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Changes and challenges facing agriculture in Maghreb

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Chargé de mission at CIHEAM

Agriculture is of considerable social and economic importance to the countries of the Maghreb. When Algeria, Morocco and Tunisia became independent nation states, their governments' first task was to draw up development strategies that would enable them to modernise their countries and raise the populations' living standards.

All of these development policies included an agricultural component, which was particularly important given the rising population and ongoing urbanisation process. The main objectives were to make the Maghrebin populations self-sufficient in food and to boost agricultural production, making it a mainstay of the national economies. Nearly a quarter of a century later, the results are disappointing, if not altogether negligible.

Agricultural development policies designed to ensure food security by modernising agriculture have shown their limitations, proving to be ill suited to the countries' natural, historical and economic context. Since the nineteen eighties, the agricultural adjustment policies pursued in the Maghreb have been intended to revitalise the sector, enabling it to play a full part in encouraging economic growth and job creation and restoring the macroeconomic balance. They have gone hand in hand with other measures, like the revision of the institutional framework, rationalisation of the use of natural resources and preparation of the agricultural sector for key events in the international calendar.

But since the end of the twentieth century Maghrebin farmers have been facing chronic difficulties. Doubt has been setting in over the effectiveness of public institutions in developing rural territories and dealing with the food deficit, which weighs more and more heavily on state budgets. There has been no let up in fears over the impending liberalisation of agricultural trade and the development gap between urban and rural areas is growing ever wider. Given that these problems are compounded by growing environmental pressures in the region, it is clear that agriculture in the Maghreb faces enormous challenges in the early years of the twenty-first century.

In this note² we set out to offer a retrospective and prospective analysis of the agricultural situation in the Maghreb, though without claiming to be exhaustive. We must begin by analysing three distinct but complementary areas: specific features and constraints of the geographical environment, demographic change in the region, and the place of the agricultural sector in the national economies. In the second part we shall address agricultural development policies in the Maghreb countries from the end of the colonial era to the beginning of the twenty-first century. In the final part we shall seek to identify major challenges facing Maghrebin agriculture in the future.

¹ This analytical note is taken from the 2006 report "*Panorama stratégique et prospectif de la situation agricole et agro-alimentaire en Méditerranée*", produced by CIHEAM's General Secretariat (under the direction of Bertrand Hervieu and the responsibility of Sébastien Abis) for the French Ministry of Agriculture and Fisheries as part of the annual work programme of the Council for European and International Food and Agriculture Forecasting (COPEIAA). Funding for the research was thus provided by the French Ministry of Agriculture and Fisheries (Direction des politiques économique et internationale - reference MAP.06.G6.02.01)

² It must be pointed out that this analysis focuses on three of the five Maghreb states: Algeria, Morocco and Tunisia. These countries are partners of the European Union and members of CIHEAM.

1. Understanding the agricultural situation in the Maghreb

1.1 The natural environment of the Maghreb

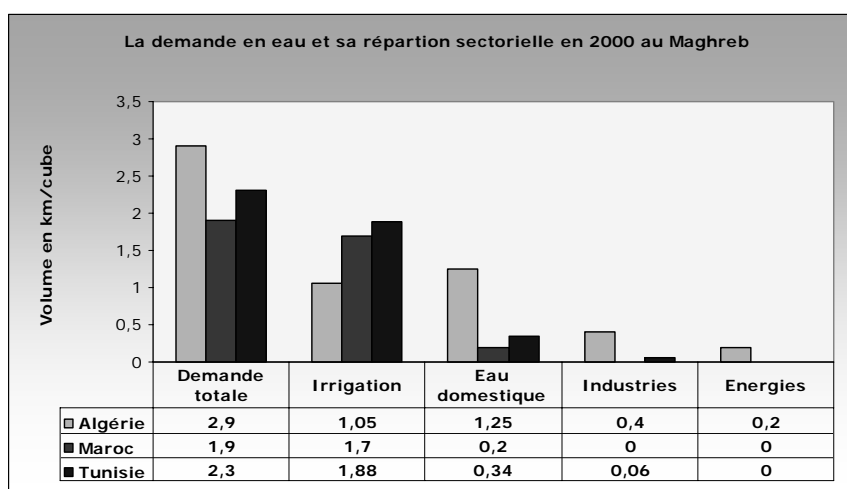
The geographical and natural features of the Maghreb countries are highly varied. Three main areas need to be distinguished:

- coastal areas with a seaboard on the western basin of the Mediterranean and the Atlantic (Morocco only);
- intermediate inland areas made up of impressive mountain ranges (Atlas, Rif et Tell), high plains and plateaux (average heights above sea level of Algerian and Moroccan territory, excluding Saharan territories, are 800 metres and 900 metres respectively, whereas half of Tunisian territory is less than 500 metres above sea level);
- the Saharan area, an immense desert, which forms the hinterland of these countries.

If we consider these three distinct aspects of Maghrebin geography we can see why the region, literally "the land where the sun sets" (Djazirat al Maghrib), is regarded as a "land's end" by Arab societies in the East. We can also grasp the full complexity of the natural environments that make up the Maghreb. The agricultural potential of the area is sometimes limited, notably because of local geographical constraints and erratic climate conditions. The very marked contrast between the rolling folds of the Mediterranean landscape and the flatness of the Saharan territories is heightened further by the narrowness of the bioclimatic region that forms a bridge between the Saharan and Mediterranean zones. Moreover, these territories have become more and more fragile as a result of human and industrial activities (urbanisation, subterranean and atmospheric pollution) and have been badly hit by the climate change affecting the world as a whole. Erosion is manifest on all sides, increasing the vulnerability of agricultural activity and compounding the impact of fluctuating rainfall patterns. It has seriously affected forest areas and caused irreversible damage to the steppe, destabilising traditional pastoral life. Environmental conditions in the Maghreb, difficult at the best of times, are being steadily worsened by a whole range of activities. Two areas of critical importance for Maghrebin agriculture need to be examined: water and farmland.

The water situation in the region has been widely reported: rainfall patterns are highly irregular, demand and consumption are increasing, competition between different user groups is intensifying, and available resources continue to diminish. Access to water is therefore becoming a matter of constant concern. Unlike many areas in the Mediterranean Basin, the Maghreb is well away from the major rivers, although some mountains in Morocco act as water towers. Requirements may not be as high as in Egypt but the worrying fact is that they are increasing: total water demand, which was 6.1 km³ P in 2000, could rise to 9.2 km³ P by 2025 (up by 50%). At present the agricultural sector accounts for the largest share of water demand in Morocco (89%) and Tunisia (82%); the share of green water is rather less in Algeria however (36%).

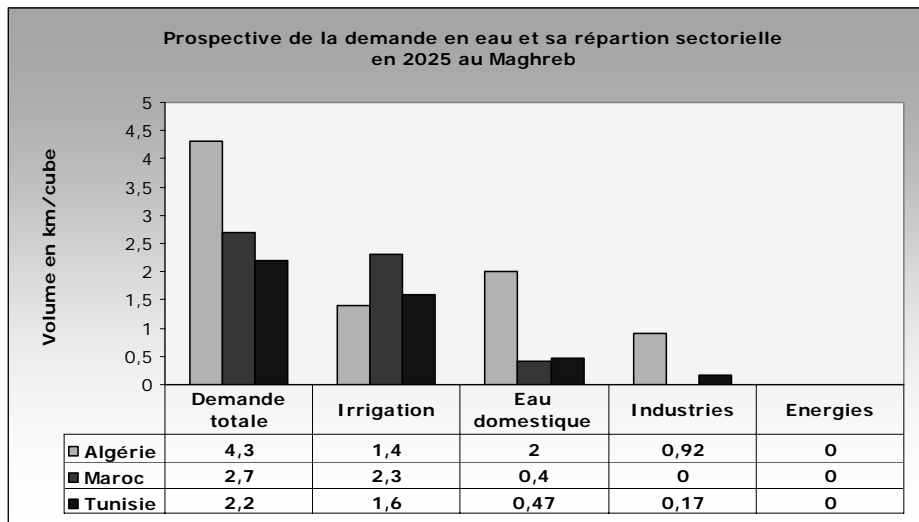
Water demand and sectoral distribution in the Maghreb in 2000



Source: our own calculations based on Blue Plan figures

Only a very slight downturn in the trend is expected by 2025: agriculture will continue to account for 85% and 73% of total water demand in Morocco and Tunisia respectively. This means that pressure on water is severe and is likely to worsen: the water exploitation index for Tunisia (between 50 and 75%) already gives cause for concern and the indexes for Morocco and Algeria could rise alarmingly over the next two decades.

Prospective water demand and sectoral distribution in the Maghreb in 2025



Source: our own calculations based on Blue Plan figures

Mobilisation of land is the second most important strategic issue as far as the natural environment is concerned. Damage to the soil by erosion, desertification and salinisation has reduced the three countries' agricultural potential, which is nevertheless significant: agricultural land covers just over a quarter of the total surface area of the Maghreb (around 80 million hectares of which nearly 25% is arable land). However, it should be noted that only 12.8% of this arable land is irrigated and that the potential is not the same in each of the three countries, although agro-ecological conditions in each of them tend to be arid or semi-arid. Agricultural production is subject to vagaries of climate, rainfall levels being unpredictable and often inadequate. The extent to which farmland can be extended is therefore strictly limited, given that increasing pressure on soils is accompanied by demographic growth and urban sprawl. In practice this means that every hectare must now feed two or three times as many inhabitants as it did in the years immediately after independence.

It should also be pointed out that Algeria has the largest area of farmland in the Mediterranean Basin (about 39.9 million hectares, representing just 17% of its national territory), followed closely by Morocco (30.4 million hectares - 68% of its territory). In 2003 the area of land cultivated per agricultural worker was 3 hectares in Algeria, 2.2 hectares in Morocco and 5.1 hectares in Tunisia. By way of comparison, the corresponding area was 12.5 hectares in the European Union, 6.4 hectares in Israel, 7.5 hectares in Lebanon and 0.4 hectares in Egypt.

2003	Surface area of country (1000ha)	Agricultural land (1000ha)	Arable land (1000ha)	Irrigated land (1000ha)	irrigated arable land as %
Algeria	238,174	39,956	7,545	569	7.5%
Morocco	44,655	30,376	8,484	1,445	17.0%
Tunisia	16,361	9,784	2,790	394	14.1%
Total	300,070	80,116	18,759	2,408	12.8%

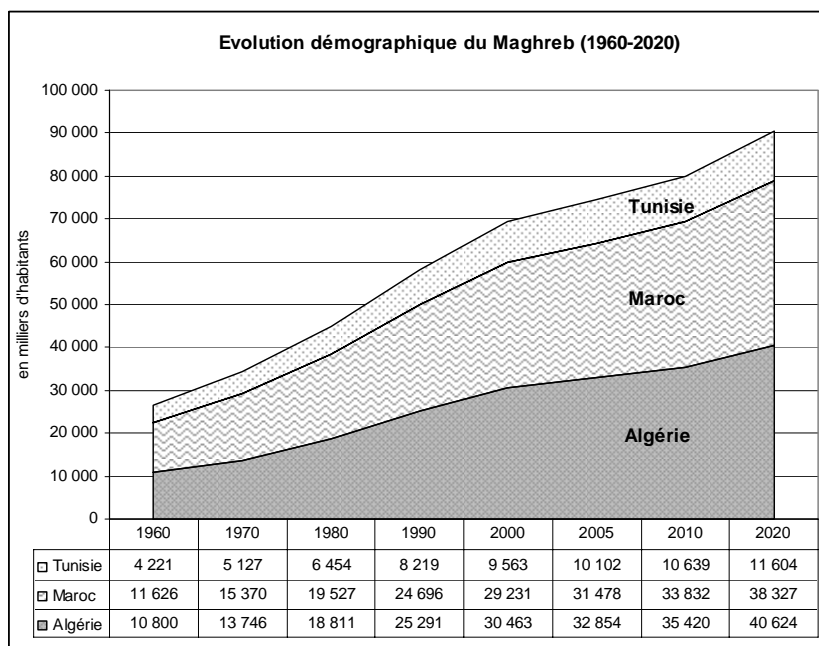
Source: our own calculations based on FAO and MedAgri figures for 2006

1.2 Belated but very rapid demographic change in the Maghreb

Although Mediterranean demographic trends have already been addressed in previous studies, it is important to consider those specific to the Maghreb, given that the processes of urbanisation, population aging and fall in fertility rates occur very rapidly in the three North African countries.

In 2005 the population of the three Maghreb countries was 74.4 million compared with 58 million in 1990 and, more significantly, 26.6 million in 1960. According to projections, the whole sub-region could have more than 90 million inhabitants by 2020. The population of the Maghreb will thus have tripled between 1960 and 2020 and that of Algeria will even have quadrupled.

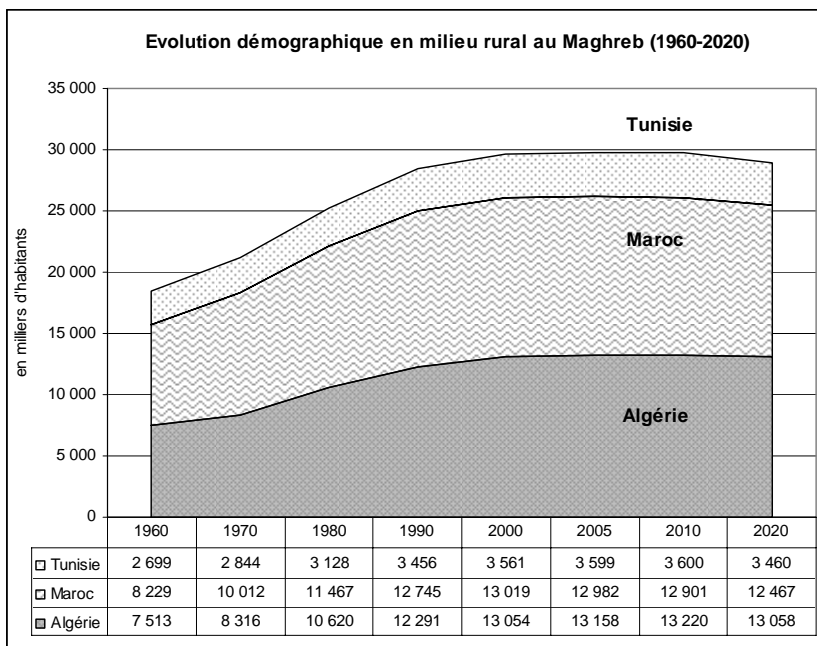
Population growth in the Maghreb (1960-2020)



Sources: Our calculations based on UNO figures

It must be emphasised however that this very high demographic growth rate has been an exclusively urban phenomenon since the end of the twentieth century and that 99% of the increase over the period 1990-2020 will have been in the cities. Although the rural population grew very substantially between 1960 and 1990, it is now stabilising and might even begin to fall slightly in the period 2010-2015. The rural population of the Maghreb was about 18.5 million in 1960 but has been in the region of 29 or 30 million since 1990 and is expected to remain at that level between now and 2020. This shows just how large the rural population of Maghreb society still is at the beginning of the twenty-first century, with 41% of Moroccans, 40% of Algerians, and 36% of Tunisians living in the countryside.

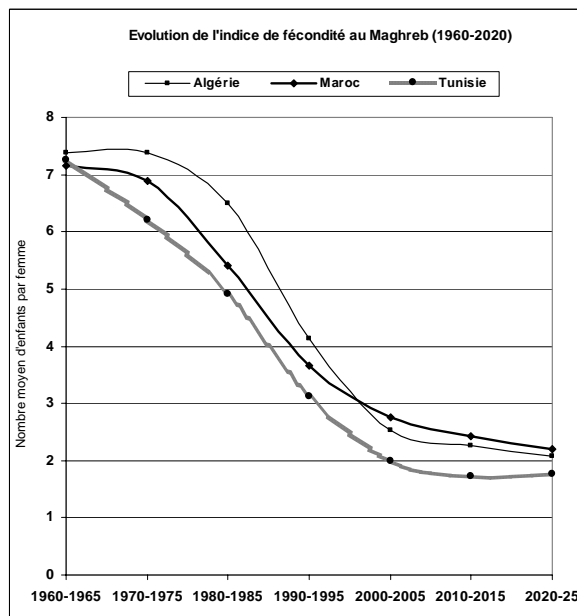
Population growth in rural areas in the Maghreb (1960-2020)



Sources: Our calculations based on UNO figures

Another unstoppable demographic trend in the region is the sudden fall in fertility rates. In France, it took about two centuries (mid-eighteenth to mid-twentieth century) for the birth rate to fall from six to two children per woman: in the Maghreb the same development will have taken just 40 years (1970-2010).

Change in fertility rate in the Maghreb (1960-2020)



Sources: Our calculations based on UNO figures

It is therefore quite natural that the Maghreb populations should be steadily aging, with the average age expected to rise from 19 in 1990 to 31 in 2020. This development is due to the extended lifespan as well as the falling birth rate. The population of the Maghreb is one of the most rapidly aging in the world. But even if they represent a diminishing proportion of the population, young people under 20 still make up 40% of the total population of the Maghreb.

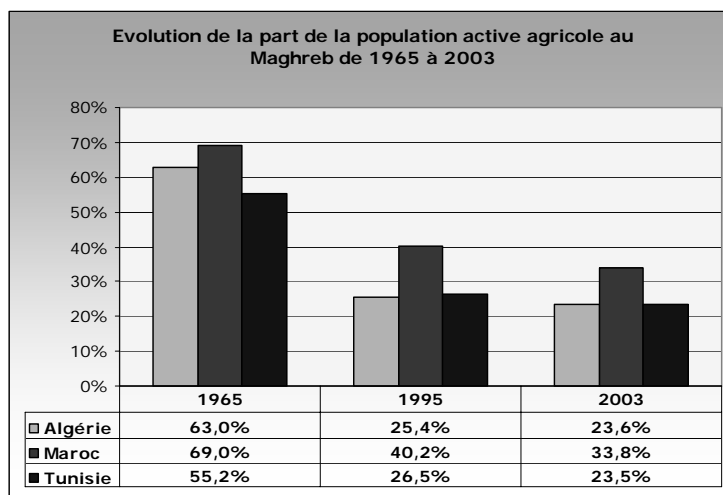
It is therefore necessary to assess the scale and pace of the demographic shift in the Maghreb, given that in most cases the countries' economic and social structures have insufficient time to adapt to it.

1.3 Indicators for the food and agriculture economies in the Maghreb countries

The object here is not to present exhaustive data on food and agriculture in the Maghreb but merely to identify certain indicators that show how the agricultural situation of North Africa compares with that of the rest of the world.

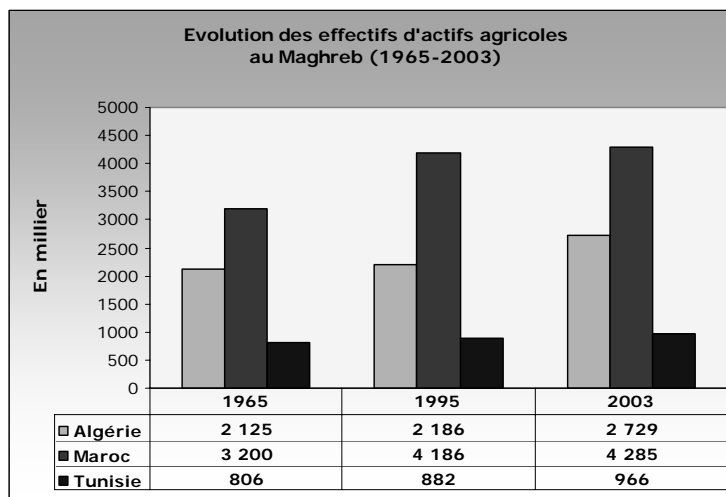
Agriculture is still an important provider of jobs in the Maghreb. We saw earlier that the number of rural inhabitants has never been so high, despite the rural-urban drift, with more than a third of the population (about 30 million people) still living in a rural environment. In 2003 the agricultural workforce was reckoned to comprise nearly 8 million people (half of whom were Moroccans) compared with 6.1 millions in 1965. Agricultural workers now represent 33.8% of Morocco's total workforce, 23.5% of Tunisia's and 23.6% of Algeria's, whereas in the nineteen-sixties the average figure for the area as a whole was somewhere in the region of 60%.

Percentage of workforce employed in agriculture in the Maghreb from 1965 to 2003



Source: CIHEAM, MedAgri 2006

Number of people employed in agriculture in the Maghreb (1965-2003)



Moreover the agricultural sector does much to shape the economies of the Maghreb: its contribution to Gross Domestic Product (GDP) in 2003 was 11.1% in Algeria, 12.9% in Tunisia and 18.3% in Morocco, which gives a total agricultural GDP (GDPa) of \$18.45 billion (16% of the EU's GDPa and barely 76% of Turkey's). Moreover the agricultural product per agricultural worker is \$3,386 in Tunisia, \$2,641 in Algeria and \$1,872 in Morocco, but in excess of \$26,000 in Europe and close to \$45,000 in France. The contrast between the increasing number of agricultural workers and the falling share of GDPa in GDP shows that agricultural productivity tends to be declining.

It is also important to emphasise the close correlation between the economic performance of agriculture and climate conditions. The case of Morocco is most significant as rainfall levels determine agricultural output, which in turn impacts heavily on the economic growth of the whole kingdom.

Furthermore, a survey of fertiliser consumption reveals wide disparities between the countries of the Maghreb but in no way points to a massive and increasing recourse to the use of inputs in agriculture. Use of fertiliser, in relation to the usable agricultural area, remains modest. If we examine the trend in fertiliser consumption over the past two decades, we find that it is falling off in Algeria and stagnating in Morocco and Tunisia. This may be partly due to the gradual elimination of subsidies and the rise in prices brought about by agricultural reforms.

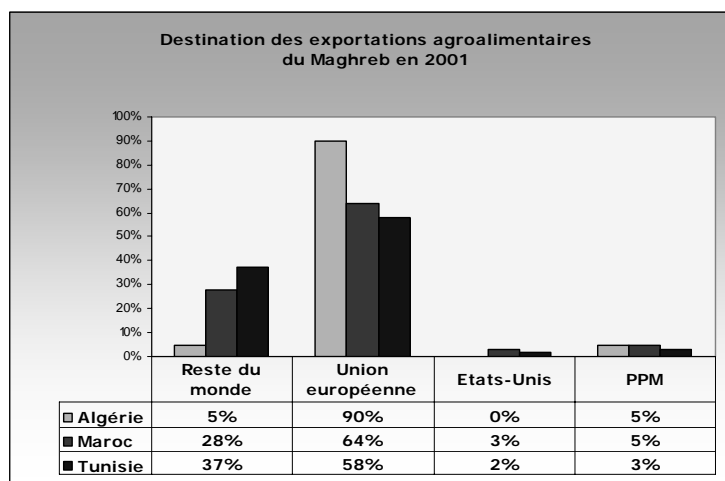
Trend in use of fertiliser per hectare in the Maghreb (in kg/ha)				
	1986	1996	2001	2002
Algeria	24	10	13	12
Morocco	36	34	38	43
Tunisia	21	21	20	21

Sources: CIHEAM, MedAgri 2006

The agro-commercial situation is by no means the same in all three countries, although each one ensures that its agricultural markets are well protected. In the case of Morocco, wheat is still the main import, followed by sugar and edible oils. The main exports are citrus fruits (50%) and preserved fruit and vegetables (30%). As for Tunisia, the main imports are cereals (35%), seed oils (11%) and sugar (8%) and the main export, leaving aside fisheries products and dates, is olive oil, Tunisia's "green gold". With oil production accounting for around 52% of its total agrifood exports in 2004, Tunisia is now the world's 3rd largest exporter of olive oil after Spain and Italy. Algeria's agricultural imports structure is still dominated by cereals (25%) and milk (14.5%), and its main exports are dates, wine and potatoes.

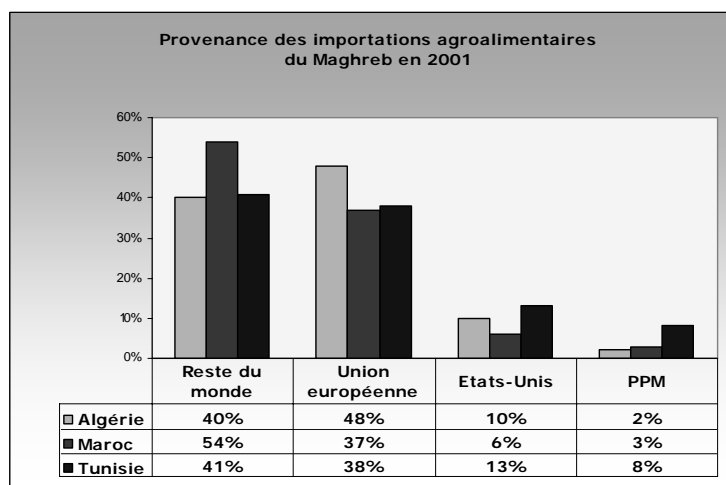
The share of agricultural products in the total volume of exports also varies considerably from one Maghreb country to another, amounting on average to 10-11% in Morocco, about 6% in Tunisia and just 0.2% in Algeria. Conversely the share of agricultural products in total imports may be as high as 25% in Algeria (as in 2002), compared with 12-15% in Morocco in recent years and 9-11% in Tunisia. Lastly as to the source/destination of imports/exports, Tunisia has the most diverse range of trading partners and is gradually reducing its reliance on the EU. However the Maghreb as a whole tends to trade agricultural goods with Europe.

Destination of agrifood exports from the Maghreb in 2001



Source: CIHEAM Observatory

Origin of agrifood imports to the Maghreb in 2001



Source: CIHEAM Observatory

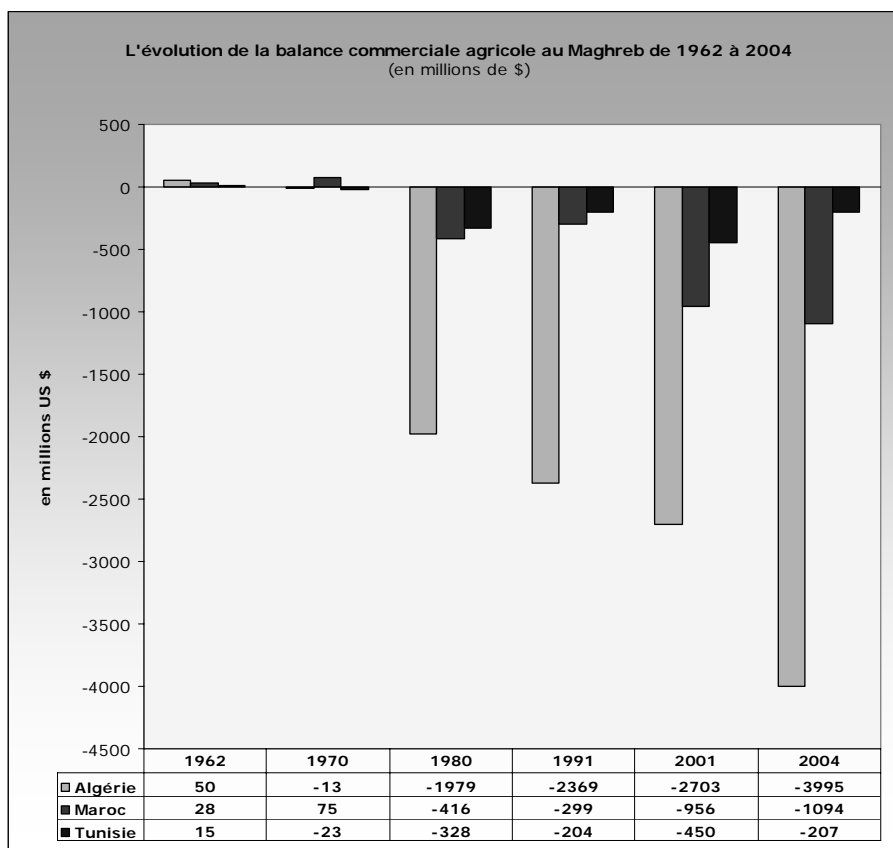
Unfortunately, as a result of galloping population growth and inadequate agricultural productivity, the agricultural trade balance of the Maghreb countries has seriously deteriorated in recent decades. In 1965 Algeria covered 143% of its food needs compared with just 1.8% in 2003. The situation is less dramatic but equally worrying in Morocco and Tunisia, where the average percentage varies unpredictably between 40% and 60%. All of this means that the ratio of agricultural exports to imports in the Maghreb fell by a factor of four between 1965 and 2003.

Food dependence has therefore become chronic as the Maghreb countries have been forced to import products from abroad on a massive scale. Milk, dairy products, sugar and meat are among the major imports. But most striking of all are the figures for cereal imports: between 1963 and 2003 net cereal imports rose by a factor of 21 in Algeria, 20 in Morocco and 13 in Tunisia. This means that the Maghreb countries' food bill continues to grow: the cost of agricultural imports in 2004 was \$7.2 billion and this year the deficit on the balance of trade in agrifood amounted to nearly \$5.3 billion. Tunisia is therefore alone in achieving a more or less adequate balance in its agrifood trade, although it has shown worrying signs of weakness for some time now. In the nineteen-sixties the authorities were faced with the problem of self-sufficiency in food, but today they are more concerned with managing the risk of food insecurity.

International trade in agricultural products in 2004			
	Agricultural exports (in millions of dollars)	Agricultural imports (in millions of dollars)	Agricultural trade balance (in millions of dollars)
Algeria	55	4050	- 3995
Morocco	964	2058	- 1094
Tunisia	974	1181	- 207
Total	1993	7289	- 5296

Sources: CIHEAM, MedAgri 2006

Agricultural trade balance from 1962 to 2004
(in millions of dollars)



Source: CIHEAM, MedAgri 2006 and FAOSTAT

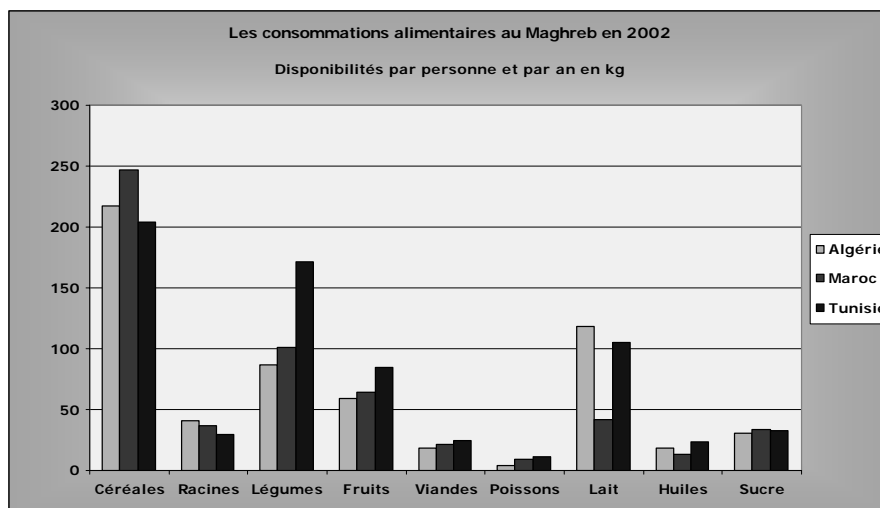
If we examine Euro-Maghrebin agrifood trade, we find that each of the three countries is in a different situation. In 2004, of all Europe's Mediterranean Arab partner countries, only Tunisia and Morocco had an agricultural trade surplus with Europe and Algeria had the largest deficit in the zone.

Situation of Euro-Maghrebin agricultural trade in 2004 (in millions of US dollars)			
	Exports to EU25	Imports from EU25	Agricultural trade balance
Algeria	40.268	1,480.433	- 1,440.165
Morocco	1,424.467	697.691	726.776
Tunisia	781.794	356.095	425.699
Maghreb	2,246.529	2,534.219	- 287.69

Sources: CIHEAM, MedAgri 2006 and FAOSTAT

Lastly an analysis of food consumption patterns shows that consumption of vegetables, fruit, meat and fish is highest in Tunisia. The following table shows that large amounts of cereals are consumed but very little fish. We also see that Moroccans consume very little milk compared with their Tunisian and Algerian neighbours. At this point we should bear in mind that consumption patterns in the Maghreb have changed, with consumers increasingly adopting the western model. Copying the western diet in this way could involve risks to health and more especially lead to a deterioration in the nutritional quality of the food intake.

Food consumption in the Maghreb in 2002



Sources: CIHEAM, MedAgri 2006 and FAOSTAT

2. Agricultural development policies in the Maghreb

The development models adopted by the Maghreb countries following independence, which were largely based on import substitution policies, benefited the industrial sector but placed the agricultural sector at a disadvantage, notably by freezing prices of food products. The policies followed in all three countries bore the stamp of state interventionism, which gave rise to a complex collection of price support measures and consumer goods subsidies, designed to foster self-sufficiency in food at a time of rapid population growth. These policies, intended as they were to guarantee food security by modernising agriculture, turned out to have serious limitations, being ill-suited to the natural, historical and economic context of the area.

From the nineteen-eighties onwards, adjustment policies therefore set out to boost agriculture so that it might once more contribute to economic growth and job creation and help restore macroeconomic balance. The agricultural adjustments mainly involved the introduction of more liberal policies on prices, subsidies and marketing and the gradual disengagement of the state. Other measures were implemented at the same time, such as changes to the institutional framework, rationalisation of the use of natural resources and preparation of the agricultural sector for important events in the international calendar.

But since the end of the twentieth century, problems facing Maghreb farmers have become chronic and it is reasonable to ask whether public institutions are capable of developing rural territories and managing the food deficit, which weighs more and more heavily on budgets. While these problems may be partly explicable in terms of natural and material constraints, we should question the choice of a productivist agriculture (involving intensification and mechanisation), which is not suited to the Maghreb context.

A brief analysis of the agricultural policies pursued in each of the three Maghreb countries therefore seems warranted if it will help us to understand why agriculture in the region is facing so many challenges in the early years of this century.

2.1 Algeria: disappointing agricultural policies

Agricultural policy in modern Algeria was very dynamic in the aftermath of independence but it soon went awry when the public authorities chose to promote national development through industrialisation. The last third of the twentieth century is accordingly characterised by ill-defined agricultural and rural policies, which have now been reviewed and amended. The sector went through a series of different periods which should be outlined here³.

Following independence in 1962 steps were taken to recover the farms left by European colonizers. Formerly colonised land was at first administered by workers' committees but it rapidly fell under the control of the central authorities. These farms, amalgamated into vast "socialist estates", became state-run ventures, which ended up duplicating the colonial model (designed for agricultural exports with intensive farming and mechanized monoculture operations for cereals). However the results soon turned out to be disappointing: land continued to be unequally distributed, social tensions were generated, food production suffered and production of cash crops declined. These estates only involved a minority of agricultural workers and therefore excluded the bulk of poor landless labourers while monopolising the resources allocated by the state.

Not until the nineteen-seventies did the Algerian state decide to reform its policy. The agrarian revolution proclaimed in 1972 set out to improve the allocation of the means of agricultural production by redistributing it to the private sector alone and implementing a series of flanking measures. In this way it was possible to recover nearly a million hectares of agricultural land. At the same time small farmers benefited from the establishment of a network of multipurpose communal service cooperatives, which helped them with agricultural tasks, marketing of products, etc. Moreover this agrarian revolution set out to limit rural-urban drift, counting on the revitalisation of agricultural activity and the institution of 400 socialist villages to optimise the rural habitat (through electrification and the introduction of social and communal amenities). These ambitious operations were to yield modest results, the impact of the agrarian revolution being very uneven and in the end rather limited. One notable result was to place agricultural labourers in a situation of increased financial and technical dependence. The industrialisation strategy followed by Algeria in the sixties and seventies absorbed the bulk of public investment, to the detriment of the agricultural sector, and by the end of the seventies there had been no increase in agricultural output and no modernisation of rural society.

As soon as the agrarian reform operations came to an end in 1976, the Algerian agricultural sector embarked upon a process of liberalisation: the boards and cooperatives lost their monopoly on marketing of products, the land nationalisation process was wound up, and procedures for granting credit were amended to the benefit of the private sector. A far-reaching restructuring of the public agricultural estates began in 1981, stimulating privatisation. Moreover, during the nineteen-eighties, the price of agricultural equipment, fertilisers and crop protection products shot up. The Structural Adjustment Plan (SAP) would not be completed until 1994 and the intervening years saw a deterioration in the material and social conditions of small farmers (ie the vast majority of Algerian agricultural workers). We should also be aware of the effect of the civil war in this connection: terrorist attacks had often occurred in the countryside and a cloud of fear now hung over the impoverished rural areas.

Since that time the food shortage in Algeria has reached alarming proportions: the country is now one of the world's leading importers of food and agricultural products, with a food bill in excess of \$4 billion in 2004. This is admittedly not a new development, given that colonial agriculture only kept the population at the minimum subsistence level. During the colonial period Algeria's maintained a slight agricultural trade surplus by exporting wine that was not consumed by local populations. Today Algeria is entirely dependent on its oil revenues to pay for food bought on the international markets.

This situation prompted the authorities to draw up a far-reaching National Agricultural Development Programme (NADP) in 2000. Without departing from the liberal framework established in the eighties, the programme was designed *inter alia* to redevelop Algeria's agricultural territory by making agriculture more competitive, increasing outputs and yields, protecting ecosystems, and exploiting more agricultural land. Although Algeria has enjoyed a very favourable economic climate since 2003 thanks to its oil manna, there can be no doubt that the NAPD can only be effectively implemented with increased and sustained investment in the agricultural sector.

³ For more details, see Omar Bessaoud, "*L'agriculture algérienne : des révolutions agraires aux réformes libérales (1963-2002)*", in *Du Maghreb au Proche-Orient, les défis de l'agriculture*, L'Harmattan, Paris, pp. 73-99.

2.2 Morocco, two-tier agriculture subject to serious constraints

The Maghreb country where the rural and agricultural world contributes most to the national economy is Morocco. Following independence in 1956 the Moroccan authorities took particular interest in the agriculture sector, regarding it as key to the development of the kingdom. Agriculture was to be given priority in all subsequent economic development plans⁴.

Their interest first became apparent in 1957 with the launch of Operation Labour, which lasted for five years and had two objectives: to modernise cereal growing techniques and to encourage national sentiment by improving the living and working conditions of the kingdom's farmers. This operation rapidly came to grief and Morocco was to continue its search for an effective agricultural policy until the mid-sixties. Looking back at this period we are conscious of a lack of any clear vision, with the authorities feeling their way along rather than following a clear direction. Many believe that this lack of resolution is one effect of the struggle for influence at central government level.

In the sixties it became necessary to restore order and some 300,000 hectares of colonial land were recovered. The OMVA (agricultural development office) was established in 1965 and subdivided into seven regional offices the following year. The era of dam-building policy then began and was to last for nearly twenty years. This "voluntarist" strategy, requiring a massive commitment on the part of the state, proved selective and was to be amended in certain respects at the end of the seventies. In the first place state action involved large-scale investment in basic infrastructure and water drainage facilities. The creation of "one million irrigated hectares", in line with the target set in 1967, was one of the most striking success stories in Moroccan agriculture. A great many hydro-agricultural projects were implemented and by 1966 Morocco had about 200,000 hectares of developed land. By 2004 the amount of irrigated land with large-scale hydraulic facilities was 682,000 hectares and if we add on the 334,000 hectares with small or medium-sized facilities, the total amount of irrigated land was over a million hectares (employing 85 large dams in all). The goal set in 1967 had therefore been met by the beginning of the twenty-first century at an estimated cost of €10 billion. But the policy of dam-building, while creating conditions for strong growth in the agricultural sector (increasing sugar beet production for example), led to the gradual emergence of a two-tier system, with the more advantaged irrigated land on one side and the vulnerable, neglected rainfed areas (bour) on the other. Since then this selective strategy has contributed to varying degrees to the social, economic and territorial imbalance in Morocco.

These imbalances worsened at the beginning of the nineteen-eighties, with the crisis in the Moroccan economy (fall in the price of phosphates, severe indebtedness). The Kingdom of Morocco then had to introduce a vast Structural Adjustment Programme (SAP) in collaboration with the World Bank and the International Monetary Fund (IMF). Apart from introducing structural reforms, this SAP, like those adopted at the same time in neighbouring Algeria and Tunisia, had one main objective: to transform the national development model followed hitherto. The SAPs were intended to trigger a shift from the import-substitution economy, in which the state was the principal player in the development process, towards a market economy, which would be open to world trade and driven by the private sector⁵.

On the agricultural front, this structural adjustment was to involve three major reforms:

- Redefining the role of public intervention agencies and ensuring that they were managed in accordance with market imperatives;
- Eliminating obstacles to internal and external trade (including monopolies, quotas and other regulations that hindered trade in agricultural products);
- Ending state subsidies to the factors of production and implementing a policy based on "real" production and consumption prices.

⁴ For a retrospective and prospective assessment of Moroccan agriculture, see Najib Akesbi: *"Evolutions et perspectives de l'agriculture marocaine"*, a report published in 2006 as part of the royal human development initiative.

⁵ Jacques Ould Aoudia, *Croissance et réformes dans les pays arabes méditerranéens*, Notes et documents no 28, Agence française de développement, Paris, July 2006.

This last point has the greatest symbolic significance, for throughout the years of reform the price of food (seed oil, milk, sugar, flour) in Morocco had been highly inflated, causing food riots like the one in Fez in 1990. Only in the middle of the nineteen-nineties did Morocco free itself from the constraints imposed by the SAP and embark on the road to globalisation. In 1995 the Kingdom of Morocco joined the World Trade Organisation (WTO) and in 1996 signed an association agreement with the European Union, which was to enter into force in 2000. Its international market presence was reinforced in 2004 with the signing of a free-trade agreement with the United States. At the same time Morocco introduced genuine forward-looking agricultural and rural development strategies, while continuing to modernise its agriculture.

But agriculture in today's Morocco presents strongly contrasting faces. There have been undeniable achievements, like the irrigated land areas, the success of agricultural labourers in adapting and innovating, and the results obtained in production and marketing of citrus fruits and tomatoes. But this trend towards cultivating cash crops, which consume vast amounts of water, should perhaps be called into question. At the same time Morocco's agricultural sector is experiencing recurrent problems. The pursuit of equity has been abandoned so that large irrigated areas can be put in place. Agricultural output, subject to the constant constraints of poor climate conditions, has been stagnating or even falling in recent years, with growth in agricultural GDP generally lower than growth in overall GDP. For basic products, primarily cereals, the trend is unfavourable: yields remain too low and invariably reflect rainfall levels. There has been no progress on the question of land, which continues to be subject to a wide range of legal regimes. The food deficit is worsening, as shown by the slow deterioration of Morocco's agricultural trade balance over the past three decades. Lastly Moroccan agriculture is suffering from underdevelopment, which continues to afflict rural zones.

These difficulties, coming on top of the growing environmental constraints, pose an enormous challenge to Moroccan agriculture. Given the social and economic role of agriculture and its importance for national prosperity, they are of concern to the nation as a whole.

2.3 Tunisia, growing vulnerability of agriculture

The importance of agriculture for the national economy has steadily diminished since Tunisia gained its independence in 1956, which demonstrates that a transition to an industrial and service economy is underway. The decline in agriculture stems notably from the recognition that the country's natural resources are too modest to provide for long-term economic growth. Although agriculture has not been a priority in the development drive, the Moroccan authorities have nevertheless taken steps to modernise the sector and make it more dynamic, mainly to counter any risk of food insecurity.

The history of Tunisian agricultural policy falls into three main periods, whose main features should be briefly outlined⁶.

The first followed the nationalisation of the former colonial lands in 1964 and lasted from 1965 to 1985. It was to be a period of development, during which agriculture would provide resources for the rest of the economy. Inputs were subsidised and the price of products fixed at stable levels. At the same time Tunisia imported goods and subsidised consumption, taking advantage of favourable conditions abroad (availability of food at relatively low prices on the world market) and at home (availability of funds from oil and phosphate exports and from tourism). But this policy gradually ran out of steam and the deficit between agricultural supply and consumption increased, with basic products such as wheat and milk falling particularly short of requirements. From 1974 Tunisia's agricultural trade entered a period of chronic deficit, which subsequently became structural; investment in the agricultural sector declined and the rate of cover of imports by exports fell from 80% in 1976 to 29% in 1983. Increasing pressure on the state budget together with the policy of price-support brought this period to an end in the mid-eighties.

The restoration of macroeconomic balance, with the implementation of the Structural Adjustment Programme (SAP) from 1986 to 1994 and its agricultural component (SAPA), marked a new period for Tunisian agriculture. The object was to reduce the state's dominance over the agricultural sector, while at the same time maintaining an acceptable level of food security. The Tunisian SAP comprised a series of important reforms designed to relaunch growth of agricultural supply by increasing the price of the main products and gradually eliminating subsidies for agricultural inputs. The SAP, by giving a bigger role to the market, led to some degree of deregulation in the different sectors and it was during this delicate period

⁶ For more details see Mohamed Elloumi, Felisa Cena, Rosa Gallardo et Mohamed Elbéchir Sai *Les défis de la terre : l'agriculture en Espagne et en Tunisie face aux défis de la libéralisation*, Ceres editions, Tunis, 2005.

that Tunisian agriculture was to undergo its most radical change. In addition to these adjustments, however, there was also substantial public investment in the agricultural sector (mobilisation of hydraulic resources, development of irrigated state-owned land). At the same time trade in certain products was liberalised and 1992 saw the import of powdered milk, beef, maize and seed oil.

Modern Tunisia's third major agricultural period began in 1995 with its entry into the WTO (following the Marrakech agreements) and the signing of the Euro-Mediterranean association agreement (which has been in force since 1998 and provides for complete freedom of trade between Tunisia and the European Union by 2010⁷). The post-adjustment process thus comprises three strategic developments: opening up to the international market through a process of liberalisation, improving the competitiveness of Tunisia's agricultural produce, and promoting sustainable management of natural resources.

From the geographical and territorial standpoint, the sweeping changes in the agricultural sector in recent years have given rise to two distinct developments in Tunisia:

- A widening of the gap between the dynamic, productive areas (arable land like the Mejerda Valley to the West of Tunis or irrigated land like that of Jendouba and Cap-Bon) and areas with much more traditional agricultural systems and very low output (particularly those along the Algerian frontier and in the South);
- An increase in the number of farms, a decrease in their average size and a fragmentation of land into smaller parcels. The number of farms rose from 326,000 to 471,000 between 1962 and 1995 causing the average size to fall from 16 to 11 hectares. Over the same period the number of very small farms (less than five hectares) almost doubled, rising from 133,000 to 251,000. This development means that Tunisian agriculture is increasingly a family concern.

Growth in output reflects the significant increase in the population and the constant rise in living standards, as well as the rapid rise of an urban middle class with different consumption habits. The national Tunisian market is therefore mainly responsible for stimulating local agricultural production. Progress in mechanisation, efforts by the state to increase the amount of irrigated land and the use of inputs has enabled Tunisian farmers to meet part of the growing demand. The boom in poultry farming and oil production is an important testimony to the success of Tunisian agriculture. On the other hand, yields of traditional food crops (cereals, fruit and vegetables) over the past few years have been more uneven, even disappointing.

Tunisia, where water is chiefly allocated to the agricultural sector, appears to be the Maghreb country most threatened by water shortage, both economically and socially. Moreover the inexorable increase in the price of water is likely to affect the competitiveness of Tunisian agriculture in the medium term. From now on any further increase in the amount of irrigated land will be limited, although the amount of work done in this area will have been substantial (the number of irrigated hectares rose from 60,000 to 400,000 between the mid-sixties and the beginning of the twenty-first century). Only by mobilising available resources to the maximum extent will it now be possible to put off the moment when the water deficit becomes irreversible, which highlights the need to make irrigation more efficient. By 2025 lack of water could lead to serious water stress in Tunisia.

At the start of the new century Tunisian agriculture is clearly faced with an enormous number of challenges ranging from globalisation to water shortage. While self-sufficiency in food is virtually guaranteed, it is imperative that Tunisia modernise its agricultural sector to maintain a more or less sound agricultural trade balance. It is clearly more difficult to satisfy all demands at once than to take up each challenge separately. But which one will have priority? Which one will be sacrificed?

⁷ The Association Agreements are the central pillars of the Euro-Mediterranean Partnership launched in 1995 at the Barcelona Summit. Once the agreement has been signed by the partner country and the European Union, it must be ratified by the parliament of the partner country and the parliament of each EU member state before it can enter into force. There is sometimes a delay of several years between these stages. Following entry into force there is a twelve-year process during which preparations are gradually made for the complete liberalisation of trade between parties. This means that Tunisia, which ratified its Association Agreement in 1998, will have liberalised its trade relations with Europe by 2010. Algeria, the most recent partner country, ratified its agreement in 2005 and is now expected to complete this process by 2017. This detailed explanation is intended to play down the importance of the year 2010, often treated as the target date for the establishment of the Euro-Mediterranean free-trade zone. In fact the free trade zone will only really come into existence between 2010 and 2017, or even later, given that Syria has not yet ratified its agreement.

3. Challenges facing agriculture in the Maghreb

The three Maghreb countries present contrasting agricultural features but face common challenges. It is possible to identify four major issues for Maghrebin agriculture.

3.1 Food security

The problem of food security has been a central concern of development policy in the Maghreb countries. The aim has been to ensure a sufficient volume of food for the growing populations and to guarantee accessible prices for the largest possible number.

An assessment of food security based on the food supply per inhabitant shows that unquestionable progress has been made since the countries gained independence. The energy contribution from food rose appreciably in the nineteen-eighties and now seems to be stabilising, except in Algeria where it is still steadily increasing. Over the past twenty years, the increase in the per capita food supply has been most marked in Tunisia. However, the daily energy contribution is still below the level found in the European Mediterranean countries and even below that of Egypt (3,356 kcal/day/person in 2003).

Food supply in the Maghreb (In kcal/day/person)					
	1981	1991	2001	2003	variation index (1981-2003)
Algeria	2,698.7	2,866.4	3,019	3,055.4	+13.2%
Morocco	2,780.8	3,072.7	3,040.8	3,098.4	+11.4%
Tunisia	2,803.8	3,105.9	3,280.1	3,247.1	+15.8%

Source: CIHEAM, MedAgri 2006

Despite efforts to counter it, malnutrition is still a very real problem. At the beginning of the nineties 2.9 million people in the Maghreb were found to be under-nourished and by 2002 this figure had risen to an estimated 3.8 million. Tunisia has the lowest malnutrition rate: 1% of the population compared with 5.6% in Algeria and 6.8% in Morocco.

Country	Number of under-nourished persons (in millions)		Proportion of under-nourished persons in the population as a whole		Trend
	1990-1992	2000-2002	1990-1992	2000-2002	
Algeria	1.3	1.7	5.1%	5.6%	upward
Morocco	1.5	2	6%	6.8%	upward
Tunisia	0.1	0.1	1.2%	1%	downward

Sources: Our own calculations, base on data from FAOSTAT (2005) and UNO (2004)

Moreover there is a serious shortage of basic products such as cereals, milk and meat in the Maghreb markets, despite the ongoing rise in consumption of these products as living standards rise and dietary habits change. Cereals continue to occupy an important place in the diet, and average per capita consumption is among the highest in the world (estimated to be 247 kg/year in Morocco, 204 kg/year in Tunisia and 217 kg/year in Algeria). Total cereal demand has increased fivefold in Algeria since independence and, in the absence of a corresponding increase in local production, the country has had to import cereals on a massive scale (nearly 7 million tonnes in 2004, 21 times as much as in 1965). The cereals situation is the same in Morocco and Tunisia.

If we consider the self-sufficiency coefficients⁸ for the main products in 2004 we find that, variations from one country to another notwithstanding, all three countries are in a precarious situation.

self sufficiency coefficient in 2004				
	Cereals	Milk	Meat (beef, mutton, poultry)	Sugar
Algeria	36.31%	43.94%	83.84%	
Morocco	68.24%	81.26%	99.50%	11.26%
Tunisia	53%	91.49%	96.31%	

Sources: CIHEAM, MedAgri 2006

Moreover some experts are now emphasising that there are two sides to the food security issue, distinguishing between quantitative insecurity, which has become less marked since independence, and qualitative insecurity, which has been worsening over the past few years.

But in the end, in view of the collapse of the three countries' agricultural trade balances and the ever increasing amounts paid for agrifood imports, food security remains a serious concern for Algeria, Morocco and Tunisia.

3.2 Sustainable rural development

Sustainable rural development represents a serious strategic challenge for the Maghreb countries, where the word "lack" has any number of associations for country dwellers: lack of food, lack of infrastructure, lack of modern facilities, lack of water, lack of land, lack of work, lack of knowledge, and so on. Today rural areas in the Maghreb, more populated than ever, are lagging far behind the towns in terms of development. For some time now the gap between the countryside and the urban world has even been widening, despite efforts by the authorities over the past thirty years to reduce inequalities. This trend is illustrated in the following summary table, which show how the gap has widened with respect to three indicators: water access, health services and the poverty index.

Pays	Proportion of the population with access to potable water				Proportion of the population with access to health services				Poverty index			
	<i>As % of total population</i>				<i>As % of total population</i>				<i>Proportion of the population living on less than a dollar a day</i>			
	1990		2002		1990		2002		1990		2000*	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Algeria	68	55	92	80	57	40	99	82	7.3	16.6	14.7	30.3
Morocco	56	18	99	56	-	-	83	31	7.6	18	12	27.2
Tunisia	99	99	94	60	96	94	90	62	3.5	13.1	1.6	8.3

• *In the absence of stable data, the poverty index for Algeria is the 1995 one, for Morocco the 1999 one and for Tunisia the 2000 one.*

Sources: WHO (2006 Report) and World Bank (2006 Report)

Despite the many improvements, poverty, underemployment and lack of access to collective infrastructure are still rife in the southern Mediterranean countryside. Links with towns are often inadequate and urban-rural relations seem to be growing more complex with the increased global orientation of the economy and society. As the towns turn increasingly to the outside world and trade, the rural areas of these countries remain isolated and underdeveloped and the national territorial balance is fractured and destabilised.

⁸ The self sufficiency coefficient is calculated as follows: $\text{production} \times 100 / (\text{production} - \text{exports} + \text{imports})$.

Will we be seeing further impoverishment of rural areas as the increase in the poverty indices over the nineties seems to indicate? Should we suppose, even cynically, that it is better to be poor on the outskirts of a large coastal metropolis than in a village in a remote area of the countryside? Far from being merely provocative, these questions should alert us to the importance of developing rural areas.

But it is also essential to take account of interactions: development of the rural Mediterranean world may well be a complicated matter in that it is necessary to reconcile modernisation (through the introduction of collective facilities), the rise in the population and the growing vulnerability of natural resources. The fact is that the sustainability paradigm must be routinely incorporated into rural development programmes, as it has been for many years in the Maghreb. We must also recognise the importance of bringing together all players (state, local authorities, civil society) who are involved in the task of developing the countryside.

3.3 Meeting the challenge of trade liberalisation

Since the nineties, the three Maghreb countries have entered into a series of international agreements in preparation for the gradual liberalisation of trade. This “anchoring process” is being conducted within the framework of (1) the Euro-Mediterranean partnership and (2) the World Trade Organisation (except in the case of Algeria, which currently only has observer status pending its accession).

As regards the Euro-Mediterranean project, liberalisation of agricultural products remains problematic and is currently being dealt with outside the framework of the Association Agreements, which are effective as of 2000 for Tunisia, 2012 for Morocco and 2007 for Algeria. In autumn 2005 the European Union nevertheless decided to enter into negotiations on liberalisation of agricultural trade with any Mediterranean country willing to participate.

This process occurred at the same time as the implementation of the new European Neighbourhood Policy (ENP), which will determine the EU's relations with the Maghreb countries as of 2007. However, by July 2005 only Morocco and Tunisia had adopted their ENP Action Plans⁹. As regards international trade negotiations, Morocco and Tunisia, which have been members of the WTO since 1995, are not authorised to grant export subsidies but they may invoke certain special safeguard clauses and apply internal support measures. What is otherwise striking is the lack of consensus between Mediterranean countries on negotiation strategies with the WTO.

At the same time it would be as well not to overlook the importance of the free-trade agreement entered into in 2004 by Morocco and the United States, which provides for a complex timetable for liberalisation of trade in different categories of agricultural products. Morocco obtained virtually free access for all of its export products (tomatoes, potatoes, courgettes, frozen or processed products, citrus fruit, water melons, strawberries, etc.). In return it has undertaken to open up its own market to American agricultural and agrifood products within 10 to 15 years in most cases. For some important products trade would be liberalised much earlier (within six years), while for others, such as common wheat and meat, it would be liberalised to a lesser degree and/or after a longer period of time. The fact is, however, that this agreement is very one-sided. While the United States has secured unprecedented access to the Moroccan market, Morocco seems unable to take full advantage of the opportunities held out because it is faced with major non-tariff barriers (being unable to meet sanitary and phytosanitary conditions, gain access to marketing channels, produce the amounts needed to supply large orders, etc.). This agreement, which officially entered into force in January 2006, creates unfavourable conditions for agricultural trade negotiations between Morocco and the EU and the latter has therefore decided to initiate discussion on liberalisation of Euro-Mediterranean agricultural trade with its Moroccan partner¹⁰.

⁹ The action plans are key instruments in the implementation of the ENP. They are policy documents, tailor-made for each country, which jointly define an agenda of political, economic and sectoral reforms for the following three to five years.

¹⁰ The European Union and Morocco have met to address agriculture and the outlook for liberalisation on two occasions: on 22 February and 18 May 2006. The Moroccan authorities seem to want greater flexibility in the conditions governing access to the European market for its own products and access to the Moroccan market for European goods, as they find it frustrating that many of their own country's agricultural products are excluded from the European market. Many Moroccan professionals think that liberalisation is unlikely to promote strong growth in the Moroccan agricultural sector and also fear that the massive influx of European products, which enjoy support under the Common Agricultural Policy, will be prejudicial to Moroccan agricultural workers, economically and socially. At the negotiations, the European Union seems to be trying to reassure the Moroccans by offering to do more to promote rural development, agricultural productivity and production of high-quality goods.

The emergence of regional South-South dialogues represents another new trend. Although the initiative has yet to yield concrete results, Morocco and Tunisia have been participating with Egypt and Jordan in the Agadir process, whose goal is to gradually set up a free-trade zone for the Mediterranean Arab countries. We should also mention the institution of a close dialogue between certain Arab countries (including the three Maghreb states) and Latin American countries, whose authorities met to draw up plans for economic and commercial trade at the Brasilia Summit on 10 and 11 May 2005. We must understand the importance of this dialogue for Brazil, which is seeking to become a key partner of the Arab countries in the field of agri-food. These developments show that the European Union is far from being the Maghreb's one and only favoured partner in agricultural trade. In the end failure to take prompt action under the Euro-Mediterranean partnership has further encouraged the countries of the South to forge alliances outside the Mediterranean Region.

Today most people in the Maghreb are worried by the prospect of liberalisation of agricultural trade. A recent study¹¹ highlighted the different risks it presented. The cost of a complete opening up of the agricultural markets would be intolerable socially and economically, leading as it would to higher unemployment, lower wages, a substantial loss of revenue to the state, increased vulnerability for the poorest sections of the population, a decline in the status, living standard and health of rural women and severe pressure on the environment. Moreover, liberalisation of trade would expose small local producers to increasing competition, for which they are unprepared. In this connection it is important to remember that are still two distinct tiers to the agriculture sector in the Maghreb countries and that in reality only a very small minority of farmers seems capable of coping with the opening up of the markets. It would therefore seem advisable to adopt a very gradual approach to liberalisation of agricultural trade in the region.

Moreover, at a time when Euro-Mediterranean cooperation is still trying to get back off the ground and the WTO Doha cycle appears to be blocked, we should consider the advisability of joint action on agriculture by the Mediterranean countries. Dialogue between the Maghreb countries would no doubt be worthwhile, as the three countries clearly face the same challenges and would have a lot to gain from joining forces on agricultural issues. This area of common ground is not sufficiently exploited by the Maghreb Arab Union (MAU), though it has been given some new momentum recently¹², and their failure to act is indicative of all the problems arising from the lack of South-South trade. We should also give serious attention to the idea of a consultative forum on Mediterranean agricultural policy, which would involve producers, national governments, and European decision-making and scientific bodies. One of the most important tasks of a platform of this kind might well be to promote quality products that are typical of the Mediterranean Region. All of these measures would certainly be sufficient to put agriculture back at the centre of Euro-Mediterranean cooperation and to establish a Mediterranean debate within the WTO.

3.4 Reinvesting in the agricultural sector

For all the reasons given in this analysis, the three Maghreb countries have no interest in abandoning or neglecting their agriculture. On the contrary, the imperatives of food security and land development militate in favour of renewed investment in the agricultural sector¹³. For in the end there are two scenarios that must be avoided: the widening of the gap between the urban world and the rural world and the development of an agricultural system exclusively focused on exports, which fails to promote economic development and diversification in the countryside. If the sector is to be modernised, it is important that the Maghreb countries rethink their agricultural policy, giving their national territory and market first priority. They must implement a programme of domestic restoration.

¹¹ See *“Impact Assessment of the Euro-Mediterranean Free Trade Area”*, Impact Assessment Research Centre, Institute for Development Policy and Management, University of Manchester.

¹² An agreement designed to help the MAU establish a regional food security programme for the Maghreb countries was signed in Rome on 4 October 2006 by Jacques DIOUF (Director General of the FAO) and Lahbib BENYAHIA (Secretary General of the MAU). It enables the FAO to provide expertise and technical assistance so that the programme drawn up in Tripoli in July 2006 by the Ministers of Agriculture of the MAU's five member countries (Libya, Morocco, Mauritania, Algeria and Tunisia) might be implemented. The programme in question consists in pooling the actual and potential resources of the Maghreb in the interest of regional food security. To this end there are plans *inter alia* to call a meeting of officials responsible for agricultural research institutions in the countries concerned in the first quarter of 2007, the object being to set up a Maghreb Observatory of fisheries resources. Algeria has been charged to prepare the preliminary draft for the project. As to questions relating to the struggle against desertification, the protection of the environment and sustainable development, it was decided in Tripoli that a Maghreb coordination cell would be set up to monitor the projects in regional programme addressing these matters.

¹³ Recently, on 16 October 2006, the Director General of the FAO, Jacques Diouf, pleaded strongly in favour of a return to public and private investment in the agricultural sector to fight against food insecurity.

Such a far-reaching project demands a return to large-scale investment in the agricultural and rural world. If the European Union really wishes to establish a Euro-Mediterranean zone, where stability is allied to solidarity, it cannot neglect the challenge it poses. It is therefore essential to include a rural development programme in any future European neighbourhood initiative. At the same time liberalisation of agricultural trade will require patience, progressiveness and flexible time limits.

Several courses of action are put forward here to prepare the ground for domestic restoration. These measures could benefit from a sharing of responsibilities between the public and private spheres:

- Modernisation of the countryside by improving collective infrastructure and social facilities: access to water, electricity, education and healthcare are strategic priorities in the effort to free rural populations from under-development and exclusion;
- Revitalisation of rural areas through economic diversification and establishment of new fields of activity (like agrotourism), it being finally recognised that agriculture alone is insufficient for the development of the rural world;
- Reestablishment of relations between town and country, with the possible forging of solidarity partnerships between coastal tourist zones and the hinterland to ensure that most of the food consumed in urban and tourist areas is locally produced rather than imported;
- Support for small farmers and local producers; this would consist in developing educational provision, pooling their expertise (mainly in order to disseminate knowledge and technical skills) and helping them gain greater access to national market (cities, country towns);
- Technical assistance to farmers producing goods for export to ensure that their products meet the sanitary and phytosanitary standards required by importing markets (first and foremost the European Union¹⁴);
- Promotion of organic agriculture, following the example shown by Tunisia; organic agriculture offers a very promising niche market for Mediterranean countries owing to growing demand by European consumers¹⁵;
- Bolstering of existing agri-food industries¹⁶ and even the establishment of Maghrebin IAAs, which would make a genuine impact at regional and international level;
- Stimulation of agricultural production through enhancement of agricultural research, given that prospective analyses point to slower growth in Tunisia and Morocco¹⁷ in the next few years;
- Development of supply and marketing of products should be optimised: while some producers are organised and ready for the export market, the majority of small farmers are unorganised and sometimes unable to gain access even to the internal market; it is necessary to restructure the sector by providing for better synergy between producers, transporters and retailers;

¹⁴ In her address (SPEECH/06/548) to the 2nd Euro-Mediterranean conference on agriculture at the European Parliament building on 28 and 29 September 2006, the European Commissioner for Agriculture, Mariann Fischer-Boël, stressed that producers in southern Mediterranean countries must comply with sanitary and phytosanitary standards if they wished to have access to the European market.

¹⁵ In Tunisia the authorities have long recognised the benefits both for farmers and the national agricultural export drive of investing in organic agriculture. This is why in 2006 the state adopted several measures designed to encourage producers to go organic. Farmers wishing to move into the sector therefore have to meet only part of the cost of developing projects in this field, the rest being paid by the state. The state also contributes around 30% of the purchase cost of specialised equipment, tools and resources for organic agriculture. To help producers with the expenditure required to develop organic agricultural practice, the authorities now grant an annual subsidy for a period of five years, as well as providing tax incentives. The authorities are now seeking to back up financial incentives with educational provision, given that organic agriculture is subject to strict regulations, which must be fully assimilated by all those who wish to take it up.

¹⁶ For an overview of the situation regarding IAAs in the Maghreb, see Fabrice Hatem - *Le secteur agro-alimentaire dans la région euro-méditerranéenne*, Notes et documents ANIMA No 16, Marseille, November 2005.

¹⁷ For the period 2000-2010, Blue Plan forecasts an average growth in agricultural production of 1.8% in Tunisia, 2.4% in Algeria and 1.9% in Morocco. For the period 2010-2025, the figures are expected to be 1.6% in Tunisia and Algeria and 1.5% in Morocco. For the purposes of comparison, the average rate of growth between 1960 and 2000 was 3% in Tunisia, 2.7% in Morocco and 1.1% in Algeria. See *A Sustainable Future for the Mediterranean – the Blue Plan's Environment and Development Outlook*, Earthscan/James & James, 2005.

- Management and conservation of natural resources and optimisation of water use; to this end, it is necessary to implement the Mediterranean sustainable development strategy, part of which is devoted to rural areas.

Conclusion

In the past few years the Maghreb has seen significant reforms in agricultural policy, which have very often been designed to enhance the structural adjustment policies introduced in the eighties. These reforms involve disengagement of the state, programmed liberalisation of trade and reduced internal support.

Even though agricultural policies in Algeria, Tunisia and Morocco have involved different strategies, it must be acknowledged that all of them have so far failed: no country has been successful in stimulating sustained agricultural growth enabling it to meet the bulk of its internal demand and to export goods under favourable conditions, while ensuring a steady rise in the rural population's standard of living. The Maghreb is consequently sinking ever more deeply into food dependency, which weighs increasingly on each country's trade balance. Its vulnerability is derived from natural environmental constraints, historical instabilities and the obvious shortcomings of the agricultural policies pursued in these countries.

At present, whereas food demand in the Maghreb countries is radically changing and constantly increasing, supply remains fixed and inflexible. Several factors could complicate the task in hand. In the first place, agricultural productivity is still insufficient and the agricultural sector continues to suffer from a number of institutional and technical constraints. Seasonal and annual fluctuations in agricultural output, often related to water availability and management, are also significant factors. Socio-demographic, technical, climatic and environmental variables accordingly play a more decisive role than ever in Maghreb agriculture.

It is now becoming clear that the countries of the Maghreb should not adopt the European model of agricultural development, based on the belief that we should produce more with far fewer people without considering the environmental implications of production from the outset. Given the population levels and underemployment in the countryside, Maghreb farmers have no alternative but to maintain a high agricultural workforce and produce at a lower cost to the environment.

Two imponderables still have to be resolved: the exact timetable for the liberalisation of Euro-Maghreb agricultural trade (whose impact should be assessed in advance so that catastrophic social and economic consequences might be prevented) and the repercussions of the rapid spread of major retail outlets in the Maghreb, which could widen the gap between the globally oriented towns and marginalised rural areas.