the Union.

The principle is to reduce guaranteed prices to the strict minimum, that is to say, to turn intervention prices into "safety nets" in the event of too drastic a fall in the world prices which should now prevail on the internal market.

The principle of "de-linked" flat-rate compensation is also maintained, but this time there is only partial compensation for new price falls, partly because it is felt that the productivity gains in European agriculture are such that farmers can now take a cut in earnings, and also because it is assumed that market prices will generally stay considerably higher than intervention prices under the new system.

Furthermore, the level of premiums can be adjusted in terms of the situation on the markets.

There are also plans within the framework of this reform to bring the market support system for milk and dairy products in line with that for the other major products as of 2005 by cutting guaranteed prices, premiums for dairy cows and relaxing the quota system.

Box 6.1 - THE CAP 2000
The decisions of the Berlin Summit (25 March 1999)

MAJOR CROPS

- Further cut in intervention prices for cereals : - 15% over 2 years – goes down from 119.19 to 101.31 €/tonne.
- Increase in the compensatory payment per ha. It goes up from 54.34 to 63 €/T of "average yield", which is an average compensation of 50% for the cut in the intervention price.
- Alignment of the premiums for oleo-proteins and cereals (for proteins : 72.50 €/T.).
- Set-aside on land maintained. "Base" rate: 10%.

BEEF MEAT

- Cut in the support price (- 20% over 3 years).
- Aid for private storage replaces intervention, unless prices fall very low ("Safety net").
- Increase in compensatory payments (suckler cows, male bovine animals), offsetting on average 80% of the fall in prices, introduction of a premium for dairy cows.
- "National envelopes" enabling each country to decide on financing additional premiums or premiums per ha. of pastureland.

DAIRY PRODUCTS

- Quotas maintained until 2008, allocation of new quotas to the Mediterranean countries as of 2000.

As of 2005:

- Reduction in guaranteed prices (- 15% over 3 years)
- Compensatory payment, calculated per tonne of dairy quota (with more "national envelopes").
- Increase in quotas (+1.5% over 3 years).

HORIZONTAL MEASURES

- Possibility for each country to "modulate" (i.e. to reduce by a maximum of 20%), the total amount of compensatory payments for the largest holdings.
- Eco-conditionality of aid.
- The savings made will be used by the country in question to finance measures planned within the framework of the Rural Development Regulation with help from the EAGGF.

RURAL DEVELOPMENT

- Increased and re-focused aids organised by the Rural Development Regulation, or R.D.R., including agricultural structural policies and rural development (22 objectives). Each country must put forward national or regional Rural Development Plans to implement it.
- Land policies and measures for improving agricultural structures fall within the scope of this regulation.
- Continuation of more targeted Agri-Environmental Measures within the framework of this RDR.
- More binding compensatory allowances for natural handicaps (contracts), extended to "environmental" restrictions, for example Natura 2000 areas.

Moreover, a reform of the Common Market Organisation for Wine has been included in the "package". It does not fundamentally alter the management of the sector but essentially involves a relaxation of the most restrictive rules (thus new planting rights have been created) and help for drafting national plans for restructuring vineyards, with a view to developing products that better reflect trends in demand.

The Berlin agreement has also introduced two new features, the so-called "horizontal measures", since they apply to all products receiving premiums:

- Modulation, or the option for each country of limiting the amount of premiums for the largest holdings (or, more precisely, for holdings receiving the highest overall amount of aid, which is not quite the same thing), bearing in mind the level of employment.
- Eco-conditionality, i.e. the principle of giving premiums to holdings meeting certain environmental criteria. The regulation on "horizontal measures" makes the provision that this will be compulsory for all the member states, but the implementing arrangements have not yet been defined.

The amounts saved in this way can be recovered by the country, giving it a certain leeway in the use of the aids provided for within the framework of the national RDR.

However, the fundamentally new aspect of this CAP reform is the co-ordination, within the framework of a single Rural Development Regulation, Regulation 1257/99 of 17 May 1999 "on support for rural development by the European Guarantee and Farm Guidance Fund", of the vast majority of the agricultural structural, agri-environmental and rural development policies and entrusting their financing to the EAGGF.

Bearing in mind the importance of this reform, whose practical effects are still not being felt in 1999, the main features of the arrangements for implementing Agenda 2000 in the 5 Mediterranean countries of the Union will be set out in the sections on "Market prices and policies" and "Rural development policies". The structural and agri-environmental policies being pursued by the member countries in other contexts will be described in the two relevant sections.

Turkey has also put forward a proposal for fundamentally reforming its agricultural policy, hitherto based on the allocation of funds from the budget for the main crops and subsidies for prices, inputs and credits. The aim in the medium term (2000-2002) will be to replace the existing system by a direct income support system that should focus increasingly on small holdings. A pilot scheme to this effect is starting up in March 2000.

Although this reform plan is primarily aimed at making budgetary savings (it is thought that an amount equal to 0.3% of the GDP can be saved as of 2000),

another essential aspect is to reduce the distortion in incentives which at present have the effect of discouraging farmers from growing high added value crops and restricting private investment in agriculture.

It should be pointed out that, alongside the measures implemented within the framework of the CAP, the countries of the European Union still retain control over large swathes of agricultural support policies in the areas of land, infrastructures, agricultural advisory services and education and social policy which, given the average age of farmers, are generally very expensive.

A study by **France's** Ministry of Agriculture which appeared in 1999 shows that over the last few years, 43% of the total amount of public expenditure on agriculture went on support to productive agriculture (market and agricultural structures policy), mainly funded by the EAGGF, and a further 43% in funding for social protection and solidarity (State contribution to social security systems and farm retirement schemes structurally in deficit), with the remaining 14% being spent on agricultural education and research, together with certain rural infrastructures.

Over the past two years, part of the budget in **Greece** has been used to wipe out the debts of the agricultural co-operatives and other undertakings such as the Agricultural Bank, a state bank which has undergone a process of restructuring, reform and modernisation.

Over the last eighteen months, a number of institutional measures have also been adopted in Greece:

- A far-reaching reform of the structure of the Ministry of Agriculture and decentralisation of the Farm Policy Council;
- The enactment of a new law on agricultural co-operatives;
- The enactment of an overall legislative framework for the National Inter-professional Organisation and the introduction of annual negotiations for the cost of inputs in agricultural production;
- The setting up of institutions to support and supervise agricultural activity, such as the organisation for certifying accounts, the organisation for payments and controls on Community subsidies, the organisation for the certification of agricultural products, the organisation for agricultural advisory services and the agricultural exports organisation;
- Improving the system for farm insurance;
- Increasing by 25% the pensions of farmers taking early retirement.

Public support in **Italy** in 1998 fell by 8.4% compared with the previous year, at current prices, and by 13% at constant prices. The fall amounted to 26,984 billion Lira, equal to 34.9% of agricultural production. Transfers from the agricultural policy accounted for more than two-thirds of the total (69%), but it

should be pointed out that tax relief represents a loss for the State budget which, if calculated as agricultural support, constitutes a considerable proportion of this support (31%) and includes a reduction in welfare and social security charges (16.4%), tax reductions on fuel (9.5%) and tax relief in the strict sense (5%).

It should be pointed out that, in Italy's case, the amount of total production-related structural expenditure, such as aid for investment, research and development, processing and marketing services, accounts for a very small proportion of total aid (10% in 1999).

The general principles behind the **Albanian** Government's attempts to develop agriculture over the last three years have been the following:

- Consolidation of the reform of the farming sector and improving free enterprise, which should help speed up this process;
- Growth in agricultural productivity by encouraging technical progress and the rational use of factors of production;
- Growth in farmers' earnings;
- Improving the organisation of agricultural markets;
- Improving the country's food security percentage;
- Creating the conditions so that productive activity does not have a negative impact on the environment;
- Behind all these items, in the long term, is the outline of the underlying target of preparing conditions for Albania's agriculture to gradually become integrated into the EU.

But there are a number of obstacles barring the way to developing the agricultural sector, including:

- The over-population of the rural areas;
- The poor state of infrastructures in rural areas, particularly as regards irrigation;
- The very limited size of Albanian farms, their fragmented nature and insecurity over land ownership;
- The high level of prices for inputs and their inefficient distribution;
- The weakness of all of the institutions providing support and supervision for the agricultural sector: lack of farm credits, weakness of agricultural research and consultation services; difficulties with the control and prevention of diseases in plants and animals;
- Rudimentary agri-food industry, lack of marketing structures and more generally, objective and subjective difficulties in breaking into new western and Mediterranean markets.

All of these difficulties make it particularly complicated to achieve these objectives, for which the government has extremely limited resources.

Nevertheless, the results achieved between 1998 and 1999 give an indication of Albania's agricultural potential and its prospects for development in 2000.

Albanian agriculture has major advantages:

- A young rural population with a high standard of education,
- Diverse climatic and environmental conditions,
- A relatively low level of environmental pollution,
- Increasingly discriminating domestic demand,
- The option of diversifying farming activities towards tourism, processing and the direct sale of products.

Box 6.2 - Bringing Albanian legislation more closely in line with European Union legislation in the agri-food sphere

With a view to developing greater integration with the EU, efforts have been focused on bringing legislation closer in areas such as plant protection, food security, veterinary and zootechnical questions etc. For instance:

- In the veterinary sector, according to decision No. 646, the Government of Albania has adopted 10 EU directives and one regulation covering veterinary conditions for production and slaughtering centres, processing centres and modes of transport, marketing practices, import and export procedures for fish, shellfish etc. In accordance with the EU directive for "border veterinary inspection posts", 14 regulations have been drawn up and the implementing texts are currently being drafted. There are plans for 14 other specific directives in this area to be adopted by the end of the year 2000.
- In accordance with EU directives, acts have been adopted in the livestock rearing sector for "pure bred breeding animals and thoroughbred livestock herds", for "feedstuffs for livestock", for "the identification and registration of animals and livestock units", together with 6 regulations and 7 directives for their practical implementation.
- In the fishing sector, the regulation "setting out the conditions for rearing bivalve molluscs" has been adopted and work is proceeding on adapting and implementing EU directive No. 91/492 for "the mollusc sector".
- In the food safety sector, the act governing "viticulture, wine and other products derived from grapes" has been adopted, together with the act governing "the production and marketing of tobacco and cigarettes" and work is underway to draft the act on "labelling" in accordance with the EC directive No, 79/112 which dates from December 1998. In the meantime, 60 European directives in the food sector have been translated and distributed and will serve as a basis for drafting other legal and sub-legal texts in this area.
- In the plant protection sector, the act regulating "the crop protection service" has been adopted and there are plans for 2 other European directives on protection measures against harmful parasites and the insecticide and pesticide trade to be adapted by the end of the year 2000.

6.2 – Structural policies and investment aid

With the notable exception of **Algeria,** the structural policies pursued in the countries to the South of the Mediterranean in 1999 revealed few new features**.** In Algeria, the question of the status of agricultural land in the former self-managed sector appears to have been settled once and for all by the Head of State's decision not to opt for privatisation. The trend in this sector would seem to be towards long-term leases granted by the State with the option for creditors to take over operating rights in the event of bankruptcy.

The problem of rangelands remains unresolved in both **Morocco** and **Algeria.** They retain their previous status and no suitable legislation has been brought forward to put an end to their destructive utilisation by the various users.

With regard to public investment in the farming and rural sector, all of the countries to the South of the Mediterranean are subject to serious budgetary constraints (shortage of real resources and a resolve to maintain financial orthodoxy after the various Structural Adjustment Programmes) and hence devote a relatively small proportion of funds to such investments.

These investments account for only 11% and 12% respectively of total public investments in Morocco and Algeria. In Algeria, expenditure on agriculture from the public amenities budget fell by 41.5% in real terms in 1999 compared with 1998. In Tunisia, the sum total of investments (private and public) in agriculture grew in current terms by 4.5% in 1999, which represents a virtual stagnation when the inflation rate of 3.5% is taken into account. Private investment in this country accounts for 51% of total investment, which would seem to show that agriculture has a certain appeal for capital. Generally speaking, public investment goes to the conservation and development of natural resources (water, forests, and land). Whereas public investment in Morocco has mainly benefited water projects (mainly large dams and irrigated areas), the majority of public funds in Algeria have gone to the "Water-Forest" sector.

Incentives for private investment in agriculture in the three Maghreb countries are being stepped up. Often quite substantial subsidies are granted for this type of investment in Algeria through the Fonds National de Développement and de Régulation Agricole (National Fund for Agricultural Development and Regulation). An Information Centre for Agricultural Investment has been set up in Morocco. This policy continues to be pursued in Tunisia where it has been in force for some time.

Agricultural support in **Algeria** also takes the form of support for farm investment: drilling and irrigation equipment, machinery for livestock and crop production and for collecting and processing milk, the planting of fruit trees and the construction of farm buildings are now subsidised. The country has a low rate of uptake of farm

aid, doubtless as a result of the cumbersome system for obtaining such aid. The system was accordingly modified in 2000.

Water also figures prominently in discussions in **Spain**. But although the topic has been widely debated, nothing has yet been done in terms of implementation. In November 1998, the Ministry of Agriculture put forward a new national irrigation plan to remedy the poor state or obsolescence typifying two-thirds of the irrigation networks. Irrigation in **Spain** has traditionally been the responsibility of central government, as reflected in the 1985 Water Act. The proposed plan involved improving the irrigation of 1.1 million hectares and irrigating a further 228,000 hectares, with public funding (State and Europe) covering 50 to 70%. The discussions concerning this plan were very complicated, mainly because of the reluctance on the part of the Autonomous Regions to share and jointly manage this scarce commodity.

This led on to the discussion of a more global plan, covering the period 2000-2008, which was finally tabled in July 2000. Under this plan, irrigation would account for only 30% of the expenditure (but out of a total in the region of 3 billion pesetas, i.e. close to a billion, whereas the initial plan had earmarked some 750 million). The other items relate to combating flooding and regulating the water flow (with plans for re-planting catchment areas) water supply and rationalisation. The very sensitive problem in Spain of transferring water from areas with surpluses to others will be the subject of subsequent debates, in which the question of possible financial compensation in particular will arise.

In **France,** 1999 was marked by the approval of a new Agricultural Guidance Act in July 1999. This was quite a landmark, since the intention of the French Government was to make this the equivalent – in a totally different context – of the 1960 Guidance Act which marked the beginning of the accelerated process of modernising French agriculture. The main feature of this act, the Regional Framing Contracts, will be described later, given their links with the European rural development regulation. The remaining provisions of the Act have primarily to do with bringing legislation in line with the prevailing trends with regard to the development of farming structures by adjusting and revitalising control of the structures, providing more information to prospective new farmers who are just starting out and controlling the trend towards larger holdings. On the social side, the Act provides for a special status for the spouse helping on the farm, together with a re-valuation of pensions, similar to measures already in force for craftsmen and tradesmen.

A reduction in the duty on transfers of agricultural land from 16.5% to 4.8% also came into force in France in 1999, and this provides an additional incentive not only for increasing holdings, but also for the purchase of land by real estate investors. This has primarily affected wine growing areas. One immediate effect was an average 5% increase in the price of land, with increases of up to 10% for land under vines. Between 1980 and 1990, the real price of farm land (deflated) fell

by half while the price of vines remained stable. Prices for arable land and pasture began to take off again as of 1995, with the 1992 CAP reform encouraging larger holdings. The continuing upward movement has gathered pace in 1999 and information available for 2000 shows the trend is ongoing, with the "mechanical" effect of the fall in duties yet to make its full impact. It should be pointed out that foreign farmers are still coming to set up in France, where the price of land is still amongst the lowest in Europe.

Another effect of this reduction in transfer duties has been that the SAFERs (regional companies managed by farmers' representatives and set up in 1962 to come into the real estate market in order to improve the structure of holdings by helping to enlarge farms or helping young farmers to become established) are losing one of their advantages (exemption from transfer duties). This can only accelerate the extension of their role to helping with local authority projects and environmental and tourism projects.

The agricultural structures policy was brought into the CAP framework at the beginning of the 70s. Since the reform of the structural funds in 1988, it has been included in the scope of the European socio-structural policy, which, as has been seen, culminated in the 1999 Rural Development Regulation. For the sake of cohesion, this reform will be examined as a whole in the section devoted to rural development policies. A number of the Union's Mediterranean countries nevertheless implemented some special measures in 1999 within the ambit of the European framework still in force at that time.

In **Italy**, the government pursued its commitment to support young farmers (under 40 years of age) in order to encourage employment in rural areas, particularly in the South. Measures were adopted to encourage the transfer of holdings from father to son with relief from inheritance duties and rules were introduced governing inheritance. Funding was also increased for the Young Entrepreneurs Organisation (an organisation controlled by the public authorities) for new projects.

In 1999, Italy began implementation of the legislative decree on aid for reducing production costs and for enhancing the competitiveness of companies within the framework of the 1994-1999 structural fund. The following aids in particular form part of this approach:

- Aid for restructuring agricultural enterprises in financial difficulty;
- Aid for cutting energy consumption and using renewable sources of energy;
- Aid for strengthening structures for marketing and processing products, with priority going to undertakings guaranteeing job creation or safeguarding jobs in fragile rural areas.

Action has also been taken to simplify and relax the administrative procedures for access to aid.

As regards farm credit, 1999 saw an increase in funding activity (particularly in the South) following a period of crisis and mistrust of these operations. Although the allocated funds are up by 8.3% over the previous year, subsidised loans as a whole have shrunk significantly (- 9% in 1999). Italian government interest subsidies for short-term credit were abolished in 1997 as the European Commission deemed that these aids were distorting competition, although they were retained in regions where it was felt that inaccessibility or weakness of the infrastructures made financing activities more difficult.

Over the period 1994-1999, 60% of the structural funds in **Greece** were taken up by measures to improve the water infrastructure, Material Improvement Plans for holdings (30,000 in all) and aid for young farmers (15,000), as well as by compensatory payments for environmental restrictions paid out per head of cattle.

Although official reports claim that implementation of the Operational Programmes has led to only scant improvement in the performance of Greek agriculture, these programmes have succeeded in slightly reversing a number of adverse trends and creating a safety net which has prevented the collapse of rural areas.

Investment in infrastructures has been given priority in **Turkey** and support measures have been granted to the country's least developed regions. Investment in agriculture as a proportion of fixed capital in 1998 and 1999 was low (5%) and is declining in comparison with other sectors such as housing, transport and manufactured products. The public sector's contribution to agricultural investment increased in 1999 compared with 1998 and is continuing to rise in 2000 (around 48%).

The agricultural reform programme involves State withdrawal from agricultural and agri-industrial production. Turkey is in the process of drafting legislation for the privatisation of state-owned companies in the alcohol, salt and tobacco sectors and these laws should be enacted in 2000. Effective privatisation of these infrastructures will begin in 2001. The government also intends to begin the privatisation of the Caykur tea factories and the state sugar refineries in 2001.

Other important tools of the structural policy have been induced investments and the implementation of farm credits through loans with subsidised interest rates. In December 1999, the government introduced a programme for gradually phasing out farm credit subsidies during the course of 2000.

In **Albania,** the policy has concentrated on land: 92% of the land scheduled for distribution was allocated and 92% of smallholders have received title deeds thanks to a modern, unified and extensive system of property registration.

The priorities as regards land policy and farm structures will henceforth be as follows:

- Consolidation of ownership: One of the main objectives in this area has been the setting up of a modern, unified and extensive property registration system. In order to implement this system, the Albanian Parliament and Government have adopted the necessary legal framework and opened "Registration Offices" in 34 districts of the country. This programme, financed by SID (USA), the Phare programme (EU) and the Government, is currently being implemented in 2,378 property registration areas (over 3,046 zones in all) and the whole process is scheduled to be completed in 2001.

- Expanding the official land market and making it more dynamic is deemed to be one of the priority goals for the 1999-2000 period. The legal framework for the sale, purchase and leasing of agricultural land has been fully implemented over the last two years. There are currently no legal barriers in Albania to the expansion of the land market. The policies designed to develop the land market has given rise to a rapid increase in transactions, particularly during 1999 and thereafter. Of the more than 40,000 transactions recorded in the land registration offices up to the end of April 2000, 15,000 involved agricultural land.

- More effective protection and administration of agricultural land.

6.3 – Price and market policies

The Common Agricultural Policy forms the single framework for intervention on prices and markets for the countries of the European Union. The Single European Act, adopted in 1986, outlawed national intervention as a practice contrary to the Union's internal rules of competition.

However, as has already been pointed out, the 1999 reform has given member countries greater room for manoeuvre, particularly through the horizontal "measures"; furthermore, in the context of this reform, the implementation arrangements for a certain number of rules concerning specific products have been defined individually for each country.

Finally, it should be noted that, in the case of the Mediterranean countries, this reform was accompanied by a certain relaxation of restrictive policies in the form of additional milk quotas, vine planting rights ...

The Mediterranean countries (with the clearly understandable exception of France, where only a very limited proportion of the milk production comes from the Mediterranean regions) have benefited from not inconsiderable additional milk

quotas within the framework of Agenda 2000 (for example 550 000 T in Spain, i.e. nearly + 8%). The distribution criteria for these new quotas in 2000-2001 and 2001-2002 call for priority criteria to be drawn up. The same applies to the planting rights granted in the wine-growing sector.

It has been calculated that the EAGGF funds allocated to support agricultural markets in **Greece** in 1999 account for 70% of the transfers received by the country under the CAP, and are equal to 42% (36% for crops and 48% for livestock) of the total agricultural revenue.

According to a Ministry of Agriculture preliminary forecast on the impact of Agenda 2000, i.e. the CAP agreement, there should be a net gain of 82 million Euro, made up of a net loss of 54 million for cereal farmers and a net gain of 125 million for livestock producers.

Cotton is a very important product for Greece, Europe's main producer. A decision was taken to make an additional payment of 0.13 US$ per Kg to producers for the 1999-2000 production period. By contrast, a compulsory plan for reducing the areas under cultivation will have a major impact (up to 45% less surface area for the largest holdings) on all holdings with more than 6 ha. under this crop.

As for tobacco, new incentives have been launched (increasing the advance payment, possibility for new producers to come into the sector, introduction of a new inter-professional organisation for tobacco). The same applies for wine (use of additional planting rights, promoting quality Greek wines on European markets).

In the beef meat production sector, the main aims of the policies are the implementation of a new labelling system, better use of pastures, improving production units (particularly the abattoirs), promoting organic products, implementing a sanitary and welfare programme for cattle, the use of genetic material and using national produce in cattle feedstuffs.

At the beginning of the year 2000, in the context of the Agenda 2000 reforms, **Italy** began the final phase of a vine inventory, a prerequisite for benefiting from Community aid for replanting and for being able to claim the 13,000 new hectares of vineyards granted to Italy under the new reform.

As regards the common organisation of the beef meat market, Italy chose not to apply a ceiling on premiums per holding for suckler cows or male bovine animals. The national envelope will similarly be distributed as an additional amount to the “suckler cow” premium and the slaughtering premium. In this way, Italy is taking into consideration the importance for the country, unlike the other Mediterranean countries of the Union, of the specialised beef meat livestock rearing units which are based on relatively intensive systems. It is true that, by contrast, the European regulation stipulates that these premiums should only be granted to units whose loading per hectare is less than 2 LSU/ha.

Another important factor for Italy is the increase granted by the EU in the current "cereal" regional reference yield, up from 3.78 to 3.9 t/ha, which is the average yield used for calculating the payment as a function of surface area.

It is not compulsory to modulate direct aids: for the moment, only two European countries, Great Britain and **France** have adopted a plan. In the case of France, this was adopted in March in the wake of discussions which dominated the political and professional scene in 1999, with the representatives of the majority of farmers denouncing both its unfair (one can obtain a lot of aid without being rich and conversely, other crops are not affected) and anti-economic (the best are penalised) features and finally, after adjustments had been made to take account of these criticisms, the complicated nature of the arrangement.

Box 6.3 - The modulation of direct aids to France

Modulation is a levy on the amount of direct aid above 30,000 ε received per holding. The system is complex because, following discussions between the Ministry of Agriculture and the trade union organisations, the economic size of the holding (expressed as a Standard Gross Margin, a criteria that corresponds to a flat-rate estimate of the net added value for each type of production) was also taken as a criterion. In addition, those holdings employing several people receive more favourable treatment.

In all, there are two levies for each holding.

A linear levy equal to 3% of the total amount of aid after deduction of a flat-rate amount of 30,000 ε.

A progressive levy. This only relates to holdings whose SGM is higher than 50,000 ε. The rate increases on a linear basis from 0 to 25% of the SGM between the thresholds of 50,000ε and 150,000ε and levels off at 25% above 150,000. This rate always applies to the amount of aid received, but under slightly different conditions, because in addition to the deduction of 30,000ε, there are two other deductions depending on the circumstances. One is equal to the salaries and social security contributions paid out by the farmer (with a ceiling of 22,500ε per job), and another of 7,500ε for the helping spouse or family helper. These two reductions give more favourable terms to holdings employing more people.

Finally, holdings set up as companies, which now account for more than 100,000 units in France, also benefit from reductions to take account of the number of people employed.

This modulation was actually put into practice for the 2000-2001 agricultural year. It affects some 50,000 holdings in all, or 10% of professional holdings, for which the amount of premiums received should fall on average by 5% (that is to say, 17,000 F per holding). The amounts thus saved will be recovered to top up the national share of aids under the accompanying measures of the RDR (see § 5.4).

The other countries have so far been content simply to study the question, since implementation is not compulsory. Nevertheless, a preliminary study by the Portuguese government indicates that the system of modulation planned for that country could affect 1% of holdings which would lose on average 3% of the premiums currently being paid.

Eco-conditionality, which is deemed to be a compulsory measure, raises two considerable implementation problems:

- It only relates to products receiving direct aids and thus does not affect other products considered to pose major environmental problems (such as off-land production). It is true, however, that these are subject to ever-tighter regulations.

- What type of conditionality should be applied: compliance with general rules (a "code of good farming practice"), or more specific, potentially stricter, conditions for each type of production.

For these reasons, the European Union has still (October 2000) not published an implementing regulation and the countries concerned are only now beginning to consider the question. In France, irrigated crops should be the first to be affected by the implementation of eco-conditionality. Italy is also planning to make payments conditional on the adoption of practices more favourable to the environment in certain limited cases: maintaining drainage networks, storing waste produced by livestock in secure reservoirs.

The number of subsidised products in **Turkey** has remained unchanged. They include the main staple crops : cereals, tobacco, sugar beet and cotton. However, the volume of subsidised purchases fell in 1999.

Aid for inputs is still a major feature of the country's agricultural policy. Subsidies for fertilisers has remained constant in nominal terms since 1997, representing a reduction in the unit subsidy from some 45% of the total price at the end of 1997 to approximately 31% in August 1999. By contrast, the subsidy for pesticides has increased from 10 to 30% of the purchase price, but only for substances deemed to be eco-compatible. Subsidies on seeds have also increased. On the whole, total Government expenditure on these forms of subsidies has fallen by 5% in real terms. Support, measured as a percentage of the Producer Subsidy, has stabilised at around 36% in 1998 and 1999. Customs duties on imports of agricultural products

are still high: the reduction on maize was accompanied by an increase for animal products.

Similarly, export subsidies in 1999 remained at levels close to those of 1998. The rate has doubled in the case of olive oil in order to facilitate disposal of stocks.

A decision was taken at the end of the year to re-organise customs tariffs, effective from 2000, enabling Turkey to meet its commitment to the WTO for the coming year. All of these aids will be called into question if the total reform of the agricultural policy begun in 1999 completes its course.

The tariff system put in place under the new code reflects **Albania's** political and economic desire to be part of the international trade system, as well as its concern for simplifying tariffs. This new system offers very low levels of protection for the agricultural sector in line with the WTO criteria.

Albania's strategy in its negotiations with the WTO is aimed at protecting the Albanian farmer and expanding sectors in which Albania has production and trading potential. In this context, certain products will have a zero customs tariff when the agreement with the WTO comes into force (seeds, plants, biological material, thoroughbred animals, animal feedstuffs, wheat, tractors); others (tea, coffee, chocolate,...) will not be admitted duty free until a little later. Products considered to be important for local agriculture will benefit from ad valorem customs duties of 18% (such as grapes, honey, vegetables, cheeses, olives, melons, tobacco, etc.) and will only have their entry duties cut by 40% some ten years later.

The European Union has granted Albania a new preferential system: "pllaqui" (a kind of bean stew) will be allowed in without quotas and duty-free, tomatoes and certain fruits and vegetables will be allowed in duty-free, but with very limited quotas and only at certain periods.

Pricing policies for agricultural products in the countries to the South of the Mediterranean involve leaving markets to play their part whilst attempting to regulate those markets to ensure they operate competitively (for example, the decree on permits controlling entry to production and wholesale markets in **Tunisia**).

The spread of free foreign trade now means that external markets are having a considerable influence on local markets. Nevertheless, guaranteed production prices still exist in certain countries (bread-making wheat in Morocco, wheat in Algeria, wheat and olive oil in Tunisia).

Since price support for cereal production took up 30% of the State's spending on agriculture in 1999 in **Algeria** (not including the operating budget for the Ministry of Agriculture), it was decided that only cereals in potentially favourable areas would receive support as of 2000, both to reduce public expenditure and to

discourage cultivation in fragile areas with excessively unpredictable yields (sloping land, steppe areas with light soils).

In **Morocco**, there has been something of an about-turn on the policy of State withdrawal, the intention being to make cereal production "more secure". Consequently, in order to ensure the proper functioning of this or any policy to make cereals production more secure, it was necessary to give consideration to the marketing system, especially as past experience had shown this aspect to be decisive. Indeed, officials believe that in as much as the progress made by bread-making wheat can be largely attributed to the "preferential" marketing system granted to this cereal (fixing a producer purchase price and guaranteed outlets for the amounts bought in at this price, granting storage and selling-on premiums to storage organisations), durum wheat and barley have suffered correspondingly as a result of the abolition of similar advantages in their favour since 1988.

It has thus been decided, as of the 1999-2000 agricultural year, not only to continue with the marketing system used for bread-making wheat, but also to introduce "specific systems" for durum wheat and barley. The aim of the latter will be partly to encourage farmers to improve the quality of durum wheat and guarantee to satisfy a reasonable proportion of industrial requirements for this product and partly to expand barley production in order to meet the needs of the programme for protecting and safeguarding herds. Similarly, Morocco encouraged the production and use of good quality cereal seeds in 1999 by granting subsidies to reduce the cost of using them by 10 to 20%.

As regards fertilisers for cereals, an effort has been made to adapt the manufactured formulae to the requirements of the land and the crops grown. Similarly, marketing and promotion campaigns for phosphate fertilisers accompanied by a 10% reduction granted by the Office Chérifien des Phosphates are scheduled between 1 October and 30 April 2000. In terms of mechanising cereal production, the use of drills, rollers and sprays is being encouraged by raising subsidy levels to 50% for individuals and to 60% for groups and co-operatives. Also with regard to cereals, Morocco has decided to consolidate farm loans with interest rate subsidies of between 1 and 5 points (the most favourable rate being applied to small farmers) and cancelling interest on credits over 10 years old. Finally, the Moroccan State has introduced a heavily subsidised insurance system against drought.

6.4 – Rural development policies

In the case of the countries of the European Union, this heading will deal with the whole range of farm structure policies and those relating more directly to involvement in development projects or rural area planning. Indeed, all of these policies will come under the RDR as of 1 January 2000 and most of the discussions

and work carried out by the Ministries responsible for agriculture in 1999 has involved devising and putting in place the arrangements for implementing this regulation at national level. Discussions on the definition and the multi-functional role of agriculture have also hinged on implementation.

It is to be noted that the term "multi-functionality" figures explicitly in the objectives of the regulation which, according to its recitals, also aims to achieve an integrated approach to the rural economy, that is to say, to implement a programme to develop jobs and incomes in the countryside based not only on the diversification of agricultural activities, but also on non-agricultural aspects, such as heritage development and stewardship of the countryside.

The two other principles of this regulation are simplification and cohesion of measures (all now financed by the EAGGF) and flexibility and adaptability to the diversity of situations. Thus, although 22 measures are put forward, including some which have been in force for some time and are well-known, only one - the agri-environmental measure - is compulsory for all countries

Box 6.4 - The 22 measures provided for in the RDR

These measures bring together aids for modernising agricultural holdings and, more generally, structural measures, aid for the forestry sector, aid for conserving the environment and the rural heritage and, more generally, aid for improving the competitiveness of rural activities. This RDR thus contains a whole range of widened and co-ordinated measures which previously came under the agricultural policy and regional development policy. Each country is thus free to adopt or reject any of these measures (the only mandatory element concerns the agri-environmental measures) and must build them into a regional or national rural development plan, to be approved subsequently by the Commission. The aid then granted in this context benefits from EAGGF joint funding (mostly Guarantee). The RDR sets a maximum amount eligible for joint EAGGF funding for each measure.

The presentation made by the Commission covers 22 measures grouped together in several categories.

The 4 "accompanying measures", including 3 measures already grouped under this term during the 1992 reform: They are co-funded by the EAGGF guarantee over the whole of the territory of the Union.

- Early retirement for farmers aged over 55. Aid for early retirement provides an overall amount of 150,000 Euro for the person leaving the sector, with annual payments not generally allowed to exceed 15,000 Euro. The premium for the successor amounts in all to 35,000 Euro (3,500 Euro per worker and per annum). The aid may not be paid for more than fifteen years for the person leaving the sector or for more than ten years for the farm worker. Both must be at least 55 years of age.
- Agri-environmental measures. The RDR takes up the principles that apply for the measures in place since 1992. The scheduled aids are granted to farmers who enter into

environmental commitments for a minimum of five years. The aid is allocated each year and calculated in terms of the loss in earnings and the additional costs resulting from the commitments, and the need to provide a financial incentive. The maximum annual amounts total 600 Euro per hectare for annual crops, 900 Euro per hectare for specialised perennial crops and 450 Euro per hectare for other types of land use.

- Aid for afforestation of agricultural land (takes up the principles of regulation 2080/92).
- Aid for the least developed areas and mountain regions, which is henceforth contractual and subject to environmental restrictions. These are now calculated per hectare and not by animal. Such aid, which may range, from 25 to 200 ε per ha, depending on the situation, may also be applied in areas subject to environmental restrictions (Natura 2000, for example).

The other measures are co-financed by the EAGGF Guidance in the regions covered by Objective 1 and by the EAGGF Guarantee elsewhere.

These are followed by 4 measures intended to strengthen farm holdings which bring together aid covered by major headings of the previous structural policy:

- Investment in farm holdings to improve earnings, farmers' living and working conditions, regardless of whether they are working full-time or part-time. The investments must be aimed at one or more of the following objectives: reducing production costs, improving product quality; conserving and improving the environment; respecting the hygiene and welfare conditions of animals; encouragement for the diversification of farming activities. The total value of national and community public aid, expressed as a percentage of the volume of eligible investment is limited to 50% in the least developed areas and to 40% in the other regions.
- Setting up young farmers. Aids to help young farmers set up are granted provided that the farmer in charge of the holding is less than 40 years old and is setting up for the first time as a farmer. Two types of aid are envisaged : a single premium which may not exceed 25,000 Euro and an interest subsidy for loans taken out which is restricted to the same amount.
- Professional training for farmers.
- Processing and marketing of agricultural products.

The total value of national and community public aid for these measures, expressed as a percentage of the volume of eligible investment is restricted to 50% for the regions covered by Objective 1 and to 40% for the other regions.

The ninth measure relates to aids for forestry and logging other than aids for afforestation and which are particularly targeted towards supporting the multi-functional nature of forests. These aids take in the following measures in particular: investments in forests with a view to improving their economic, ecological or social value, rationalising the harvesting, processing and marketing of forestry products; investments relating to the use of wood as a raw material; maintaining and improving the ecological stability of forests in areas which play a part in protecting the public interest in this respect and maintaining fire-breaks through agricultural measures.

In addition to planting costs, this support can cover:

- An annual premium per hectare afforested to cover the maintenance costs over a maximum period of five years;
- An annual premium per hectare to compensate the losses arising from afforestation over a maximum period of twenty years; this premium amounts to 725 Euro per hectare for farmers or farmers' associations and 185 Euro per hectare for others.

Finally, article 33 of the RDR contains thirteen "varied measures for developing all rural areas". These measures can affect the whole of the territory and include programmes hitherto only implemented in regions whose development is lagging behind or rural areas encountering reconversion difficulties:

- Land improvement;
- Reparcelling;
- Setting up services providing help for farm management;
- Marketing of quality agricultural products;
- Basic services for the rural economy and population;
- Renovation and development of villages, protection and conservation of the rural heritage;
- Diversification of agricultural activities and activities close to agriculture to provide multiple activities or alternative incomes;
- Agricultural water resources management;
- Development and improvement of infrastructures connected with the development of agriculture;
- Encouragement for tourist and craft activities;
- Protection of the environment in connection with agriculture, forestry and landscape conservation as well as with the improvement of animal welfare;
- Financial engineering.

Within this framework, the countries should thus put forward Rural Development Plans, at national or regional level, setting out the implementation arrangements for this Regulation, which may only come into force in each of the zones, countries or regions in question after the European Commission has ascertained that they meet the goals of the RDR and the administrative and financial imperatives.

The Berlin agreement also provided for a re-directing of the structural aids (the "economic and social cohesion policy"), by adopting 3 objectives:

Objective 1:
Economic development of regions whose development is lagging behind, defined strictly as regions whose per capita GDP is less than 75% of the European average, together with the outermost and Nordic regions. The areas covered by this objective are Portugal, Greece, a large part of Spain, the very southern-most part of Italy (6 regions) and the Overseas Departments in the case of France.

Objective 2:
Economic redevelopment of areas with structural difficulties, including the "declining rural areas", i.e. areas with low or falling population densities, affected by unemployment or with a high percentage engaged in agriculture and not covered by Objective 1.

Objective 3:
It involves adapting education and training systems and affects the whole of the Union.

In the regions affected by the first two objectives, a specific plan has to be put forward relating to the relevant Rural Development Plan. The scope of this plan naturally goes well beyond the agricultural sector because, as in the past, all of the sectors and the infrastructures, particularly in the areas covered by objective 1 can be financed in this way. In addition to the more favourable arrangements provided for within the framework of the RDR for the areas covered by objective 1, measures to develop agricultural holdings or units in the agri-food sector can also benefit from special funding.

In all, the EAGGF funding for rural development over the period 2000-2006 will be 4.3 billion Euro a year, half of which will go to the 5 EU Mediterranean countries. This represents 10.5% of the EAGGF Guarantee credits. Overall, the socio-structural credits granted to the regions with specific problems amounts to 22,5 billion a year for objective 1, 3.7 billion for objective 2 and 4 billion for objective 3, to which should be added 3 billion allocated to the Cohesion Fund and some 2 billion for the Community Initiatives.

The member countries drew up their Rural Development Plans in 1999 and most of these were made public in the course of the year. The Commission took its decisions only in 2000, in some cases only after to-ing and fro-ing to adjust the proposed RDPs to the spirit and the letter of the RDR. Thus the national RDP for France, which was submitted in July 1999, was not finally accepted until September 2000.

In the meantime the previous rules continued to be applied in 1999.

In **Spain,** there was a delay in the drafting of the RDPs, which apply to each Autonomous Region, and the first were not finally adopted until the end of 2000. The main reason for this was the inability of the central government and the Autonomous Regions to agree on a general framework for sharing out the "national" funding between the State and the Autonomous Regions. As a result, discussions had to take place with each Autonomous Region in turn.

Nevertheless it proved possible to define the priorities for the rural development schemes in the regions covered by Objective 1, which took in 76% of the country and 58.8% of the population. They cover the following points:

- Improving competitiveness and developing the fabric of production,
- Research and development into the information technologies,
- Environment, natural and water resources,
- Human resources, employment and equal opportunities,
- Rural and urban development,
- Energy and transport infrastructures,
- Agriculture and rural development,
- Fisheries and aquaculture.

One noteworthy proposal put forward by Spain as part of the RDP is that of setting up an agri-environmental aid programme for sunflower production. As the results for 1999 are already revealing, there is a risk that the cut in direct aid for sunflower production will result in its disappearance, particularly in the dry areas where it has been a traditional crop. This development will have major economic, social and also environmental consequences. Faced with this prospect, both Spain and France have put forward a special aid programme for those planting sunflowers who undertake to apply agri-environmental rules.

This programme has been put forward to the Commission and the Autonomous Regions may include it in their RDPs or not as they choose. If they do include it, they will contribute to financing the measure.

Portugal as whole is included in the areas covered by objective 1.

It has thus submitted specific programmes covering the various aspects of the RDR and the regional programmes in the context of objective 1.

The national RDP is made up of 3 programmes.

- "RURIS", covers the 4 so-called accompanying measures : early retirement, less favoured regions subject to environmental restrictions, afforestation of agricultural land and agri-environmental measures. This involves total public expenditure (EAGGF and State) of 280 M ε over the 6 years of the programme.

- "AGRO" takes in the other measures, divided into 2 approaches:
  1. Structural measures involving agricultural and forestry undertakings, combining the measures of the RDR: modernisation, re-development, diversification of agricultural holdings, processing and marketing of agricultural products, sustainable development of woodlands, management and hydro-agricultural infrastructures, support for holdings subjected to natural risks, financial engineering.
  2. Development of the human potential of undertakings: vocational training, advice and demonstrations of techniques, training infrastructures and specialised "agro-rural" services intended to help diversify activities.

This AGRO programme will involve public expenditure of 3.3 billion ε over the period 2000-2006.

- Finally, the "AGRIS" programme, which is decentralised in each of the regions, includes programmes for each region in the following areas: diversification of small-scale agriculture, development of quality products, sustainable management of woodlands, support services to improve working conditions and farming activity, management of water resources and reparcelling, collective agro-rural infrastructures (roads, electrification ...), development of the countryside and the rural heritage, support for local agricultural development initiatives.

In **France**, the proposal for the French Rural Development Plan drawn up at national level was not accepted by the Commission until July 2000. As regards the agricultural aspects, all of the pre-existing measures are included in this Plan. The basic characteristic of the plan put forward by France is to re-group most of the RDR measures, including the agri-environmental measures, into Regional Farming Contracts, the new mechanism provided for under the Agricultural Guidance Act.

Under this plan, the only structural measures available to farmers not signing an RFC were those aimed at helping young farmers to establish themselves. These have been made flexible and extended to the age of 40 (the maximum age stipulated in the previous European procedures, since France had hitherto chosen to set the limit at 35), the Compensatory Allowance for Natural Handicaps (which the RDR intends to make subject to more restrictive conditions, particularly as regards the environment) and the Grass Premium (or Premium for maintaining extensive livestock rearing systems), which had previously come under agri-environmental measures.

As mentioned earlier, discussions between France and the Commission were protracted; in the RDP that was finally accepted, the agri-environmental measures remain outside the RFCs, (however, holdings signing up for these contracts will receive an additional premium). Two measures have been set up at national level: the switch to organic agriculture and converting arable land to extensive pasture. By contrast, the grass premium has been abolished, since the Commission questioned the real environmental effects of this measure, as it did before in 1992 and 93 during discussions on the implementation in France of the measures covered by Regulation 2078/92. It has been replaced by a regional measure for extending pasturelands.

As in the case of Spain, a new, relatively "non-targeted" agri-environmental measure has been introduced for growing sunflowers.

The main aspect and the most original feature of the RDP are the RFCs, which are intended to bring together all the measures for restructuring holdings and focus

them under 2 headings: the economy and employment, land use and the environment.

Box 6.5 - The RFCs,
A tool for developing agriculture and the countryside in France

The Agricultural Guidance Act of July 1999 provides for the creation of a new tool for modernising agricultural holdings, the Regional Farming Contracts (RFCs), which are intended not only to become the main instrument of farm structural policy but also to play a key role in the country's rural development policy by giving priority to the role played by agriculture in this context.

The RFC is a 5-year contract signed between a farmer (or farming undertaking) and the State, whereby, in return for access over the period to financial advantages either in the form of funding for investments or annual flat-rate subsidies (usually per hectare or per animal), the beneficiary undertakes to modernise and adapt the holding in line with a series of criteria drawn up at national and local level.

The Regional Farming Contracts have a much broader objective than the Agri-Environmental Measures or the Material Improvement Plans which they are destined to replace, in that they provide aid for modernisation to those holdings which submit innovative schemes affecting the farm as a whole and which, by meeting the challenges deemed to be important locally, form part of the local development projects.

Implementing this principle has two consequences:
- The RFC must encompass the entire farm and reflect its relationships with its natural and economic environments.
- Priority will be given to projects drawn up within a collective framework, at a regional or branch level.

All RFCs must include two components:
- Economy-employment: diversification of production, products of a specific quality, maintaining or expanding employment, improving working conditions.
- Region-environment: Water and land, bio-diversity, countryside and heritage, natural risks.

Therefore, two important concepts underpin the RFCs:
- Sustainable agriculture in its economic, social and environmental aspects.
- Multi-functionality of agriculture and its inclusion in a form of rural development in which the role of agriculture is seen as going significantly beyond its productive activity.

The procedure introduced by the Ministry of Agriculture was also original, reflecting the innovative nature of the measure:
- Preparatory work in each Département, bringing together the administration and professional organisations and involving the publication of summary documents.

- Following the approval of the Act, the drafting of implementing rules and principles and a catalogue of possible measures, with a maximum amount of aid and specific implementing conditions for each one.
- The drawing up of standard measures for each Département, reflecting local priority objectives and dealing with each sub-region in turn.
- Finally, the drawing up of local projects by the traditional farming development bodies (Chambers of Agriculture, unions), economic institutions (for example co-operatives, producers' organisations) or local development institutions (local authorities).
- The contract for each holding is individual and specific but forms part of the local plan. This involves a considerable amount of work for the farmer, his advisers and the representatives of the administration, who must take into consideration the situation within the holding and its location and identify appropriate measures.

In sum, therefore, the scheme is based on collective projects comprising individual contracts, and entails an inevitably complicated procedure involving the administration, farmers' professional organisations and other players at the local level.

For the French Government, the RFCs are the key element in the national Rural Development Plan and their funding must fall within the framework of the RDP aids. As France plans also to allocate the resources derived from the modulation of compensatory payments to the RFCs, it has been necessary to adapt all of the RFC measures to bring them into line with the 22 objectives set out by the RDP.

The French RDP was not officially approved by the Commission until October 2000[18] and the corresponding funding could not be mobilised until that date.

This explains why results fell far short of the target figures envisaged at the end of 1998 (several thousand "experimental" RFCs in 1999 and 100,000 in 2000). In fact, no more than fifty or so contracts were signed, some of these rather hastily, and at the end of the year the implementation of the RFCs had not even got off the ground in many Départements, especially those with particularly intensive forms of production. The scheme is expected to reach cruising speed in 2001.

Some in the farming profession and in particular, the majority of members of FNSEA, the largest farming union, have found it difficult to accept that most of the structural aids will change from being "on demand" ("everyone is entitled if they meet the conditions) to a "project-based" approach and that multi-functionality and diversification of activities will henceforth take precedence in policy over agricultural production.

Farmers in the Mediterranean regions, like those in mountain areas, are right to see the RFCs as a powerful tool for re-balancing aid and earnings around the diversification of products and activities with which they are already familiar. However, it should be noted that the aid envelopes are worked out for each Département separately: thus every region and every type of production will benefit from the RFCs.

[18] One of the amendments requested by the Commission in order to accept this RDP was precisely maintaining agri-environmental measures for those farmers not signing up for the RFCs. However, the amount of these aid will be increased by 20% within the framework of the RFCs.

During 1999 and 2000, **Italy** drafted the regional RDPs and plans for the areas covered by objectives 1 and 2 at regional and national level. Objective 1 covers the six regions in the South. The resources allocated to Italy account for 13.7% of the Community total (24 billion Euro) for the period 2000-2006 and the EAGGF contribution (the part covering the agricultural sector and rural development) accounts for some 13.6% of the EAGGF total (2,929 billion Euro).

Community resources allocated for rural development measures in the regions covered by objective 2, which represent 13% of the population in the whole of the Centre and the North of the country, amount to 383 million Euro each year.

The measures are drawn up at a regional level and thus vary from one region to another. However, it can be said that these programmes include most of the measures found in the previous programme implemented from 1994 to 1999 and place much importance on collective organisation, particularly with respect to the processing and marketing of products. The up grading of the measures for setting up young farmers has already been mentioned.

In **Greece,** a country which falls entirely within the area covered by objective 1, the Ministry of Agriculture has set three strategic objectives in the Structural Fund programme for the period 2000-2006:

- Improving the competitiveness of Greek agriculture,
- Developing rural areas in a sustainable and integrated manner,
- And preserving and improving the environment and natural resources.

These three main objectives are being pursued in accordance with the following guidelines: integrated action for agricultural holdings, processing food and wood, aid to young farmers, information and training for the rural population, intervention for agricultural products, natural resources, integrated rural development programmes, measures providing support and technical assistance.

Greece has also submitted a Rural Development Plan which will be financed by the EAGGF Guarantee for the implementation of the accompanying measures.

The new RDP has a total budget of around 3 billion Euro, divided up as follows:
- Early retirement for an expected 50,000 beneficiaries;
- Compensatory Allowances for natural handicaps: targeting 180,000 beneficiaries (as before);
- Agri-environmental measures;
- Reforestation of agricultural land.

The rural development policies in the countries outside the European Union do not have such a complex institutional framework.

In some cases, there is no rural development policy as such. This does not mean that there are no stated aims in this area, nor that there is no fight against development inequalities, even if the funding allocated is clearly not on the same scale as that made available jointly by Brussels and the member countries of the Union.

Therefore, having taken note of how its rural areas were lagging behind, **Morocco** drew up and published an ambitious rural development strategy for the first time in 1999. Its aim is to create "a different situation for the rural sector" in 2020. Based on a "global, integrated and multidimensional approach", its success will depend on the extent to which the various players in rural development become involved and accept their responsibilities. The "contracts under the plan" negotiated between the regions and the Standing Inter-Ministerial Rural Development Committee will determine the form that the programmes worked out within this context will take. These contracts will set out the areas in which the State can intervene and the types of support that it will undertake to provide to implement the various programmes.

Although there are no rural development strategies and policies as such in Algeria and Tunisia, there has never been any shortage of measures in these areas.

The State Secretariat for Rural Development in **Algeria** was set up in 1998 but disappeared under the government appointed in 1999, almost certainly because it failed to put forward any schemes and accomplished nothing in its short life-span. 1999 and 2000 in particular were marked by a more rapid pace in land development and the implementation of an ambitious "crop re-development" programme aimed at increasing incomes for farmers and rural inhabitants by improving the crop systems through adjustments (crops, irrigation) that would create jobs immediately and in the future. However, much more time will undoubtedly have to be devoted to the 700,000 ha. of fallow land scheduled for re-development, mainly because of a lack of undertakings for carrying out the investments.

It is clear that the rural development measures in the three Maghreb countries primarily relate to agriculture, the conservation of natural resources (forests and land, water), education and, to a certain extent, health. Rural industrialisation in particular and the development of non-agricultural activities in general are almost completely absent from the actions being carried out or encouraged in these areas. This situation ought to be corrected in the future if the rural environment is to be allowed to modernise without depleting its vitality.

In **Albania**, policy has focused on land : 92% of the land scheduled for distribution has been distributed and 92% of the peasants hold title deeds thanks to a modern, unified and extensive property registration system.

Rural development policies in Albania are very limited. The concept of a rural area was not clearly defined within the public administration until the 90s.

Implementation of programmes and projects offering a wide range of structural and rural development measures commenced at the beginning of the 90s in response to political, social and economic changes. These measures were aimed at:

- Encouraging agricultural production methods that respected the environment;
- Diversifying economic activities in the rural areas;
- Introducing help and management services for agricultural holdings;
- Managing water resources;
- Encouraging forestry, including afforestation, investment in private forestry development enterprises, processing and marketing forestry products;
- Renovating villages and safeguarding the rural heritage;
- Developing and improving rural infrastructures;
- Improving vocational training.

Changes have taken place during these 8-10 years in the rural areas of Albania, mainly after the introduction of freedom of movement for the population. The implementation of the "land act" (1991) had a particular influence on these developments. Its effects on the rural landscapes are particularly clear. The characteristics of three types of rural areas can now be seen to be emerging:

- The rural area undergoing intensive urban development (around the large cities in the western part of the country);
- The balanced rural area (in the areas with favourable natural and economic conditions, such as Myzeqe, Fusha and Korçes, etc);
- The rural area with a declining population and in economic recession (particularly in the north and north-east of the country).

Investments in infrastructures in **Turkey**, have long been the priority and support measures have been granted to the least developed regions of Turkey.

Some of these Rural Development Projects (RDPs) are financed solely by the Turkish Government, whilst others receive funding from international donors such as the World Bank and the FAO. Programmes for Developing Priority Regions have been implemented to avoid creating development disparities between the eastern and western regions.

In addition to these projects, the Southern Anatolia Project (SAP), which will cover a wider area with greater resources for the development of the whole of the southern part of Turkey, should also be mentioned.

Despite the major success already achieved as a result of this approach to rural development, the contribution of the rural sector and agriculture as a whole to the

Turkish economy has not reached the desired level and earnings in the rural areas are still far from those of the main urbanised or tourist areas.

6.5 – Environmental policies

It is clear that agri-environmental policies are now included in the general framework of rural development policy in the European Union. By 1999 however, some member countries had made little progress in introducing agri-environmental measures, even though they are governed by a European regulation dating from 1992 (R. 2078/92).

Thus only four programmes have been set up to date in **Greece**:

- organic farming,
- reduction of nitrate pollution,
- permanent set-aside,
- and programmes for endangered species.

Some progress has been made with the organic farming programme. This is an activity which lends itself well to small agricultural holdings. The programme covered 15,000 agricultural holdings in 1999, but only 0.5% of the arable land.

The reduction of nitrate pollution has affected only 750 agricultural holdings, but it would appear that this problem of pollution is not as critical in Greece as it is in certain northern countries.

The programmes dealing with set-aside and endangered animal species have also been relatively modest, receiving 15 million and 0.5 million Euro respectively in aid.

The agro-environmental policy in **Italy** essentially covers 2 areas: conserving natural resources and reducing the effects of intensive farming activity on the environment. There were 924 protected areas in all in Italy at the end of 1998 out of a total surface area of 3.2 million ha., which accounts for more than 10% of the country's area.

Action under regulation 2078/92 to spread farming practices with a minimum impact on the environment affects 2.5 million hectares (15.4% of the utilisable agricultural area, 7% of agricultural holdings), with programmes for reducing inputs and switching to organic farming accounting for most of these.

The Seventh 5-Year Development Plan in **Turkey** is pursuing a goal of sustainable agricultural development aimed at guaranteeing sustainability of the use of resources. A major effort has been made in this respect to protect environmental

performance by means of a compromise between the economic, social and technical aspects of the implementation of agricultural policies. Some institutional re-shuffling has taken place and new legislative improvements have been introduced to effectively control the environmental effects related to farming practices and activities in other sectors.

As regards the environment, every country has stated its determination to sustainably protect its natural resources by using them reasonably for the benefit of the people, particularly those in rural areas. This determination also depends on the means available and calls for adjustment to specific situations and the availability of resources.

The main problem in the countries of the South is still one of managing natural resources, particularly water and land. The initiative of the **Moroccan** government in this area to set up a new body in 2000, the Natural Drought Observatory (see box), is worthy of note.

Box 6.6 - Morocco sets up a National Drought Observatory

The setting up of a National Drought Observatory is part of a strategic plan to combat drought and stems from a desire to predict and permanently regulate this phenomenon to enable the country's economy and its people better to adapt to its effects.

This body was launched by the Ministry of Agriculture and Rural Development during the first half of 2000 and finalisation of all the administrative arrangements are close to completion. Its aim is continuously and methodically to collect reliable data that should make it possible to evaluate the real impact of this climatic hazard on the state of natural resources and the living conditions of the people affected. In so doing, it should naturally inform the options of the public authorities and help in making decisions as regards the action to be taken to forecast and limit the effects of drought. In order to achieve this goal in the short term, the Observatory should set up an early warning system and act as a monitoring instrument able to trigger emergency programmes if signs of a drought should appear. In the medium and long term, it should help to create tools that enable greater allowances to be made in the country's economic and social planning for the risks of drought and thereby work out the appropriate strategies for tackling them.

The National Drought Observatory has thus been assigned four main roles:

- To systematically collect, analyse and distribute the relevant information to identify drought, monitor its effects and assess programmes aimed at combating it;
- Work out a strategy for combating drought that includes the rational management of water to make best use of it in the event of drought;
- Draw up a programme for monitoring and assessing the impact and effects of drought;
- Put forward initial and continuous training programmes for combating drought that are suited to local and regional conditions.

In order to fulfil its tasks, the Observatory will be organised in the form of a network made up of a central structure (organised within the Hassan II Agricultural and Veterinary Institute) that will work in close conjunction with the member partners (National Institute for Agricultural Research, the Meknès National Agricultural School, the National Forrestry School) and will be permanently in touch with its contacts at regional level. The central structure co-ordinates and guides the activities of the observatory, whilst the regional units are responsible for collecting reliable information on the ground. This body should thus work in partnership with any other players involved at any level of the process for drawing up and implementing programmes for combating drought.

Beyond the strictly national framework moreover, it should be noted that, according to its founders, the Observatory should also play a more active role in the implementation of the programmes of the Observatory of the Sahara and the Sahel and in implementing the recommendations of the Rio Summit on bio-diversity and the conservation of resources. The Observatory should also provide a multi-disciplinary framework for co-operation and reflection on the International Convention on climate change in conjunction with the National Environment Observatory.

The emphasis in Tunisia is placed much more on water management. The national strategy for the mobilisation of surface water made provision for building 1,000 mountain lakes to provide 50 million cubic metres. 491 lakes with storage capacity of 48 million cubic metres had been built by March 2000. These reservoirs are used by 1,915 farmers grouped together into mutual associations and have supervisory staff at hand provided by the Ministry of Agriculture to help the farmers optimise their holdings.

A Ministry of Regional Development and the Environment was set up in Algeria at the end of 1999. This is the first time that the word “environment” has appeared in the title of a separate ministry, which would seem to indicate the high priority that will henceforth be given to this area. Since the “natural” environment is heavily influenced by farming and livestock rearing activities, it will be necessary to find ways in which this ministry can co-operate with the Ministry of Agriculture (which is also responsible for forests) to optimise their activities. Apart from this new development at the institutional level, the environment policy in 1999 was marked by the adoption of a national afforestation programme aimed at raising the rate of afforestation over the next twenty years from 11 to 14% (around 1.2 million ha.), since afforestation will henceforth include fruit trees.

Introduction

Review of current trends indicates that we are approaching a "water crisis" in several regions, most notably in the Middle East and North Africa, and in an increasingly large number of countries worldwide. In the near future, availability of water rather than land will be the main constraint on agricultural development in the arid and semi-arid countries of the Mediterranean. In most of those countries with an erratic rainfall pattern, many of the available sources of water which can be used for economic activities have already been developed or are currently in the process of development. There is no doubt that unless there is efficient control and proper water management self-sufficiency in food and energy will continue to be a mirage for most of those countries.

The major challenge facing water planners and managers in the new century is that, while the physical availability of water to each country will be constant, demand for water will continue to increase steadily in the foreseeable future. The problem is thus how to balance water demand and supply in these difficult conditions.

There is really only one solution, and that is to manage the available water resources in each country in a manner that is efficient and environmentally sound. In the Mediterranean region the way in which water resources are being managed is having increasingly severe environmental implications including accelerated soil and water degradation, the degradation of natural ecosystems and fresh-water pollution.

Our attempts to develop and manipulate the earth for social and economic well-being have resulted in wide-ranging environmental damage that we are only now beginning to appreciate.

The lessons learned in the past decade are that technical solutions alone cannot provide the growing population with a safe water supply and proper environmental sanitation. Integrated management of water resources is needed which includes technical, institutional, managerial, social and economic aspects.

New mechanisms will be required in the future to protect water resources and allocate diminishing water supplies to increasing and competing uses. Anticipatory and preventive approaches should be developed for managing the quality and quantity of arid regions' water resources in a way that acknowledges their use in social, economic and environmental terms.

In the Mediterranean, we need a new ethic, one that promotes efficiency and protection of the water system in everything we do. Efficiency must be the primary option. Part of that ethic is the acceptance of the obligations tat accompanying the rights we assume to have to water, obligations to protect water's many ecological functions, to get as much as possible out of every litre we take from its natural course, and to help others to receive its benefits.

7 *Mediterranean Countries and the water problem*

Water shortage is not a new phenomenon in the Mediterranean countries. What is new, however, is that it is occurring in an increasingly changing environment and this makes it more serious and long-lasting. The recent droughts in the last decade marked a turning point. They highlighted the vulnerability of water supplies even in the industrialised Northern Mediterranean countries, which had always relied on adequate per capita rainfall. The water crisis is endemic or permanent in some Southern Mediterranean areas, but it has now even reached towns and villages in France, Spain, Italy and Greece, obliging them to impose temporary restrictions. The shortfall in quantity has been compounded by a decrease in quality due to contamination of surface or underground water.

There are many interrelated reasons which are contributing to this crisis, but only major ones will be discussed in the present section.

7.1 - Limited information on water resources

A basic problem in the Mediterranean region as well as in many regions of the world is adequate knowledge both of the natural and potential water resources and of present and forecasted water demand. The occurrence of water resources is defined by a set of stochastic variables. It is thus essential to know not only their average values but also their space and time distribution. Measurements of these variables should meet the following conditions:

(i) suitable geographical distribution and density of measurement points;
(ii) suitable frequency of measurements;
(iii) sufficiently long periods of measurements; and
(iv) accurate measurements.

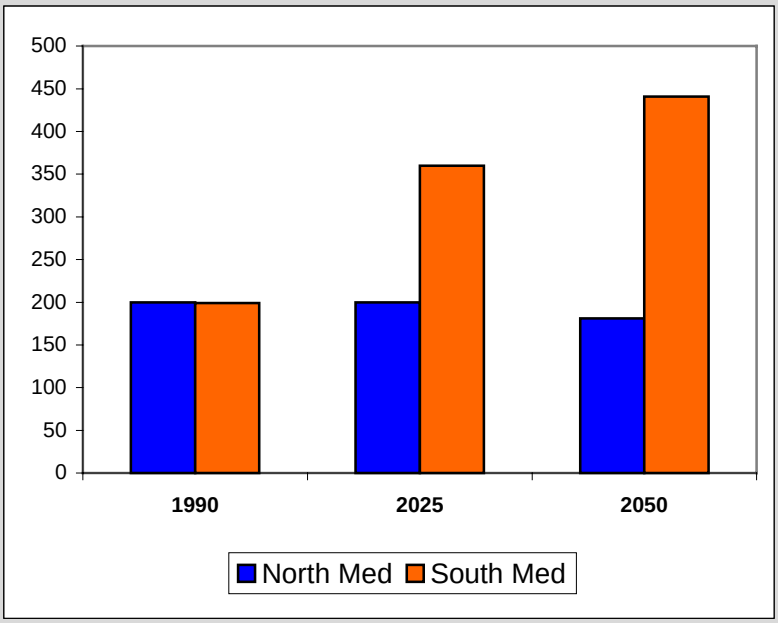
The collection, processing and analysis of good quality data on surface water and groundwater resources in terms of quantity and quality are vital to efforts directed towards planning to meet present and future water demands. Efforts must be stepped up to gather fundamental water statistics, organising them into usable and accessible forms and disseminating them to those who may need them.

7.2 - Population trends and explosive urban growth

It is estimated that the population of the countries of the Mediterranean basin as a whole, currently around 400 million, will have reached between 520 and 570 million by 2025. The difference between the two figures is equivalent to the current populations of Egypt and Turkey. The northern countries of the basin, from Spain

to Greece, will account for only about one-third of the total population in 2025, whereas the countries in the south and east of the basin, from Morocco to Turkey, will contribute almost two-thirds of the total Mediterranean basin population in 2025, i.e. almost twice the current figure.

Graph 7.1 - Population in the Mediterranean countries – Evolution trends 1990-2050 (million inhabitants)



Source: United Nations Population Division, 1994.

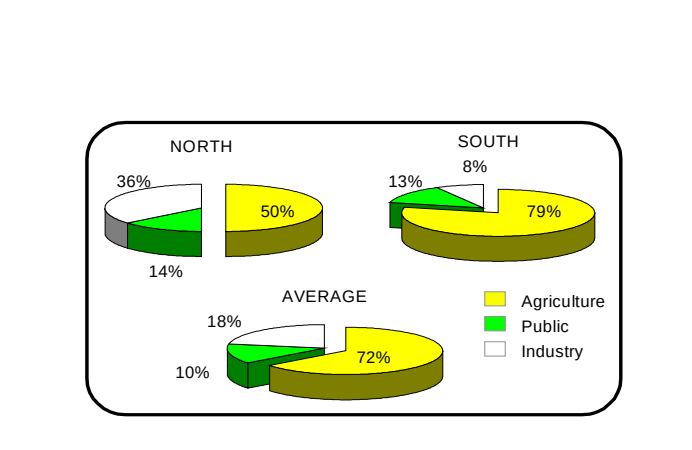
The sequences of this high population growth rate with an average of 3% yearly in the southern countries of the Mediterranean will also increase the total water requirements. Furthermore, past experience indicates that, as the standard of living increases, so does per capita water requirements.

Rapid population is always linked with rapid urbanisation. Urban growth will be explosive in the southern and eastern countries, where it is, on average, five times faster than it was in Europe last century. The rate is not the only factor to be considered. The size of urban population will be very large: 200 million more urban inhabitants in 2025 in the south and east of the basin, i.e. as much as the current total urban population in the Mediterranean region. The urban population of the

Mediterranean basin could in fact amount to between 380 and 440 million compared to a little over 200 million today. Generally, the annual growth of urbanisation is high in the Mediterranean region, but it is much higher in the south (4.5%) compared to the north (2.8%).

This population increase with a high urbanisation rate, will place serious stress on fresh-water resources, particularly with consumptive uses in the developing countries of the Mediterranean region. This will normally be reflected in sectoral water distribution and water use. Under such conditions, Southern and Eastern Mediterranean countries will experience difficulties in ensuring self-sufficiency in meeting agricultural, domestic and industrial water needs. The supply of drinking water to urban areas will be one of the most critical problems in those countries.

Graph 7-2 - Sectoral water use in the Mediterranean Countries



Source: Elaboration LAMBED, on World Resource Institute Data, 1985.

7.3 - Water Scarcity

Scarcity of water is a major constraint in arid and semi-arid countries of the Mediterranean. In many countries, all available water resources which can be used for economic purposes have already been developed or are in the process of development.

The overall prospective analysis focusing on future draw-off as compared to available resources, the “exploitation index”, indicates that the Mediterranean countries could be classed into roughly three groups:

The first group consists of countries where water availability will remain adequate

up to 2025 and beyond, and where there is even a fairly comfortable margin for increased per capita draw-off. This group includes some countries with low population growth (France, Italy, former Yugoslavia) and some with higher population growth (Albania, Turkey, Lebanon). Maintaining this margin will require efforts to develop and manage water and to preserve appropriate quality, which will be necessary in any event.

Secondly, there are countries where water availability, although still adequate at present, will drop considerably (Spain, Morocco, Algeria, Cyprus). Any significant growth in the per capita draw-off would fairly rapidly place these countries in the critical situation with which the countries in the next group are confronted and would call for solutions other than conventional hydraulic works.

Finally, there are some countries where current water availability is already limited or negligible. As from the year 2000, the exploitation indexes will exceed, or will have already exceeded, 100 percent. These include countries where population growth is low (Malta), average (Israel, Tunisia) or high (Egypt, Syria, Libya). In order to meet demand, per capita draw-off on conventional resources will probably have to be reduced through various incentives, or else the country will have to use non-conventional water resources to the full, particularly in the agricultural sector.

The analysis clearly indicates that at the dawn of the new century and beyond in the Southern Mediterranean countries, water demands will fast approach the limit of resources and that the majority of these countries entered a period of chronic shortage during the nineties. These countries will be facing several similar problems including primarily:

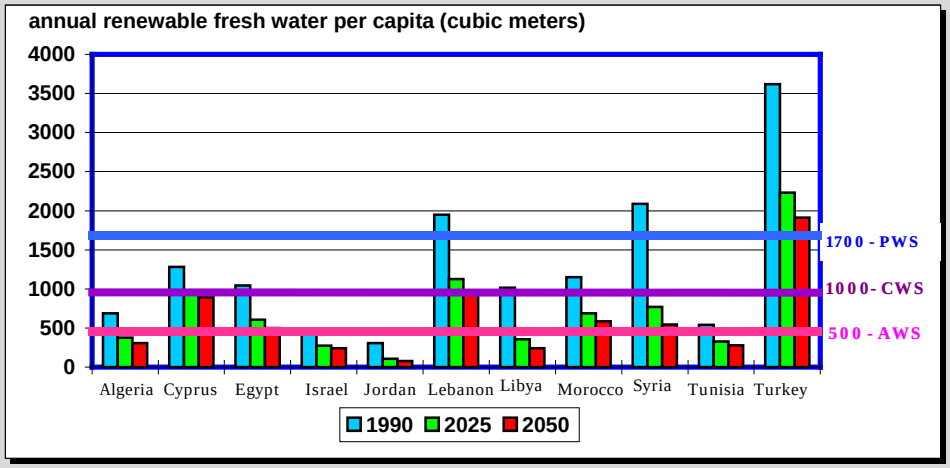
- Declining water resources per inhabitant both in terms of water availability and water withdrawals. It is expected that the available water per capita will be reduced by nearly 50% of the present level.

- Exploitation of water at a relatively high rate with the risk of deterioration in water quality.

- Excessive reduction of water withdrawals per capita, which will have a significant effect on sectoral water use , creating notable competition and conflict amongst users in the various sectors, and in the irrigation and domestic sectors in particular. Priority will be given to satisfying drinking water demands to the detriment of the available water allocated to the irrigation sector with the consequence of less irrigated acreage and more land degradation.

- Progressive degradation of the quality of available water resources due to increasing volumes of waste discharged into water bodies and the atmosphere.

Graph 7.3 - Water Availability per capita in the Mediterranean Countries



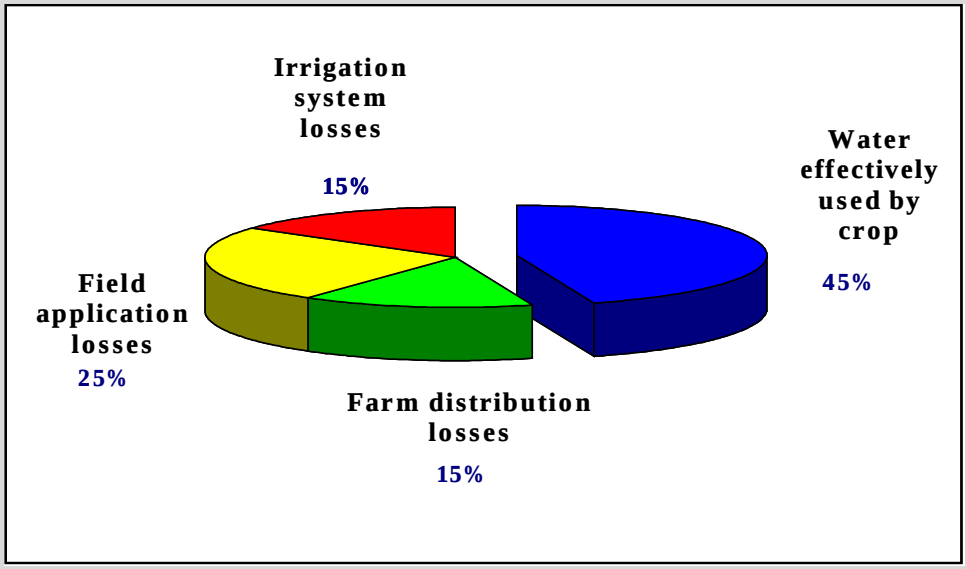
PWS = Periodic Water Stress
CWS = Chronic Water Stress
AWS = Absolute Water Stress

Source : United Nations Population Division, 1994.

7.4 - Inefficient water use

Water resource problems are often connected with a lack of efficiency in water use in agricultural, industrial and domestic supply. Agriculture is by far the most important water use activity, and it is also probably the least efficient sector in water use. The failure to recognise the economic value of water has led to wasteful and environmentally damaging uses of the resource. Managing water as an economic commodity is an important way of achieving efficient and equitable use and of encouraging conservation and protection of water sources. It should be realised that if we want to have enough water of a sufficiently good quality we have to pay for its true value.

Graph 7.4 - Average losses of irrigation water



Source : FAO, 1994.

There is much room for improvement in the efficiency of water sources use. In this respect, irrigation is a major concern, as water is often supplied to farmers at a cost well below the cost of supply, this being a particularly important issue in developing countries. If we could significantly improve equity in water resources use and the reliability of irrigation projects in the developing countries, the food production of these countries would benefit greatly. Achieving such goals is primarily a subject of a proper and environmentally sound water management of the available water resources in each country.

7.5 - Water quality degradation and water pollution

In almost all developing countries, including the Mediterranean ones, water quality programmes are either in their infancy or even non-existent. There is no reasonably clear and detailed picture of environmental issues confronting the land and water sectors or any accurate estimates of the cost of land and water degradation for the national economy. The cost is already significant, and unless drastic action is taken the current trends indicate that it is likely to be even higher. In addition, there simply is no information on the status of water pollution and the extent to which

water quality has been impaired for various potential uses. On the basis of the anecdotal and very limited information available, it can be said that the problem is already very serious near urban centres, especially as regards groundwater and lakes and also in the case of several rivers. It should be noted that once the groundwater is contaminated it is very difficult to decontaminate it.

Water pollution is now already a serious problem in most developing countries: a large percentage of wastewater is untreated, and this is directly discharged into streams, rivers and waterways, irrigation canals and drainage ditches. While one can question the actual percentage figures, there is no doubt that a very high proportion of domestic and industrial effluents are untreated at the present time. If allowed to grow unchecked, increased pollution from industrial and domestic sources is likely to reduce the amount of water available for various purposes in the future.

At our present state of knowledge, we simply do not know the extent of contamination that has already occurred and which may render some water sources unusable in the future without expensive treatment. Unless the protection of water resources receives attention as a priority issue, the lack of such protection will be a major cause of water scarcity in the region. Furthermore, the total costs to the country in terms of economics and health due to unchecked pollution will be unsustainable.

7.6 - Poor performance of irrigation and drainage systems

In the Mediterranean countries, irrigated areas currently cover more than 16 million hectares and have increased over the past 15 years by 3 million hectares at an average rate of 200,000 hectares per year, entailing additional water requirements in the order of 2,000 million m^3 per year. Irrigation represents 72% of total water withdrawals in the Mediterranean area.

In spite of this rapid expansion in gross irrigated areas, irrigation and drainage have undergone little technological change over this period. Most irrigation systems in both developing and developed countries of the Mediterranean are performing far below their potential mainly as the result of inadequate technologies, management practices and policies. This is true in virtually every dimension - performance, efficiency, productivity, equity, sustainability and impact on rural livelihood.

In the Mediterranean region, irrigated agriculture is characterised by the following features in general:

- the overall performance of many irrigation projects is far below expectations. The inadequate operation and maintenance and inefficient management of an increasingly scarce water resource are contributing to the problems;
- priority is always given to water quantity with minimum consideration for its quality; quantity and quality are not interlinked;
- large irrigation projects have been given high priority, while small-scale water programmes for agriculture have received inadequate attention.

Poor management practices, inefficient water use, and failure to place a high economic value on water have undoubtedly had a profound impact on the earth's physical environment. Water-logged and salted lands, declining and contaminated aquifers, shrinking lakes and the destruction of aquatic habitats are together placing a high environmental price on irrigation.

8 Constraints on environmentally sound management

A comprehensive and critical analysis of existing literature on environmental aspects of water development in the Mediterranean region indicates that there are many constraints which limit the potential application of available knowledge by water professionals and decision-makers in developing countries. On the basis of this analysis, the following four major constraints can be identified:

1. incomplete framework for analysis;
2. lack of appropriate methodology;
3. inadequate knowledge;
4. institutional constraints.

It should be noted that the four major constraints identified are not independent issues: on the contrary, they are often closely interrelated.

8.1 - Incomplete framework for analysis

The framework currently used for analysing and considering various environmental impacts associated with water development projects is overwhelmingly biassed towards assessing only the negative impacts.

What is thus needed is a balanced framework for analysis which will identify both positive and negative impacts. The next step should then be how to maximise the positive impacts and minimise the negative ones. A framework that considers only the negative impacts and ignores the positive ones is both incomplete and counter-productive.

8.2 - Lack of methodology

Review of the process currently used by developing countries to incorporate environmental issues into water management indicates that the methodologies available at present do not appear to satisfy the special requirements of those countries. While the Environmental Impact Assessment (EIA) process has been made mandatory in several industrialised countries, its actual use so far in developing countries has been somewhat slow. The reason for this slow acceptance is the lack of an operational methodology that can be successfully applied in the developing countries with limited expertise, resources, data and time. The EIA methodologies that are being used in industrialised countries are not directly transferable to developing countries for various socio-economic and institutional reasons (Biswas and Kindler, 1989).

The complex, lengthy, expensive and time-consuming EIAs as practised in developed countries, are not the right tool for assessing the impact of water development projects in developing countries. It is also important that, in addition to being appropriate to local circumstances, they should be affordable in terms of cost and maintenance. Many hydrological services in the developing Mediterranean countries have not been guided on these latter aspects. It is not uncommon to find that equipment has been acquired without ensuring that it can be properly operated and maintained. The life-span of equipment is thus unduly shortened, and scarce resources are thereby wasted. Furthermore, it is necessary to develop guidelines which can actually be used by professionals for water management in planning and managing projects.

8-3 - Lack of adequate knowledge

The results presented so far show that there is some working knowledge available about the Mediterranean countries' water. However, as can be seen from comparison of the various estimates, there are differences with regard to water balance components and water resources at the various levels.

Those scientists who have made contributions to this knowledge have pointed to the lack of adequate data on the hydrological cycle, the lack of sufficient aerial coverage of the data and their representation, the gaps in data, the quality of data, and in some cases problems of access to data even if they are available. In addition, questions are raised about the adequacy of the scientific basis, methods and techniques used in making the assessments.

There are many areas where there may not be adequate technical knowledge for getting reliable answers. Similarly, there are areas where "conventional" knowledge can at best be dubious and at worst totally erroneous.

8.4 - Institutional constraints

A sectoral approach to water development is a major institutional constraint in all developed and developing countries, and this has an important bearing on the sustainability of projects.

There are many reasons for this situation, but one of the most important is the division of responsibilities between the various water-related issues. Because of long-standing rivalries, coordination and cooperation between the various ministries leave a great deal to be desired, and yet in any large-scale water development project all of these issues must be integrated within the project area. While it is easy to point out this necessity, actually achieving this integration in the field is a very complex and daunting task.

Before discussing the action needed and the proper tools for implementation, it is of interest to represent some cases where efforts have been made to save fresh water and compensate for water shortages in the agricultural sector through the use and recycling of the non-conventional water resources.

8.5 - Case-studies from the region

In the region, the amount of collected and treated wastewater is expected to increase substantially with population growth, rapid urbanisation, and the improvement of sanitation service coverage. Such low quality water represents an attractive option for water-scarce countries of the region, since it is a renewable and valuable source of water. The safe use of sewage water is also becoming a global concern for obvious health and environmental reasons.

Most governments in the region have included wastewater re-use in their water resources planning. Policies have been formulated, but few governments have the capacity to implement them in their water-management practices in terms of action to deal with water pollution control and waste disposal. Concerted efforts supported by regional and international organisations are needed if real change and beneficial results are to be obtained in the near future.

As a matter of fact, the re-use and recycling of wastewater is now a top priority in the arid countries of the Mediterranean as a supplemental water resource for irrigation development that could result in a conclusive reduction of agricultural water demand and, consequently, an increase in the limited fresh-water supply for meeting demand in other sectors.

In this regard, it is of interest here to highlight some of the case studies where wastewater is successfully and widely used for irrigation in some developing countries of the region.

8.5.1 - Re-use of low quality water for sustainable agriculture in Egypt

The re-use of agricultural drainage water:

The cultivated area in Egypt is 7.2 million acres, which is sustained by adequate land drainage systems starting with collectors and ending with main drains. The drainage network is about 17.500 km long and is equipped with a monitoring network of measuring stations on key points of main drains in the Nile Delta so as to furnish reliable measurements.

The total drainage discharged annually varied from 13.5 billions m^3 in 1985 to 12.4 billion m^3 in 1995, representing nearly 23% of the annual Nile water supply (55.5 billions m^3). On the other hand, the volume of officially re-used drainage

water increased from 2.6 billion m^3 in the 1980s to about 4.2 billion m^3/yr in the early 1990s. By the end of the 1990s the total volume of re-used drainage water amounted to about 7.0 billion m^3/yr.

Average water quantity and quality data for the 1994-1995 period are set out in tables 8.1 and 8.2.

Table 8.1 - Drainage water re-used for irrigation, 1994-1995

Salinity class	Eastern delta	Middle delta	Western delta	Total delta
Ppm	(million m3/yr)			
<750	101	52	320	473
750-1000	528	235	187	950
1000-1500	370	1 404	53	1 827
1500-2000	0	0	0	0
>2000	121	0	26	147
Total	1 120	1 691	586	3 397

Table 8.2 - Drainage water flows to the sea, 1994-1995

Salinity class	Eastern delta	Middle delta	Western delta	Total delta
Ppm	(million m3/yr)			
<1.000	969	548	294	1 811
1000-1500	952	295	1 374	2 621
1500-2000	1 296	160	0	1 456
2000-3000	804	1 241	618	2 663
> 3000	198	1 389	2 326	3 913
Total	4 219	3 632	4 613	12 464

The analysis of data collected since 1985 indicates:

- about 80% of the drainage water discharged into the sea had a salinity level below 2000 ppm equivalent to nearly 3 dS/m, which could be safely used for major crops;
- actual concentrations vary from a minimum of 400 ppm to a maximum of 5000 ppm;
- volumes of drainage water between 3000 ppm and 5000 pm account for almost 25% of the total drainage water that flows to the sea;

- 70% of drainage water released to the sea amounts to about 9 billions m^3 and has a concentration of below 3000 ppm.

Nowadays all drainage water with a concentration of up to 2000 ppm is used in irrigation through mixing with fresh water.

However, recent developments in research on plant breeding and selection, soil, crop and water management, irrigation and drainage technologies will facilitate the re-use of drainage water with a relatively high level of salt concentration of up to 5000 ppm.

This can be seen clearly in water resources policy, where every drop of drainage water will be fully re-used for irrigation by the beginning of the year 2017.

In Egypt, drainage water is considered one of the economically most feasible alternatives when used in irrigation on an environmentally sound and sustainable basis to bridge the gap between water supply and demand.

8.5.2 - Re-use of treated wastewater in Egypt

In Egypt it is planned that 84,000 ha will be irrigated with treated wastewater by the year 2000. All urban waste projects include facilities for treatment up to the tertiary level and allow re-use for irrigation. Many rural areas still lack such facilities. The estimated amounts of wastewater from major cities and urban areas are set out in table 8.3.

Table 8.3 - Wastewater (billion m3/yr) from urban and major cities

Area	1992	2000
Cairo	1.36	1.70
Alexandria	0.53	0.65
Other urban areas	1.54	2.58
Total	3.43	4.93

In the case of new Greater Cairo (east and west banks of the Nile), for example, where sewers will be able to treat up to 4 million m^3 per day, the treated wastewater could irrigate 168,000 ha of desert land.

Agriculture is the largest water user in Egypt, a situation that is likely to continue for many years to come, since the Egyptian economy depends heavily on agriculture and about half of Egypt's population is involved in agriculture in one

way or another. In 1994, the cultivated area amounted to 7.4 million feddans (3.1 million hectares). Egypt plans to reclaim about 1.2 million additional hectares by the year 2000. With current irrigation practices and current levels of efficiency in irrigation systems, the total irrigation water demands about 51.5 BCM per year. According to the forecasts of the Egyptian Ministry of Water Resources and Irrigation, irrigation demands are expected to increase to 59.5 and 61.5 BCM by the years 2000 and 2025 respectively.

These figures clearly show that the expansion of irrigated area to meet the necessary food requirements of the rapidly increasing population will require an additional water supply amounting to nearly 10 BCM by the year 2025. It is not an easy challenge, but a reasonable solution could be found if Egypt were to re-use the huge amounts of agricultural drainage water (13 BCM) successfully, as well as the treated sewage water (4 BCM) together producing a total of 17 BCM per year. This source of such huge amounts of non-conventional water could meet the expected agricultural water demands for the next 25 years.

Moreover, this could lead to 17 BCM savings in the fresh-water resources which could be allocated to other sectoral water uses to satisfy the increasing needs.

However, strategies for the re-use of both resources need to be researched in depth and developed in order to achieve such goals. Likewise, the concepts of the re-use and management of drainage and treated sewage waters in irrigation must be fully understood and properly adapted to sustained production on a permanent economic basis.

8.5.3 - The re-use of reclaimed wastewater: the case of Tunisia

Tunisia, like many other arid and semi-arid countries of the Mediterranean, is facing more serious water shortage problems. Problems of water scarcity will intensify because of population growth, the rise in living standards and accelerated urbanisation, which are threatening water supply in general, and agriculture in particular, and are leading to both an increase in water consumption and the pollution of water resources. According to forecasts (1993), increased domestic and industrial water consumption by the year 2020 may cause a decrease in the volume of fresh water allocated to Tunisian agriculture. In recent years, the water policy of the country has thus been focusing on developing additional water resources such as the treated waste source, both as a supplementary irrigation resource and in order to protect the existing fresh-water resources.

Wastewater re-use is considered to be part of Tunisia's overall water resources balance. It has been made an integral part of the environmental pollution control and water management strategy.

Wastewater re-use policy was launched in Tunisia at the beginning of the eighties. The area currently equipped with wastewater treatment plants is about 6,366 ha. The amount of reclaimed wastewater by the year 2000 amounts to approximately 10% of the available groundwater currently used for agriculture in areas where excessive groundwater use is causing salt-water intrusion in coastal aquifers. Many projects are being implemented or planned where irrigation is achieved by means of treated wastewater, and this will cover almost 200,000 ha.

Technical, sanitary, social, organisational and institutional problems have been encountered at various levels in the irrigation schemes using recycled wastewater. However, the rate of utilisation of recycled wastewater still remains relatively low compared to potential (table 8.4).

Table 8.4 - Recycled wastewater utilisation rate in 1994

Irrigation scheme	Equipped area (ha)	Irrigated area (ha)	Pumped volume (M^{m3})	Pumped vol. Treated vol. (%)
Soukra	615	515	3.6	28
Cebala	3 200	1 250	12.5	30
Mornag	1 047	459	1.3	20
Nabeul	356	266	0.9	35
Hammamet	145	145	0.6	54
Sousse Nord	80	80	1.1	24
Sousse Sud	205	205	1.0	24
Sousse-Monastir	170	170	2.0	62
Mocknine	100	60	0.3	21
Kairouan	120	120	0.6	16
Sfax	340	240	3.7	47
Total	6 378	3 510	27.6	33

The overall use of treated wastewater and its full utilisation in irrigation calls for further research in order to minimise the risks related to wastewater re-use, expand the range of crops, and evaluate the long-term effects on the soil-plant-groundwater-human system. Likewise, risk assessment studies will also have to be conducted on water-sludge-soil-plant-animal-human exposure pathways.

As to the financial and economic feasibility of recycled wastewater use, more comprehensive evaluation is required which takes account of the cost of various operations, their fertilising value and their effects on crop production and on the environment.

In conclusion, the experience gained by Egypt in the field of the re-use of drainage water in irrigation and that gained by Tunisia with regard to wastewater recycling for irrigating agricultural crops is very rich and is based on an intensive research programme and experimental trials with wide-ranging technical and scientific results that carefully guide the sustainable use and environmentally sound management of such non-conventional water resources.

This experience should be carefully analysed and transferred to other arid and semi-arid countries in the region, particularly those with severe shortages in available water resources.

9 Priority actions

Preventing water scarcity from undermining food security, ecological life-support systems, and social and political stability will not be an easy task. In a large part of the world, particularly arid and semi-arid regions, expanding the water supply to one user now means taking it away from another. New dams and river diversions will rarely offer sustainable solutions, since they would in most cases involve taking more water from fresh-water systems, which are already overtaxed. The main challenges are now to establish priorities and policies for allocating water amongst competing uses and users, to encourage the more efficient and productive use of water, and to reshape institutions to better suit the new era of water constraints. These are not challenges that water managers can meet alone. They now belong in the portfolios of diplomats, on the agendas of cabinet meetings, and high on the priority lists of development banks and international support agencies.

Given the water scarcity situation in the Mediterranean region and the water-related environmental threats, the physical and technical problems which affect the development and management of water resources must be reviewed at the national and regional level and ranked in order of priority.

A top priority is to ensure that both people and ecosystems get at least the minimum amount of good-quality water they need in order to remain healthy and to function productively. And in particular, with competition for scarce water increasing and strong pressures to treat water more as a commodity, governments have an important responsibility to ensure that water's most fundamental purpose – that of supporting life – is fulfilled.

Satisfying these basic human needs thus is not constrained by water availability per se, but rather by inadequate investment by governments, external support agencies, water providers, and community groups in the technologies, infrastructure, and institutions needed.

In this regard, a number of issues concerning the necessary action are outlined and discussed in the following sections.

9.1 - Water resources assessment

Many efforts have been made in the different countries of the region with regard to the assessment of water resources. However, due to the complex nature of the arid and semi-arid climates and the marked variability in magnitude and distribution, still more efforts are needed in this respect. Many of the data have not been adequately researched and, more important, heroic assumptions are involved in the estimates of groundwater. The assessment of water resources is required for a

number of purposes; apart from assessing the quantity and quality and distribution in space and time, it should also include monitoring variations caused by climate variability or by climate changes and assessing the environmental impact of water resources management and socio-economic systems and water-related hazards.

9.2 - Management of water resources: a new approach

In the Mediterranean region, current trends demonstrate that we cannot continue on the present path where water resources management is characterised by policies that are unsustainable from any point of view - whether economic, social or environmental. The problems are legion, however, and they all stem from four principal failures:

- refusal to regard treated water as an economic good;
- excessive reliance on the government for water and wastewater services;
- fragmented management of water between sectors and institutions;
- inadequate recognition of the health and environmental concerns involved with current practices.

We must adopt a new approach to water resources management in the region which overcomes the failures, reduces poverty and conserves the environment, all within a sustainable development framework, and has the following characteristics:

- it must address quantity and quality concerns through an integrated approach;
- it must integrate land use management and sustainable water management;
- it must recognise water as an economic good and promote cost-effective measures;
- it must support participatory and innovatory approaches.

The essential elements of the action to be taken to realise this new approach are summarised in box 1.

Box 9.1 - New approach for water resources management

a) Strategies: from the segmented to the comprehensive.

Water issues need to be treated systematically. We must stop managing water on a sectoral basis according to its various individual uses and, instead, develop a comprehensive framework for water resources management. Coordination between the different sectoral users is critical for successful long-term water resources management. In addition, physical and institutional infrastructures must be complementary.

b) Measures: from the curative to the preventive.

To prevent costly problems from occurring and to achieve the effective application of water resources, action in the water sector should move from the curative to the preventive. Through preventive measures the fragile water sources characterising the region could be used in a manner which minimises the requirements and costs of mitigation and restoration.

c) Investments: from the incremental to the strategic.

Addressing water resources management issues under the new approach requires that a broad range of investments, both large and small, be made on a continuous basis. Investments which maximise benefits can be of a variety of scales and types. Completeness and cost-effectiveness are important determinants of investment decision-making. Equally important is the ability to operate and maintain investments effectively. However, it must be recognised that investments are not the only solution for the sustainable management of water resources. While infrastructure improvements remain critical, they must be complemented with measures to strengthen institutions, develop human resources, and promote public awareness.

Given the need to mobilise resources, improve efficiency and increase the quality of services for users, the participation of the private sector in water management should be encouraged. Likewise, to ensure that measures to promote the use of economic incentives are internalised, increasing user participation in programme and project design should be supported.

9.3 - Supply and demand water management

The questions of demand side versus supply side water management are important issues that require special attention in a water-scarce zone such as the countries of the Southern Mediterranean. The supply management concept has dominated action in the region for long time. During the last century the region witnessed major water supply projects including large impoundments, long-distance transfer and the mining of fossil water. These undertakings meet with many economic and environmental limitations, which require a combination of supply management and demand management through measures to minimise waste, improve efficiency and maintain works.

Irrigation water charges
The introduction of irrigation charges is a very important prerequisite for the efficient management of irrigation demand, because it is observed that, despite the existing water shortages, misuse of water in agriculture is widespread in current irrigation management practices. This is due mainly to the failure in the past to recognise the economic value of water and the real cost of providing water services. It is therefore now widely believed that managing water as an economic good is an important tool for achieving efficient and equitable water use as well as encouraging the conservation and protection of scarce water resources. Yet for many Arab states in the region it is difficult to reconcile the concept of water as an economic good with the traditional idea of water as a basic necessity and human right.

9.4 - Food security: short-term and long-term strategies

Agriculture will continue to be the main consumer of water resources in many parts of the region and, consequently, over 85% of resources will be consumed by agriculture region-wide. In order to achieve food security for the developing countries of the region, the water gap will be about 50% as the result of population growth and the deterioration of productivity due to poor water management. There are two approaches which need to be debated by scientists, policy-makers and the end users of water for agriculture. First, regarding the formulation of short-term strategy for water and sustainable agricultural development, large amounts - almost 50% of the total volume of water already used in agriculture - could be made available to meet new agricultural demands by improving efficiency in this sector, through better systems of farm water management, efforts to reduce losses in the distribution of irrigation water, changes crop patterns, the improvement of irrigation scheduling and the adoption of irrigation-efficient technologies. In this regard, part of the increasing agricultural water demands could also be satisfied through the use of unconventional water resources - saline and treated sewage water. This brings us to the second approach for a long-term strategy to satisfy future food demands taking account of the water burden and the availability of food

self-sufficiency in terms of the prevailing local economic, trade and environmental conditions.

Achieving food security in the region requires action to:

- promote water-efficient irrigation ("precision irrigation");
- promote water-efficient agriculture ("precision agriculture");
- promoting water re-use in agriculture, and in particular the recycling of drainage water and re-use of urban wastewater.

9.5 - Sectoral water use and allocation efficiency

There is now argument in the region over the adoption of the principles of allocation efficiency which result in water being used first in the economic sectors which bring the best return - that is, industry and the services rather than agriculture – and, secondly, in the productive activities within each sector which generate sound economic returns such as the production of crops which fetch a high price on world markets rather than those - such as sugar, wheat and rice - for which other producers have access to free or virtually free water. Such an approach does not create new water, but it does provide a sound basis for both policy and practice in the utilisation of the region's scarce water.

The possibility of gaining water from the existing systems to provide supplies for additional users in other sectors where the economic and social returns are higher will be an increasingly important strategy, but it is one which has not yet made its way into the policies of national governments and/or water institutions of the developing countries in the region. Given the analysis of the traditional place of water in the economies and cultures of the region, such policies are difficult to adopt and deploy. For those who consider that new water is the only solution and that the political problems of re-allocation are insurmountable, the approach of re-allocation is not yet a relevant option. On the other hand, for those who consider that serving the interests of as many effective water users as possible is the major issue, the re-allocation of water will be a major feature of future water policies. What is obviously needed is initiative and management in terms of the solutions put forward. In this regard, a much more controversial issue is how a society regards its water resource base and the use it makes of it. This depends to some extent on the overall level of economic development of an individual country. The more economically advanced a society becomes, the more it needs to question its water resource policy.

9.6 - Sharing water

The trans-border water resources shared between the countries of the region or with countries outside the region constitute the majority of water resources, both surface resources and groundwater bodies. The competing demands for water in the absence of a conflict resolution mechanism may lead to severe consequences in the water-scarce zone. Urgent action is needed in this respect to promote basin-wide cooperation between the riparian states. This can only be achieved by recognising the interests and concerns of all riparian countries through comprehensive, integrated and environmentally sound water management of the entire water basin.

9.7 - Implementation of water programmes

The means of implementing water programmes in this region at the national and regional level - including funding, capacity-building and human resources development - are important issues that require attention. The existing water institutions need to be restructured to undertake multidisciplinary functions.

National laws and regulations pertaining to the protection and development of water resources need to be elaborated and enforced. Accompanying measures need to be undertaken to promote public awareness and participation, education, training and information systems. The mobilisation of applied research centres and national and regional scientific communities and the enhancement of the scientific and technological capacity of the regions are important prerequisites for implementing the programmes for water resources development and management, and in particular for addressing the future environmental threats to the integrity of these resources.

For the foreseeable future, measures to curb demand and distribute water more equitably - amongst people and amongst nations, as well as between people and nature - offer the best hope for preventing scarcity from leading to more hunger and poverty, greater political and social instability, and more widespread ecological decline. Efficiency gains can go a long way towards squeezing more out of the existing supply. But water strategies alone will not be sufficient. Living within the limits of nature's water supply will require reducing consumption amongst the more wealthy social groups and reducing family size amongst all groups; renewed efforts to create the necessary conditions for stabilising the population must form the core of any successful strategy to achieve a sustainable and secure water future for all.

10 Water resources challenges and the role of CIHEAM/IAM Bari

It is becoming increasingly obvious that continued rapid population growth and socio-economic changes are exerting increasing pressure on policy-makers and on the public at large to find viable and realistic water management strategies that can deal with the following four issues:

1. safeguarding water to meet basic needs for difficult uses;
2. minimising water loss;
3. re-using and allocating scarce water for desired socio-economic development;
4. protecting the environment from degradation and loss of productive capacity.

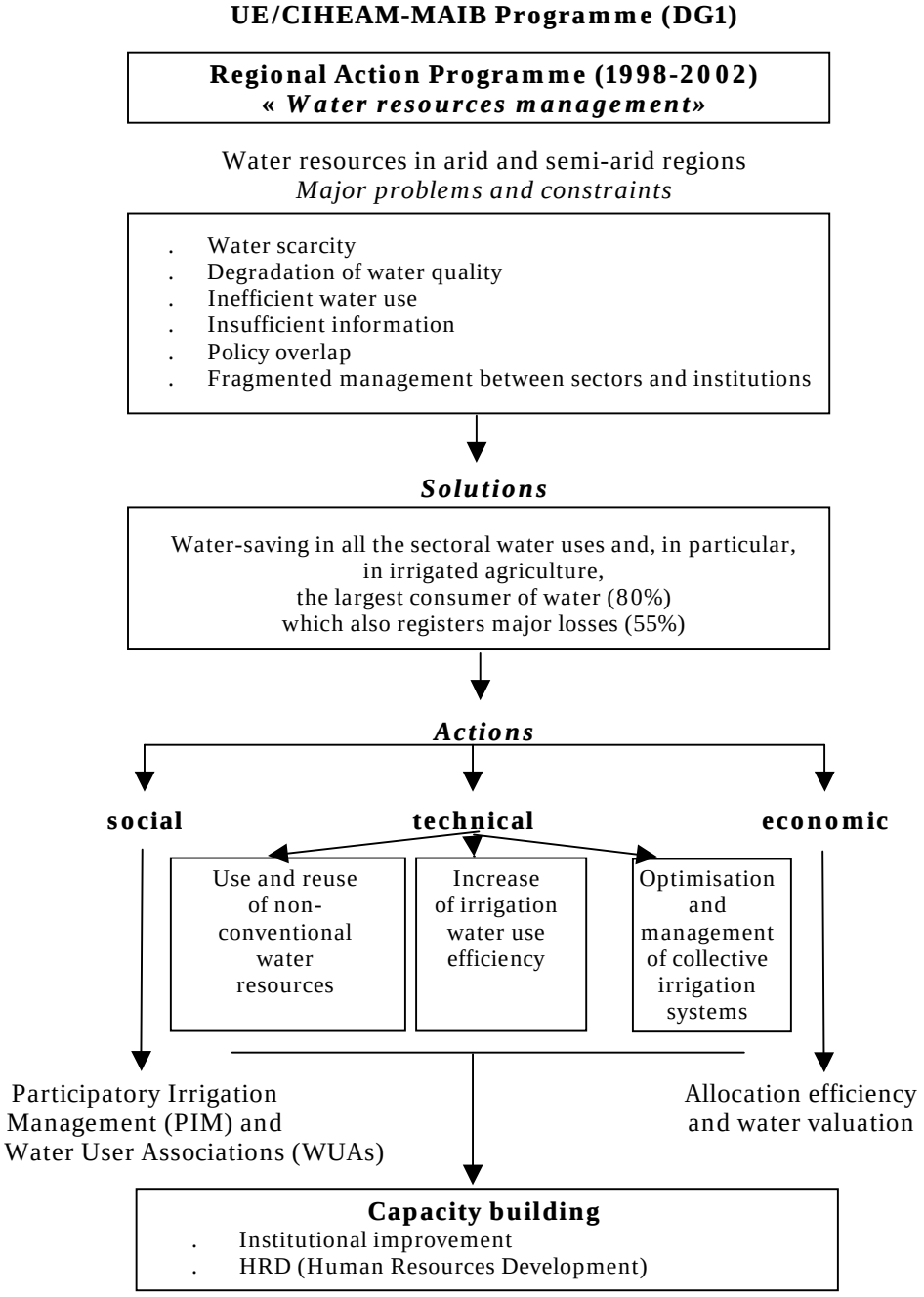
The common requirements in all practical responses to resolve all of these major issues must include larger investments, better institutions, more technology and expertise, and intensified cooperation.

Aware of the above-mentioned challenges and relying on past experiences and the knowledge accumulated in the water resources sector, the CIHEAM Mediterranean Agronomic Institute in Bari launched the 4-year Regional Action Programme on "Water resources management" in 1998, within the framework of the EU (DG I) Programme. This programme is geared mainly to the sustainable use of water resources in the irrigation sector and places emphasis on the following major issues:

- Non-conventional water resources practices and management for sustainable use;
- Water use efficiency;
- Design, management and optimisation through performance analysis of collective irrigation systems;
- Participatory Irrigation Management (PIM);
- Economic aspects of water mobilisation and use.

The objectives of the programme are to improve institutional capacities, to develop human resources strengthening regional cooperation, and to effect technology transfer and the sharing of experiences between the South and the North in the Mediterranean through training, action to promote research and measures to develop networks for the communication of scientific and technical information in the field of water resources and irrigation based on the concept of “Centres without Walls”.

Graph 10.1 - EU/CIHEAM-MAI Bari Regional Action Programme (RAP)



The Regional Action Programme is being implemented with the collaboration of many important universities and scientific institutions in both Southern and Northern Mediterranean countries, a fact which emphasises the need for continued development of human potential, education and public understanding as an essential element of a major international effort. Particular importance is attached to capacity-building within national research institutions with a view to increasing the individual countries' ability to address issues of sustainable development while devoting adequate attention to environmental constraints. More emphasis is being placed on the socio-economic aspects of water resources management, and this is being carried out in close cooperation with other CIHEAM institutes and, in particular, with the institute in Montpellier (France).

The role of the Bari Institute in the development and promotion of new strategies and action for the sustainable management of water resources in the Mediterranean region confirms the importance of international cooperation. Combining the international experience of countries with different levels of development may also be mutually beneficial, since the developing countries can learn from the experience of the more developed countries, drawing lessons from their successes and failures, and the more developed countries have the opportunity to use their skills to further sustainable water resources development in developing countries.

In view of the interdisciplinary and inter-sectoral nature of water resource problems, it is essential that an adequate institutional framework for water resources management be established in each country and each region if the sustainable development of water resources is to be achieved. Water management can only be rational if the institutions responsible for that management are efficient.

11.1 - Introduction

This statistical section contains a short presentation of the main indicators of agricultural and food development in Mediterranean countries.

The data relate to demographic and economic aspects, resources and production means, consumption, and international trade.

In view of the fact that few data are available in several countries in the region, in order to ensure comparability we have deliberately limited our data to the indicators most frequently used for population growth, urbanisation, aggregate economic growth and growth agriculture, food consumption and international trade.

11.2 – Notes on methodology

11.2.1 – Data source

The agricultural statistics (land use, production, trade) have been drawn from the United Nations Food and Agriculture Organisation (FAO).

They are collected from the official bodies in the various countries and completed where necessary by estimates made by the FAO on the basis of provisional or unofficial information.

The macroeconomic information concerning population, national accounts, world trade, etc. have been drawn either from the United Nations series of statistics which are published in various yearbooks (statistical yearbooks, yearbooks of national accounts, population yearbooks, yearbooks of international trade) or from World Bank or IMF publications.

11.2.2 – Table of indicators

Table 11.1 - Population, demographic growth, urbanisation, agriculture ratio of employment, 1999

Country	Tot.pop. (1)	Growth rate. (2)	Urb.pop./ Tot.pop. (3)	Rur.pop./ Tot.pop. (4)	Agr.pop./ Tot.pop. (5)	ALF/ TLF (6)	Inhtts/ A.E. (7)
	mn inhtts	%	%	%	%	%	
	1999	1965-99	1999				
Albania	3,11	1,51	39	61	49	49	4
Algeria	30,77	2,83	59	41	24	25	12
Egypt	67,23	2,25	46	54	37	34	8
France	58,88	0,56	75	25	4	4	63
Greece	10,63	0,65	60	40	14	17	13
Italy	57,34	0,29	67	33	6	6	40
Lebanon	3,24	1,20	89	11	4	4	72
Malta	0,39	0,70	90	10	2	2	129
Morocco	27,87	2,19	55	45	38	37	7
Portugal	9,87	0,24	38	63	15	13	15
Spain	39,42	0,64	77	23	8	8	30
Tunisia	9,46	2,12	65	35	25	25	10
Turkey	65,54	2,31	74	26	31	47	5

(1) Total population in millions of inhabitants
(2) Average annual demographic growth rate in period 1965-99 (%)
(3) Part of urban population in the total population (%)
(4) Part of the rural population in the total population (%)
(5) Part of the agricultural population in the total population (%)
(6) Part of the agricultural labour force in the total labour force (%)
(7) Number of inhabitants per agricultural employee.

Source : Medagri 2001, our calculations based on FAO data.

Table 11.2 – Gross domestic product, economic growth, agriculture ratio to the GDP

Country	Year	GDP	GDP/ inhtts	Exchange rate *	GDPGrowth rate.	AGDP/ GDP	AGDP/ Agr.E.
		mns $	$	MU p 1 $	%	%	$
					1990-98	1998	
		(1)	(2)	(3)	(4)	(5)	(6)
Albania	1998	2 460	649	150,63	1,8	63,0	2 026
Algeria	1998	49 585	1 664	58,74	1,2	12,0	2 459
Egypt	1999	88 781	1 320	3,405	4,2	17,0	1 552
France	1999	1 395 204	23 607	0,963	1,5	1,8	26 201
Greece	1999	125 089	11 767	305,65	2,0	5,6	8 420
Italy	1999	1 140 976	19 898	0,96	1,2	2,4	19 344
Lebanon	1998	17 073	5 352	1 516,10	7,7	12,0	
Malta	1999	3 622	9 288	0,40	1,2	2,5	
Morocco	1998	35 545	1 279	9,60	2,1	16,0	1 296
Portugal	1998	106 862	10 718	0,96	2,3	1,9	2 971
Spain	1999	580 297	14 720	0,963	1,9	3,0	11 903
Tunisia	1999	21 031	2 223	1,19	4,4	14,1	3 340
Turkey	1998	198 006	3 120	260 724	4,1	26,0	3 415

(1) Gross Domestic Product in millions of $ US
(2) Gross Domestic Product per inhabitant in $ US
(3) Exchange rate, local monetary unit per 1 $ US
(4) Average annual growth rate of GDP on period 1990-1998 (%)
(5) Part of agricultural GDP in the total GDP (%)
(6) Agricultural GDP per agricultural employee (1 $ US)

* Euros per 1 $ US in Spain, France, Italy and Portugal.

Source : Medagri 2001, our calculations based on FAO data, world bank, IMF, and National data.

Table 11.3 – Cultivated areas, irrigated areas, means of production, 1998

Country	Arable land, perm.crops. 1000 ha	Cult.Land 1000 htts ha	Cult.Land/ Agr.E ha	Irrig.Land/ Cult.Land %	Cult.Land/ tract ha/tract.	Fert/ Cult.Land kg/ha
	(1)	(2)	(3)	(4)	(5)	(6)
Albania	699	204	0,9	49	86	7
Algeria	8 173	277	3,4	7	88	12
Egypt	3 300	51	0,4	100	37	306
France	19 517	333	20,0	10	15	261
Greece	3 941	375	4,8	36	16	129
Italy	11 030	193	7,5	24	7	168
Lebanon	308	98	6,6	39	55	195
Malta	11	30	3,7	18	22	91
Morocco	9 976	363	2,4	13	231	32
Portugal	2 580	263	3,8	24	17	82
Spain	19 080	480	13,7	19	23	108
Tunisia	4 900	525	5,3	8	140	19
Turkey	26 968	430	1,9	16	31	63

(1) Arable land and permanent crops, 1000 ha
(2) Cultivated land per inhabitant, ha
(3) Cultivated land per agricultural employee, ha
(4) Part of irrigated land in the cultivated land (%)
(5) Cultivated land per tractor, ha
(6) Fertilizers per hectare, kg

Source : Medagri 2001, our calculations based on FAO data.

Table 11.4 – Main agricultural products, 1999

Country	Cereals	Vegetables	Fruit	Milk	Meat	Sugar	Olive oil
	1000 T						
Albania	512	640	128	907	63	3	4
Algeria	1 540	2 841	1 478	1 409	503	0	57
Egypte	19 590	13 083	6 417	3 510	1 299	1 350	0
France	64 761	8 151	12 058	25 335	6 462	4 891	2
Greece	4 554	4 181	3 614	1 900	499	261	350
Italy	21 005	15 723	19 126	12 236	4 043	1 848	614
Lebanon	93	1 259	1 278	272	112	40	6
Malta	6	59	19	46	18	0	0
Morocco	3 860	3 265	2 589	1 196	533	500	70
Portugal	1 860	2 395	1 419	1 889	732	70	32
Spain	17 943	11 659	14 769	6 922	4 875	1 074	598
Tunisia	1 825	2 053	836	830	198	18	160
Turkey	30 282	21 777	10 389	10 060	1 244	2 210	60

Source : Medagri 2001, based on FAO data.

Table 11.5 – Growth rate of agricultural products, 1999

Country	Cereals	Vegetables	Fruit	Milk	Meat	Sugar	Olive oil
	%						
Albania	-19,6	3,9	1,5	4,3	0,3	-54,5	
Algeria	-49,2	17,2	17,3	19,3	-5,9		24,0
Egypt	9,1	5,7	8,6	4,9	1,3	7,7	
France	-4,3	4,4	11,0	0,4	-0,8	3,8	15,0
Greece	-0,3	1,9	3,0	1,1	-2,6	0,4	-11,8
Italy	1,8	8,4	8,2	2,6	0,4	9,0	32,9
Lebanon	-1,5	-6,0	-1,2	0,6	5,1	14,3	2,4
Malta	0,0	0,0	22,9	0,0	-0,7		50,0
Morocco	-41,8	-12,5	-5,1	11,2	2,1	2,0	16,7
Portugal	47,9	10,5	-8,2	0,0	3,6	-7,9	-20,0
Spain	-19,2	1,4	10,9	2,5	11,5	-16,8	-16,7
Tunisia	9,7	11,7	-1,3	18,6	10,6	0,0	-15,8
Turkey	-8,7	0,2	1,2	-0,2	-0,9	-18,2	20,0

Source : Medagri 2001, our calculations based on FAO data.

Table 11.6 – Food consumption, 1998, kg/capita/yr

Country	Cereals	Root	Sugar	Dried beans	Vegetables	Fruit
	(1)	(2)	(3)	(4)	(5)	(6)
Albania	199	31	22	5	192	51
Algeria	237	33	24	5	81	40
Egypt	245	25	32	8	159	79
France	114	67	39	2	123	86
Greece	150	70	32	5	263	134
Italy	160	39	32	6	173	129
Lebanon	138	62	32	15	348	242
Malta	147	80	53	4	144	131
Morocco	252	33	38	8	114	72
Portugal	129	128	35	5	186	115
Spain	103	88	33	8	156	100
Tunisia	219	30	31	8	169	73
Turkey	225	67	32	13	214	110

Country	Meat	Fish.	Milk	Oil	Beverages
	(7)	(8)	(9)	(10)	(11)
Albania	24,0	2,0	268,0	11,0	11,0
Algeria	17,0	3,0	110,0	17,0	2,0
Egypt	20,0	10,0	43,0	8,0	1,0
France	94,0	29,0	256,0	35,0	106,0
Greece	79,0	27,0	278,0	32,0	61,0
Italy	80,0	24,0	259,0	37,0	82,0
Lebanon	32,0	7,0	93,0	19,0	13,0
Malta	76,0	41,0	199,0	18,0	60,0
Morocco	18,0	8,0	34,0	14,0	6,0
Portugal	83,0	59,0	195,0	29,0	134,0
Spain	103,0	35,0	159,0	31,0	116,0
Tunisia	20,0	9,0	79,0	22,0	8,0
Turkey	20,0	7,0	127,0	23,0	12,0

(1) Cereals
(2) Roots and tubers
(3) Sugar
(4) Dried beans
(5) Vegetables
(6) Fruit
(7) Meat
(8) Fish
(9) Milk and milk products
(10) Oils and fats
(11) Beverages

Source : Medagri 2001, our calculations based on FAO data.

Table 11.7 – International trade ratios for agricultural products, 1998

Country	Total.Import TI	Total.Export TE	Agr.Import AI	Agr.Export AE
	millions $			
Albania	870,0	208,0	230,3	18,2
Algeria	9 323,0	10 126,0	2 969,1	43,4
Egypt	16 166,0	3 130,0	3 783,2	575,0
France	307 221,0	320 216,0	26 552,2	38 253,8
Greece	25 959,0	10 515,0	3 779,7	2 979,2
Italy	215 806,0	241 731,0	23 726,4	16 089,6
Lebanon	7 060,0	800,0	1 090,6	138,1
Malta	2 665,8	1 712,4	284,8	35,2
Morocco	8 406,3	4 552,1	1 469,1	797,5
Portugal	36 945,9	24 195,7	4 202,9	1 504,6
Spain	125 049,0	104 632,0	12 123,4	14 855,4
Tunisia	8 310,5	5 728,2	910,6	438,5
Turkey	45 934,9	26 974,0	3 507,8	4 788,1

Country	Tot.Bal.Std.*	TE / TI	Agr.Bal.Std**	AE / AI	AI / TI	AE /TE
	%					
Albania	-61,4	23,9	-85,3	7,9	26,5	8,8
Algeria	4,1	108,6	-97,1	1,5	31,8	0,4
Egypt	-67,6	19,4	-73,6	15,2	23,4	18,4
France	2,1	104,2	18,1	144,1	8,6	11,9
Greece	-42,3	40,5	-11,8	78,8	14,6	28,3
Italy	5,7	112,0	-19,2	67,8	11,0	6,7
Lebanon	-79,6	11,3	-77,5	12,7	15,4	17,3
Malta	-21,8	64,2	-78,0	12,4	10,7	2,1
Morocco	-29,7	54,2	-29,6	54,3	17,5	17,5
Portugal	-20,9	65,5	-47,3	35,8	11,4	6,2
Spain	-8,9	83,7	10,1	122,5	9,7	14,2
Tunisia	-18,4	68,9	-35,0	48,2	11,0	7,7
Turkey	-26,0	58,7	15,4	136,5	7,6	17,8

* Total Standardized Balance = (TE-TI)*100/(TE+TI)
** Agricultural Standardized Balance = (AE-AI)*100/(AE+AI)

Source : Medagri 2001, our calculations based on FAO data.

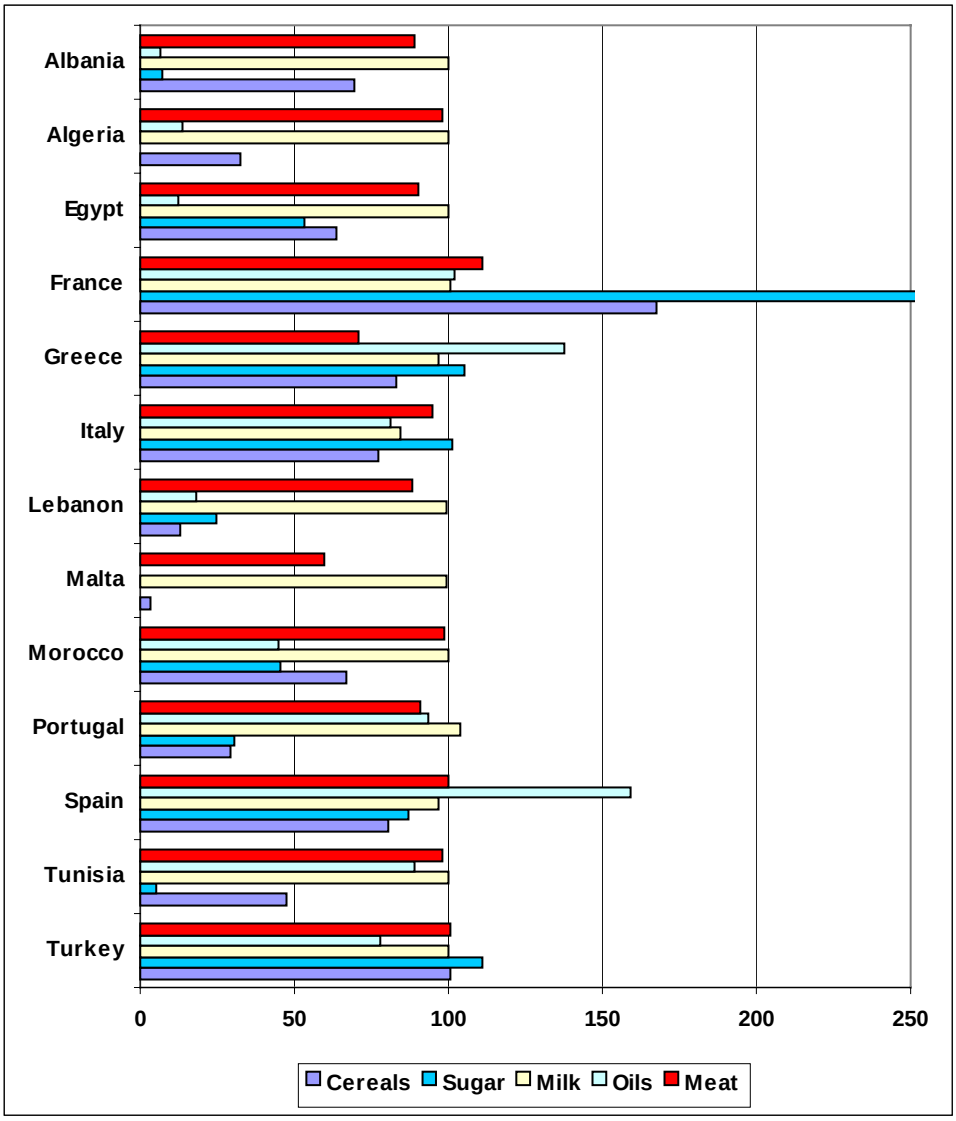
Table 11.8 – Self sufficiency ratios for main food products, 1998

Country	Cereals	Sugar	Milk	Oil	Meat
	%				
Albania	69,61	7,33	99,73	6,42	89,22
Algeria	32,51	0,00	99,86	13,37	97,85
Egypt	63,87	53,26	100,00	12,54	90,37
France	167,64	265,64	100,74	101,71	110,86
Greece	83,20	105,12	96,89	137,74	70,93
Italy	77,23	101,21	84,58	81,23	94,67
Lebanon	12,72	24,47	99,52	18,02	88,14
Malta	3,34	0,00	99,58	0,09	59,98
Morocco	66,92	45,35	99,74	44,98	98,43
Portugal	29,27	30,55	103,80	93,49	91,23
Spain	80,74	87,30	96,62	159,27	99,93
Tunisia	47,46	5,44	100,00	88,91	97,81
Turkey	100,50	111,36	100,00	77,86	100,68

Self sufficiency ratio = production*100/(production+import-export)

Source : Medagri 2001, our calculations based on FAO data.

Graph 11.1 – Self sufficiency ratios for main food products, 1998, %



Source : Our calculations based on FAO data.

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