

# Tomorrow, the Mediterranean

## Scenarios and projections for 2030

GROWTH ~ EMPLOYMENT ~ MIGRATION ~ ENERGY ~ AGRICULTURE

COORDINATED BY CÉCILE JOLLY

AND PRODUCED WITH  
THE “MEDITERRANEAN 2030” CONSORTIUM

# *MEDITERRANEAN 2030*

## A foresight project for the Mediterranean region

IN 2009, IPEMED has undertaken, in partnership with specialised Euro-Mediterranean organisations (CARIM, CIHEAM, FEMISE, OME) an extensive foresight project whose aim is to rally, within the “Mediterranean 2030” consortium, institutional and private-sector foresight bodies in the Mediterranean region (Commissariat for planning from Morocco, Algeria and Turkey, Centre d’Analyse Stratégique, Institut Européen de la Méditerranée, Mauritanian policy analysis Centre, University observatory of socio-economic reality of Lebanon, Albanian Council on foreign relations, Ministry of foreign affairs of Croatia and Mauritania, etc.) to the task of building a common vision of the Mediterranean in 2030.

This foresight project has two objectives:

- Firstly, a scientific and economic objective: elaborate joint, region-wide diagnostics and projections in the fields of energy, agriculture, water and the environment, population and migration and foreign direct investment. This would be done in collaboration with specialised Euro-Mediterranean organisations and with the foresight bodies of the Mediterranean countries;
- Secondly, and more importantly, a political and pedagogical objective: to foster and encourage long-term cooperation between officials responsible for foresight, to disseminate foresight methodology throughout the Mediterranean region and to be a tool for decision making.

The works of the consortium are animated and coordinated by Cécile Jolly, analyst at the Centre d’Analyse Stratégique and Macarena Nuño, project officer at IPEMED.

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# THE MEDITERRANEAN IN 2030: ROUTES TO A BETTER FUTURE

THE MEDITERRANEAN BASIN has developed a fabric of economic, political and human relations that lend it a definite regional dimension. The raid of the Arabic revolts came to remind that this dynamics could also take the shape of a political convergence. Structurally nevertheless, the Mediterranean integration is highly varied, depending on the country or sub-region concerned. The European Union plays a central role for all Mediterranean countries, which might be members or future members, or have established agreements and privileged economic relationships with it. Although Latin Europe, the Adriatic countries (Western Balkans), the Middle East and the Maghreb display geographical continuity, from an economic, institutional and socio-cultural point of view, their heterogeneity is obvious. The Mediterranean is in progress and is the object of political and private investment. The motivation behind such investment might be grounded in economics, politics, citizenship, society, ecology or culture, depending on countries and their inhabitants. But these initiatives all tend to weave closer what history has done and undone, to accelerate the income dynamics of the region and to speed up its global ranking as compared to world economic giants.

This region is subjected to strong uncertainties on its future, whether it is national or collective: the deepest crisis that Europe has ever known since the 1930s reaches today not only the springs of its recovery but questions its own construction (in particular the economic governance of the Euro zone). This economic and institutional crisis also affects the countries of the Adriatic promised to an integration that the community uncertainties and the starts of the Greek crisis handicap. The Arabic revolts engage a powerful reforming impulse but pull countries into a phase of inevitably long transition which does not exclude backlashes or

plunging certain States into a phase of reaction with impacts in terms of stability and economic growth to more or less short term.

Finally, naturally, the regional integration suffers itself from these uncertainties : uncertainty regarding the growth of the leading economic partner in the region – the European Union; uncertainty regarding the extent of economic and political reforms in both North and South; uncertainty about whether States bordering the Mediterranean are willing to have a common destiny, with Europe struggling to preserve its former solidarity and force of attraction, and Arab solidarity regarding a certain force thanks to its democratic aspirations and its position at the centre of international, and not just Euro-Mediterranean, attention. Although the spotlight is currently on the turbulence upsetting the European Union and the Arab Mediterranean, one way of reducing uncertainty is to get back to the structural trends and envisage the upshots of Euro-Mediterranean growth and long-term regional integration.

At first sight, the diagnosis is not particularly favourable to Mediterranean integration. Income convergence between countries in the Mediterranean basin is not significant. Exchanges of goods and capital have made less progress within the region than with other global trade zones (e.g. emerging countries). The growth of investment flows coming from the Gulf States has strongly influenced the Mediterranean Arab countries towards developing real estate, telecommunications and, to a lesser extent, financial services. The diversification of exchanges of goods and capital could represent an opportunity if it was accompanied by a rise in both quality and technology, resulting in productivity gains that encourage growth and employment. It is undeniable that the centrifugal dynamics of Europe have not led to a major investment flow (foreign direct investments stagnate at around 2%) sparking off significant technological transfers, nor to industrial joint processing comparable to that organized with Eastern European countries or within emerging Asia.

Southern and Eastern Mediterranean economies have taken advantage of past dynamics of global growth drawn by emerging countries. Yet, the growth of Southern and Eastern Mediterranean countries (SEMC) remains low in comparison with that of the world's most dynamic geographical areas. Europe's demographic slowdown and weak productivity gains mean that it has entered into a low-level zone. In 2030, India and China's combined population will be 3 billion, representing 25% of global GDP, compared with 12% today and only 3% in 1990. This shift in the world economy brings with it brand-new market opportunities as



well as the possibility of global income convergence and an exit from poverty. But it also brings the risk of marginalizing the least dynamic regions. The Mediterranean region could thus be confronted with a weakening of its capacity to influence international regulations that will affect its future as economies continue to look outwards. China and America's handling of an exit from the crisis indicates a move away from multipolarity. This domination of States continents and emerging markets could have the effect of imposing a more unequal and less protective social model on the Mediterranean region, in the race to be the most attractive. The consequence would be to maintain low work conditions in the South and accentuate labour market duality and fears of outsourcing in the North. Although emerging countries' economic power will equal that of advanced countries by 2030, income per inhabitant will not experience the same progression: they will be rich as a whole, but individually poor, thus increasing the global workforce competition.

## I. Synergies for a Mediterranean vision

YET, THERE ARE CLEAR REGIONAL complementary features. First of all, the Mediterranean region is a place where individuals' collective preferences converge, due to the high level of migration, and where the circulation of ideas and people goes hand in hand with more homogenous lifestyles and aspirations. In the last twenty years, this convergence has manifested itself in different ways, most obviously in southern and eastern Mediterranean shores. The rise of individualism has modified the relationship to others leading to a less emphasis on the extended family and a mistrust of institutions, which are victims of the same disaffiliation as in Europe. Fertility patterns are close to those in Europe and aspirations to freedom and well-being are translated by a desire to emigrate, most radically amongst the young. This convergence of aspirations becomes today famous in the demands stemming from Arabic revolts of a bigger freedom of expression and participation but also from a more equalitarian distribution of the benefits of growth. This way, the Arabic revolts question the idea of a shock of civilizations (S. Huntington) as well as the forms of votecatching and paternalism which have always prevailed. In the future, one of the major stakes lies in the capacity of the reformed regimes, whether they are revolutionary or not, to increase participation in the economic and political system and to organize the

circulation of elites by the establishment of political competition. It also lies in the capacity of Europe to accompany this movement by basing it on real convergences and in the respect of differences. Because the Arabic revolutions also show a reconciliation of peoples with their aspirations, a request of dignity (this Arabic word of *karama* was on all the lips from Tunisia to Egypt or Libya) which does not go without a legitimate pride and the demand of a fairer treatment, including by the European partners. In Europe, this major transformation imposes not only to strengthen the partnership dimension of the policy implemented in the region but also to respect even more the cultural differences. Just as Europe has built a nation from nations, the Mediterranean should be built on its cultures and be a “rendez-vous” of civilisations<sup>(1)</sup>.

Correlatively, there is a demographic synergy between an ageing Europe, facing a probable drop in workforce numbers affecting potential growth, and the South and East Mediterranean countries where high numbers of more qualified young people are entering the job market due to the investment done in education (by 2030, between 20% and 60% of the population of many countries will have been educated to secondary level or above). In 2030, 40% of the potential workforce will be on the East and South shores of the Mediterranean and 60% in Europe (including the Western Balkans), compared with 30% and 70% today. In the future, the politically viable count unit will be one billion inhabitants. The EU27 with its current boundary will stagnate around 500 million. The Euro-Mediterranean region would help approach this target.

Although in the future there will be a larger workforce in the South, work dynamics remain uncertain. Maintaining the current rate of job creation in Europe (1.3%) would result in a workforce deficit of 40 million by 2030, even if working lives are extended. Symmetrically, maintaining rates of job creation in SEMC (2%) will not be sufficient in 2030 to substantially reduce unemployment rates and “formal” inactivity, which are both high in the region (including a significant economic share of informal “subsistence” work). Although additions from one side will not automatically make up for lacks on the other side, due to both compartmentalized labour markets and restrictive migration policies, two factors argue for greater mobility within the region: (i) it could compensate for the weaknesses of intra-European mobility and make up sectorial labour deficits (caring professions, hotels and catering,

(1) *Le rendez-vous des civilisations*, Y. Courtage, E. Todd (2007).

construction work); (ii) it could strengthen qualification levels of workers from the South and the Balkans and their capacity to adapt to the needs of the economy, and encourage more circular migration to the detriment of “permanent” migration and brain drain.

The synergies of natural resources also make the case for greater regional integration. Such synergy is obviously energy-related, not just because of fossil energy, but more especially due to the natural availability of renewable resources in SEMC (e.g. solar potential is significant, wind speed in the South ranges from 6 to 11 m/s). It could also be agriculture-based: Europe being more crop- and meat-centred, with relatively abundant arable land and water resources but with now marginal agricultural employment, and the South maintaining high rural work figures but with Mediterranean production threatened by water stress, rampant urbanization and the impact of climate change. Paradoxically, although the Mediterranean diet is esteemed in Europe, cereal crops are the mainstay of consumption in the South and East Mediterranean. Complementarities between consumption and natural resources will be reinforced in 2030: in the South by a population and income growth increasing its cereal consumption and in the North by a concern for diet (obesity), which will move food choices towards fruit and vegetables. Once again, the resources of some countries will not automatically fulfil the requirements of others in a global market where emerging powers fuel the market and attempt to get hold of increasingly scarce natural resources.

These synergies should not be limited to asymmetrical complementary trade, the South being a supplier of natural resources and primary goods with low added value and the North providing sophisticated, more expensive goods. “Natural” resources are themselves not only sources of “malediction” but also tend to become scarcer, which increases their comparative short-term benefits and imposes a transition that shall already be largely underway by 2030. Whatever the availability of natural resources, which varies greatly from country to country, supply logic should be replaced by an efficient demand logic. This is true for energy and the environment, where the solution to scarcer resources (water and energy) and environmental security depends just as much, if not more, on the “savings” that can be made (e.g. lower energy intensity, water supply management), than it does on technological progress and fossil fuel alternatives. Regarding agriculture, pursuing a supply logic would lead to the disappearance of food-producing

farming and reveal difficult rural, social and environmental challenges. In the North, it would tend towards intensive farming, which is detrimental to employment, rural development and ecological balance.

Moving from a supply logic to a demand logic involves encouraging the creation of solvent markets rather than maintaining the economies catching up with Europe in a demeaning sub-contracting role differentiated only by wage levels. Instead of transforming such countries into low-cost platforms intended for the common market (a role already fulfilled by Turkey and Croatia and to a lesser extent the Maghreb), the emphasis should be on proximity, which guarantees quality (particularly for health and the environment), and responsiveness. The rising trend of transportation costs in the mid-term (insufficient oil substitutes) and their environmental impact, the chronic resurgence of health-related incidents linked to importing low-cost goods, the increased variability of demand and the convergence of consumption patterns on both sides of the Mediterranean all confirm this hypothesis. The decision to tighten up location choices on a regional basis could lead to the progressive reduction of differences in salary and work conditions. Greater mobility of labour would be an additional factor in the tendency to curb wage inequality, reinforcing the social acceptability of Mediterranean offshoring and outsourcing.

In this context, renewal of the regional production organization shall also involve services, which all countries can provide. This not only means promoting each country's comparative advantages – with Europe specializing in services with high added value, and South and East Mediterranean countries specializing in service support (e.g. tourism, transport and telecommunications with a slight progression in medical and financial services) – it also involves increasingly synergies between goods and services, leading to more deep-rooted and harmonious regional integration. There are no services without goods, as illustrated by the boom in mobile phone industry (physical goods and related services). In the same way, transport and distribution services go hand in hand with food and energy industries. Services add the highest levels of value to mass-produced goods, produced cheaply in different places round the world. In addition, the exchange of services fosters the harmonisation of standards that, along with multilateral trade liberalization, are the first obstacles to trade. Services impose the circulation of

people, through the provision of services or freedom of establishment, thus promoting the convergence of skills and wages. In the long term, they will allow a development less focus on possessing physical goods and allowing a lower consumption of natural resources.

## 2. Taking up common challenges

THE MEDITERRANEAN ECONOMIES are confronted with a political and social crisis of an unequalled scale, on the background of protest against the crisis of austerity imposed on European populations, and of a revolution in the Arab countries where the populations are opposed as much to the political authoritarianism as to the unequal redistribution of the wealth. The European solidarity is worsened by the extent of the crisis of the debts of certain countries, questioning the community capacity to adopt a coordinated answer and cracking the community consensus. The hypothesis of an explosion of the Euro zone, henceforth evoked, bring up the spectre of the division and marginalization of certain nations. But, at the same time, the very strong interdependence of the European economies, could, on the contrary, push to a deepening of the European integration that has been slowed down since the last enlargements. On the other shore of the Mediterranean, the Arabic world is in the grip of a powerful movement of revolt which reaches even the Israeli shore. If the contagion effect is a fact, implying reforms even in the countries which did not overthrow their leaders, following the example of Morocco, the long-term impact of these transitions is uncertain. They can lead to a middle-term instability, either that the revolutions and the reforms come along with starts, or that the repression plunges certain countries into a potential long-lasting internal confrontation, as in Syria. They may also modify only marginally the political and economic balances, maintaining the acquired advantages without promoting a real traffic of elites. On the contrary, they can encourage a tremendous movement of reform allowing the emergence of new economic and political elite, releasing the productive energies and making participate a largest number of people in a new dynamics of growth, on the Turkish model.

The similarity of the slogans between the Tunisian, Madrid and Israeli streets shows that a certain continuum exists between the peoples of this region and that their fate is not impervious. The solutions to the

challenges faced by the countries of the region are partially common and could be better solved if envisaged in a more partnership way.

First of all, and it is one of the major impulses of the Arab revolts, Mediterranean economies do not create enough jobs. South and East Mediterranean rentier economies' low employment performances can be explained by their tendency towards weak entrepreneurship and innovation, the public sector's predominance over the private one and the importance of the informal sector (from 20 to 30% of non-agricultural GDP in Algeria, Morocco and Egypt, according to the OECD). In Europe, just as it is catching up the technological gap with the United States, the working population has dropped to an extent that cannot be made up by investment alone. Overall, productivity gains will be crucial to future growth, both in the North and the South. These productivity gains will be achieved through three fundamental factors: a distinct improvement in human capital (in the South) and a better easiness of movement for the workforce, a rationalized organization of production and improved performances in technology and innovation. In these three domains, the bases of existing cooperation would be worth reinforcing, thus accelerating the transfer of technology and know-how.

Mediterranean economies must also adapt to greater energy restraint and the preservation of natural resources. For hydrocarbon-producing economies, this will involve thinking beyond oil (apart from Libya, oil and gas production should peak in 2020-2025). Importing countries should reduce the constraints linked to the important weight of the energy in their growth. All should rather decrease their energy intensity and favour an environment – friendlier economy. If nothing is done, even taking into account the progress made and current projects for developing renewable energy sources, energy demand in the South and East will be enough to cancel out efforts made in Europe to fight climate change. Although the effects of climate change are set to be more severe in the Mediterranean than in the world as a whole, countries in North Africa, the Middle East and the Adriatic will have less means to protect themselves (income effect), even though they have contributed little to global warming (their greenhouse gas emissions, although rising, are well below European averages). These negative effects will add to the already difficult agroclimatic conditions in South and East Mediterranean (pressure on water resources of over 100% according to Plan Bleu, use of farming land of over 80% by 2030 according to the FAO, urbanization will have rise by 60% according to the United Nations

at this horizon). In this context, a more sustainable development calls for the transfer of mainly European technologies and skills to promote eco-activities and the rationalized use of natural resources. Ecotechnologies are today's market opportunities and they could find a foothold in the Mediterranean, particularly in countries that need to create new installations rather than upgrade old ones. Their cost, often still higher than that of less sober technologies, will need public incentives, possibly involving a regional "sharing" of funding with the aim of establishing a kind of environmental equity.

In addition to the predicted worsening of agroclimatic conditions in the Mediterranean, the 2008 food crisis put the focus on agriculture and rural life issues. The Arabic revolts, and in particular the Tunisian revolution, came to remind the territorial disparities of development which affect essentially the rural areas. In this context, States have to rethink agricultural policies and food security, to try to regulate trade and secure supplies. The halt of rural densification South and East of the Mediterranean in 2015 and the reform of the European CAP by 2013 should constitute ideal opportunities for reorganizing farming within a Euro-Mediterranean framework. This would include ensuring food safety for inhabitants, strengthening agricultural systems that produce local jobs and revenues, and organizing intensive farming to respect the environment. Quality management could prevail over quantity management, with labelling for Mediterranean products, highlighting the "services" they provide in terms of health, nutritional and environmental quality, proximity and culture. This kind of development would lead to more added value for Mediterranean production and accelerate North/South investment in agriculture, the professionalization of different types of production and improve farmers' qualifications. This more "Mediterranean" orientation for agricultural policy could be compensated by a contribution from cereal production to set up a form of market price stability and a supply guarantee by constituting security stocks and setting up a North-South agreement.

The last challenge is that "Mediterranean" migration is set to continue in the short and medium term but they will ease in the longer term (at the end of our foresight in 2030). In the next twenty years, factors encouraging migration from SEMC and the Balkans will remain (e.g. demographic and income differences between the two shores, economic emergence which encourages the migration of middle classes who risk losing status, political crises) but certain facts due to a premature demo-

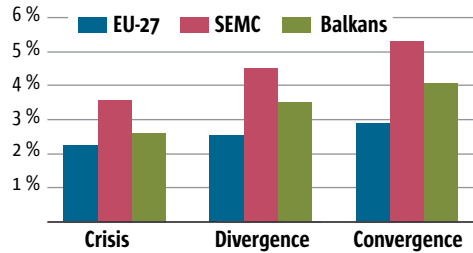
graphic transition (Tunisia, Turkey) or an already finished one (Croatia, Serbia) will go to the sense of a “migratory transition” and a weakening of emigration on behalf of mobility. In the North of the Mediterranean, the attractive factors of migration will also persist (demographic slowdown, labour shortage in Europe, income growth and the desire to attract highly qualified workers) and they will become more marked in the South, that will become ground of immigration because of the increase of its standard of living and a slowing down of growth of its working population. At the same time, the nature of migratory flows will have evolved: Mediterranean migrants will become more educated than in the past, with migration perceived as only part of a process to increase skills and qualifications (experience, acquisition of diplomas), involving return trips. This type of “qualification-based” migration will only be easier if some preconditions are guaranteed regarding the transportability of rights and the recognition of qualifications. On this condition, a policy of Mediterranean mobility could value a migratory potential without degrading the situation of the countries of departure (brain drain). It would anticipate a long-term evolution where the countries of South and East Mediterranean will progressively reduce their contribution of low qualified workers to become receivers of migrants coming from their nearness, as showed by the Libyan exodus in Tunisia.

### 3. Mediterranean future threatened by marginalization or divergence

NEVERTHELESS, THESE complementarities and long-term challenges let remain many uncertainties, on the rhythm of the anticipated evolutions, on the role of the regional integration and on the political voluntarism to face it. To limit these political, economic and social uncertainties, three scenarios have been elaborated, among which the impacts on growth, employment, migrations, energy and agriculture have been analyzed and quantified. The first scenario continues the past trends of ill-assorted insertion of the countries of the region in a world economy pulled by emergent countries, stressed by strategies of competitive deflation (wage restraint and restrictive monetary policies) and by a successful political transition in countries already in a catching-up process with Europe. The second scenario envisages a deepening of the economic crisis of Latin Europe and a transition struck in the Arabic



**GRAPH I**  
**GDP growth rate**  
**in the three scenarios**  
**(2010-2030)**



Mediterranean area, leading to a slowing down of Latin Europe and North Africa and a blocking of institutional answers. The third scenario, a proactive and soundly cooperative one, feigns the partial extension of the mechanisms of European solidarity to the whole Mediterranean basin, authorizing unprecedented dynamics of convergence in the region.

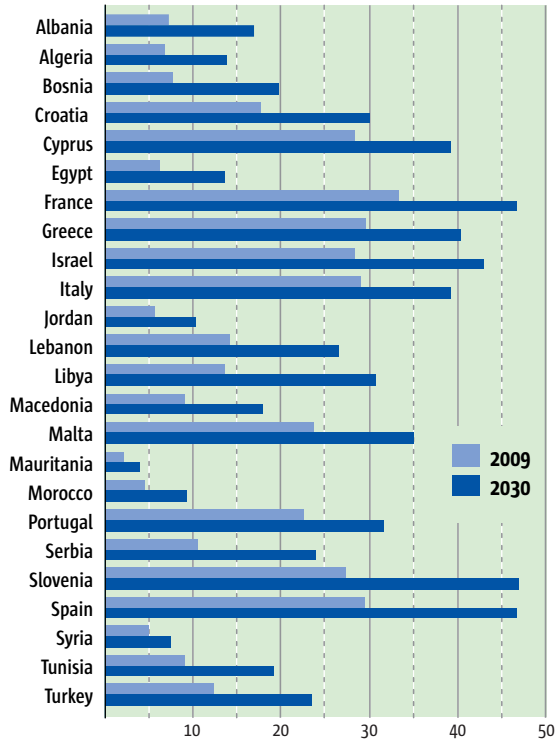
These scenarios try to describe likely and differentiated evolutions, without drawing a scenario of a Mediterranean total unhooking or full convergence. The heterogeneousness of the countries of the region so much in their productive specializations, their demographic context, their political evolution or their institutional anchoring seem to go against a totally coherent dynamic. The variations of growth in the different scenarios have been maintained in a “reasonable” range (GRAPH I).

### **“Mediterranean divergences” scenario: disparate insertion in the world economy**

A CONTINUATION OF PAST TRENDS (European growth rates under 2% per year, close to 3-4% in South and East of the Mediterranean and in the Balkans) would not be conducive to Mediterranean convergence. The upset in the world economy’s dynamics in benefit of Asia could produce an accentuation of divergences, with winners and losers at national and regional level. In this scenario, growth, drawn by emerging countries, will reinforce competition to the detriment of purchasing power and domestic demand. Because of international competition, countries are under pressure to reduce their internal costs in order to restore economic competitiveness through a combination of tight monetary policy and wage restraint. The industrial specializations of the Western Balkans and the South Mediterranean will approach those of Eastern European countries, turning them into a new low-cost platform for the European Community and providing emerging countries with a good position for penetrating the EU market. World economy’s dynamics, more than

**GRAPH II**  
**“Mediterranean**  
**divergences” scenario.**  
**GDP per capita**  
**(2009-2030)**

(thousands of dollars,  
purchasing power capacity)



Source : CAS – Ipemed, 2011.

Mediterranean one, benefit the most competitive economies that have already been catching up: Croatia, Serbia and Turkey, and to a less extend Tunisia and the other Balkans countries, would get closer to the per capita income of Portugal; deepening the gap with other North African countries (Algeria and Egypt) and the Middle East (Lebanon and Jordan) whose growth would be less dynamic (GRAPH II). The Arabic revolt pulled, in this perspective, a positive dynamics only in the first country in revolution, Tunisia; the rentier dimension of the economies and the preservation of the vote-catching having prevailed in the other Mediterranean Arabic countries. In Europe, potential growth of Greece and Portugal is also weakened by the difficulties of their balance of payment and public debt, increasing both intra-Mediterranean and intra-European divergence. The Euro-Mediterranean process makes progress in terms of agricultural and commercial liberalization. The liberalization of services is limited to some service provisions, without going as far as freedom of establishment, lending weight to labour selection based on qualifications. The intra-regional exchanges progress with a slower rhythm than the

**TABLE I “Mediterranean divergences” scenario – employment (2007-2030)**  
(thousands)

**MCs benefit from an improved labour market situation.  
They approach the EU’s 2007 levels.**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate*
47,098	2.15% 2,050	133,036	121,909	12,113	141,327	48.5%	9.1%

**Europe benefits from input of active workers that limits  
the decline on its active population.**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate*
48,250	0.87% 2,100	283,710	267,219	16,490	148,717	65.6%	5.8%

**The Balkans converge rapidly.**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate*
2,536	1.4% 110	11,466	9,360	1,105	9,243	53.1%	10.6%

(\*) It corresponds to the number of people who have worked in the formal sector and can no longer do so. This rate does not take into account disguised unemployment linked to under-employment, nor signing-up conditions for the unemployed. It is probably therefore an under-estimate.

Source : FEMISE, 2011

one of the rest of the world, whereas the sub-regional trade (Arabic or from the Maghreb) rest low, comparable to what it is today.

Labour productivity increase is higher in European countries strongly affected by the financial crisis (Spain, Greece, Italy and Portugal). It stays at the same trend level in the rest of Europe, in the Adriatic countries and those of the South and East of the Mediterranean. Employment and activity rates would increase but remain low due to the race to competitiveness. Productivity gains come from a substitution of labour by capital. Above all, these rates will mostly be unequally distributed between the countries thus enhancing the Mediterranean divergence: unemployment would decrease but remain high in the South and East of the Mediterranean and the Balkans (9% to 10%) (TABLE I). Europe would manage to partially make up for its loss of activity by facilitating migration mostly for qualified workers (EU Blue Card) and by means of a slight extension of working life (pension reform). Labour market duality would remain marked in North and South, emphasizing inequality between a globalized elite integrated in world trade, compared with low-qualified workers subject to increased flexibility in the North and a drop in working conditions and wages in the South. The

weight of the informal sector remains important in particular in the South and East of the Mediterranean region and in the Adriatic countries, even if it slightly declines because of the decline of rural employment, which represents a significant part of the informal employment, and the dynamics of the activities turned to the export. The same trend is observed for the non-agricultural informal employment in SEMC (except Mauritania) which will go from 43.5% of the total employment in 2000, according to the OECD, to 40.5% in 2020, with considerable differences between countries; informality being reduced in a higher measure in countries having known a strong growth of their informal employment after the liberal reforms in the 1990s (Egypt, Algeria) and continuing to grow in those where it progressed in the years before the crisis (Turkey, Morocco).

Migratory pressure is fed by the “losers” of the modernization-globalization process, and in particular young graduates. Qualified migration is facilitated while non-qualified migration remains very restrictive and temporary, under the cover of circular migration. Migration is also geographically selective: a migratory flow is essentially established between the EU and catching up countries, which attract themselves more and more migrants from the nearby countries (sub-Saharan Africa, the CIS, Asia). Migrants’ remittances continue to play an essential stabilizing role in non-European Mediterranean economies. Community migratory policies strongly remain national preventing the circulation of migrant workers and the acquisition of “transferable” skills: qualifying migration remains the exception.

In this context, the Mediterranean Sea’s position as a world-economy transit site would be accentuated, benefiting from new opportunities for developing trade yet with deeper impacts in terms of pollution, loss of biodiversity and paving the coastline. This scenario would further emphasize the duality of economies and territories (marginalization of inland areas, coastline development) and lead to the development of export outlets for industry and agriculture to the detriment of production for domestic markets. The increase of the energy and food demand and the urbanization raise the environmental pressures in the South and East of the Mediterranean. The pressure on water resources becomes unbearable and the contribution to the climate change worrisome. The stabilization of CO<sub>2</sub> emissions in Europe is, indeed, more than balanced by increased demand in the South led by the augmentation of the population, its standard of living and the sector-based composition of the growth. If, in 2030,

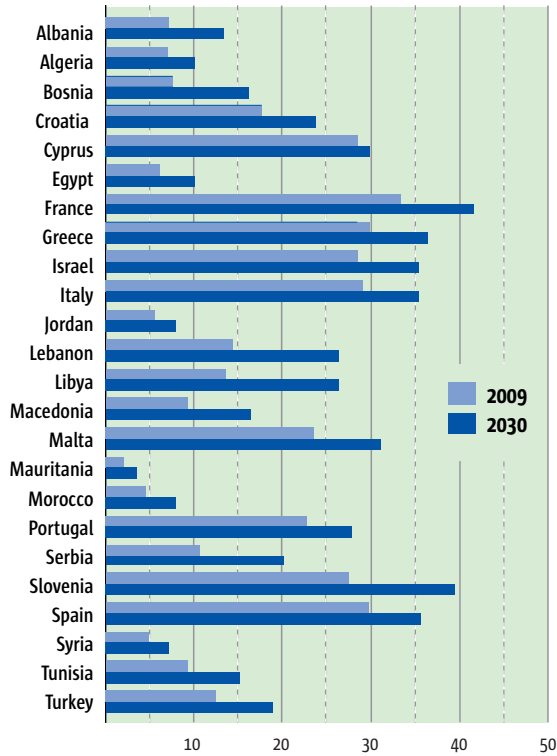
the difference of energy consumption per capita between both shores remains (30% lower in the South), the dependence on fossil fuels of the SEMC will imply a very strong growth of their CO<sub>2</sub> emissions (of about 100%), even reported to the amount of inhabitants. This is mainly due to a lower progress of renewable energies and energy efficiency in these countries than in Europe.

For agriculture, productivity gains and pressure on arable lands mark the disappearance of production of food crops. Rural zones only attract few activities for the benefit of littoral zones, thus accentuating rural exodus in the South and agricultural concentration in the North. The part of agriculture in GDP strongly decreases, except in Turkey, on behalf of big exploitations intended for the export. The Euro-Mediterranean agricultural decline would be accompanied by a strong penetration of suppliers from the rest of the world (meat and cereal crops). While strictly “Mediterranean” production (fruit and vegetables, olive oil and wine) that had not received labelling would be under stiff competition from products from afar (Chile, Australia, Brazil and China).

### **Scenario of “crisis in the Mediterranean region”: marginalization and convergence through the bottom**

THE 2008 CRISIS COULD CONTRIBUTE to making the picture even more negative. South European countries are the most weakened by the crisis. They are caught up in an unfavourable debt spiral which increases the default risk – and thus the interest rate on government debt – and hampers the potential of growth. Their demand’s growth and recovering could be hold back by consolidating public finances (decrease in public transfers and raising taxes) which would lead to a trend and level of income that is lower than in the past. From then on, the crisis of Latin Europe goes together with a retreat of its exchanges and investments in the neighbouring countries (Balkans and South Mediterranean). North Africa, strongly disadvantaged by this retreat (because of a strong commercial dependence with Mediterranean Europe), suffers from a long-lasting instability bound to an incomplete political transition. The Machrek, Turkey and the Balkans succeed in limiting the effects of the crisis thanks to the transfers of capital coming from Northern Europe and the emerging countries looking for low-cost investments in a high-yield zone. A kind of Mediterranean convergence through the bottom would work in this way, where all the countries catching up with Europe would get close to European Mediterranean income levels (GDP per capita for

**GRAPH III**  
**“Crisis in the Mediterranean region” scenario.**  
**GDP per capita (2009-2030)**  
 (thousands of dollars, purchasing power capacity)



Source : CAS – Ipemed, 2011.

Turkey and Serbia reaching 80% of the one of Portugal), but with a marked European divergence (GRAPH III). The hysteria effects of the crisis are focused on South Europe, which experiences a durable slowdown of its growth and a sustained weakness of its productivity gains, whereas the rest of Europe would remain anchored to the growth of emerging markets. In this scenario, Germany would overtake France in per capita income. Slovenia would reach a higher per capita income than Spain.

This context of crisis is unfavourable to the Euro-Mediterranean institutional integration and threatens the European cohesion. The Euro-med process would remain limited (no further liberalisations) and planned enlargement postponed indefinitely. The UFM would lack of projects and the liberalization of services would be hindered by fears of social dumping. The sub-regional trade suffers from the instability of the Arabic Mediterranean Sea and its part in the exchanges, nevertheless weak, still diminishes.

**TABLE II “Crisis in the Mediterranean region” scenario – employment (2007-2030)**  
(thousands)**SEMCs struggle to maintain a labour market balance nevertheless socially unsatisfactory**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate*
28,600	1.42% 1,240	117,322	103,411	13,804	157,040	42.8%	11.8%

**EU27 struggles to retain its potential and becomes more “continental based”**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate*
34,292	0.63% 1,490	270,480	253,261	17,219	161,948	62.5%	6.4%

**Stabilisation of the Balkans**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate*
1,957	1.10% 80	9,947	8,781	1,166	9,762	50.5%	11.7%

(\*) It corresponds to the number of people who have worked in the formal sector and can no longer do so. This rate does not take into account disguised unemployment linked to under-employment, nor signing-up conditions for the unemployed. It is probably therefore an under-estimate.

Source : FEMISE, 2011.

Southern European countries are the victims of a hysteresis effect stemming from the economic crisis, which has deskilled labour with a definitive loss of human capital, translated by stagnating or falling employment rates, which remain relatively stable in Northern and Eastern Europe. Latin European economies are creating fewer jobs than the Northern ones, with weaker activity rates (average of 53.5% compared to 62.5%), and higher unemployment (7.7% compared to 6.4%) (TABLE II). The Maghreb countries are feeling the effects of the European Mediterranean crisis and are ensuing instability more than countries in the Machrek and the Adriatic. Their employment rates are rising more slowly than the general trend. In the South, activity rates are therefore generally under 50%, with an average drop of several points. Official unemployment rates have stabilized at around 12%, but most jobs remain informal. Non-agricultural informal employment stays at the 2000 level. Morocco reaches a rate close to the one of Latin America (more than 65%) and Algeria and Egypt stay at a level around 40%. With an average annual job creation rate of 1.2 million, social indicators are stagnating at best. Existing divides are deepening and social tensions are set to persist due to this dynamics poor in employment creation.

In this context, migration pressure remains high and is fed by the conflicts and political instability that accompany difficult transition periods. On the other hand, the crisis in the European Mediterranean has the effect of maintaining tight restrictions on migration (in terms of circulation and recognition of qualifications). European countries' migration balance continues its trend (United Nations medium scenario): the drop in the active population is mitigated by the retirement age reform and low growth makes these countries less attractive to migrants.

Although demand from emerging countries continues to raise energy prices and food goods, this imported inflation does not indicate an activity overload, but eats further into household incomes in a depressed economic context (i.e. stagflation). Sluggish growth is insufficient to limit the negative environmental impacts of energy consumption because of the low progress in energy efficiency (in the Arabic Mediterranean and the Balkans), the lack of renewable energy development and the continued use of fossil energy. Although CO<sub>2</sub> emissions drop by 10% in 20 years due to the crisis in Europe, they rise sharply in countries South and East of the Mediterranean.

Regarding agriculture, the dichotomy of intensive farming for export alongside under-equipped subsistence crop farming continues in the absence of productivity gains. Water conflict intensifies. Food dependency and rural poverty go hand in hand and accentuate social imbalances, fuelling a vicious circle of instability.

### **Another future is possible: scenario of the “Mediterranean convergence” or the top-down convergence scenario**

A DIFFERENT FUTURE COULD exist for the Mediterranean, involving neither divergence nor marginalization, hinged on proactive political action shared by all inhabitants in a multipolar context of international regulations. A stronger and richer economic growth in terms of employment involves promoting the integration of production systems by developing Mediterranean synergies and extending certain means of redistribution and social protection to the whole of the Mediterranean. In a regionally integrated system (establishment of the four EU freedoms, access to the European domestic market and standardized norms allowing the emergence of a regional preference system) internal levers for growth could result in increased regional productivity and employment in all countries, if accompanied by a geographical redistribution of the production and a sharing of the added value allowed by the opening of



certain enhanced cooperation to South and East Mediterranean countries. Such a scenario presumes that the political transition in the Arab Mediterranean has not only liberated a positive dynamics in the South, but has led to closer convergence with Europe, and a rapprochement based not just on economic interest but on a political and value-based community.

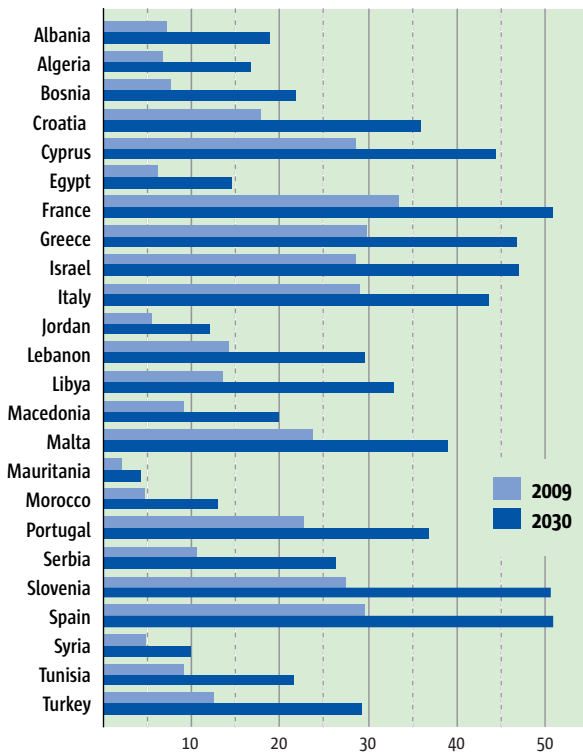
Due to this soundly cooperative scenario, all the Mediterranean region benefits from a total factors productivity increase and supports its competitiveness with lower social costs than in the “Mediterranean divergences” scenario. A regional convergence dynamics emerges then. Diffusion of technology through imitation and knowledge as well as capital transfers leads to a productivity catch up. In promoting a more equitable and redistributive growth, domestic demand increases in non-European countries bordering the Mediterranean which provides growing market opportunities. South Europe benefits from this development and, to a less extent, the other European countries. This dynamics strongly increase the sub-regional trade, offering henceforth opportunities of emerging and deep markets. The countries of the Adriatic, taken by Croatia and Serbia, pull Bosnia, Macedonia and Albania. The intra-regional trade in the Middle East and in the Maghreb develops all the more strongly as exchanges crossed with the Gulf are to be added to the more deepened relations established with the Mediterranean and European neighbours. In this context, Turkey becomes an indispensable interface and a moving plate of the Euro-Mediterranean trade.

All countries in the region (apart from Mauritania) would then attain per capita incomes of over USD 10,000 by 2030. Slovenia may equal Spain in per capita income and Croatia gets close to Portugal. Egypt and Morocco triple their per capita income and get in the convergence path. Turkey’s and Serbia’s per capita income reaches over USD 25,000 by 2030 (GRAPH IV).

Activity rates in Southern and Eastern Mediterranean countries and in Adriatic States get close to those of Europe, where the migrant’s number is able to compensate for domestic labour shortages and to supply consumer markets. In the South, the informal market strongly reduces its size (more than 10 points in average, the part of the informal employment on the total employment of Turkey and Tunisia getting closer to the level of Eastern Europe transition countries, i.e., 22%), unemployment rates go under 9% and more than 2.6 million jobs are created every year, enhancing social stability (TABLE III). In Europe, labour mar-

**GRAPH IV**  
**“Mediterranean convergence” scenario.**  
**GDP per capita (2009-2030)**

(thousands of dollars, purchasing power capacity)



Source : CAS – Ipemed, 2011.

kets are close to full employment and recruitment tensions are lightened by an easier migration. Immigration also supports a strong domestic consumption and contributions paid by active immigrant workers help limit the enlargement of the duration of activity (moderate deferment of retirement ages).

Employment opportunities offered by Southern and Eastern Mediterranean countries and the Balkans become sufficient to limit brain drain. For migrants, the question of returning to their country becomes relevant, thus the migration become more circular and qualifying. The SEMC and Adriatic countries’ take benefits of these comes-backs, as the Korean example did in the 60’s, which involve a cumulative economical dynamics. Croatia, Serbia, Turkey, Tunisia and Algeria end their “migratory transition” in 2030: they become migrant “net receivers” countries and stop being sending countries (GRAPH V). The migration balance of Latin Europe increases due to migrants coming from other countries outside the Mediterranean region.

**TABLE III “Mediterranean convergence” scenario – employment (2007-2030)**  
(thousands)

**SEMCs**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate*
59,846	2.6% 2,600	145,886	134,657	11,229	128,477	53.2%	7.7%

**EU27**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate*
67,088	1.2% 2,920	303,019	286,057	16,961	129,409	70.1%	5.6%

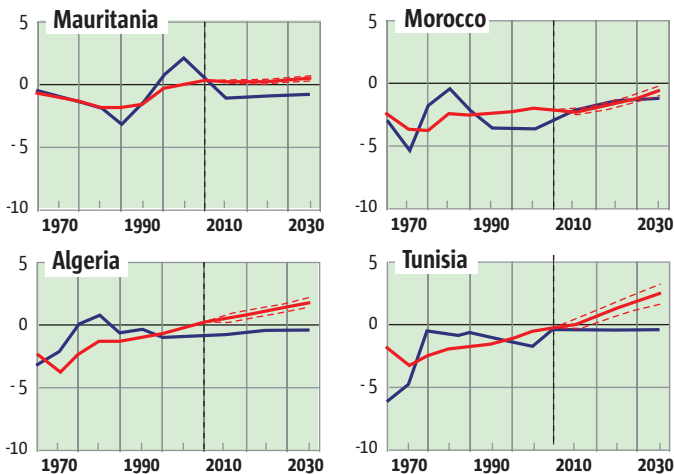
**Balkans**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate*
2,895	1.5% 130	10,601	9,719	882	9,107	53.8%	8.3%

(\*) It corresponds to the number of people who have worked in the formal sector and can no longer do so. This rate does not take into account disguised unemployment linked to under-employment, nor signing-up conditions for the unemployed. It is probably therefore an under-estimate.

Source : FEMISE, 2011.

**GRAPH V Prediction of the net migration rates (in ordinates) in the Maghreb (1965-2030)**

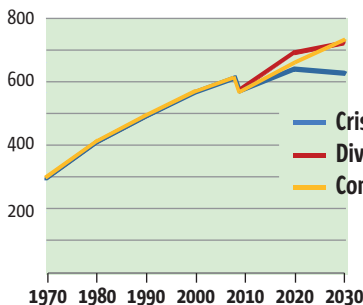


Source:  
Giambattista  
Salinari –  
CARIM, 2010

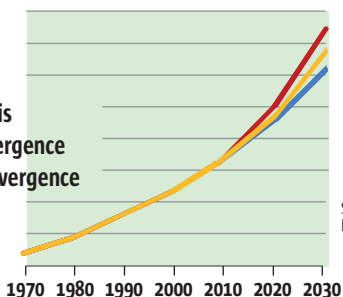
The blue line refers to the original UN's time series of net migration rates. The red line describes the theoretical predicted values of net migration rates according to model 2. The vertical dotted line in the graphics indicates the boundary between the UN's estimated net migration rates and the projected ones.

## Evolution of the demand of primary energy in 2030

**GRAPH VI** In NMCs (Mtep)



**GRAPH VII** In SEMCs (Mtep)



Source : OME-Ipemed, 2011.

For energy, the convergence scenario facilitates better progress in energy efficiency and significant development of renewable energy sources thanks to regional cooperation and technology transfers. 16% of energy demand is met by renewable energy sources in 2030 (24% in Latin Europe, including the Balkans, but only 8% in the SEMC), compared with 12% in the crisis scenario and 10% in the divergence scenario. Energy-saving measures have been put in place, not just in European Union countries, but also in the South: prevention campaigns, creation of an “energy saving” label, energy-efficient buildings, etc. The convergence scenario represents 14% of supplementary wealth for the region cumulated with 5% less energy in comparison with the divergence scenario, which is far from negligible. The same goes for CO<sub>2</sub> emissions. Although the crisis and divergence scenarios are very similar in terms of carbon intensity, the convergence scenario makes it possible to reduce this intensity by 20% with, let us not forget, an increased level of wealth. Another positive effect is that energy dependence is reduced in this scenario and energy inflation is partially curbed. Despite efforts made, the impact of growth on climate change nevertheless remains worrying: from 2020, CO<sub>2</sub> emissions from SEMC overtake those of Northern Mediterranean countries (NMC) even though energy consumption per inhabitant remains lower (**GRAPHS VI & VII**).

In a context of accelerated industrialization and development in SEMC and the Balkans, agriculture’s share of GDP drops sharply. Rural exodus is contained, however, because of the development of non-farming rural activities (e.g. tourism, real estate) and a food-processing chain that stimulates jobs in industry and services (e.g. transport, distribution, qua-

lity). Access to investment, creation of storage capacity, alert mechanisms and the availability of seed also help to modernize crops subsistence farming and limit the negative impacts of fluctuating prices. In addition, the labelling of Mediterranean products guarantees agricultural competitiveness based on quality.

**An alternative to the convergence scenario pulled, in the first place, by a dynamics of integration in the South**

THE CONVERGENCE SCENARIO with the catching-up of the income levels of Southern and Eastern Mediterranean countries and, to a lesser extent, of Adriatic countries, could be driven by an endogenous growth of North Africa and the Middle East and not by a more marked European will. The wind of reform which blows in the South and a largest participation of people in the productive process would release a national economic dynamics and would also authorize a regional integration multiplying the effects of anticipation, creation of business and economies of scale as so many positive externalities of the regional integration. A commercial liberalization on the scale of the Great Arab Free Trade Agreement – GAFTA (Arab countries including the States of the Gulf Cooperation Council) or amplifying the Agadir agreements (involving Egypt, Jordan, Morocco, Tunisia and the Palestine territories) could be coupled, from then on, with the implementation of common projects in agriculture, energy, tourism or health. Common financing of investments, at least in North Africa and at the best including the Gulf countries, would allow using the oil and gas incomes in purposes of regional development. An institutionalization process set up on a regional or sub-regional basis (Maghreb, Middle East) or in a variable-geometry gathering, at first, a small number of States, would allow the region to define common positions in international negotiations, and in particular in those with Europe. While the Arabic commercial liberalization has already led to an increase of the intra-regional trade of about 30%<sup>(2)</sup>, a deep integration involving a harmonization of standards and regional investments will have an even bigger impact.

This economic dynamics in the South could take two different forms concerning its relation with the European Union. It could have a domino effect on Member States economies and certainly encourage EU political voluntarism towards the region. The EU could, in this respect, participate in projects co-financed at the regional level and accelerate the

(2) See articles from J. Abidi and N. Péridy.

rhythm of negotiations for an access to the internal market and even for accession, in the case of candidate countries. The intensification of certain North-South bilateral relations could go in the same direction renewing doubtlessly the principles of the Euro-Mediterranean negotiations and centring them more on investments. But this economic dynamics of the South could also bring about a relative distance between an integrated southern shore on the one side and, on the other, the European Union.

This scenario, not very plausible at the end of 2010, has won in probability thanks to the Arab revolutions. It has not been analysed by the “Mediterranean 2030” consortium in the present document and could be subject to further analysis.

#### 4. What can be done to encourage Mediterranean convergence?

TO OBTAIN CONVERGING regional performances that are more socially and territorially balanced an integration of the production systems is needed. It is not enough to simply open up trade, since this has a limited impact in a global economy. Liberalizing services could be a more vigorous growth factor as well as an alternative of migration, but trade and work dynamics cannot be reinforced without a standardization of norms, without which liberalization shall remain limited, as shall its potential to create income. In addition, encouraging internal levers for growth must involve rehabilitating social welfare systems, which are guarantees of sustained consumption and public support to allow people and goods to stand up to intensified global competition. Seen this way, setting up a Mediterranean “ecosystem” is the condition for its autonomy and growth. From then on, a number of recommendations centring on the major challenges and Mediterranean convergence factors are proposed:

1. Invest in human capital by encouraging mobility (authorise temporary migration for services under contract and projects co-funded by the UFM) and qualifications (create a common base, a Euro-Mediterranean network of vocational training courses and establish recognition-accreditation of skills and diplomas; ErasmusMed, etc.).
2. Accelerate the transfer of knowledge, skills and technology by (i) encouraging the emergence of Euro-Mediterranean competitiveness

and research clusters in sectors with high growth or rich in employment (information and communication technologies for services, farming and energy efficiency techniques, etc.); (ii) narrowing down location choices to the region: setting up a system of regional preferences, going beyond free trade, and based on social, health and environmental quality criteria would contribute to accelerating the transfer of capital and know-how.

3. Create a common institutional area accompanied by financial transfers, an advanced status including funds inspired by the philosophy of accession funds to the domestic market (with the progressive establishment of the four freedoms of movement for goods, capital, services and people) and pursue discussions on accession for EU candidate countries.
4. Engage a Mediterranean certification process, initially covering services and agriculture, with a Mediterranean label guaranteeing health quality (establishment of a health agency) and environmental quality for farming and skills level and service quality for the provision of services.
5. Select UFM projects (co-funding) based on job creation potential and/or energy restraint.
6. Create a Mediterranean environment fund aimed at strengthening the capacity to adapt to climate change in South and East Mediterranean countries and the Balkans. It will also finance renewable energy transport's infrastructure and public transport as an alternative to roads, clean development projects that reduce greenhouse gas emissions, and projects for rationalizing water demand and energy efficiency, particularly in the building sector.
7. Set up a Mediterranean investment bank, based on the same principles as the EIB, and designed to encourage funding for SMES, which are key to the creation of wealth and jobs.
8. Enlarge transport networks in the South Mediterranean to facilitate South-South commercial exchanges, with a particular focus on multi-modal transport to better optimize logistical costs.
9. Draw up a common food security policy (mutualized insurance for agricultural risk; constitution of security stocks and emergency intervention systems) and a rural development policy (tangible and intangible infrastructures for industries; managerial and technological training courses).

# GROWTH SCENARIOS FOR THE MEDITERRANEAN IN 2030

Cécile Jolly\*

## I. Methodology and growth scenario

### **A growth accounting based on labour force and productivity**

A SIMPLE GROWTH accounting links production to the available resources in the economy and to the state of technology ( $Y_t = f(P_t, L_t, K_t)$ ). The income level of a country at a moment “t” relies on productivity (P), on the potential employment (L) – which is based on the total potential working population and on the equilibrium rate of unemployment, and depends on the capital stock (K). The capital stock can be considered as endogenous to macroeconomic developments (it evolves in line with economic activity), while the average annual return on capital is constant over a long period, unlike the labour force. Labour productivity is a proxy for the speed of capital accumulation and for total factors productivity. The employment potential depends on the evolution of the age structure of the population, on competitiveness and on the functioning of the labour market; it is viewed here through the employment rate (proportion of the employed population in the total population or in the population of working age). Forecasts are focused on the labour force and on productivity, the combined progress of which induces the growth rate. This growth rate is applied to the per capita income of each country evaluated in purchasing power parity according to IMF databases (September 2010). Forecasts thus carried out consequently make it possible to answer the central question of incomes convergence in the Euro-Mediterranean region and the employment/unemployment problems.

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Population projections are based on the median scenario of the United Nations (2008 revision) and are constant in each scenario. The labour force results from the employment rates evolution (employed population in the total population), which is casted by country on the basis of past trends<sup>(1)</sup> and follow, up to 2015, the forecasts of the IMF. The increase of the employment rate also takes into account, for European countries, a threshold effect that relates to population ageing, which restricts opportunities for working population increase.

The projections hinge upon a productivity growth rate which relies on the accumulation of human capital and the speed of diffusion of technical progress. The evolution of labour productivity (GDP per person employed) is forecasted in proportion with past trends<sup>(2)</sup> for each country and, up to 2015, follows the forecasts of the IMF. For countries having experienced a strong growth of their productivity rates since 1995, it takes into account a threshold effect due to the slight slowdown of catching-up path (especially the new EU Member States) (TABLE 1). This measure of the productivity remains very imperfect as far as it does not take into account, for Southern and Eastern Mediterranean countries, the informal employment which counts between 30% (Turkey) and more than 65% (Morocco) of the non-agricultural employment with differences in productivity which can reach 30 to 40%. Nevertheless, formal and informal employment are complementary either that companies have a part of formal and another of informal employment or that informal structures are the subcontractors of formal structures. Therefore, productivity trends measured on formal employment affect the whole economy.

### Three scenarios from variance with the business-as-usual scenario

STARTING FROM A BUSINESS-AS-USUAL scenario which extends to 2030 the past trends and the 2015 IMF's forecasts, three scenarios have been carried out from variance with the initial projections: a scenario of "Mediterranean divergences", a scenario of "crisis in the Mediterranean region" and a "Mediterranean convergence" scenario.

In the reference scenario, EU15 productivity remains low (less than or equal to 1.5%) following past trends (productivity gains at around 1% on average between 1995 and 2009). The productivity of catching up countries (new EU Member States, Western Balkan) and Mediterranean

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(1) (2) Resulting from The Conference Board Total Economy Database: Output, Labour and Labour Productivity Country Details, 1950-2009, January 2010.

**TABLE 1 Growth rate of labour productivity\* in Euromed countries (1980-2030) (%)**

	1980-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2019	2020-2029
<b>Albania</b>	-1.51	-5.75	7.48	8.84	5.42	2.64	3.04
<b>Algeria</b>	-1.55	-5.32	-1.12	0.61	-0.10	1.52	1.53
<b>Bosnia</b>	–	–	–	5.40	0.69	2.65	3.24
<b>Croatia</b>	–	–	3.20	3.36	1.68	1.48	1.70
<b>Cyprus</b>	5.03	2.88	3.58	0.76	0.86	1.86	2.01
<b>Egypte</b>	2.75	-0.15	3.23	1.16	3.86	3.11	3.06
<b>Spain</b>	1.88	1.60	0.68	0.09	0.91	1.01	1.01
<b>France</b>	2.13	1.40	1.40	0.99	0.37	1.02	1.21
<b>Greece</b>	-0.35	0.10	2.32	3.29	1.58	0.47	1.50
<b>Israel</b>	1.47	1.11	2.06	0.37	0.38	1.36	1.32
<b>Italy</b>	1.84	1.45	1.18	0.03	0.95	0.45	1.00
<b>Jordan</b>	-2.81	-5.30	-0.54	2.79	2.30	2.04	2.04
<b>Macedonia</b>	–	–	1.18	2.70	-0.20	1.70	2.03
<b>Malta</b>	–	–	–	–	0.74	1.05	1.51
<b>Morocco</b>	0.86	0.41	-0.99	3.09	2.97	3.17	3.04
<b>Portugal</b>	2.16	2.18	2.24	0.67	0.78	0.92	1.50
<b>Serbia</b>	–	–	–	6.04	3.97	3.70	3.53
<b>Slovenia</b>	–	–	4.14	3.02	1.45	1.82	1.91
<b>Syria</b>	1.94	4.06	1.69	0.26	0.41	2.34	2.04
<b>Tunisia</b>	0.78	1.50	2.54	2.39	2.61	3.02	2.52
<b>Turkey</b>	3.61	1.77	2.29	4.47	1.79	2.84	3.04

\* This rate is calculated as the ratio between the percentage of GDP variation with regard to the percentage of employment variation over the same period.

Source: The Conference Board Total Economy Database (2010), *Output, Labor and Labor Productivity Country Details, 1950-2009*, January 2010<sup>(3)</sup>.

countries increases more rapidly (productivity gains of 2-3%) due to the modernization of production capacities and to human capital adaptation. A process of substitution of labour by capital takes place in catching up economies and it is unfavourable to employment. The low productivity trend in “historic” European countries weakens long-term growth and employment. Employment rates increase therefore slightly in all countries.

In the “Mediterranean divergences” scenario, because of international competition, countries are under pressure to reduce their costs in order to restore economic competitiveness through a combination of tight monetary policy and wage restraint. Productivity increase is higher

(3) The Total Economy Database was developed by the Groningen Growth and Development Centre (University of Groningen, The Netherlands).

in European countries which are more affected by the financial crisis (Greece, Spain, Portugal and Italy). It stays at the same trend level in the rest of Europe, in the Adriatic States and in the Southern and Eastern Mediterranean countries. Employment rates increase in the South because of economic development and in Europe because of extending working lives (pension reform). But they remain low due to the race to competitiveness and to the productivity gains which lead to a substitution of labour by capital. Unemployment rates persist at a high level in the non-European countries bordering the Mediterranean. For South Europe, the decline of the labour force (Italy, Spain) or its slow increase (France) is not enough to contain the unemployment rates, which remain higher than in the rest of Europe.

In the scenario of “crisis in the Mediterranean region”, the crisis impact is long lasting in South Europe. For all Mediterranean countries, productivity gains and employment rates are lower than in the reference scenario. By contrast, they are relatively stable in Northern and Eastern Europe. South European countries face a hysteresis effect of the crisis, the unemployed becoming “de-skilled”, which leads to a permanent loss of human capital and to a stagnation, or even a decrease, of employment rates. North Africa is more affected by the European crisis and by a long lasting instability than Adriatic and Maghreb countries. Their employment rates increase more slightly than in the reference trend.

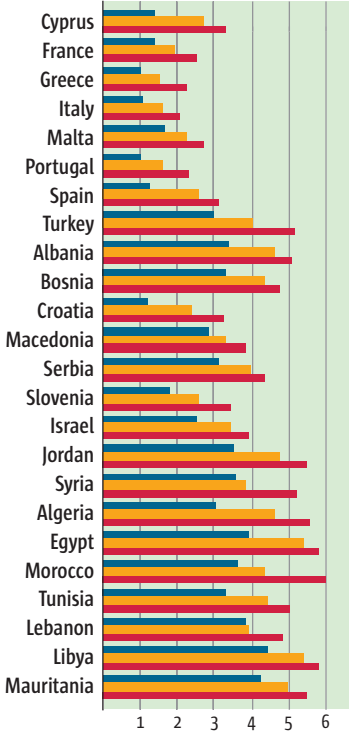
In the “Mediterranean convergence” scenario, labour productivity and employment rates increase in parallel. The productivity catch up is higher in the Mediterranean countries having a low income per inhabitant. This unprecedented growth of productivity is associated with economic development that brings about an increase in employment, because growth relies even more on internal demand.

On the whole, in the “Mediterranean divergences” scenario, the income in the Mediterranean countries increases more strongly than the one of Eastern and Northern European countries (**GRAPHS 1 to 4**) while Arab Mediterranean countries, Adriatic States and Turkey become a low-cost platform for Latin Europe; this last one benefiting from its geographical proximity and from the density of the commercial and human exchanges with these countries. The most distant countries from the Mediterranean shores in East Europe suffer from this competition. Conversely, the “crisis in the Mediterranean region” scenario places all Mediterranean countries at a disadvantage. In the “Mediterranean convergence” scenario, the income of non-European countries borde-

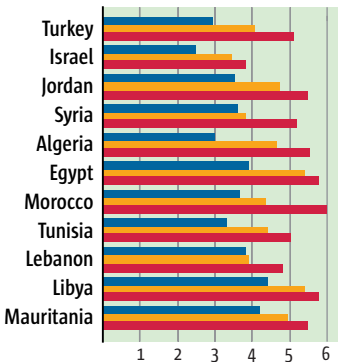
## GDP Growth for the three scenarios (%) Source : CAS – Ipemed, 2011.

■ Crisis in the Mediterranean region ■ Divergence ■ Convergence

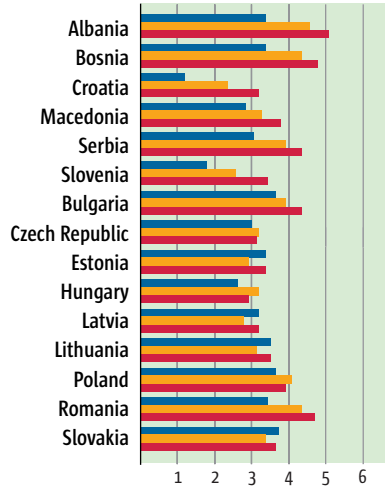
**GRAPH 1** In the Mediterranean region



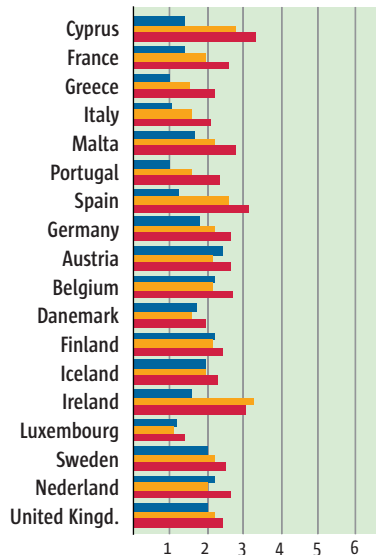
**GRAPH 2** In South and East Mediterranean countries



**GRAPH 3** In Balkan States and Eastern Europe



**GRAPH 4** In EU15



ring the Mediterranean rises sharply, South Europe having the possibility to take advantage of this shifting of the European centre of gravity to its South. But this economic dynamics of the South could also bring about a relative distance between a structurally more integrated southern shore on the one side and, on the other, the European Union.

## 2. Three pictures of a possible future

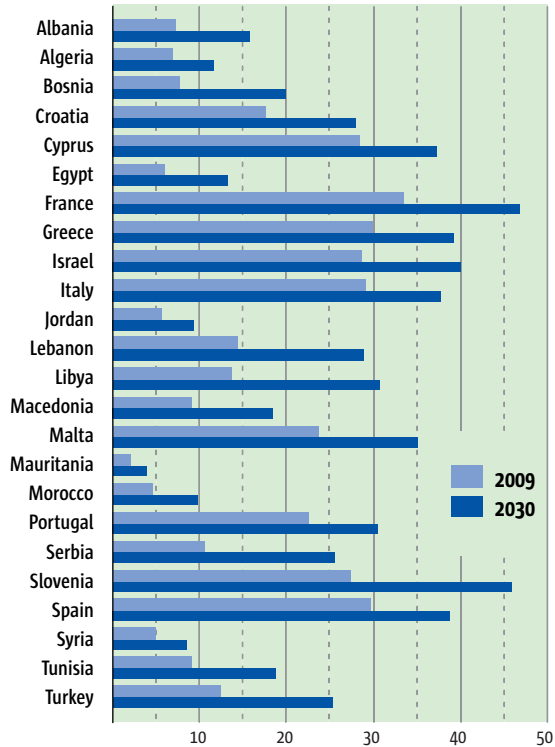
### **The continuation of past trends**

THE CONTINUATION OF PAST TRENDS (European growth rates under 2% per year, close to 3-4% in South and East of the Mediterranean and in the Balkans) would not be conducive to Mediterranean convergence. In 2030, income gaps between countries remain without catching-up effect. The convergence of income is limited to the new EU Member States which reach levels comparable to those of the EU15. GDP per capita of Turkey and Serbia remain lower of half than that of France and amount to the two thirds of that of Portugal (GRAPH 5). Specialization in South and East Mediterranean countries would remain confined to low-quality, low-tech products. A slow-down in rural areas would not be compensated by the creation of new activities. The continuation of past trends would also increase environmental pressure (with CO<sub>2</sub> emissions in South and East Mediterranean countries equalling Latin Europe's stabilized levels by 2030). And it would not resolve the employment issue in the North, where restrictions on migration flows combined with a drop in the number of people in work would limit growth potential; nor in the South, where weak work dynamics would mean that over half of the population is inactive. Unemployment rates are close to 10%, with the informal market playing an adjustment variable role. The Balkan countries would be confronted with the same difficulties (inactivity rates slightly above 50% and unemployment rates slightly below 10%), with the simultaneous appearance of insufficient local and sectorial workers. In this context, migratory pressure remains high, essentially fed by differences in income, while migration policy restrictions are increasingly strict in the North and the South, affecting both low qualified and qualified workers.

**GRAPH 5**  
**Reference scenario,**  
**continuation of past**  
**trends and IMF**  
**forecast for 2015.**  
**Per capita GDP**  
**(2009-2030)**

(thousands of dollars,  
 purchasing power parity)

Source : CAS – Ipemed, 2011.

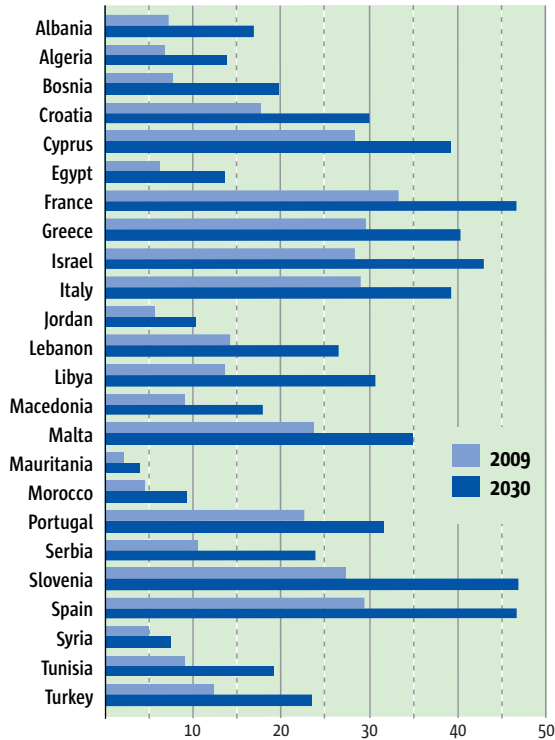


### The “Mediterranean divergences” scenario: a disparate insertion in the world economy

IT IS DIVERGENCE THAT THREATENS the Mediterranean. The upset in the world economy’s dynamics could take things this way, with winners and losers at national and regional level. Growth, drawn by emerging countries, could reinforce competition to the detriment of purchasing power and domestic demand. The industrial specializations of the Western Balkans and the South Mediterranean could approach those of Eastern European countries, turning them into a new low-cost platform for the European Community and providing emerging countries with a good position for penetrating the EU market. World growth’s dynamics, more than Mediterranean one, would benefit the most competitive economies that have already been catching up: Croatia, Serbia and Turkey, – Tunisia and other Balkan States to a less extent – would get close to Portugal in per capita income, deepening the gap with other North African (Algeria and Egypt) and Middle East (Lebanon and Jordan) countries, whose

**GRAPH 6**  
**“Mediterranean**  
**divergences” scenario.**  
**GDP per capita**  
**(2009-2030)**

(thousands of dollars,  
purchasing power parity)



Source : CAS – Ipemed, 2011.

growth would be less dynamic (**GRAPH 6**). In Europe, potential growth of Greece and Portugal would also be weakened by the difficulties in their balance of payment and public debt, increasing both intra-Mediterranean and intra-European divergence. The Euro-Mediterranean process would make progress in terms of commercial and agricultural liberalization, but this would not be compensated by transfers, thus accentuating rural exodus in the South and agricultural concentration in the North. The liberalization of services would be limited to some service provisions, without going as far as freedom of establishment, lending weight to labour selection based on qualifications.

In this context, in addition to environmental pressures linked to economic growth and income, the Mediterranean Sea’s position as a world-economy transit site would be accentuated, yet with deeper impacts in terms of pollution, loss of biodiversity and paving the coastline. This scenario would further emphasize the duality of economies and territories (marginalization of inland areas, coastline development) and lead

to the development of export outlets for industry and agriculture to the detriment of production for domestic markets. Employment and activity rates would rise in the Mediterranean as a whole, but unequally: unemployment would decrease but remain high in the South and East of the Mediterranean and the Balkans (9% to 10%). Europe would manage to partially make up for its loss of activity by facilitating migration mostly for qualified workers (EU Blue Card) and through a slight extension of the working life. Labour market duality would remain marked in the North and the South, emphasizing inequality between a globalized elite integrated in world trade, compared with low-qualified workers subject to increased flexibility in the North and a drop in working conditions and wages in the South. For energy, progress in the use of renewable resources would be balanced by increased demand resulting in a rise in greenhouse gas emissions, which would be as pronounced around the world as in the reference scenario, with more marked national differences. The Euro-Mediterranean agricultural decline would be accompanied by a strong penetration of suppliers from the rest of the world (meat and cereal crops). While strictly “Mediterranean” production (fruit and vegetables, olive oil and wine) that had not received labelling would be under stiff competition from products from afar (Chile, Australia, Brazil and China).

**The scenario of “crisis in the Mediterranean region”:  
marginalization and convergence through the bottom**

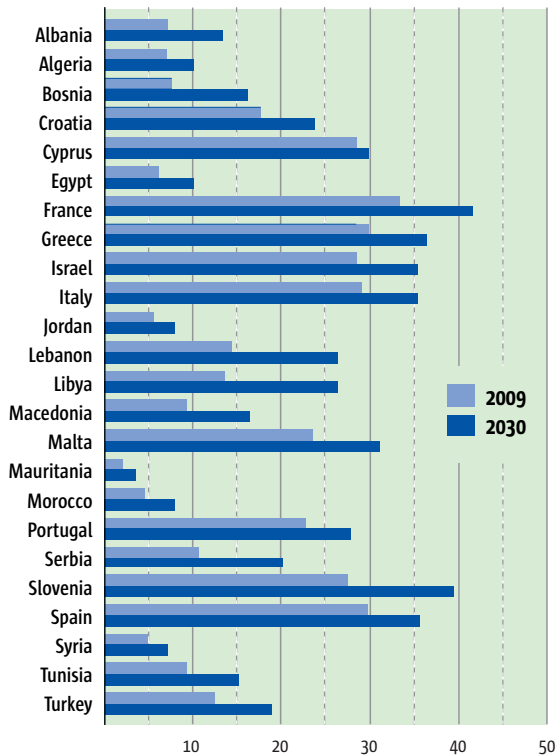
THE 2008 CRISIS COULD CONTRIBUTE to making the picture even more negative. South European countries have been made fragile by the crisis. They are caught up in a debt spiral which increases the default risk - and thus the interest rate on government debt - and hampers the growth potential. Their demand growth and recovering could be hampered by consolidating public finances (decrease in public transfers and raising taxes) which would lead to a trend and level of income that is lower than in the past. The dropout of South Europe may result in a divergence with the rest of Europe which would remain anchored to the growth of emerging markets. Germany would overtake France in per capita income. Slovenia’s per capita income would be higher than the Spanish one (**GRAPH 7**).

South European countries are also the European countries that make the most dynamic Euro-Mediterranean cross-exchanges, since trade remains strongly influenced by proximity, as do migratory move-



**GRAPH 7**  
**“Crisis in the**  
**Mediterranean region”**  
**GDP per capita**  
**(2009-2030)**

(thousands of dollars,  
 purchasing power parity)



Source : CAS – Ipemed, 2011.

ments. A long lasting slow-down in these economies, impeded by the Euro zone’s fixed exchange rates and lack of solidarity, would lead them to a withdrawal from investments and trade with countries neighbouring the Balkans and the South Mediterranean. Euro-Mediterranean institutional integration would remain limited and planned enlargement postponed indefinitely. The UFM would have a lack of projects and the liberalization of services could be hindered by fears of social dumping. Agricultural markets would continue to be ruled by quotas. The economic weakening of South European countries goes together with a decreasing political power which is unfavourable to a strong European linkage to South and East Mediterranean shores. This sluggish growth in Latin Europe could lead to global marginalization of the Mediterranean region due to economies’ interdependence (the Balkans, Turkey and the Maghreb essentially trading with Europe). More likely still, in economies South of the Mediterranean and the Balkans, it could also lead to transfers of capital from Northern Europe, the Gulf

and emerging countries making low-cost investments in a high-yield zone (as well as a diversion of trade towards these countries).

A kind of Mediterranean convergence through the bottom would work in this way, where all the countries catching up with Europe would get close to European Mediterranean income levels (GDP per capita for Turkey and Serbia reaching 80% of the one of Portugal), but with a marked European divergence. The hysteria effect of the crisis is focused on Southern Europe which experiences a durable slowdown of its growth and a sustained weakness of its productivity gains. In contrast, the growth rate in Northern Mediterranean countries returns to pre-crisis levels. Some Mediterranean countries benefit from investment inflows and from a positive effect of globalisation-related relocations. But the relocations rely essentially on cost differential of the working force. Technical progress and feedback from different sector activities are weak. Economic activity stagnates and the majority of employment is informal.

**The “Mediterranean convergence” scenario: a sound and sustainable growth hinged on proactive political action**

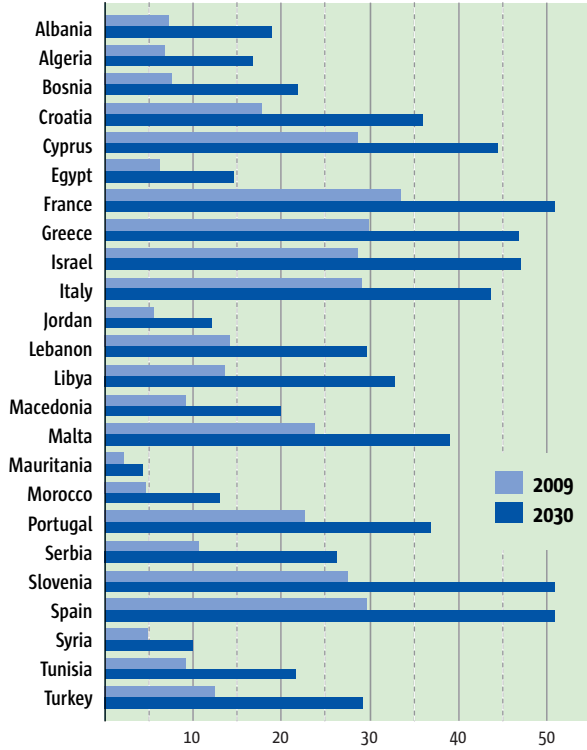
A DIFFERENT FUTURE COULD EXIST for the Mediterranean, involving neither divergence nor marginalization, hinged on proactive political action shared by all inhabitants and applied with the help of multipolar international regulations. A stronger and richer economic growth in terms of employment involves promoting the integration of production systems by developing regional synergies and extending certain means of redistribution and social protection to the whole of the Mediterranean. Such a scenario would imply an enforced institutional framework in which the perspectives of access to the European Union or the European internal market will foster the harmonization of norms as showed by examples of Croatia and Turkey as well as the new Member States. In a regionally integrated system (establishment of the four EU freedoms, access to the European domestic market and standardized norms allowing the emergence of a regional preference system) internal levers for growth could result in increased regional productivity and employment in all countries, if accompanied by a geographical redistribution of the production and a sharing of the added value allowed by the opening of certain enhanced cooperation to South and East Mediterranean countries.

Due to this soundly cooperative scenario, all the Mediterranean region benefit from the total factors productivity increase and support its competitiveness with lower social costs than in the “Mediterranean divergences” scenario. A regional convergence dynamics emerges then. The activity rates in Southern and Eastern Mediterranean countries and in Adriatic States get close to those of Europe. In Europe, the migrant’s number is able to compensate for domestic labour shortages and to supply consumer markets. Technology diffusion through imitation, knowledge and capital transfers lead to a productivity catch up. In promoting a more equitable and redistributive growth, domestic demand increases in non-European countries bordering the Mediterranean which provides growing market opportunities. South Europe benefits from this development and, to a less extent, the other European countries. This dynamics strongly increase the sub-regional trade, offering henceforth opportunities of emerging and deep markets. The countries of the Adriatic, taken by Croatia and Serbia, pull Bosnia, Macedonia and Albania. The intra-regional trade in the Middle East and in the Maghreb develops all the more strongly as exchanges crossed with the Gulf are to be added to the more deepened relations established with the Mediterranean and European neighbours. In this context, Turkey becomes an indispensable interface and a moving plate of the Euro-Mediterranean trade.

All countries in the region (apart from Mauritania) would then attain per capita incomes of over USD 10,000 by 2030 (GRAPH 8). Activity rates in South and East Mediterranean and Adriatic countries would be close to those of Europe, where migration would fill in the labour gaps and fuel consumer markets. In 2030, Slovenia may equal Spain in per capita income and Croatia gets close to Portugal. Egypt and Morocco triple their per capita income and get in the convergence path. Turkey’s and Serbia’s per capita income reaches over USD 25,000 by 2030.

**GRAPHIQUE 8**  
**“Mediterranean convergence” scenario.**  
**GDP per capita (2009-2030)**

(thousands of dollars, purchasing power parity)



Source : CAS – Ipemed, 2011.

# EMPLOYMENT PERSPECTIVES IN THE MEDITERRANEAN

Frédéric Blanc\*

EMPLOYMENT IS A MAJOR issue for the advancement of the Euro-Mediterranean region. For South Mediterranean countries (hereafter mcs), the forthcoming years will entail creating an unprecedented number of decent jobs in order to absorb the growing number of new entrants in the labour market, the current high proportion of unemployed young people, and to slightly increase female participation in economic activity. The north side will face a very different and new challenge of maintaining their economic and job-creating dynamics in a context where the number of active workers is set to shrink. The Balkan countries lie somewhere in between, since their economies more resemble those in the mcs, but their demographic perspectives are identical to those in Europe.

On the one side, the age pyramid in the South is characterized by a much higher-than-average proportion of young people. It is true that demographic growth rates have slackened and that fertility rates are starting to approach those of the North. However, the impact of past high fertility rates is now being felt, with a young population due to arrive on the job market by 2030. In addition, mcs can no longer practise their approach of previous decades: figures for the non-working population clearly indicate that this has not been effective. On the other side, the age pyramid will get thinner in the so-called active parts. Economically active population reserves do exist, particularly through developing female work or rising the retirement age. However, it is not possible to rely on these two factors alone, since reserves are probably insufficient.

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Delegate General, Femise.

How should these challenges be tackled and what regional situation are we heading towards? This section shall present the nature and dimension of employment progression in the region's 43 countries by 2030, the key factors that will determine possible changes and the outlines of the foreseeable scenarios by 2030.

The section is organized into four parts:

- The nature of the employment based on a presentation of the current situation and the major likely demographic tendencies.
- The employment content of growth and the duality of work markets.
- The need to better match training and skills to the needs of economies in the region.
- The major probable scenarios in terms of job creation by 2030 taking into account key changes in Euro-Mediterranean relations.

## I. A tense demographic context and a weak activity rate

WE WILL START BY PRESENTING the demographics of the working population and the labour market situation in the region, comprising the 10 Euromed Partnership countries (Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestine, Syria, Tunisia and Turkey), the 27 European Union Member States and the 6 Balkan countries (Albania, Bosnia-Herzegovina, Croatia, Macedonia, Montenegro and Serbia).

The Euromed-Balkans region taken as a whole comprised 790 million inhabitants in 2007, more than 160 million of whom were under 15 years old. Over 620 million people were old enough to work (over 15), but only 328 million of them were economically active, and 300 million had a job (TABLE 2). However, the two sides are very unequally balanced. Mediterranean countries represent around one third of the zone's overall population (34%), but half of the young population (49.8% of the under 15s) and only a quarter of employees (25.5%). Conversely, Europe currently offers 7 jobs out of 10, but counts less than half of the under 15s. This current concentration of the active population in the North, with the active population of tomorrow mainly based in the South, is one of the first factors of tension for the whole region, since the areas are relatively compartmentalized. Symbolically, it is worth noting that the population of under 15s in MCS has now overtaken the one of the EU.

**TABLE 2 Demographic indicators of labour markets in 2007**

	Total***	Of whom under 15s	Proportion of under 15s	Population of working age (15 yrs and +)	Active population** [a]	Jobs**
<b>MCs (Med)</b>	269,215,108	81,540,022	30.3%	187,675,086	83,463,607	74,810,990
<b>EU27</b>	494,488,654	77,976,021	15.8%	416,512,633	235,777,564	218,968,727
<b>Balkans<sup>(1)</sup></b>	23,836,823	4,332,617	18.2%	19,504,206	8,475,566	6,824,185
<b>Total</b>	785,267,185	163,280,900	20.8%	621,986,285	327,716,737	300,603,902

Sources : \* UN Pop. Div. quinquennial estimates and projections; \*\* ILO, LABORSTA Labour Statistics Database; \*\*\* World Bank, WDI online ; [a] active population is the sum of the employed and unemployed. (1) Serbia excluding Kosovo.

**TABLE 3 Activity in 2007 in South Mediterranean countries, Europe and the Balkans**

	Pop. of working age (15 yrs & +)* [1]	Active pop. 2007** [2]	Non active pop. [3]=[1]-[2]	Rate of activity [2]/[1]	Unemployed [4]	Rate of unemployed [4]/[2]	Non actives and unemployed [3]+[4]
<b>MCs</b>	187,675,086	83,463,607	95,904,812	44.47%	8,652,617	11.57%	104,557,429
<b>EU27</b>	416,512,633	235,777,564	180,735,069	56.61%	16,808,837	7.68%	197,543,906
<b>Balkans<sup>(1)</sup></b>	17,798,566	8,475,566	9,323,000	47.62%	1,651,381	24.20%	10,974,381
<b>Total</b>	621,986,285	327,716,737	285,962,881	52.69%	27,112,835	8.27%	313,075,716

Sources : \* UN Pop. Div. quinquennial estimates and projections, \*\*ILO, LABORSTA Labour Statistics Database. (1) Serbia excluding Kosovo.

Looking at **TABLE 3**, which sums up the major aggregates of labour markets, we can identify other local tension factors. In the Mediterranean, three tension factors are identified:

- The very high number of people under 15 who hope to have a job. They represent 81.5 million people for a total population of 269 million, or one-in-three people in the South Mediterranean. The number of young people who will be seeking for a job in the near future will be greater than the number of formal jobs available.
- The gap between the number of people that may want a job and the number of formal jobs available (187 million people aged over 15, of which 173 million potential economically active people aged 15-65, compared with 74 million jobs currently available). As such, the activity rate of the over 15-year-olds is below 50%. Less than one Mediterranean in two at working age in the South is actively employed. As a result, 96 million people at working age are not on the labour market. A significant number undertake informal work as a matter of survival, but are relegated to the margins of social protection measures.

- The number of unemployed exceeds 8.5 million people, corresponding to the number of people who have worked in the formal sector and can no longer do so. This number, which represents an official unemployment rate of 11.6%, does not take into account disguised unemployment linked to under-employment, nor signing-up conditions for the unemployed. It is probably therefore an under-estimate.

IN EUROPE, the situation is less contrasted, but still includes three tension factors:

- Unemployment rates are still high in many countries. Even when these rates are much lower than those experienced by numerous developing countries, public opinion still considers unemployment to be one of the main political priorities. This naturally implies that imported labour is relatively unacceptable for these same public opinions.
- Situations are disparate, with unemployment rates ranging from 3.5% to 11% and activity rates from 48.5% to 65% (except for Luxembourg). In view of such variations, it is clear that structural modifications applied and accepted across Europe will be difficult to conceive. In addition, in a normally open labour market, such divergences are symptomatic of hidden obstacles.
- The active to non-active workers ratio puts huge pressure on retirement and social security systems. These systems are mostly based on workers' contributions. European countries now also need to increase activity rates, especially in countries where they are low.

A LOOK AT **TABLES 4** and **5**, based on the United Nations medium variant scenario, shows the extent of tensions that will continue to intensify. From 2007 to 2030, the working age population (over 15) will increase in the region by over 100 million people. Yet 84% of these potential supplementary workers will be located in the South. As a result, the Europe/Mediterranean relationship in terms of potential active workers will shift from 70/30% to 60/40% over the next 20 years. For the South, these additional 87 million potential active workers largely outweigh the formal jobs currently on offer.

In contrast, Europe is set to lose potential active workers, possibly more than 20 million by 2030, unless the legal retirement age is extended to 80 years old. We can see that the EU27 will contain 20 million less 15-65 year-olds, 13 million of whom will be aged 25-65. If the “wor-



**TABLE 4** Population aged 15 years and over in Euromed countries and the Balkans (2000-2030)

	2000	2007	2020	2030
<b>MCs</b>	157,652,462	187,675,086	236,451,924	274,362,500
<b>EU27</b>	398,814,493	416,512,633	428,570,690	432,427,178
<b>Balkans<sup>(1)</sup></b>	19,039,016	19,504,206	19,878,546	19,708,616

Source : UN Pop. Div. quinquennial estimates and projections (Medium Variant Scenario). (1) Serbia including Kosovo.

**TABLE 5** Evolution of the population by age group (2007-2030) (thousands)

<b>Age</b>	<b>15-65</b>		<b>25-65</b>		<b>15-80</b>	
	<b>2007</b>	<b>2030</b>	<b>2007</b>	<b>2030</b>	<b>2007</b>	<b>2030</b>
<b>MCs</b>	173,895	242,661	119,893	185,123	185,908	269,731
<b>EU27</b>	331,958	311,805	271,023	258,303	394,753	397,127
<b>Balkans<sup>(1)</sup></b>	16,201	15,094	12,676	12,490	18,902	18,719
<b>Total</b>	522,054	569,560	403,592	455,916	599,563	685,577

Source : UN Pop. Div. quinquennial estimates and projections (Medium Variant Scenario). (1) Serbia incl. Kosovo.

king age” population is to remain stable, this section of the population will have to be extended to include 15-80.

For the Balkans, the general situation lays half way between the South Mediterranean and the EU. Although in Albania, the structure of its population and its labour market statistics follow a “southern” pattern, the other countries tend to match the European situation. In addition, demographic trends in the region show a clear population drop, with an identical EU dynamic. In all age groups that define a possible economically active period, numbers of potential active workers will go down.

Starting with broadly different situations, the EU and the Mediterranean countries share a common objective for the next twenty years: to increase activity rates and the number of active population. For some countries, this means maintaining the dynamic of job creation and the economy in general; for others, it means allowing young people to find a job, maintaining a balanced social context and improving the dynamics of the economy and living standards. One zone possesses the resources that the other zone needs: the EU has work opportunities for the more numerous active population in the South, and the South has the active population that the EU is going to need.

## 2. The employment content of growth and the duality of labour markets

ECONOMIES' CAPACITY to create jobs is fundamentally based on the nature and the dynamic of their growth regime. Economic growth, and therefore job creation, depends on the accumulated quantity of production factors (physical and human capital) and the means in which they are mobilised to obtain a given level of production. This combination can also generate increased production through the total factor productivity (TFP). To achieve full potential, economies need to be well endowed and/or high performing. In the Mediterranean, employment dynamics are characterised by the small contribution to aggregate growth of TFP and an over-sized informal sector.

### **How to enhance the quality of the growth-employment relationship and the importance of factor productivity**

ON THE SOUTHERN shore of the Mediterranean, a simple observation of labour market statistics implies that the growth-employment relationship does not work satisfactorily in the given situation. However, if we calculate the elasticity of employment to growth (estimation of employment growth for each percentage rise in GDP growth), MCS perform relatively well. Although MCS appear to have reached a significant level of job creation due to their economic growth – on average 4-5% during recent years – the image is misleading. Firstly, because estimations differ widely between countries. And secondly, because they remain unstable over time. Lastly, over the long term, the employment content of growth is insufficient, since it is not enough to absorb new arrivals while integrating more potential active workers into formal markets.

We may therefore ask why the quality of the employment-growth relationship is insufficient and so instable? The answer is probably, mainly because a portion of new jobs created are not in the most dynamic sectors that could encourage the necessary structural changes. Creating a job in the government administration, for example, will not have the same potential knock-on effect as creating a marketing-engineer position. This is because in the first case, less other positions and sectors will benefit from knock-on effects than in the second. Put simply, such jobs contribute little to the growth of GDP, and the high degree of elasticity observed does not reflect efficient use of the workforce. This is

not to say that some positions do not create value in relation to others, but rather that they create less positive effects outside their sphere.

In fact, the problem of the employment-growth relationship in the Mediterranean, certain Balkan countries and Europe, lies in the structure of new jobs created driving less dynamics and changes compared to “old” ones. In standard economic calculations, this is the “total factor productivity” that involves any growth that is not due to the accumulation of factors (employment and physical capital). Broadly speaking, if an economy sees its TFP rise substantially, it will benefit from higher than “normal” growth, and part of the surge in activity will then be converted into jobs. For MCS, an improvement in the employment-growth relationship, essentially through better quality and sustainability in the medium term, necessarily involves an improvement in productivity gains in the economy.

THE TFP ISSUE IS ALSO at the centre of European dynamics, although for different reasons. As mentioned, TFP is at the root of growth that is not due to an accumulation of factors. Demographic trends in Europe clearly suggest that labour is set to become the scarce factor in the years ahead. In any case, with an ageing population, European countries will no longer be able to count on a baby boom to continue fuelling their economic growth. Economically active people and their skills will become rare, and the accumulation of physical capital through investment will hardly be able to make up for shortages. This being so, sustainable growth will have two major sources: productivity gains and imports of active workers via migration.

### **The main role of the informal sector**

THE SO-CALLED “INFORMAL” sector is particularly developed in MCS (30% to 40% of total employment). If we take the very low rates of formal work in the Balkans, it is obvious that these countries also possess significant informal sectors. The development of the informal sector partly stems from a lack of opportunities to work in the formal sector, given the share of inactive people in the working age population. For people living in poverty, who cannot afford to be jobless, informal jobs make part of a “survival strategy”. However, in emerging countries like MCS, the presence of an informal sector can have positive outcomes. By offering potential alternatives to conditions of extreme poverty, it acts as a token of social stability. It is also likely to play the role of an incubator

by developing skills and companies before individuals and firms can join the formal sector and take advantage of their successful accumulation. However, this kind of “positive” role can only occur when there is a good degree of mobility between formal and informal sectors, and there are unfortunately no indicators of this in mcs. Setting up the necessary conditions for such mobility will doubtlessly be one of the keys to transforming labour markets in the coming years.

At the same time, it will be necessary to find solutions to the three most significant problems arising from the existence of a large informal sector:

- few decent jobs are available. In addition, both in the Mediterranean and Europe, social protection systems base their services on the existence of formal jobs, thereby excluding a large part of the population. Although European countries have been able to create systems to reach these inhabitants, the same cannot be said for the South and the Balkans;
- companies in the informal sector have only limited access to modern technology, capital and a certain number of goods and services provided by state authorities. This prevents their capacity for growth and, for the broader economy, significantly limits the emergence of the productivity potential of these companies. However, they are in competition with certain local companies evolving in the formal sector and this distortion of competition stands in the way of an efficient allocation of resources;
- for governments, state budgets are deprived of tax resources that could be used to optimize the overall functioning of the economy. Moreover, the impact of government policies and reforms is diminished given that they do not affect activities lying outside the legal system. Thus, for the Balkans and countries in the South whose activity rates are below 50%, most of the working age population is not concerned by measures applied to labour markets.

### 3. The necessary matching of training and skills to the needs of the economy

IT IS FAIRLY CLEAR that one of the keys to developing employment in the Euromed region lies in training human capital. Initial education is an issue, but it cannot alone bring about a rapid change in the current situation, characterised by a low return of investment in the sector. Changes must also concern those who have already left the basic edu-

cation system and those already working, particularly in the informal sector. Vocational training and continuous training lie at the heart of these potential changes.

In a few decades, MCS have made remarkable progress in education. But this progress has not been matched on the same scale in labour markets. In some countries, a high percentage of the labour force that has reached secondary education is unable to find a job. The relative high unemployment rates among graduates, not only underlines the weakness of the return of investment in human capital but also, and above all, how ill-matched this training is to demand in labour markets. The challenge in the period ahead will therefore be to bring about a huge improvement in the way training is aligned with the needs of the economy – not just at the local level, but also in the whole Euro-Mediterranean region, in view of the population numbers at stake.

Observing the situation from an employability angle, the first observations relate to the choice made in education orientations. In MCS, we can observe that social sciences and literary subjects are more popular than scientific and technical ones. On average, nearly two-thirds of diplomas awarded in secondary education relate to literature and human sciences. This is in contrast with Eastern Asian countries. At the same time, scientific subjects and engineering studies are less attractive (with a gap of over 10 percentage points). It is widely accepted today that economic development relies on technological innovation and adaptation, and on the driving role of factor productivity. This naturally leads to encourage scientific and technical education.

But why are scientific and technical courses underrepresented? It could be taken as a translation of the state administration's policy of recruiting university graduates. This tends to disadvantage the private sector to the detriment of the public sector and create a counter-productive bias with two significant effects:

- the private sector, which is less attractive, has difficulty in getting hold of the skills it needs;
- the best qualified find it more worthwhile either to wait for a state job (and join the unemployed in the meanwhile), or to migrate to other labour markets that can offer them jobs compatible with their education level. In the general economy, it is clear that this leads to a lower TFP level in the region, with weaker growth perspectives for this TFP, not because education systems are of lower quality in these countries, but

rather due to the inefficient allocation of human resources, which means that only a fraction of potential TFP is achieved.

General education is not the only mechanism for developing human capital. Rapid improvement in matching education to work market needs today involves enhancing the value of vocational and continued training. This also implies a modification of professional recognition systems, which should no longer be founded solely on diplomas, but also on skills. The objective is to induce labour markets to allocate human capital more efficiently. Continuous vocational training is, from this point of view, a key tool for allowing people to progress and enhance their experience, thereby encouraging mobility. The notion of skills – seen as the capability of doing something in a satisfactory manner in a given concrete situation – appears better tailored to a more mobile workforce, in economies possessing a large share of informal jobs and containing a hotbed of unexploited experiences and know-how.

#### 4. Employment trends and possible scenarios

IN THIS LAST PART, three scenarios concerning the evolution of the employment in the three zones will be described. In the first place, main guidelines will be established, according to the evolution of the employment in Europe and in the MCS, during the last decade, before the 2009/2010 crisis. Then, the main lines of the three possible scenarios will be presented.

##### **For Mediterranean countries**

BETWEEN 2005 AND 2007, the number of jobs in MCS rose at an annual rate of +2%, which is around 1.2 million job creations per year. These figures take into account the highly negative trend observed in Turkey (-600,000 jobs between 2005 and 2007). For the nine other countries, in the 2004-2007 period preceding the current severe crisis, the annual rate was above 3.5% per year, which is around 1.8 million jobs created annually. However, this figure owes much to Egypt's performance during the period.

MCS did not experience workforce shortage problems. The challenge was rather to absorb an influx of people looking for work (inherited from the demographic dynamics of the previous generation). The issue is no longer demographic, but one of economic activity.

**TABLE 6 Employment trends for South Mediterranean countries (2007-2030)**  
(thousands)**Maintain of the ratios**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unemployed	Non-active pop.	Activity rate	Unemployment rate
34,236	1.7% 1,490	121,707	109,047	12,660	152,656	44.4%	10.4%

**Maintain 2005-2007 rate**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unemployed	Non-active pop.	Activity rate	Unemployment rate
62,616	2.7% 2,720	150,836	137,427	13,409	123,526	55.0%	8.9%

**Maintain No. of non-employed**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unemployed	Non-active pop.	Activity rate	Unemployment rate
94,994	3.7% 4,130	180,171	169,805	10,366	94,191	65.7%	5.8%

Source : FEMISE, 2011.

In this context, it is worth mentioning the two main objectives of job creation to be reached by 2030:

- create the number of jobs necessary for maintaining the current labour market structure (keeping activity and employment rates stable);
- maintaining the number of non-active people at the 2007 level so as to ensure social order (TABLE 6).

To maintain current ratios, MCS would have to create 34 million jobs over the next 20 years, which is around 1.5 million jobs annually. This is an objective they managed to attain over the last decade, but it would result in the presence on the southern shores of the Mediterranean of more than 150 million non-active inhabitants in 2030. As we have already pointed out, the pace of employment growth is currently higher and, if it lasts until 2030, it would allow the creation of 62 million jobs (around 2.7 million per year on average), pushing up the activity rate by almost 10 points (i.e. 30 million more active workers than in the previous scenario). This would however still not be enough to stop the absolute number of inactive people from rising. To reach this target, MCS would have to create 95 million jobs, or over 4 million per year.

**TABLE 7** Employment trends for EU27 (2007-2030) (thousands)**Maintain 2000/2008 rate**

Jobs created	Annual rate* Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate
61,850	1.1% 2,690	297,617	280,819	16,797	134,810	68.8%	5.6%

**Maintain 2005/2007 rate**

Jobs created	Annual rate* Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate
78,305	1.3% 3,400	314,221	297,274	16,948	118,206	72.7%	5.4%

\* Upper limits included. Source : FEMISE, 2011

**For EU27**

CONCERNING THE 27 COUNTRIES of the European Union, the annual job creation rate has varied from 1.5% (2000-2008) to 2% (2005-2007). This represents 3 to 4 million job creations per year. These rates do not take into account the effects of the crisis, which Eurostat says led to the loss of 4 million jobs in 2009.

However, given the European demographic decline, assumptions based on maximum activity in Europe are needed. For Europe, we assumed a maximum activity rate of 79.5%. It means that all persons, both men and women, aged from 25 to 80 will be economically active in 2030. Similarly, we establish a hypothesis of minimum or “frictional” unemployment rate of 5%.

From these hypotheses, we can illustrate potential problems arising from demographic decline: Europe would be unable of sustaining the rate of job creation observed between 2005 and 2007, neither the one observed between 2000 and 2008 (TABLE 7).

In the first case, Europe would manage to create 78 million jobs (taking the number of jobs to 297 million) and would achieve a record activity rate of 72.7% (no European country except Luxembourg currently tops 65%) and a very low unemployment rate of 5.4%. 17 of the 27 countries of the EU would be concerned by the upper limits and thus experience workforce shortage problems (which will imply inevitably an extension of the retirement age).

But, without the country ceilings, the potential of job creation according to the rates of 2005-2007 could reach 42 million supplementary jobs. Once the ceiling per country included, the annual rate is not of 1.97% and 4 million jobs created per year anymore, but only of 1.3% et



**TABLE 8** Employment trends for the Balkans (2007-2030) (thousands)**Unemployment rate of 1 digit and activity rate > 50%**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate
2,326	1.3% 100	10,119	9,150	969	9,590	51.3%	9.6%

**Balkans 2030 = EU 2007**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate
3,476	1.8% 150	11,157	10,300	857	8,552	56.6%	7.7%

**Balkans 2030 = EU 2020**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate
5,154	2.5% 220	12,811	11,978	833	6,898	65.0%	6.5%

Source : FEMISE, 2011.

3.4 million jobs per year. Even the long trend observed during the 2000 decade (2000-2008) will not be reproduced. In this second case, Europe would at least create 62 million jobs, with an activity rate of 69% and an unemployment rate of 5.6%. But even there, 11 of the 27 countries of the EU are concerned by the ceilings and finally 14 million jobs would not be filled. Those two rates constitute an initial approximation of the demographic effect in terms of uncreated jobs.

**For the Balkans**

ECONOMIC PERFORMANCE in the Balkans has been unstable during the last decade. Referring to the most recent period (2006-2008), we can estimate the annual rate of job creation at 2.7%, or around 180,000 jobs per year. As the **TABLE 8** shows, if the average rate is maintained, the Balkans could significantly reduce their unemployment rate to below 10%, and at the same time increase their activity rate above 50%. This would call for the creation of 2.3 million jobs in the next 20 years, or around 100,000 per year. The current trend would even be compatible with the creation of 3.4 million jobs needed for the Balkans to display in 2030 the same activity and unemployment rates as the EU27 in 2007. However, the trend would need to be accelerated in order to exceed 220,000 jobs per year to further reduce the gap that will exist with the EU.

On the basis of these broad guidelines, we can present three scenarios showing how the region's three zones can converge towards common objectives, leading to different economic dynamics. Concerning the labour market, the major inflexion point will be a certain opening-up of the North-South and South-South job markets, which would (or not) lead to an increase of the competitiveness and of the total factor productivity and would have a positive impact on the employment rate. These three major scenarios have already been described; therefore we will hereafter only describe the possible evolutions that they would involve on the labour market.

*“Mediterranean divergences” scenario.* The Euromed process and the Union for the Mediterranean make progress on certain sensitive issues like services, agriculture and easier mobility conditions, although still limited. Part of the European gap is reduced by active workers from mcs and the Balkans, resulting in dynamic growth effects in these zones. But it is not enough to encourage a more integrated area, where countries play a local competition to move forward in a global context hardly marked by cooperation. Some mc and some European countries take benefits of it, but other countries stagnate.

- **In the Mediterranean**, activity rates grow more sharply and the number of jobs created annually reaches the highest levels of the 2000s. But few countries are concerned. At the regional level, a few more than 2 million jobs would be created per year. But this improvement does not concern all countries, leading to a very unstable social context in some areas. In consequence, the potential of the most dynamic countries is also reduced. Globally, unemployment decrease at rates close to those from Southern Europe today, and the activity rates increase, although the average rate remains below 50% (TABLE 9). The number of people without jobs (the non-active and unemployed) increases significantly to reach more than 150 million. This number is unable to coexist with a stable social situation. In the most dynamic countries, a flow of migration with the EU is established and the return of these migrants benefits the local economy. But, in front of a consequent number of the non-working population, the potential is restrained by a persisting security context concerning the freedom of movement of men and skills in the Euromed area.

**TABLE 9 “Mediterranean divergences” scenario – employment (2007-2030)**  
(thousands)

**MCs benefit from an improved labour market situation.  
They approach the EU’s 2007 levels.**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate
47,098	2.15% 2,050	133,036	121,909	12,113	141,327	48.5%	9.1%

**Europe benefits from input of active workers that limits  
the decline on its active population.**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate
48,250	0.87% 2,100	283,710	267,219	16,490	148,717	65.6%	5.8%

**The Balkans converge rapidly.**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate
2,536	1.4% 110	11,466	9,360	1,105	9,243	53.1%	10.6%

Source : FEMISE, 2011

- **In Europe**, circular and temporary migration with mcs helps to partially make up for demographic deficits. Europe has opened up to agricultural produce, in return for greater opening of mcs to services. It creates new markets opportunities. Nevertheless, the standard of living in South Mediterranean does not improve fast enough to involve a real convergence. Within the two European areas (continental and Latin Europe) a lot of countries benefit from this race to productivity. Because of the growth, global employment improves faster, despite of the capital/work substitution. The annual average rate would reach around 0.9% (2.1 millions employment per year), involving an activity rate over 65% and an unemployment rate below 6%. These rates illustrate the stress on European labour markets and working force: 5 countries would have activity rates over 75% (two of them are even put to an upper limit), 8 others would have activity rates over 70%. In Latin Europe the annual rate reach 0.7%, which stand for +608 000 jobs per year. The activity rate grows up to 58.3% and the unemployment rate falls down to 6.3%.

**TABLE 10** “Crisis in the Mediterranean region” scenario – employment (2007-2030) (thousands)

**MCs struggle to maintain a labour market balance nevertheless socially unsatisfactory**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate
28,600	1.42% 1,240	117,322	103,411	13,804	157,040	42.8%	11.8%

**Europe struggles to retain its potential and becomes more “continental based”**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate
34,292	0.63% 1,490	270,480	253,261	17,219	161,948	62.5%	6.4%

**Stabilisation of the Balkans**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate
1,957	1.10% 80	9,947	8,781	1,166	9,762	50.5%	11.7%

Source : FEMISE, 2011.

- **The Balkans** also benefit from a process in which they take part. Thanks to a better economic dynamics, they fill their delay on the labour markets in relation to their European neighbours. In 2030, the activity rates reach the recent South EU situation, like Greece or Italy, despite of their quite high unemployment rate.

*“Crisis in the Mediterranean region” scenario.* The Euromed Partnership is no longer progressing and remains restricted to a free trade zone mainly concerning industrial products, without moving into services or agriculture. No strategy has been adopted for using complementarities to solve structural difficulties. On the whole, there is a slight variation of the global productivity rate and the activity rates would remain low.

- **In the Mediterranean countries**, little progression can be observed in South-South integration and there is a lack of significant progress in terms of productivity. Countries continue to specialise in producing low-quality goods. The employment rate (percentage of employment on the total population) does not progress much, following the lowest rates recorded during the last decades. The activity rates remain also generally under 50% (TABLE 10) and fall of some points. The official unemployment rate has stabilised at around 12%, but most activities remain informal.

With only 1.2 millions created job in a medium annual rate, in the best case the social indicators stagnate. The preexistent divides in terms of dynamics go deeper and deeper and regarding to this low job creation activity dynamic, the social tensions persist.

- **In Europe**, the economic dynamism comes up against the demographic problems. Migration policies still focus on minimizing flows. Demographic decline is only managed through activity reserves, mainly involving raising the retirement age: here, unless the retirement age can be raised to 80, growth potential is restricted by labour force shortages. On European labour markets, an overall increase in activity rates can be observed, and a reduction in unemployment rates, both of which approach physical ceiling rates. Labour shortages still are a problem in certain regions, limiting growth potential. Obviously a Euromed decline scenario is more favourable to the continental Europe than to the Southern Europe. In such a case, it is mainly the employment sharing which would fluctuate, in favor of Northern and Eastern Europe and to the detriment of Southern Europe. If the European growth employment rates should remain at 0.63% or 1.49 million per year, Southern Europe would suffer more in this scenario with an annual rate of only 0.3% (+220 000 job/year). The activity rates would be also lower than in Northern Europe (53.5% against 62.8% in average) and the unemployment rate would be higher (7.7% against 6.4%).
- **In the Balkans**, the situation is normalized. Countries catch up with Europe but start to experience the same structural difficulties, mostly concerning labour shortage in certain sectors. Nevertheless, activity is slightly above 50% and unemployment rates are cut by half.

**“Mediterranean convergence” scenario.** By establishing the four EU freedoms in the Euromed region (freedom of movement of goods, money, people and services), the three areas succeed in creating the zone of peace and prosperity that has been sought since 1995. Training initiatives are set up at Euromed level (e.g. creation of a common core of knowledge, Euromed network for vocational training and recognition of skills, Erasmus Med, etc.). They lead to a convergence of labour market indicators, with a driving effect resulting in job creation rates aligned on the best performances of each partner. This deeply cooperative scenario gives the possibility to benefit from total factor productivity gains, thus the three zones can support their competitiveness with a lower social cost. This effect is reinforced by a faster convergence in the standards

**TABLE 11** “Mediterranean convergence” scenario – employment (2007-2030)  
(thousands)

**MCs**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate
59,846	2.6% 2,600	145,886	134,657	11,229	128,477	53.2%	7.7%

**Europe**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate
67,088	1.2% 2,920	303,019	286,057	16,961	129,409	70.1%	5.6%

**Balkans**

Jobs created	Annual rate Annual No	Active pop.	Jobs	Unem- ployed	Non-active pop.	Activity rate	Unemploy- ment rate
2,895	1.5% 130	10,601	9,719	882	9,107	53.8%	8.3%

Source : FEMISE, 2011.

of living. Southern Europe can benefit from emerging consumption markets. Thanks to South-South integration, the Mediterranean partners take advantage of this markets characterized by important scale’s economy, which also involve gains of productivity without curbing jobs.

- **In mcs**, activity and unemployment rates are close to those of many European southern countries today. In this moment, there are more formal workers than inactive and unemployment rates under 8% (**TABLE 11**) are the rule. With more than 2.6 million jobs created every year, socially the difference is relevant: local opportunities become sufficient to contain the brain drain. For the migrants, the come-back possibility becomes pertinent, thus the migration become more circular. The mcs take benefits of those comes-backs, as the Korean example did in the 60’s, which involve a cumulative economical dynamic. The standards of living grow and transform the local markets into interesting economic markets. Thanks to the South-South integration’s progress, the mcs take also benefit of this growth. With a relevant standard of living’s convergence, that populations can perceive and benefit from, the social context is more stable.

- **In Europe**, thanks to economic dynamic and immigration, labour markets are close to full employment. Labour shortages can be sectorial, but not very important, as skills are available on the southern shore. Immigration also promotes strong domestic consumption, and contri-

butions paid by active immigrant workers help reduce the deferment of retirement ages. Growth potential remains at the highest levels associated with the 2000s. The potential growth remains at its highest levels, those of 2000. The market effect sums up with the productivity effect, which bets on the knowledge economy, reducing the substitution effect. For Europe, this period is auspicious and the job's creation rate is close to the one of the 2000's decade : 1.2% per year, +2.9 million jobs per year. The price is a relevant tension on the labour market: the average activity rate is over 70%. Indeed, 18 of 27 countries are over 70%. The unemployment rate is close to a frictional threshold of 5.6%. It is obvious that without an immigration provision, the tension would reduce the competitiveness via the lack of skills and high salary pressure. Of course Southern Europe take benefits of this trend and the job's creation rate is equivalent to the European average (1.3%), which represents +1.2 million jobs created per year. Thus the activity rate is 66.1% and the unemployment is 6.0%.

- **The Balkans** have further increased their convergence with Europe, and their indicators (activity and unemployment) and performance lie at the current South Europe's level.

# MIGRATORY FLOWS AND DEMOGRAPHIC TRANSITION

## Long term evolution and future scenarios

Philippe Fargues\*, Giambattista Salinari\*\*

FORECASTING MIGRATION is not like projecting population change. Unlike mortality and fertility, one cannot break up the factors explaining migration into determinants – close or remote – that would lend themselves well to projection. Population trends and structures, particularly at working ages, can be projected with some accuracy from now until 2030; imbalances between age groups and the tensions that may result can even be inferred. But whether they will actually translate into migration will depend upon economic, political and social circumstances that no social science knows how to project. The terrorist attack of 11 September 2001 in the US, for instance, triggered the military intervention in Iraq in 2003; this military intervention triggered, in turn, the flight of refugees from Iraq towards Jordan, Syria, Egypt and Lebanon among other countries. Who could have ever predicted the war and this subsequent migration?

Nevertheless, while migratory movements are not entirely unpredictable, they do show some remarkable constants, and it is on these constants that we will focus in the next pages.

Migration comes normally in “waves”. In the Euro-Mediterranean region, it is possible to recognize several major waves of migration during the contemporary epoch. The first wave, which started in the second half of the nineteenth century and that ended with the Second

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World War, was a North-South movement originally from France then from Spain, Italy and Malta to the Maghreb, following the colonial expansion of Europe into Africa. At the same time, another wave of migration took place from Mediterranean Europe – in particular from Spain, Portugal, Italy and Greece – to North-Western Europe. The third wave started around the 1970s and is still underway. Here, migrants came from the Middle East and North Africa (MENA) and in part from parts of the Balkans and Eastern Europe and headed towards Western Europe, including, since the 1990s, Mediterranean Europe.

Authors from various disciplines<sup>(1)</sup> have noticed an approximate coincidence between the general chronology of migration waves and the demographic transition. This connection between the long-term trend of migration flows and the development of the demographic transition will be the keystone for the present attempt to predict future migratory scenarios.

This article is divided into two main parts. Part 1 analyses the demographic forces that will impact international migration in the Middle East and North Africa over the next two decades. Part 2 attempts, instead, to forecast the evolution of net migration rates in the Mediterranean region in the next 20 years<sup>(2)</sup>.

## I. Emerging demographic patterns across the Mediterranean

### **Senders turned into receivers of migrants**

FOR ALMOST THREE DECADES, between 1960 and 1990, the MENA was divided into two sorts of countries: migrants-receiving vs. migrants-sending, or capital-rich vs. labour-rich, depending on whether or not they were oil producers. The Gulf and Libya fell into the first category and all other countries into the second<sup>(3)</sup>. This distinction no longer holds. Not only have all MENA countries become oil producers<sup>(4)</sup>, but oil has failed to create sufficient employment for nationals. Large oil-producers are now faced with domestic unemployment to which they respond with restrictive immigration policies, whereas the rest of MENA

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(1) Gozzini 2005; Hatton et Williamson 1998; Chesnais 1993; Livi Bacci 1992; Easterlin 1961.

(2) Part 1 draws extensively from Fargues 2009.

(3) Algeria, Iraq and Iran were at the same time oil and labour exporters.

(4) Except Morocco, Jordan, Lebanon and Palestine.

**TABLE 12** Migrants originating from selected MENA countries by groups of countries of residence\*

Country of origin	Country of residence			Total
	Europe	MENA	Other	
Algeria 1995	991,796	66,398	14,052	1,072,246
Mauritania 2004	26,000	31,000	193,000	250,000
Morocco 2005	2,718,711	213,034	253,641	3,185,386
Tunisia 2005	779,200	128,900	25,800	933,900
Egypt 2000	286,000	1,912,729	538,000	2,736,729
Lebanon 2001	157,030	123,966	325,816	606,812
Iraq	150,000	2,000,000	150,000	2,300,000
Syria	n/a	n/a	n/a	2,906,812
Yemen 1999	n/a	810,000	n/a	1,000,000
Iran	n/a	n/a	n/a	750-1,500,000
Palestine 2004**	n/a	4,435,273	n/a	4,983,354
<b>Total</b>	<b>5,108,737</b>	<b>9,721,300</b>	<b>1,500,309</b>	<b>21,100,239</b>

\* First generation migrants. No estimates based upon solid records were found for Jordan, Sudan and Syria.

\*\* Palestinian refugees; most of them are not first-generation but second or third-generation migrants.

countries have turned into unwilling receivers of migrants whilst remaining at the same time major senders, a fact that leads them into restrictive immigration policies too. This paper is limited to emigration from MENA countries and will touch immigration to, or through, these countries only to the extent that it affects the former. It will not deal with Gulf States and Libya except for the purpose of comparison with the West.

There are around 20 million first generation migrants from Arab countries, Turkey and Iran (TABLE 12) representing some 5% of their aggregate population, significantly more than the world average of 2.9%. Four countries count more than 2 million first-generation emigrants: Turkey, Morocco, Iraq and Egypt. Iran, Algeria, Yemen and Sudan come next, with between 1 and 2 million, followed by Tunisia and Lebanon with five hundred thousand to 1 million emigrants.

Migrants originating from the Maghreb and Turkey are found mainly in Europe, whereas those from the Machrek and Iran tend to have come to other MENA countries (where they have been met by large numbers of Asian migrants) or to North America. Gulf States and the West are to a certain extent competing for Eastern Arab migrants<sup>(5)</sup>. In Machrek

(5) As well as for Turkish migrants, whose preferred destination has become the Gulf States and Russia.

countries, migration to the Gulf and Libya is popularly thought of as “temporary” – administrative terminology also classifies it this way – whereas emigration to the West is “permanent”. But this does not correspond to a true divide and is not based on solid empirical evidence. The oil-producing states, exactly as the West, host both short-term and long-term migrants, including second-generation migrants.

Emigration from Arab countries has gained momentum in the 2000s after slowing down in the 1990s. During the period 1993-2005, the number of Moroccans registered with their consulates doubled, from 1.545 million to 3.185 million. Moroccan migrants have increased at an annual rate of +6.0%, more than four times that of the resident population of Morocco (+1.4% a year). The rise of Moroccan emigration in recent years - at least until the world economic downturn started in 2008 – is reflected in the numbers registering with their consulates: +92,195 a year in 1993-1997 (i.e. an annual growth rate of +5.4%), +132,804 a year in 1997-2002 (+5.9% a year), and +201,107 a year in 2002-2005 (+7.0% a year). Other Arab countries such as Lebanon, Egypt, Tunisia and Algeria have also experienced an upsurge of emigration in the last decade. In Spain, the number of Arab nationals was multiplied by 4.6 between 1998 and 2006, representing an annual growth rate of + 21.9%. By contrast, emigration from Turkey and Iran has continuously receded.

All MENA countries have now become receivers of international migrants. Some of these are labour migrants attracted by local labour markets, whether they are regularly or irregularly employed. Others are refugees and transit migrants, largely unwanted by local governments and stranded in the region against their will. Each category has its own logics. Labour migrants respond to widening economic differentials between MENA countries and their less developed neighbours in Sub-Saharan Africa and Asia; refugees have fled rising insecurity in several MENA countries or in their African or Asian region; transit migrants are stuck on their way to their intended destination in the West or in the Gulf, which they cannot reach for lack of visa.

MENA countries located in the European neighbourhood, i.e. Southern and Eastern Mediterranean countries, host at least 5.6 million immigrants, including 4 million labour migrants (regular and irregular in roughly equal numbers), 1.5 million non-Palestinian refugees (most of them without regular permits of stay) and 100,000 transit migrants mostly trying to reach Europe (TABLE 13). These estimates, all conserva-

**TABLE 13 Regular and irregular immigrants in Southern and Eastern Mediterranean countries (early 2000s)**

	Regular immigrants <sup>(6)</sup>	Irregular immigrants <sup>(7)</sup>			Minimum total	Ratio irregulars /regulars (minimum)
		Labour	Refugees <sup>(8)</sup>	Transit		
<b>Algeria</b> <sup>(9)</sup>	80,238	Tens of thousands	95,121	Tens of thousands	10,000	0.1
<b>Egypt</b>	115,589	Tens to hundreds of thousands	104,390	n.a.	100,000	0.9
<b>Israel</b>	189,000	100,000	1,700	n.a.	100,000	0.5
<b>Jordan</b>	392,273	100,000 or more	519,477	n.a.	600,000	1.5
<b>Lebanon</b>	302,315	400 - 500,000	22,743	n.a.	400,000	1.3
<b>Libya</b>	449,065	1.0 - 1.2 million	4,754	Tens of thousands	1,000,000	2.2
<b>Mauritania</b>	48,000	Few thousands	861	Tens of thousands	10,000	0.2
<b>Morocco</b>	62,348	Thousands to tens of thousands	1,878	Tens of thousands	10,000	0.2
<b>Palestine</b>		422,000	0	n.a.	422,000	n.a.
<b>Syria</b>	55,000	Thousands to tens of thousands	707,422	n.a.	700,000	12.7
<b>Tunisia</b>	35,192	Thousands to tens of thousands	161	n.a.	10,000	0.3
<b>Turkey</b>	272,943	Hundreds of thousands	8,852	Tens of thousands	300,000	1.1
<b>Total SEM</b>	2,001,963	2-3 millions	1,467,359	≥ 100 000	3,662,000	1.8

Source: Fargues, Philippe, "Work, refuge, transit: An emerging pattern of irregular immigration South and East of the Mediterranean". Article under review at the time of writing.

tive, show that immigration is now sizeable across the entire SEM region and that irregular migration is two times more common than regular migration. One should not systematically view irregularity as a deliberate breach of the law, since in many cases it is the law that has changed, transforming formerly regular migrants into irregular ones. **TABLE 13** also shows that relatively few target Europe as a final destination. The vast majority are workers attracted by local SEM labour markets and refu-

(6) Non-citizens or born-abroad residents according to most recent official records (census, survey or residency statistics). See Fargues, Ph. (ed.) Mediterranean Report 2006-2007, Appendix Table 7, [www.carim.org](http://www.carim.org)

(7) Various sources for labour migrants and UNHCR for refugees.

(8) UNRWA Palestinian refugees are not included because most are not migrants.

(9) In Algeria, Sahrawi refugees are included in the residing population; most are not migrants.

gees waiting for a peace settlement to return to their home country. The SEM region is not a waiting room for irregular passage to Europe so much as a new importer of mostly informal labour.

While their moves have distinct motivations, irregular migrant workers, refugees and transit migrants share a common fate in SEM countries where they have no legal access to labour welfare and protection and subsist rather than prosper. They are not in SEMC because governments opened their doors but rather because they did not close them. Now, faced with massive irregular migration, governments respond with policies and legislation that keep apart or exclude, but rarely integrate, immigrants. Nowhere do migrants enjoy rights and duties that would allow them to become fully-fledged actors in SEM societies. As a result, they form an underemployed, under-protected but often over-skilled workforce, whose availability contributes to keeping labour costs low. Irregular immigration has become a regulator of SEM labour markets. As long as large segments of SEM economies escape the control of the state, irregular immigration is likely to keep growing in SEMC.

Will irregular migration into SEMC put ever more pressure on the EU? A number of facts have to be faced. At present, most irregular migrants in SEMC do not contemplate crossing the Mediterranean. Most irregular migrants to the EU have entered one of the Member States in a regular way, usually by air directly from their country of origin without transiting through a SEMC. Then, they have overstayed their visa while in the EU. Migrants irregularly entering the EU after transiting through the SEMC are not growing in numbers so much as continuously inventing new routes to bypass patrols and military checkpoints as they cross the Mediterranean.

### **The largest generations ever born now reaching working age**

FOR DECADES Arab leaders and intellectuals have viewed population as a problem or, at least, a challenge. However, the nature of the problem has changed, even though not everyone is aware of that change. Until recently, the problem was with rapid population growth due to high levels of fertility, resulting births growing too rapidly. The solution was seen in demography itself, namely in birth control. One after another, all Arab governments adopted programmes of family planning (except the Gulf countries that saw their national population as too small for their labour needs).

**TABLE 14** Year of maximum numbers at 20-25

	Mostly sending countries	Mostly receiving countries
2005	Morocco	–
2010	Algeria, Iran, Tunisia	–
2015	Lebanon	Bahrain
2020	Jordan, Turkey	–
2025	Egypt	–
2030 +	Iraq, Mauritania, Palestine, Sudan, Syria, Yemen	Kuwait, Libya, Oman, Qatar, Saudi Arabia, United Arab Emirates

Source: UN Population database.

Family planning eventually worked and annual numbers of births did stabilize and even shrank. Maximum numbers of births were recorded in the 1980s or 1990s. The largest generations are no longer newly-born infants but young people reaching working age. Accordingly, the population problem has shifted. It is now young adults aged 20-30 who represent the most sensitive age group with regard to demography. Rates of population growth at 20-30 are higher than those of the total population and, in many cases, higher than the rates of growth of resources available to young adults. By “resources” is meant here everything that makes life possible, if not enjoyable, including agency and the capacity to decide for oneself. Earning and access to labour are key.

Falling birth rates are expected to translate into lessening pressures on MENA labour markets after some 20 to 25 years. Indeed, population aged 20-25 reach a maximum somewhere between 2005 and 2030 according to when fertility started to decline (TABLE 14).

Despite the numbers of new entrants into labour markets stabilising or even decreasing in the near future, total working age populations in the MENA will continue to rise sharply during the next two decades given that generations reaching working age will still be much larger than those reaching the age of retirement. Europe (EU27) will be subject to opposite trends, with a total working age population starting to shrink in 2010 and numbers of new entrants continuously declining over the next two decades (TABLE 15, GRAPHS 9 & 10).

Could migration of working age population from the MENA to the EU27 mitigate both trends, with surpluses in the former and shortages in the latter? At first glance, the two phenomena do not have the same magnitude: from 2005 to 2030 the total working age population is expected to increase by 156.318 millions in the MENA, but to decrease only by 23.666 millions in the EU. However, if one considers only new

**TABLE 15 Demographic dynamics of MENA and EU labour markets (2005-2030)**

	MENA		EU27	
	Numbers	Change (t, t+5)	Numbers	Change (t, t+5)
	<b>Total Working Age Population</b> POP <sub>15-64</sub> in thousands			
<b>2005</b>	286,836	+ 35,587	330,137	+ 2,227
<b>2010</b>	322,423	+ 32,029	332,364	- 3,934
<b>2015</b>	354,452	+ 30,196	328,430	- 5,598
<b>2020</b>	384,648	+ 30,048	322,832	- 7,032
<b>2025</b>	414,696	+ 28,458	315,800	- 9,329
<b>2030</b>	443,154	–	306,471	–
<b>Total 2005-30</b>	–	+ 156,318	–	- 23,666
	<b>Annual Numbers of New Entrants</b> POP <sub>25</sub> in thousands			
<b>2005</b>	8,744	+ 818	6,533	- 185
<b>2010</b>	9,562	+ 293	6,348	- 326
<b>2015</b>	9,855	- 85	6,022	- 417
<b>2020</b>	9,770	+ 51	5,605	- 216
<b>2025</b>	9,821	+ 530	5,389	- 25
<b>2030</b>	10,351	–	5,364	–
<b>Average 2005-30</b>	9,684	+ 321	5,877	- 234

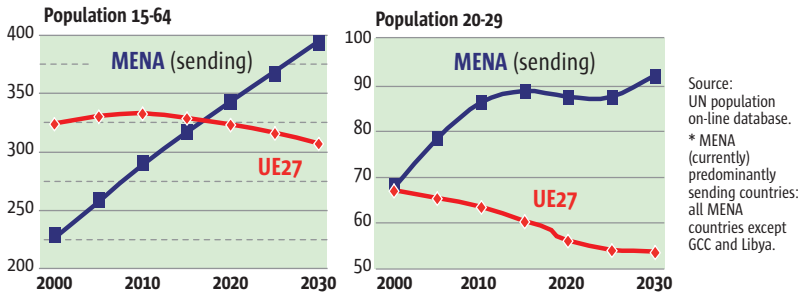
Source: United Nations, World Population Prospects, the 2006 Revision, Data Online <http://esa.un.org/unpp/index.asp>

entrants on the labour market<sup>(10)</sup> – who are also the potential migrants – surpluses in the MENA and shortages are much closer in size: from 2005 to 2030 the number of individuals reaching their twenty-fifth birthday will increase by 321 thousands per year in the MENA and decrease by 233 thousands in the EU27. From a quantitative point of view, it seems that migration could help alleviate future imbalances. One should note that were Turkey to be admitted into the EU, its younger and faster growing population would slacken the decrease of EU-aggregated young active population, but have no impact on the demography of individual Member States. Seen in this perspective, enlargement is not a substitute for migration.

New and larger generations are only one facet of the changes that MENA labour markets will go through in the next two decades. Not only have high birth rates produced the largest generation ever born, now searching for employment, but recent declines in birth rates are linked with other trends that sharpen the competition for employment.

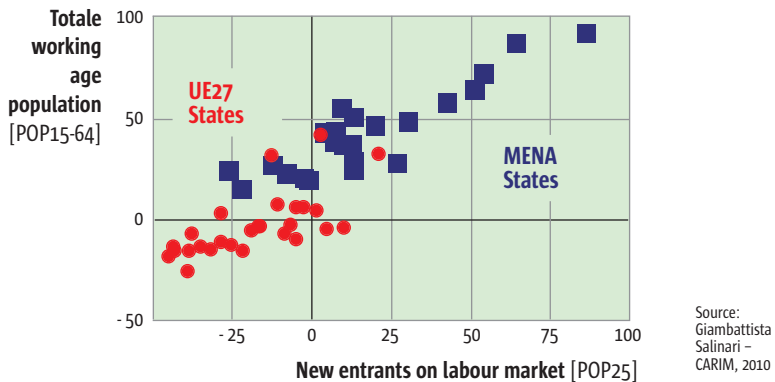
(10) Schematically equated to population aged 25 years in table 15 and graph 9.

**GRAPH 9 Working age population in the MENA\* and EU27 (2000-2030) (millions)**



**GRAPH 10 New entrants on the labour market and total working age population**

Relative change 2000-2030



Indeed, birth control has at least two corollaries that tend to increase, rather than relieve, pressures on employment. One is the changing role of women and the other the development of school education.

Women’s role in the family and society has started to change fundamentally with the demographic transition. High fertility in the recent past was linked with early marriage and low participation of women in economic activities, particularly in those taking place outside the household, in the public space. Decreasing birth rates are correlated with delayed marriage and increased participation of women in the workforce. As a result of a larger proportion of women seeking employment, the demand for employment grows faster than the working age population.

Not only are the largest generations ever born now entering the Arab labour markets, not only do they now include both sexes, but they are



increasingly educated. The spread of school education has been a key factor in the reduction of fertility and human capital is soaring. The quantity of work needed as well as its quality have been disrupted in relation to demographic change. Young persons entering the labour force have received more education than old persons leaving it through retirement or death, and therefore new jobs do not have the same profile as those left vacant. Even though in its 2008 MENA Development Report, the World Bank stresses the insufficient achievements of MENA countries with regard to the quantity and quality of education provided by their youth, labour markets seem to receive more people with a school education than they can accommodate.

To summarise, MENA labour markets are currently faced with unprecedented rates of growth, all much higher than the 1.7% annual rate applied to the total population: current rates are as high as 3% for the working age population; 4-5% for the actual demand for labour (in which a growing proportion of women must be included); 6-8% for the quantity of human capital (measured as the aggregate number of years spent at school among those entering the labour market minus that number among those leaving the workforce).

### **The lifting of family constraints and the birth of the individual**

IS THIS MASSIVE DEMOGRAPHIC inflow on MENA labour markets a chance or a burden? There are two possible interpretations. The first one is a rather optimistic view propagated by several international agencies in the last decade. According to that interpretation, demographic change is a “gift” for it opens a window of opportunity to endogenous economic development<sup>(11)</sup>. As a consequence of sharp but recent declines in the birth rates, the dependency ratio<sup>(12)</sup> is at low ebb. This will not last for declining birth rates will soon end up in an ageing population and the child dependency of the recent past will give way to old-age dependency (TABLE 16). In other words the proportion of potentially active to inactive population is exceptionally high.

For young people now beginning their working life, the future benefits of their work are no longer mortgaged to support numerous children (as was the case until recently), or the burden of the aged (as will soon be the case). This is a situation favourable to savings and investment.

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(11) Bloom 2003, World Bank 2007, Assaad and Roudi-Fahimi 2007.

(12) Defined as the ratio of the sum of the population aged 0-14 and that aged 65+ to the population aged 15-64.

**TABLE 16** Year when the ratio [old persons / young adults] passes over 0.33

	Mostly sending countries	Mostly receiving countries
1950 or before	Lebanon	Israel
1965	Turkey	–
1975	Egypt, Tunisia	Bahrain, United Arab Emirates
1980	Morocco	Kuwait, Qatar
1985	Algeria, Iran	Libya
1990	Mauritania, Iraq, Jordan	Saudi Arabia
1995	Sudan	Oman
2000	Palestine, Yemen	–

Source: Giambattista Salinari based on UN Population database.

Investment can now be economic rather than demographic: it may serve to improve the quality of life of future generations rather than to meet the demand effect of the population explosion. MENA countries would, according to this thesis, be at a privileged moment in which they enjoy a population dividend. **GRAPH 11** shows three series for the aggregated MENA population:

- The green line (“intra-generational competition”) represents the size of the generation born 25 years earlier (approximately the annual number of new potential entrants onto the labour market): it climbs steadily until 2010 then stabilises for around 15 years before climbing again, but at a slower pace.
- The blue line (“inter-generational burden in children”) shows the total fertility of the generation described above: it has continuously declined until now<sup>(13)</sup> and is expected to continue to decrease over the whole period (projected total fertility rates);
- The red line (“inter-generational burden in old persons”) figures the average number of living parents per sibling in a family<sup>(14)</sup>: it is stable until 2005 (generation born in 1975) then climbs sharply and continuously until 2025.

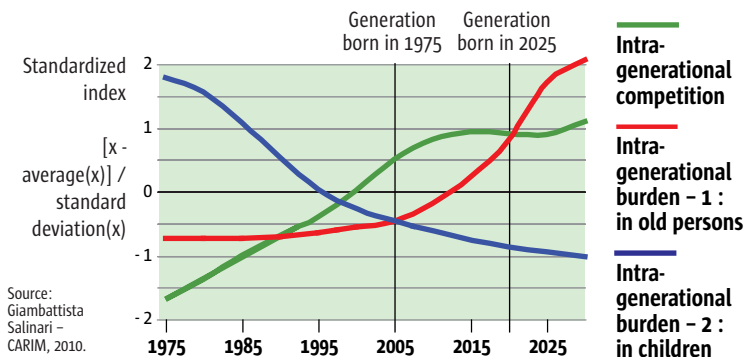
Generations born between 1975 and 1995, i.e. the young adults of today, would benefit from a favourable but short-lived demographic gift that can yield a dividend for the entire population.

(13) 2005: last index based on actual data.

(14) Computed as the product of the number of parents at birth (two) by their probability of surviving 25 years later (survival probability from 30 to 55 if the mean age at childbearing is 30) and divided by the number of siblings surviving at 25:  
 $2 [l(55.g-30)/l(30.g-30)] / ISF(g) l(25.g).$

### GRAPH 11 The demographic dividend in the MENA region.

Demographic competition and burden at 25 years



What impact will the demographic gift have on international migration? The literature is silent on the topic, but one may assume that development made possible by dependency rates at their lowest will soon reduce the root causes of emigration and international migration will slow down. The problem with this interpretation, however, is that for young people to be able to save, they need to work and earn a sufficient income. This is not an easy task in countries confronted with high unemployment, underemployment, low wages and poor returns on education. On average, it takes a young educated person two to three years to find first employment, then again two to three years to accumulate enough savings for his or her marriage. Transition to adulthood occurs at the price of a long period of expectation and exclusion<sup>(15)</sup>.

In Algeria, a country where oil wealth could never translate into job opportunities for everyone, unemployment is the lot of 31% young adults at 20-24 and 26% at 25-29 (ONS 2005). In Morocco unemployment is highest among the young (33% at 15-24 years and 26% at 25-34 in urban areas), and highly-skilled persons (24% of people with a diploma are unemployed, against 9% of those with no diploma). Between 1999 and 2004, unemployment has declined for every category except those with a university degree and the higher the diploma the higher the probability of being unemployed. Unemployment starts as soon as education ends, and the higher the education received the longer the duration of subsequent unemployment. Two out of three first job seekers with a university diploma are unemployed for more than one and for up to three years (CERED 2005).

(15) Dyer and Yousef, 2008.

From that point of view Morocco and Algeria are average MENA countries, not exceptions. The MENA 2004 Development Report of the World Bank, after stating that “*when demographic burden becomes a demographic gift [...] the growth of economically active population will exceed that of the economically dependent population by a much greater magnitude than in any other region*”, observes that “*the dynamics of demography in MENA have created some of the most intense pressures on labor markets observed anywhere in the post-wwi period. [...] Unemployment is highest for groups in the middle and upper end of the education distribution*”. In relation to educated people remaining unemployed, the 2008 MENA Development Report of the World Bank states that “*the impact on development of the considerable education progress recorded in the region has been less than expected*”. If young people are not offered work and rewards for their education, then the demographic gift may prove a demographic mirage.

An alternative interpretation of demographic change leads to a more realistic view. It acknowledges another face of low birth rates, i.e. that family constraints of earlier times are lifted for new generations. Due to their own (expected) low fertility, they no longer bear the burden of numerous children. Due to their mothers’ high fertility, they still have numerous siblings to share the burden of old persons. As a result, young adults today bear fewer family burdens. From a demographic point of view, the Middle East is now witnessing the birth of the individual. For the first time, there is personal freedom in movement. Demography sets the backdrop against which young and often educated adults now arrive on Middle Eastern labour markets, freed from family charges. The freedom of movement which has been gained through demographic change also entails a certain level of individual availability for risk<sup>(16)</sup>.

More human capital flooding into the labour market engenders more capabilities, but also more expectations. Human capital has a potential for progress but also for protest. If expectations are frustrated, then the response can be anything from voice to exit. The voice response, illustrated by the Arab revolutions, occurs when the demand for political and social empowerment grows among young people that are more educated than ever before. A statistical analysis of political violence in Egypt, in the early 1990s, showed striking correlations between the rise of edu-

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(16) This interpretation goes against the ‘new economics of labour migration’ that views individual migration as a choice made collectively by the family for one of its members, as an insurance against risk (Stark...).

cation, the speed of birth rates decline, urban growth and the rise of violent extremism<sup>(17)</sup>.

The exit response to frustrated expectations may take the form of emigration. Surveys of Middle Eastern youth reveal that the proportion of young people who wish or intend to emigrate ranges from a quarter to an enormously high three quarters of an age group, according to countries. In the second half of the 1990s, a EUROSTAT-coordinated survey already found high proportions: 14% in Egypt, 27% in Turkey and 20% in Morocco. More recent surveys unveil far higher numbers. Tunisia (before the revolution), a country with a successful economy, but a stalled democratisation process, is a case in point (**TABLE 17**): in 2006, 76% (against 22% in 1996 and 45% in 2000) of the age group 15-29 declare that they are contemplating emigration as an option. Many of them may simply dream without making concrete plans or taking actual steps, but their dream tells much about the deep discomfort that is now common among the young in the MENA.

Future patterns of migration will not resemble those of the past and not even those of the present day. Family profiles of young MENA migrants are going through radical changes. Yesterday, migrants had a family back home and their emigration was motivated by a drive to feed and educate their families. Remittances was the main reason for leaving the country and in many cases, return was part of the migration project. Tomorrow, young emigrants will typically have no children or wives and their goal will rather be self-accomplishment.

WILL CONFLICTS and wars produce more migrants in the coming decades? One has to acknowledge that they have continuously done so over the last sixty years as brought out by the (incomplete) list below<sup>(18)</sup>.

- The Palestine/Israel conflict (open wars of 1948-49 and 1967 and low intensity wars in the early 2000s) caused a great deal of migration. Directly and locally, they produced the Palestinian exodus. Indirectly, it had an impact on the whole Arab Middle East. The protracted conflict served as a pretext for Arab authoritarian regimes to stay in power, claiming solidarity with the Palestinians while belligerence with Israel offered them a strategic resource for legitimizing state violence. This had two contrasted outcomes for migration: states put administrative obstacles to the emigration of their citizens (during the Cold War), but

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(17) Fargues, 1994.

(18) Fargues, 2002.

**TABLE 17 Wish to emigrate among Tunisian youth (1996-2005)**

Percentage of young persons who declare that they wish to emigrate

National representative sample [sample size: 20,000 in 1996; 10,000 in 2000; 10,000 in 2005]

		1996	2000	2005
<b>Sex</b>	Male	29	54	84
	Female	14	37	66
<b>Age</b>	15-19	21	44	76
	20-24	24	47	77
	25-29	23	45	74
<b>Instruction</b>	Illiterate	6	3	66
	Primary	19	45	77
	Secondary	26	49	77
	University	24	46	73
<b>Activity</b>	Employed	25	48	77
	Unemployed	31	54	85
	Student	26	48	75
<b>Total</b>		<b>22</b>	<b>45</b>	<b>76</b>

Source: Fourati, Habib 2008. Consultations de la jeunesse et désir d'émigrer chez les jeunes en Tunisie 1996 – 2005. CARIM.

political repression combined with poor economic performance also fostered emigration.

- The October 1973 War between Israel and Egypt indirectly triggered a massive wave of Egyptian migration to the Gulf through the strategic alliance between Egypt and Saudi Arabia: oil became a new weapon of war and its soaring price soon resulted in equally soaring demand for imported labour in the Gulf, while the supply of Egyptian labour was suddenly made possible by President Sadat's open-door policy.
- The Gulf War of 1990-1991 resulted in three million legal immigrants being driven out their host country. Most of them were Arab citizens who were suspected of disloyalty because they bore the wrong citizenship. In Iraq, Egyptian migrants originating from a country now at war with Iraq; Yemenis in Saudi Arabia and Palestinians in Kuwait, both coming from countries supporting Iraq. But hundreds of thousands were Asian migrant workers fleeing the battlefield.
- The American invasion of Iraq in 2003, which soon resulted in the largest flow of refugees in the Middle East since 1948.
- Other conflicts also had an impact on migration: the Iran-Iraq war of 1979-1988 and a myriad of civil wars like those in Yemen in the 1960s, in Lebanon in the 1970s-80s, in Algeria in the 1990s and in Sudan in the 1990s and 2000s.

- More recently, the Arab revolt resulted in flows of refugees not only from countries in transition (Tunisia, Egypt) but mainly from Libya because of the NATO intervention and from Syria because of the repression.

Without offering scenarios for future conflicts in the MENA, one must cite a number of dangerous situations that may trigger large movements of peoples: the unresolved Israel-Palestine conflict; Iraq under foreign occupation; ethnic conflicts in Sudan; religious tensions between Muslims and Christians in Sudan, Lebanon, Iraq and Egypt; religious tensions between Shia and Sunni Muslims in Iraq and Lebanon; exposure of migrant workers to changing legislation on entry, stay and labour in Gulf Cooperation Council countries and Libya.

Freshwater scarcity may become a source of acute tensions in the MENA, even though no one can say with any certainty that nations would go to war over water appropriation<sup>(19)</sup> or that water disputes might engender migration. The Nile may soon become the subject of intense rivalry between ten countries with fast growing populations including Sudan – since the late 1990s an oil-rich country with ambitious irrigation plans. Other potential or actual conflicts over water exist between Syria and Turkey (the Euphrates), Israel and Jordan (the River Jordan) and between Lebanon and Syria (the Oronte).

## 2. Forecasting Mediterranean migration

### The theoretical framework

THE LINK BETWEEN demographic transition and mass migration from MENA countries has been emphasized by several authors<sup>(20)</sup>, and stressed in the previous section of this work. The first task of our forecasting exercise will therefore be that of clarifying, by using pooled time series analysis, the exact role played by the demographic covariates in the upsurge of this wave of mass migration.

The possibility of linking the long-term development of migrations to some demographic covariates will be the key in our subsequent prediction, because if this link exists, if the demographic transition is fol-

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(19) Goldstone, 2001.

(20) De Haas, 2007, 2005 ; Fargues 2002 et 2009, 2000, 1986 ; Rashad 2000 ; Courbage 1999.

lowed by mass migrations some years later, then this link can be reasonably employed to predict the development of future migrations.

The theoretical framework that we will follow in the next pages deviates in some respects from the “mainstream” conceptualization of migration processes. The most relevant difference is probably the prominence that we accord to demographic/political shocks as triggers for migration, rather than to income differentials. In our understanding, income differential has a fundamental role in deciding migration flows, but alone it cannot be considered a sufficient condition for emigration. According to our model, migration processes can be thought, instead, of being subdivided into four different phases:

**The origin of migration flows.** At the origin of most cases of mass migration (at least, in the Euro-Mediterranean region during the period 1950-2010) there is a shock. This shock differs from country to country: it may be an economic shock, as in the case of the migration from Albania, after the “Pyramid Crisis” (1997); it may be a shock produced by war, as in the Palestinian Diasporas (1948 and 1967), the Yugoslavian Wars (1991-1995), the October 1973 War the political repercussions of which made mass emigration from Egypt possible, the Iran-Iraq War (1980-88), the Gulf War of 1990 and the Iraq War of 2003, etc.; it may be a political-institutional shock, such as the decolonization process (‘50s-‘70s), or the fall of Berlin Wall (1989). These shocks are easily detectable, and the causal relationship between them and the upsurge of migration flows seems straightforward.

In other cases, however, the shocks are less evident, and we suggest that this is the case with the demographic transition process<sup>(21)</sup>. A steep reduction in the mortality rate engenders a multiplicity of effects that are not always easy to recognize, not least because of their delayed nature. In a rural economy, the demographic transition will initially change the ratio between population size and available farmland. This change will become apparent a few years after the onset of the decline in mortality, when the increased number of survivors puts both the traditional system of devolution of wealth from one generation to the next (inheritance and dowry) and the process of family formation under stress. At this point two forms of migration generally take place: urbanization first and international migration later<sup>(22)</sup>.

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(21) Zelinsky, 1971.

(22) Cuberes 2009; Dyson 2001



For the study of such processes, much of the necessary information is simply not available. We can, nevertheless, try to use a small set of demographic indicators in order to initially test the long-term association between migration and the demographic transition. The indicators that we selected for this analysis are: population density<sup>(23)</sup>, proportion of urban population, rate of natural increase, urban growth and median age.

**The orientation of migration flows.** Once the general conditions for migration have been primed by an initial demographic/political shock, a different set of factors come into play, turning migration flows towards their destinations. Among these factors some economic variables, like income differentials, the unemployment rate and the level of education (as a proxy for human capital) play a fundamental role. The economic variables, however, are not the only factors at play in this process: other variables also matter, e.g. the geographical and the cultural proximity, the presence of pre-existing colonial ties, or the presence of pre-existing migrants' communities in the receiving regions, etc.

Economic theory<sup>(24)</sup> predicts that the net migration rate is positively associated with GDP per capita and higher level of education, and negatively associated with unemployment.

**The self-reinforcement of migration flows.** A fundamental aspect of the first migrants' communities is that they are, to a certain extent, capable of self-feeding themselves through the mechanism of chain migration<sup>(25)</sup>. This phenomenon appears to be generally subdivided into two different stages. In the first stage, the existing stock of mainly young male migrants will attract a population characterized by the same demographic characteristics from the sending regions. As time goes by, nevertheless, the capacity of attraction starts weakening and a second stage begins in which migration appear to be driven mainly by family reunification. Due to family reunification, the demographic characteristics of

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(23) Population density can be computed as the ratio of total population to the national territory or only to the fraction of that territory which is inhabitable, or arable. The two indexes diverge considerably on the Southern shore of the Mediterranean where desert land occupies a large proportion and, in cases, most of the national territory. While in predominantly agricultural or pastoral economies, population pressure is expected to be reflected by the density of inhabitable land, in modern diversified economies of the MENA the availability of national space is also expected to matter.

(24) Massey & al. 1993; Jennissen 2003; Bijak 2006; Boeri 2001; Venturini 2004.

(25) Massey 1993: 449.

migration flows show during this second stage a more even gender balance. We can, therefore, theorize a negative association between the previous migrants stock and the current net migration rate. The problem is that we lack the information concerning past emigrant stocks. To integrate this process into our model we have, therefore, used as proxy variable, the ratio between female and male population in the age class 20-49.

**End of emigration and migration transition.** As time goes by and the population finds a new equilibrium, migration outflows start to decrease. In those countries where the initial shock was given by the demographic transition, the population undergoes an aging process caused essentially by the reduction in fertility. The aging process has implications for migration. One important determinant of the fertility reduction is the will to give children more chances of social promotion (for instance by allowing them access to the higher levels of education). Social mobility of this kind<sup>(26)</sup> causes a vacancy in the lower sectors of the labour market, which is a precondition for the attraction of new immigrants. This is, in part, how countries turn from sending to receiving countries.

### **A first inspection of data**

THE BULK OF OUR DATASET is based on the 2008 Revision of the World Population Prospects published by the Population division of the United Nations<sup>(27)</sup>. This data spans a century, from 1950 to 2050, and primarily concerns national aggregates. For the sub-period spanning from 1950 to 2010 the UN Population division provided estimates of the main demographic indicators concerning the stock and the flow of population with a periodicity of 5 years (12 time intervals).

The UN Population division declares that, from a general point of view, three different procedures have been followed to produce the estimates:

- in the case of developed countries the estimates are based completely on official statistics produced by the national statistic offices;
- for less developed regions, estimates are frequently based on indirect estimation and models;
- in some rare cases, when no data are available, the estimates are based on a consideration of the demographic evolution of countries with “similar socio-economic profile”.

(26) Billari and Dalla Zuanna 2008: 24.

(27) [www.un.org/esa/population](http://www.un.org/esa/population)

The first strategy applies to all the countries on the Northern Mediterranean shore. The second strategy, conversely, applies to many countries on the Southern Mediterranean shore.

In the Maghreb and in the Machrek the civil registers have existed for a long time<sup>(28)</sup>. Since the 1960s the quality of data collected has greatly improved, and the United Nations estimate that, in 2001, the civil registries of Algeria, Egypt, Libya and Tunisia covers more than 90% of mortality<sup>(29)</sup>. The majority of the countries in the Maghreb and in the Machrek region have, moreover, carried out between 4 and 6 censuses from the 1960s with a periodicity of about 10-12 years. Only Mauritania has three censuses<sup>(30)</sup> while Lebanon's only census goes back to 1932 and since then the country has conducted only one national demographic sample survey, in 1970. Besides this data many surveys exist concerning fertility and health: Morocco, Egypt, and Jordan are particularly well covered with respectively 8, 8, and 6 surveys realized since the 1970s. In summary, it seems reasonable to state that, from the 60s onwards (with the exception of Syria, Lebanon and Mauritania), UN estimates concerning the Euro-Mediterranean region have been based on a wide range of different and reliable data sources.

The UN World Population Prospects only provide the rate of net migration. This information has been generally estimated through the difference between total population growth and natural population increase. The use of a net migration rate has been heavily criticized in past years<sup>(31)</sup>, but despite this fact it has continued to be used in empirical research works<sup>(32)</sup>. In our understanding the use of the net migration rate as a dependent variable in a regression analysis presents three advantages over other possible indicators.

First, this index has been put together from the most basic demographic information: the total population, the number of births and the number of deaths. These basic variables are much less affected by systematic bias than those concerning emigration rates, especially in the period from 1970s onward. It is, indeed, true that every measurement error committed in the estimation of these three basic variables affects the estimation of the net migration rate, but this is not a real problem

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(28) Since 1840 in Egypt, since 1882 in Algeria, since 1908 in Tunisia, since 1923 in Syria and since 1925 in Morocco (Tabutin and Schooumaker 2005: 618).

(29) Tabutin and Schooumaker 2005: 618.

(30) Tabutin and Schooumaker 2004: 588.

(31) Rogers, 1990.

(32) Jennissen, 2003.

insofar as the measurement errors are independent from each other. Second, as the net migration rate is estimated using very basic information, longer time series are available. The net migration rate has, finally, a third advantage in comparison with migrant stock as only the former, not the latter, is sensitive to short-term changes in migration. Political shocks, as we will see, can, indeed, strongly bias the regression analysis and hide fundamental processes at stake. Cross-sectional regression analyses of migrant stocks generally do not allow any control over the effects arising from political crises (because the information about stocks and the occurrence of political crises are generally not contemporaneous, and because at a given time migrants stocks may result from the cumulated effect of several previous political crises). Net migration rate, conversely, means that political shocks can be checked for.

Besides the estimated demographic indicators, the Population division provides a set of eight different variables of projected indicators covering the period from 2010 to 2050, always with a periodicity of 5 years. The different population projections have been obtained by applying different sets of hypothesis on the future trends of mortality, fertility and migration. Among these eight different variants, we chose the so-called “medium variant” which the Population division itself defines as the most likely.

To obtain information on economic variables covering the period from 1950 to 2010 we used two different sources: the time series of GDP per capita comes from the Maddison *Historical Statistics of the World Economy*<sup>(33)</sup>, while information concerning the diffusion of tertiary education has been taken from Barro and Lee (2010)<sup>(34)</sup>. In the case of Bosnia, Croatia and Serbia the data concerning GDP per capita for the period 1950-1985 are missing and, therefore, have been calculated, assuming that the growth rate in these regions was the same as that recorded in Yugoslavia during the period 1950-1985.

We selected for our analysis the most relevant countries belonging to the Euro-Mediterranean area where data are available. The 16 major countries forming this area have been broken down into 4 major regions with a similar general timing in the onset of the demographic transition. **TABLE 18** shows the detailed list of macro-regions and countries. From our set of countries we excluded the Occupied Palestinian Territories and Slovenia because data on GDP *per capita* and the educational attainment

(33) [www.ggd.net/maddison](http://www.ggd.net/maddison)

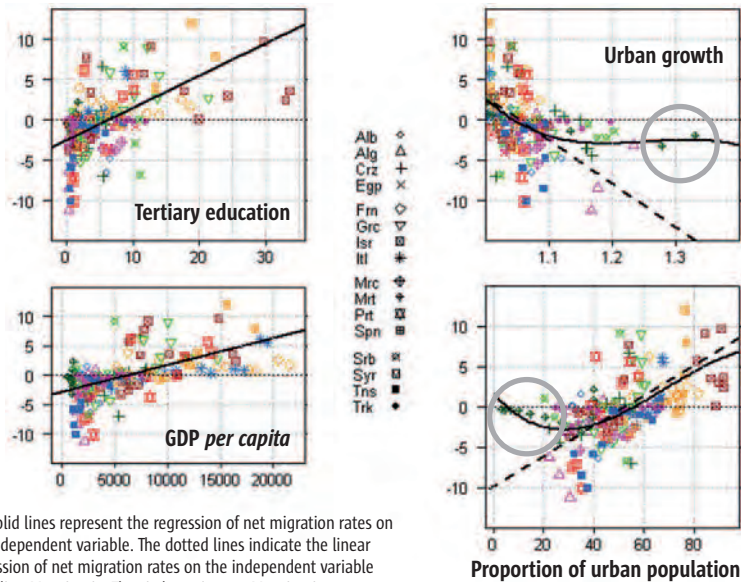
(34) [www.cid.harvard.edu/ciddata/ciddata.html](http://www.cid.harvard.edu/ciddata/ciddata.html)

**TABLE 18 Geographical classification of the Euro-Mediterranean region**

<b>South Europe</b>	Italy, France, Portugal, Spain
<b>Balkans</b>	Greece, Albania, Croatia, Serbia
<b>Maghreb</b>	Algeria, Mauritania, Morocco, Tunisia
<b>Machrek</b>	Egypt, Israel, Turkey, Syrian Arab Republic

Source: Giambattista Salinari - CARIM

**GRAPHIQUE 12 Relationship between net migration rate (on the ordinate) and tertiary education, urban growth, GDP per capita and proportion of urban population (on the abscissa) (1950-2010)**



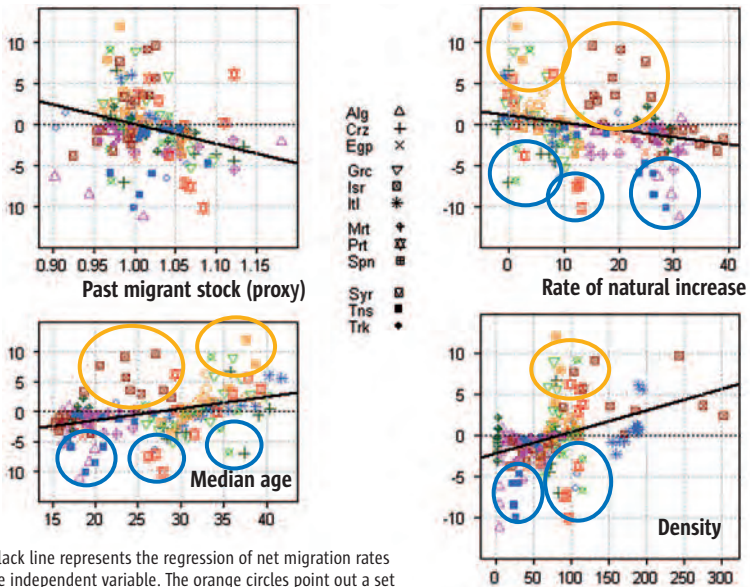
The solid lines represent the regression of net migration rates on the independent variable. The dotted lines indicate the linear regression of net migration rates on the independent variable excluding Mauritania. The circles point out Mauritania.

Source: UN Population Division (2008).

were not available. We exclude also Lebanon because of the huge effects produced by political shocks on migration 1950-2010 and because of the lack of demographic information.

**GRAPHS 12** and **13** show a simple bivariate analysis, for the period 1950-2010, using only simple indicators. In **GRAPH 12**, we look for a general statistical association between net migration and tertiary education, urban growth, GDP per capita and proportion of urban population. The first thing to be noted looking at it is the strong dispersion of points around the trend: GDP per capita and tertiary education, as predicted by economic theory, show a positive linear association with net migration rate,

**GRAPH 13** Relationship between net migration rate (on the ordinate) and past migrant stock, density, rate of natural increase and median age (on the abscissa) (1950-2010)



The black line represents the regression of net migration rates on the independent variable. The orange circles point out a set of disruptive events that produces an abnormal value of immigration. The blue circles point out a set of events producing an abnormally low level of net migration rate.

Source: UN Population Division (2008)

nevertheless the cloud of points is largely dispersed around the predicted values. The proportion of urban population and the level of urban growth show a complex path. The graphs indicate a clear linear relationship in the expected direction (positive for the proportion of urban population and negative for urban growth), with only one country, Mauritania, clearly outside. Mauritania shows, at the same time, the lowest proportions of urban population and the higher urban growth rates, and both these conditions are associated with low levels of emigration. Of all the countries under scrutiny, Mauritania is, by far, the most delayed in the demographic transition, and it is possible that, in the early phases of such process, all the effects of the demographic transition on emigration are absorbed by urban growth. In this case, the relationship between urban population, and urban growth and emigration might be non-linear.

In the second panel of graphics (GRAPH 13), we look for a statistical association between net migration and past migration stock, median

age, rate of natural increase and population density. The relationship between this second group of variables and net migration rates have the expected sign. Nevertheless a set of different political events seems in part to be masking the real strength of this relationship. On the one hand, we have, in fact, a set of disruptive events that produces an abnormal value of immigration (orange circles): the waves of migrants directed towards Israel; the refugees of the Iraqi wars directed towards Syria; and the regularization of migrants in Portugal, Spain and Italy. On the other hand, we have a different set of events that produces an abnormally low level of net migration (i.e. high emigration rate: blue circles): the decolonization process in Algeria and Tunisia; the loss of colonies by Portugal; the Yugoslavian Wars and the collapse of the communist regime in Albania. These political shocks make it more difficult to detect the effects produced by the demographic transition process on international migration.

Three major facts seem, therefore, to emerge at the end of this first inspection of the UN's historical data concerning migration in the Euro-Mediterranean region:

- The importance of political crises as triggers for international migration flows.
- The opposite effect produced by crises on the countries directly affected, and on their neighbours.
- The importance of checking for political and economic shocks to find out the long-term connection between the demographic transition and mass migration flows.

### **Building the model**

IN THE PRESENT SECTION we will present a more detailed analysis of the role played by political shocks, the demographic transition, migratory chains and economic variables in the surge of mass migration waves during the period 1965-2010 in the Mediterranean region. This part of the work will make use of pooled time series analysis as analytical tool for disentangling the effects produced by these different processes on migration. Once the different components of migratory processes have been disentangled, the estimated regression coefficients will be applied to the projected series of our variables in order to estimate the net migration rates for the Mediterranean region during the period 2010-2030.



**TABLE 19** List of political shocks

Political\Economic Shock	Period	Involved Regions
Oil Shock	1970-1979	Machrek, Southern Europe
Berlin Wall	1990-1999	Balkans, Southern Europe, Israel
Yugoslavian War	1990-1994	Balkans; Southern Europe
Albania Anarchy	1995-1999	Balkans; Southern Europe
Gulf War 1	1990-1994	Machrek; Maghreb
Gulf War 2	2000-2009	Machrek; Maghreb
Decolonization	1965-1969	Southern Europe, Machrek; Maghreb
Regularization 1	1995-1999	Southern Europe
Regularization 2	2000-2004	Southern Europe

Source: Giambattista Salinari - CARIM

The most sensitive part of the analysis has been that of identifying the political events significantly affecting net migration rates. **TABLE 19** presents the list of political shocks that we have considered in our analysis, along with the area potentially concerned by their direct or indirect effects.

To find out the countries that were significantly influenced by the effects of such political events we have built, as a preliminary measure, two dummy sets: one for each of the 16 countries and the 4 macro-areas listed in **TABLE 18** and one for each of the 9 major political shocks presented in **TABLE 19**. The interaction between these two dummy sets allows us to check for the impact exerted on a given country (or macro-area) by a given political crisis. To verify the statistical significance of the political shocks on the net migration rate of a given country we have then performed a step-wise regression (not shown here). The step-wise regression selected 17 historical configurations (country + shock) in which a political shock has exerted a statistically significant effect on migration. The list of these historical configurations can be found in the dummy section of **TABLE 20**.

After having identified the most important political shocks during the period 1965-2010, we performed four different pooled time series analyses. As a preliminary analysis, we performed an ordinary regression analysis without taking into account the effects produced by the political shocks. The result was a poor model fit (Adj.  $R^2 = 0.27$ ). The only significant variables are *GDP per capita*, the proportion of population with tertiary education and population density.



We then ran a second regression, checking also for political crises. This time the fit of the model improved greatly (Adj.  $R_2 = 0.85$ ), and all our economic and demographic variables become statistically significant with the exception of tertiary education. The Durbin-Watson test nevertheless identifies in this model the presence of significant serial correlation. We then performed our third model controlling this time for the effects produced by political shocks and for the presence of serial correlation. The results of this operation largely confirm the results obtained through the second model.

Finally, because reverse causation may exist between net migration rate and median age, we introduced an instrumental variable into our baseline model (model 2). We chose life expectancy at birth ( $eo$ ) as an instrument for our two stages least square estimation, supposing that the effect of this variable on net migration would be entirely “captured” by median age and that  $eo$  is not influenced by net migration rate. The estimated coefficient for median age in the two stage regression (model 4) is smaller than that estimated through ordinary linear regression (model 2), but the difference between the two coefficients is not statistically significant. This means that reverse causation has a small and probably non-significant effect on median age. The exclusion of tertiary education from the set of the major determinants of migration is probably one of the more striking results of our analysis. This fact, nevertheless, can be, at least in part, justified. Economic theory states that the level of education is a proxy for human capital and predicts a positive association of this variable with net migration rate<sup>(35)</sup>. Higher levels of education are nevertheless known to be negatively associated with net migration rates in several countries (like in Morocco or Tunisia for instance) where in recent years governments have greatly invested in secondary and tertiary education. These investments have added to the number of young people with high level of education without transforming the economic structure and political regime of these countries. Therefore, young people with high levels of education tend to be associated with high rates of unemployment and emigration<sup>(36)</sup>. It is possible that these contrasting results for the connection between education and net migration (the more general predicted by economic theory and the more local found in countries like Morocco and Tunisia) are both at play in our

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(35) Jennissen 2004: 174.

(36) Fargues 2009: 14.

**TABLE 20** Regression analysis: Net migration rates in the Euro-Mediterranean region (1965-2010)

Variables	Model 1 No Shocks		Model 2 with Shocks		Model 3 Shocks and AR(1)Correction		Model 4 Instrumentale Variable $e_0$	
	Value	Pr(> t )	Value	Pr(> t )	Value	Pr(> t )	Value	Pr(> t )
(Intercept)	34.20	0.43	48.03	0.02	48.91	0.03	46.92	0.03
Urb. Growth	-60.05	0.42	-63.43	0.07	-65.48	0.07	-61.32	0.09
(Urb. Growth) <sup>2</sup>	25.52	0.41	26.17	0.07	27.03	0.08	25.33	0.09
GDP per capita	0.00	0.00	0.00	0.02	0.00	0.04	0.00	0.05
Tertiary Education	0.21	0.01	-0.04	0.47	-0.03	0.56	-0.04	0.53
Emigrant Stock	-1.29	0.88	-14.00	0.00	-13.72	0.00	-13.95	0.00
Density	-0.02	0.06	-0.02	0.00	-0.02	0.00	-0.02	0.00
Median Age	-0.04	0.53	0.15	0.00	0.15	0.00	0.14	0.06
Israel	–	–	6.04	0.00	6.08	0.00	5.81	0.00
Albania: BerlinWall	–	–	-14.75	0.00	-14.72	0.00	-14.91	0.00
Balkans: BerlinWall	–	–	-5.76	0.00	-5.63	0.00	-5.61	0.00
Croatia: YugWar	–	–	10.76	0.00	11.12	0.00	10.73	0.00
Egypt: OilShock	–	–	-2.33	0.08	-2.30	0.10	-2.34	0.08
Greece: YugWar	–	–	7.20	0.00	6.55	0.00	7.28	0.00
Israel: BerlinWall	–	–	6.52	0.00	6.37	0.00	6.46	0.00
Israel: PalDiasp2	–	–	1.83	0.38	1.14	0.58	1.97	0.37
Israel: GulfWar1	–	–	9.17	0.00	9.35	0.00	9.22	0.00
Italy: Reg1	–	–	4.10	0.04	4.23	0.03	4.06	0.04
Italy: Reg2	–	–	3.23	0.10	3.32	0.09	3.20	0.10
Portugal: OilShock	–	–	21.54	0.00	21.15	0.00	21.52	0.00
Portugal: ColWar	–	–	-16.53	0.00	-16.16	0.00	-16.47	0.00
Serbia: YugWar	–	–	14.55	0.00	14.05	0.00	14.48	0.00
Serbia: Reg1	–	–	-6.97	0.00	-7.26	0.00	-6.83	0.00
Spain: Reg1	–	–	9.14	0.00	8.86	0.00	9.16	0.00
Spain: Reg2	–	–	4.52	0.02	4.25	0.04	4.50	0.03
Syria: GulfWar2	–	–	6.65	0.00	6.79	0.00	6.54	0.00
AR(1)	–	–	–	–	0.12	–	–	–
Adj. R2	0.27	–	0.85	–	–	–	–	–
Durbin Watson stat	1.44	–	1.82	–	2.01	–	2.00	–

Source: Giambattista Salinari – CARIM, 2010

data. These two opposite trends might combine to produce this lack of statistical association between education and migration.

In order to describe the non-linear relation between urban growth and international migration we used a second-order polynomial equation whose coefficients are both significant at a 10% threshold. This fact seems to confirm our former discussion concerning Mauritania. In the case of very high levels of urban growth, and in the context of the beginning of the transition process, international migration seems not to be prevalent. Both the past emigrant stock and the median age present significant negative associations with net migration rate. As we discussed in the theoretical part of this work the median age is one of the variables mostly influenced by the demographic transition because it results from the combined effect of the past evolution of fertility and mortality rate.

Population density, finally, shows a significant negative association with the net migration rate. It must be noted that population density has not, in general, a straightforward relation with demographic pressure on land – and therefore migratory pressure – that one would intuitively think. Indeed, the proportion of inhabitable land varies greatly between countries and is exceptionally low in most countries of the Southern shore of the Mediterranean where a large part of the territory is desert. Egypt, for example, had a population density of 74 inhabitants per square kilometre of national land in 2005, but 95% of its territory is uninhabitable Sahara, and it has a population density of 1,478 inhabitants per square kilometre of non-desert land, i.e. one of the highest population pressures on inhabitable land recorded from anywhere in the world. Population density used in the model below therefore reflects the availability of national space *per capita*, which may differ greatly from the availability of economically useful space. The fact that population density shows a significant negative association with net migration rates implies nevertheless that, other conditions being equal, the higher the density the lower the net migration rate (and therefore the stronger the migration outflows). It is then worth noting that the connection between density and net migration has now the opposite sign if compared with the type of association shown in the previous bivariate analysis (**GRAPH 13**). This is likely a consequence of the fact that in the present analysis we are controlling for other covariates like median age, GDP *per capita*, urban growth rate, etc.

Thanks to this fact, we are able now to analyze the relationship between density and net migration “*within*” each of the two groups of transitional and post-transitional populations (Northern/Southern shore). What we found in the framework of the regression analysis can thus be simplified by saying that a transitional population characterized by higher density shows higher emigration rates than a transitional population characterized by lower density. In other words, the present regression analysis allows controlling, at least in part, for the different proportions of inhabitable land characterizing the Northern and the Southern shore of the Mediterranean. The bivariate analysis, on the contrary, focused on the different characteristics existing *between* transitional population of the Southern shore of the Mediterranean (with rising but still low population densities, wide areas of dry lands, and negative net migration) and Northern post-transitional population (with stationary but high levels of population density and positive net migration). The role played by population density in the present model is not, however, of primary importance: omitting this variable from the model causes in fact only a small fall in the overall explained variance (from 85 to 84%). Substituting the population density with the ratio between population and arable land will cause, instead, a loss of significance of the coefficient (these calculations are not shown here).

At the end of this part of our analysis we can affirm, therefore, that the connection between the net migration rate, on the one hand, and urban growth, median age and population density, on the other, seems to confirm the major role played by demographic transition as trigger for international migration flows.

### Three scenarios for net migration in 2030

OUR FORECASTING exercise suggests that there is a long term connection between demographic transition and migration. Given our poor understanding of migration, without this long term connection no prediction with a time horizon of twenty years would be possible, because the other processes influencing migration are too volatile. Demographic variables have two major advantages that can be exploited for our forecast. First of all, demographic phenomena (and especially age structure) evolve more slowly than other variables linked to cyclical dynamics. Second, many characteristics of the Mediterranean populations in 2030 will be strictly dependent on the characteristics of current Mediterranean populations.

For these reasons we decided to exploit the UN's population projections as a starting point for our forecasting exercise. By doing so we are founding our prediction on two strong hypotheses:

- that the connection identified between demographic transition and migration will hold during the next 20 years;
- that the UN's population projections are able to capture the main features of the future demography of the Mediterranean region. It should, of course, be noted that projecting the population evolution of a country where the demographic transition is in an early stage is much riskier than projecting the future evolution of a population that is entering the last stages of that process. For this reason, we can reasonably argue that the results concerning the Northern Mediterranean are probably more reliable than those concerning the Southern shore.

To take into account the effects arising from economic variables (GDP *per capita* and education levels) we have integrated the UN's projections with two different sets of information. In what concerns human capital, we used the projection up to 2030 done by KC & al. (2010)<sup>(37)</sup> of the future diffusion of tertiary education. To build the future series of GDP *per capita* we were forced, on the contrary, to build different scenarios using a simple extrapolation from Maddison's time series. We supposed initially that the effect of the current economic crisis has reduced the GDP *per capita* in 2010 to the same level as that registered in 2005 in all Mediterranean countries. From 2010 up to 2030 we have then supposed three different growth paths:

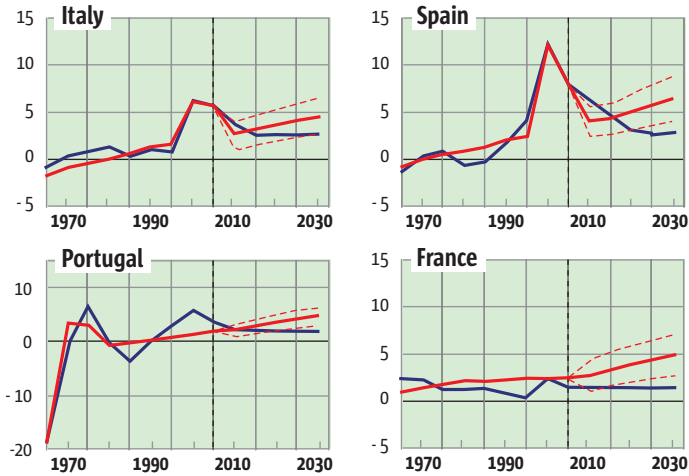
- a medium path in which growth follows exactly the same mean growth rate registered along the period 1965-2010;
- a low path in which the mean growth rate is reduced to half of that registered along the period 1965-2010;
- a high path in which growth is supposed to be one and half times higher than that of the period 1965-2010.

THE RESULTS of our forecast are shown in **GRAPHS 14 to 17**, in which the blue line refers to the UN's original time series of net migration rates. The red line, conversely, describes the theoretical predicted values of net migration rates according to our model 2 (see **TABLE 20**). The vertical dotted line in the graphics indicates the boundary between the UN's estimated net migration rates and the projected ones. In this manner it

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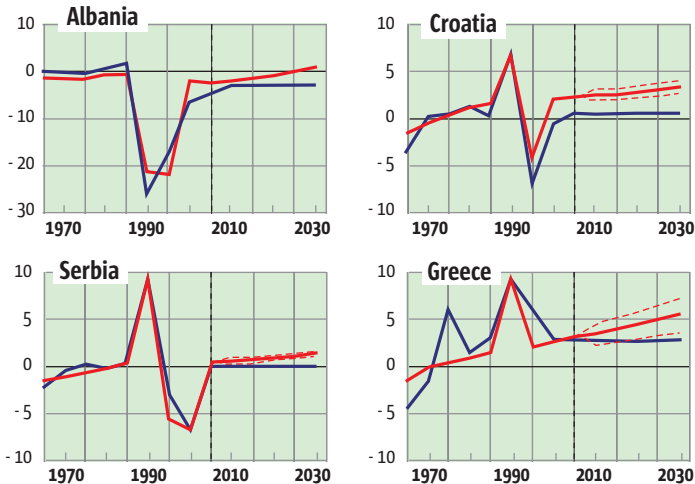
(37) Data is available at [www.iiasa.ac.at/Research/POP/edu07/index.html](http://www.iiasa.ac.at/Research/POP/edu07/index.html)

**GRAPH 14 Prediction of net migration rates (in ordinates) in Mediterranean Europe (1965-2030)**



Source:  
Giambattista  
Salinari –  
CARIM, 2010

**GRAPH 15 Prediction of net migration rates (in ordinates) in the Balkans (1965-2030)**

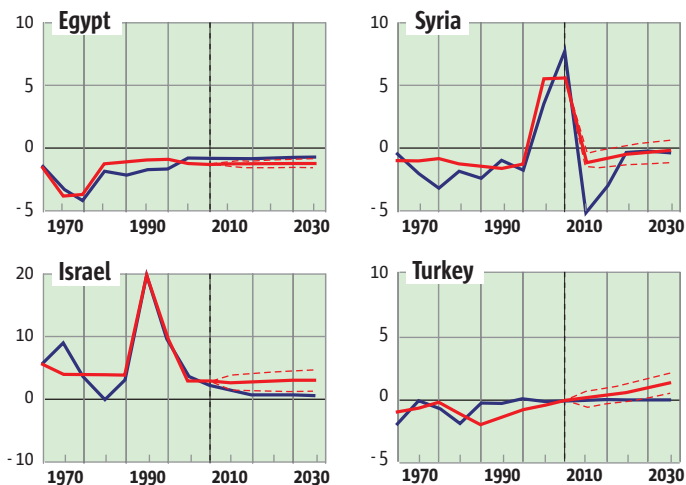


Source:  
Giambattista  
Salinari –  
CARIM, 2010

The blue line refers to the original UN's time series of net migration rates.

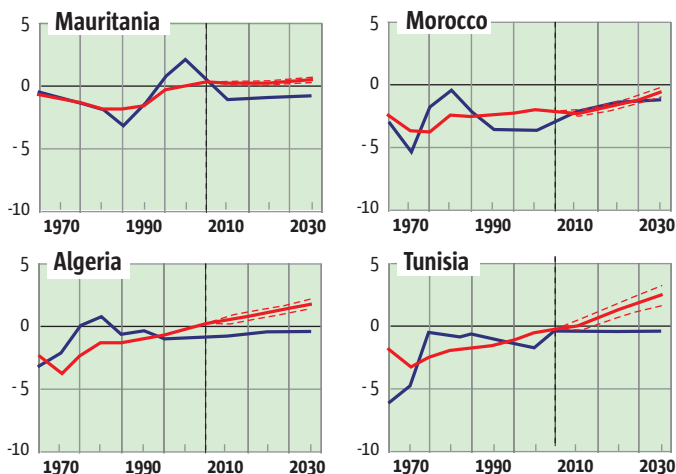
The red line describes the theoretical predicted values of net migration rates according with model 2 (see TABLE 20). The vertical dotted line in the graphics indicates the boundary between the UN's estimated net migration rates and the projected ones.

**GRAPH 16 Prediction of net migration rates (in ordinates) in the Machrek (1965-2030)**



Source:  
Giambattista  
Salinari -  
CARIM, 2010

**GRAPH 17 Prediction of the net migration rates (in ordinates) in the Maghreb (1965-2030)**



Source:  
Giambattista  
Salinari -  
CARIM, 2010

The blue line refers to the original UN's time series of net migration rates. The red line describes the theoretical predicted values of net migration rates according to model 2 (see TABLE 20). The vertical dotted line in the graphics indicates the boundary between the UN's estimated net migration rates and the projected ones.

becomes possible to compare what the UN supposes to be the most likely scenarios for future net migration rates with our prediction.

It seems to us that in many cases the UN's scenarios have been drawn by prolonging the last known value of the series into the future. This strategy seems to have been adopted in 8 out of 16 countries. In the other 8 cases the impression is that the strategy has been that of prolonging not the last value of the series but some previous values. This second strategy seems at play when major political events disrupt the last values of the series. There is consequently only one case in our sample, that of Syria, of a transition from positive to negative value of net migration rate, while no case can be found of transition from negative to positive values. The phenomenon of migration transition seems, therefore, not to have been taken into account by the UN's experts when drawing their scenarios for the Mediterranean region.

In contrast, according to our model, 5 countries (Croatia, Serbia, Turkey, Tunisia and Algeria) will pass through the transition from sending to receiving countries during the period 2010-2030. According to our model, these countries will show a mean value of net migration rate around +2.5 % in 2030. The timing of the migration transition in such countries does not appear to be strongly affected by the different hypotheses we introduced concerning the evolution of *GDP per capita*. This fact seems to confirm that the model is more sensitive (at least in the early stage of the migratory transition) to the changes occurring in the group of demographic variables than the set of economic changes. Tunisia, the country for which our model predicts the most spectacular migratory transition, is also the country in the most advanced stage of demographic transition among the countries of Northern Africa (in 2005 the net reproduction rate was, according to UN's estimates of 0.87). In the Maghreb, the two other countries (Algeria and Tunisia) undergoing the migratory transition (according to the model) are the two countries that combine the highest proportion of urban population, the highest median age and the lowest net reproduction rate. Egypt, Morocco and Algeria, moreover, have almost the same *GDP per capita* in 2005 (respectively 3,200, 3,103, 3,374 1990GK\$ in 2005<sup>(38)</sup>), despite this fact only Algeria undergoes the migration transition. Syria has a higher *GDP per capita* (about 7,767 1990GK\$) than Algeria and Tunisia, and

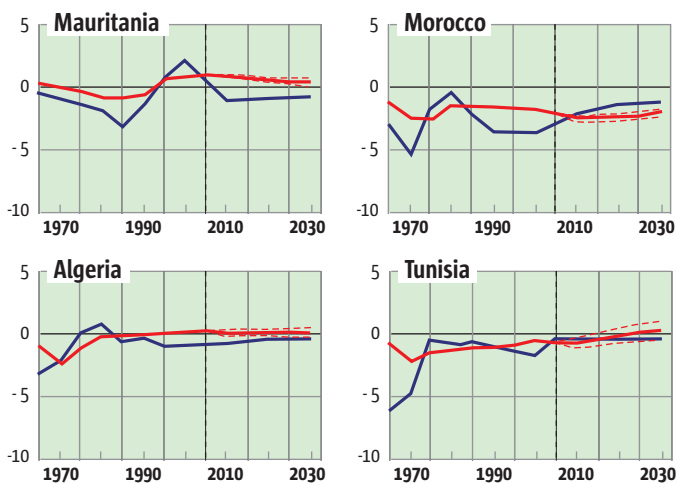
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(38) The data come from Maddison (2010) and are expressed in 1990 International Geary-Khamis dollars.



### GRAPH 18 Counterfactual analysis for Maghreb (1965-2030)

Net migration rate



Source:  
Giambattista  
Salinari –  
CARIM, 2010

The blue line refers to the original UN's time series of net migration rates.

The red line describes the theoretical predicted values of net migration rates according with model 2 under the hypothesis that the whole Maghreb maintains the same median age as Morocco in 2005 (24 years) 2010-2030.

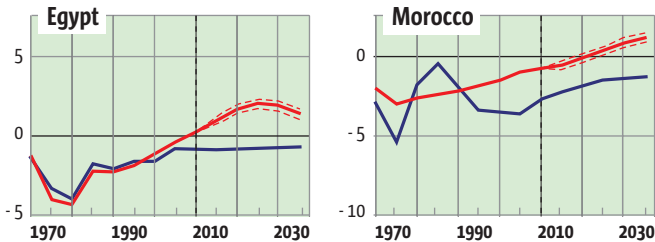
despite this fact our model predict a slightly negative net migration along all the period 2010-2030.

To identify the role played by the median age (and therefore by demographic transition) in the migratory transition process we decided on a counterfactual analysis. In this context we supposed that the whole Maghreb maintains, during 2010-2030, the same median age as Morocco in 2005 (24 years). The results of this simulation analysis are shown in GRAPH 18. The migratory transition of Algeria and Tunisia simply disappear from our series. The model interprets, therefore, median age as the fundamental determinant of migratory transition.

Two important North African countries, Morocco and Egypt, will not, according to the model, pass through the migratory transition during the period 2010-2030. The trends shown by the net migration series of these two countries are nevertheless quite different. In the case of Morocco, the trend in net migration rates is positive showing a progressive tendency toward less negative values of net migration rates. In the case of Egypt no such positive trend can be detected and net migration rates are predicted as remaining negative for 2010-2030. To investigate the

**GRAPH 19 Counterfactual analysis for Egypt and Morocco (1965-2030)**

Net migration rate



Source:  
Giambattista  
Salinari –  
CARIM, 2010

The blue line refers to the original UN's time series of net migration rates. In the case of Egypt the red line describes the theoretical predicted values of net migration rates according with model 2 under the hypothesis that Egypt has the same urban evolution of Tunisia. In the case of Morocco the red line describes the theoretical predicted values of net migration under the hypothesis that Morocco has the same age structure and migrants stock as Tunisia.

causes underpinning the lack of migratory transition in these two countries we performed a new counterfactual analysis. Through this form of analysis we found that the causes hampering the migration transition in Morocco and Egypt are diverse.

In Egypt, the lack of migration transition can be justified almost entirely, according to the model, by the low levels of urbanization. In our counterfactual analysis we supposed, in fact, that Egypt undergoes the same urban growth as in Tunisia (that according to our model does pass through the migratory transition in the period 2010-2030). This single change (see GRAPH 19) produces in the predicted net migration rate series a spectacular positive hump.

In the case of Morocco, the reasons underpinning the lack of migratory transition seems to be more complex. In our counterfactual analysis, in fact, none of the variables of the model can, taken alone, entirely justify the lack of migratory transition. To verify this fact we proceeded by systematically substituting the different series of Tunisia (GDP per capita, urban growth, density, etc.) into the Moroccan dataset. The two variables that produced the greatest effects on Moroccan net migration rates were our proxy for past emigrant stock and median age, but none of these two variables taken alone could produce the transition from negative to positive migration rates. By supposing, conversely, that the evolution of median age and total migrant stock were in Morocco both equal to that of Tunisia the migratory transition suddenly appears (see GRAPH 19). The important past migratory experience

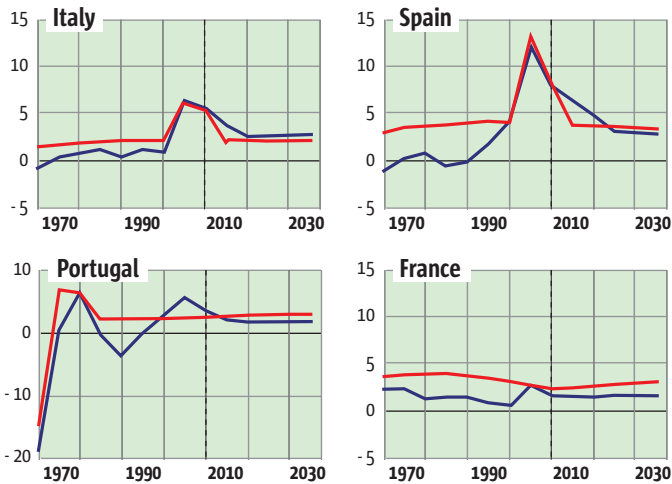
of Morocco seems to us to be the fundamental element hampering the process of migratory transition, even if a more gradual increase in median age and of *GDP per capita* with respect to that of Tunisia seems to play a role in the process.

For the Northern shore of the Mediterranean region the model predicts a quite different picture from that projected by UN's Population division. In this scenario, net migration rates in Greece, Italy, France and Spain are expected to be about +2.5 ‰. Our forecast for 2030, instead, predicts a value which is generally higher than 5 ‰. In the scenario drawn by the Population division, moreover, the evolution of the net migration rate shows a stationary trend, while our forecast shows a positive trend with net migration rates becoming more and more important as time goes by. To explain why the model predicts, in the case of Mediterranean European countries, a continuous growth of net migration rates we recurred again to a counterfactual analysis. We supposed that all European Mediterranean countries had, in 2010-2030, the same *GDP per capita* and the same median age as Spain in 2005. We found that none of these two variables taken alone is able to fully account for the growth of net migration rates. The growth of net migration rates predicted by the model, conversely, disappear when both *GDP per capita* and median age are simultaneously held to the levels of 2005 (see **GRAPH 20**). The dynamic of net migration rates in Mediterranean European countries appear to be determined, according to the model, by a combination of economic and demographic factors. This fact can also be confirmed by observing the more important impact on future net migration exerted by our different hypothesis concerning future economic growth rate.

### **Concluding remarks**

IN THIS WORK, we have tried to identify some of the long-term connections between demographic transition and migratory waves, and to use this connection in order to built scenarios concerning the future evolution of migration in the Mediterranean region up to 2030. The variables we used to test the link between population dynamic and migration are inevitably too simple to capture the overall set of interactions between these processes. Nevertheless, all the variables that we thought connected to this process (urbanization, median age and population density) were, indeed, significantly associated with migration, even after

**GRAPH 20 Counterfactual analysis for Mediterranean Europe (1965-2030)**  
Net migration rate



Source:  
Giambattista  
Salinari –  
CARIM, 2010

The blue line refers to the original UN's time series of net migration rates. The red line describes the theoretical predicted values of net migration rates according with model 2 under the hypothesis that Southern Europe maintains during the period 2010-2030 the same GDP per capita and the same median age as Spain in 2005.

correcting our results for the bias introduced by serial correlation and endogeneity.

Because the existence of a long-term association between demographic transition and migration was confirmed by our analysis we proceeded to build up our forecast. The overall picture predicted by our model has shown several countries of the Southern shore undergoing the migratory transition, but, with the exception of Egypt and Morocco. On the Northern shore, our model predicts for 2010-2030 a positive trend of net migration rates in response to population ageing and economic growth. The concluding impression we derived from our forecast exercise: namely that, with few, but important exceptions, the Mediterranean region will see, in the next twenty years, persistence, but also a reduction in the migratory asymmetry between the Northern and the Southern shores.

At the end of this projection, a major question remains unanswered. If immigration is fated to continue in the North (Europe), from where will immigrants come? And if emigration is fated to continue in the South (MENA), where will emigrants head? Will there be a dominant

pattern of South-to-North migration across the Mediterranean or will Europe and MENA be linked by migration with different parts of the world? Projecting migration at country level cannot predict regional dynamics and migration across the Mediterranean depends in part, and perhaps above all, on political developments at the Mediterranean level that are not factored into the projection.

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# ENERGY PERSPECTIVES IN THE MEDITERRANEAN

## Challenges and stakes for 2030

Dr. Houda Ben Jannet Allal\*

THIS CHAPTER FOCUSES on a major and sensitive subject for development in the region: the energy situation and its perspectives. The key strategic role that energy plays in economic, social and sustainable development is widely recognized. This is particularly the case in the Mediterranean region, which is characterized by North-South energy interdependence and an unequal balance of resources at a time when requirements are increasing everywhere, especially in the South and East of the Mediterranean.

The chapter is organized into three parts:

- The nature of the energy issue: a global challenge at the heart of Mediterranean development issues.
- The current situation in the sector. Energy, the environment and cooperation: a recent field of reflection with a new global focus.
- Energy perspectives for 2030 based on key developments in Euro-Mediterranean relations defined in the three scenarios of the present Med2030 report.

The following energy data were supplied by the OME based on preliminary data from MEP2011 and other in-house publications<sup>(1)</sup>. 2030 data result from the application of Med2030 scenarios to the OME forecasting model.

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(1) *Mediterranean Energy Perspectives* (MEP). MEP 2011 with the OME scenarios. For more information on the model and the MEP: [www.ome.org](http://www.ome.org).



## 1. A global challenge at the heart of development issues

ENERGY IS CENTRAL to the major political challenges facing the region: security of supplies, economic competitiveness and environmental performance. It also exerts a major influence on fair redistribution, mainly through the question of sharing out energy revenues. In addition, energy is the economic sector in which the issue of investment is the most pressing. Its technological structure entailing high fixed costs means it is highly capitalistic by nature. If we add rising demand and increasingly difficult access to resources, the sums involved are colossal, as is the corresponding challenge. If the necessary investments are not made, then the security of supplies, growth of the regional economy and environmental integrity will be in jeopardy. The economic recession and temporary crisis, which seriously threaten to restrict growth, do nothing to improve matters.

Our 20<sup>th</sup> century model of infinite growth, incompatible with the available quantities of land, water and energy resources, has gone up in smoke. Reports by the IPCC (Intergovernmental Panel on Climate Change) are increasingly alarmist, and the latest report from the International Energy Agency clearly shows that the target of restricting the increase in temperature to 2.5°C by the end of the 21<sup>st</sup> century is impossible. We are heading towards an increase of 5°C, perhaps 6°C if we do not change fast. The ecological crisis, mainly measured by carbon footprints, clearly shows that human beings are living beyond their natural means. In the long term, the issues of hydrocarbon reserves (currently taking a back seat in the face of the economic crisis), raw materials and water scarcity are following an unsustainable long-term model made worse by increased inequalities. The crisis is systemic. The myth of the invisible hand and the optimal allocation of resources by a deregulated market has broken down. The Mediterranean is wholly affected by all of these major concerns and challenges.

## 2. Energy, the environment and cooperation: a recent field of reflection with a new global focus

TODAY, THE MEDITERRANEAN appears to be an area “unequally shared” between European countries and the rest, torn between opportunities for regional integration and a latent risk of economic and cultural

riffs that are detrimental to its inhabitants. It mirrors North-South inequalities, where managing natural resources, and in particular water, energy and the protection of the environment, has become a crucial challenge and an underlying source of conflict. The Mediterranean is a topical subject and energy has become an urgent issue. The Paris summit on 13 July 2008, organized as part of the “Barcelona Process: Union for the Mediterranean”, blew new political wind into the sails of Euro-Mediterranean relations. This first summit made significant progress for partnership in the region at a time when global and regional economies are finding themselves confronted with serious preoccupations.

In the field of energy, the Mediterranean area is characterized by two obvious and major inequalities: imbalances between countries in the North, which are richer and consume more energy than countries in the South; and imbalances in the possession of energy resources, which are highly concentrated in three countries – Algeria, Libya and Egypt (4.6% of the world’s natural gas reserves and 4.7% of oil). The extent of these reserves is probably underestimated. Algeria, Egypt, Syria and Libya supply 22% of oil imports and 35% of gas imports of the Mediterranean basin and the potential for trade in oil and especially gas is extremely promising.

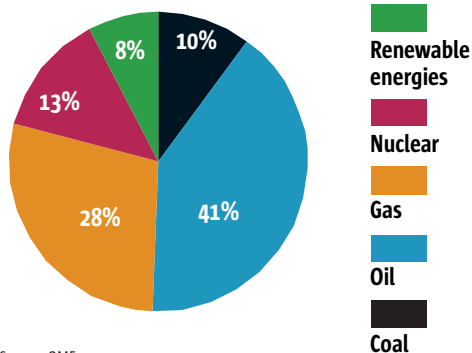
The reinforcement of North-South and East-West electricity interconnections is also a potentially beneficial objective for the region. The Mediterranean possesses exceptional renewable energy resources, in particular solar and wind power, especially in the South and East. The winner of the Nobel Prize for physics, Carlo Rubbia, likes to point out that in the Sahara, it “rains” the equivalent of one barrel of oil per squared metre each year in the form of solar energy.

On the demand side, fossil energy (oil, gas and coal) still dominates the energy mix and totals 80% of energy supplies in Mediterranean countries (95% for SEMCS and 70% for NMCs) (GRAPHS 21 and 22). Nevertheless, as mentioned earlier, there is significant potential for renewable energy sources along with unexploited energy efficiency. Several restrictions prevent the judicious exploitation of these resources, the advantages of which are largely known and mostly include reducing the constraints of energy dependence and moving towards sustainable development targets seek by all countries.

Inequalities persist between the North and the South in terms of energy consumption per inhabitant. In 2009, an NMC inhabitant consumed an average 2.7 toe compared with 1.2 toe for someone living in an

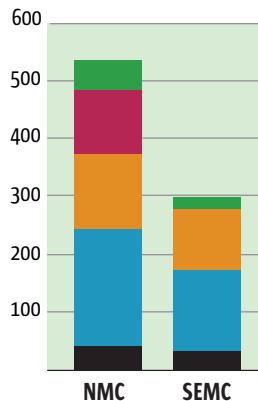
**GRAPHS 21 and 22 Primary energy demand in the Mediterranean (2009)**

**By source** (907 Mtep)



Source: OME, 2011.

**By source and region** (Mtep)



SEMC, i.e. over double. Energy consumption per inhabitant in the Mediterranean therefore averaged out at 1.8 toe.

In this context, the financial crisis (now economic and social), the energy crisis, concerns for the security of supplies and the necessary transition towards low-carbon economies in order to adapt to climate change, only accentuate the need to change the scale of complementary energy efficiency policies in the region, both North and South. This complementary nature could take the shape of more deep-seated cooperation when it comes to energy saving, renewable energy, infrastructure and common energy policy questions.

Access to energy, energy security and environmental constraints therefore constitute a significant challenge in terms of economic and social development in the Mediterranean. Energy insecurity and the degradation of local and global environments will have the effect of hampering this development, or making it impossible. This challenge can only be met by Euro-Mediterranean cooperation based on a new model of energy systems compatible with sustainable development in order to “respond to the needs of the present without compromising the potential of future generations to access their own needs”. The only option is therefore to renew the energy system in the Mediterranean, and create a sustainable system founded on greater accessibility in the South and energy saving and renewable energy development in the North, as well as in SEMCs. Clearly, the current energy system is based on consumption patterns involving worrying levels of carbon demand and pollution, which

are incompatible with the kind of sustainable development sought by all countries in the region.

The new energy paradigm therefore consists in designing an “energy system” that covers not just the energy sector (supply) but also energy consumption (demand), and in ensuring its development to obtain an energy service involving the optimal use of resources, economic and social costs and protection of the local and global environment. The satisfaction of creating an “energy service” instead of an “energy supplier” would put the new stakeholders at the forefront: companies, local authorities, households, those working in construction, transport, industrial and farming production and the service industry. Towns and local authorities would become the essential drivers and promoters of these new policies. Regional cooperation would also play a crucial role.

### 3. Energy perspectives: rising energy demand and increased risks

IN THIS LAST PART, we present the energy perspectives for the region in 2030 broken down into three scenarios, defined in this study, to reflect key developments in Euro-Mediterranean relations: a “crisis in the Mediterranean region” scenario, a “Mediterranean divergences” scenario and a scenario of “Mediterranean convergence”. As we pointed out at the start of this chapter, the 2030 data that follow result from applying OME’s forecasting model to the three above-mentioned scenarios.

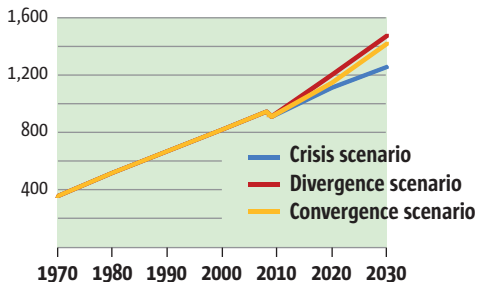
According to these scenarios, regional energy demand is set to rise from over 30% to more than 60% during the period 2009-2030 (**GRAPH 23**). This increase will essentially be drawn by SEMCS, where demand will more than double during the same period.

In 2030, primary energy demand could be multiplied by 1.3 to 1.6 in the Mediterranean, with countries to the South and East seeing energy demand rise over five times more than countries in the North. They would then represent from 47% to 50% of the Mediterranean area’s total energy demand, compared to 36% in 2009. According to the estimations of the Observatoire Méditerranéen de l’Énergie, Turkey could become the area’s second consumer.

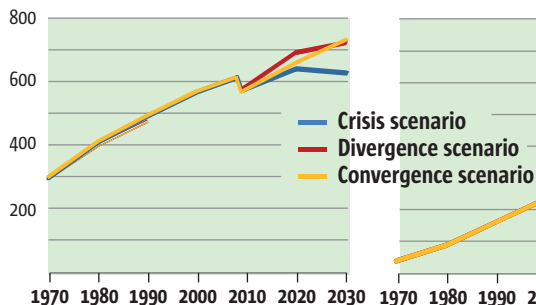
Thus, by 2030 in terms of volume, SEMCS catch up with NMCS’ consumption levels, but inequalities exist in terms of consumption per

## Progress of primary energy demand up to 2030 (Mtep)

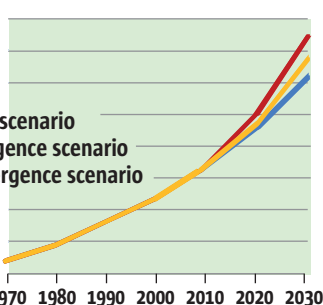
**GRAPH 23** In the Mediterranean



**GRAPH 24** In NMCs



**GRAPH 25** In SEMCs



Source: OME, 2011.

**TABLE 21** Progress of energy consumption per inhabitant in the Mediterranean up to 2030 (toe/inhabitant)

Scenario	2009			2020			2030		
	Crisis	Divergence	Convergence	Crisis	Divergence	Convergence	Crisis	Divergence	Convergence
Med.	1.8	2.0	2.2	2.1	2.2	2.1	2.2	2.5	2.4
NMCs	2.7	2.9	3.1	3.0	2.8	3.0	2.8	3.2	3.3
SEMCs	1.2	1.4	1.6	1.5	1.7	1.5	1.7	2.1	1.9

Source: OME, 2011.

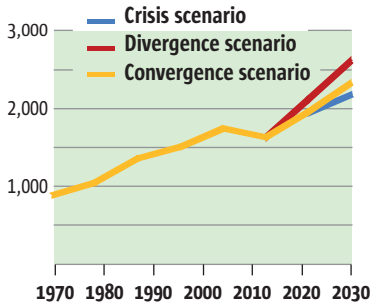
inhabitant (TABLE 21). The gap in energy consumption per inhabitant between North and South remains significant (factor of 1.7) although not so high as in 2009.

Overall, the three scenarios foresee increased risks and impacts that could lead to a development dead-end:

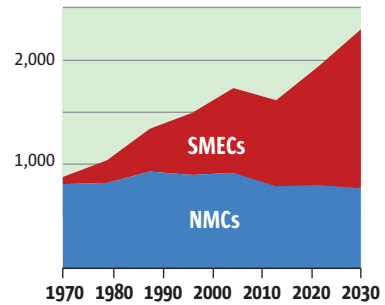
- CO<sub>2</sub> emissions resulting from fossil energy consumption should stabilize in NMCs between 2009 and 2030, and even drop by 10% in case of crisis and by 7% in case of convergence, but could go up by

## Progress in CO<sub>2</sub> emissions in the region

**GRAPH 26** For the three scenarios  
(MtCO<sub>2</sub>)



**GRAPH 27** For the convergence scenario (MtCO<sub>2</sub>)



Source: OME, 2011.

**TABLE 22** Progress in CO<sub>2</sub> emissions per inhabitant in the Mediterranean up to 2030 (tCO<sub>2</sub>/inhabitant)

Scenario	2009			2020			2030		
	Crisis	Divergence	Convergence	Crisis	Divergence	Convergence	Crisis	Divergence	Convergence
<b>Med.</b>	3.3	3.5	3.9	3.5	3.7	4.5	3.9		
<b>NMCs</b>	3.6	3.5	3.8	3.5	3.0	3.5	2.2		
<b>SEMCs</b>	3.0	3.5	3.9	3.5	4.1	5.0	4.3		

Source: OME, 2011.

almost 100% in SEMCS (GRAPHS 26 & 27). Expressed per inhabitant, these emissions start off higher in the North than in the South, are comparable by 2020, and significantly higher in the South than in the North by 2030, whatever the scenario (TABLE 22).

- Energy dependence could rise sharply, both for importing SEMCS (88% in 2030) and NMCs (73% over the same period). Due to rising demand and the diminishing of conventional reserves, the Mediterranean could need to import over 40% of its oil, almost 30% of its gas and over 70% of its coal in the 2030s.

Aspirations for economic and social development are justified and energy is indispensable to attain them. The crisis and divergence scenarios clearly illustrate that continued development in line with industrialized countries' current energy model (which is targeted by developing countries) is difficult, costly and risky. Simply from an energy point of view, economic and social development would be radically compromised and not just for the most "vulnerable" countries. In addition, this path would inexorably increase the risks of climate change.

Nevertheless, as we have mentioned above, the Mediterranean possesses considerable energy saving and carbon potential. It all depends on the technologies promoted and the new behaviour encouraged. Several reliable estimations show that over the next twenty years, there is a potential for reducing consumption by around 20% (and more if energy prices continue to rise).

The Mediterranean is highly vulnerable to climate change. Several studies, and in particular that of the IPCC, confirm this. A relatively recent study by the IDDRI (Institut du développement durable et des relations internationales) on climate change and its impacts in the Mediterranean also confirms the region's vulnerability and calls for urgent long-term action. One of the study's conclusions is that *"the multiple foreseeable impacts of climate change make it one of the most worrying issues for the future of the Mediterranean in the mid and long-term [...] there is less and less doubt that the changes already under way are irreversible"*. The challenge is therefore not only to reduce greenhouse gas emissions, but to adapt to current and forthcoming changes in order to reduce the vulnerability of societies likely to be dramatically affected in the future. The three scenarios show that rising CO<sub>2</sub> emissions are likely to spiral out of control, in particular in countries in the South.

Overall, the three scenarios present significant challenges, both for the energy sector and more generally for sustainable development in the region. Seen from the dual perspective of energy/environment and development, the convergence scenario emerges as the preferable option. The convergence scenario allows a better progression in energy efficiency and significant development of renewable energy sources in the region thanks to Euro-Mediterranean cooperation and technology transfers. In fact, 16% of energy demand would come from these energies by 2030 (24% in NMCS, and only 8% in SEMCS) compared to 12% in the crisis scenario and 10% in the divergence scenario. Thanks to a heightened convergence and cooperation strategy, the Mediterranean would benefit from its high potential for renewable energy and energy savings, but better results could be achieved especially in the South and East.

The convergence scenario shows the repercussions of energy saving measures put in place or being drawn up in EU Member States and Southern Mediterranean countries : prevention campaigns, creation of "energy saving" labels, energy efficiency in buildings, etc. For example, the new energy regulations adopted in Tunisia in buildings under

**TABLE 23 Energy intensity in the Mediterranean in 2030** (toe/US\$ 1000 constant prices)

Scenario	Crisis	Divergence	Convergence
<b>Mediterranean region</b>	0.10	0.10	0.08
<b>NMCs</b>	0.07	0.07	0.06
<b>SEMCS</b>	0.18	0.17	0.13

Source: OME, 2011.

**TABLE 24 Carbon intensity in 2030** (tCO<sub>2</sub>/ US\$ 1000 constant prices)

Scenario	Crisis	Divergence	Convergence
<b>Mediterranean region</b>	0.17	0.17	0.14
<b>NMCs</b>	0.08	0.08	0.06
<b>SEMCS</b>	0.42	0.41	0.30

Source: OME, 2011.

construction are among the most significant in the sector in terms of energy savings. This measure is likely to encourage energy consumption reductions of 40% by 2020. Similar legislation exists or is under way in most SEMCS (e.g. Algeria, Egypt, Jordan, Lebanon, Palestine, Syria and Turkey). The recent creation of “energy efficiency” labels and certificates in Morocco, Tunisia and Egypt (for refrigerators, air conditioning and washing machines) also represents an important step in changing the market and consumer behaviour.

Although the crisis scenario foresees lower global demand for energy and so reduced CO<sub>2</sub> emissions by 2030, the situation is not optimal because renewable energy sources and potential energy savings are not exploited. This is illustrated by the energy and carbon levels in the three scenarios (see TABLES 23 & 24). The crisis scenario is therefore neither the most efficient nor the least energy consuming. The divergence scenario is the least energy efficient since it consumes more energy than the convergence scenario for a much lower level of development. The convergence scenario represents more wealth for the region (+14%), which is produced using less energy (-5%) in comparison with the divergence scenario, a difference that is far from negligible. The same goes for the impact on CO<sub>2</sub> emissions. Although the crisis and divergence scenarios are almost the same in terms of carbon intensity, the convergence scenario makes it possible to reduce this intensity by 20% with, let us not forget, a higher level of wealth.

We can also see an imbalance between the North and South in terms of energy and carbon intensities. Energy intensity is 2.5 times



higher in the South than in the North in the crisis and divergence scenarios, and twice as high in the convergence scenario. Carbon intensity is 5.4 times higher in the South than in the North in the crisis and divergence scenarios, and five times higher in the convergence scenario. These differences are considerable and call for sustained cooperation towards achieving, all together, a less energy-consuming region with greater respect for the environment. Scope for cooperation is vast in this area.

To conclude, the challenge of governance, stakeholder mobilization and capacity (public authorities, local authorities, the private sector and civil society) and strengthening regional cooperation are key factors in the framework of an energy system that respects a shared ethical concept of sustainability. This shared ethical vision would not, however, be complete without joint social responsibility allowing everyone to benefit from development. This would involve equal treatment for actions affecting demand (lower energy consumption for the same service) and supply (production and delivery of energy products to satisfy consumption requirements). This entails massive public and European investment – and earmarking the corresponding budget – in the key transition sectors: transport, construction, energy efficiency and renewable energy but also education, research, training and culture.

In this new energetic paradigm, the question of the citizens' implication in energy issues is a very interesting and promising one. This does not mean that the solution is simple, only that sustainable development in the Mediterranean is a thorny issue that will involve respecting tough but indispensable constraints. Yet we can see perspectives on the horizon that did not exist in the past and that justify the need for changing the paradigm. Prigogine and Schrödinger have helped us discover that Man has possibilities and responsibilities in managing and making the history of his planet. That said, Mediterranean countries have every reason to develop through converging with their neighbours rather than sticking it out on their own, if only to ensure an optimal impact on the energy sector and sustainable development.

# FOOD SECURITY AND AGRICULTURE IN THE MEDITERRANEAN

## Crisis scenario and prospects for 2030

Vincent Dollé\*

THERE WILL BE 7.5 BILLION inhabitants in the planet in 2020, 8 billion in 2030. Since 1990, population growth is due to be 45% of that of India and China, nevertheless the Mediterranean countries also contribute to this growth. In 20 years, the Mediterranean region will have 100 million supplementary inhabitants, the vast majority of whom will live in cities or suburban areas. The increase in living standards, on the one hand, and the changing dietary habits of the new urban citizens, on the other, will cause large changes in consumption. Overall, individual consumption of vegetables will continue to decline in favour of an increase in meat and dairy products but also in products derived from processed animal products. This transfer in the demand, from vegetable to animal products, is accompanied by a growth in the demand for plant products for animal feed but also for the production of biofuels. This biomass competition, in a context of pronounced climate change and a rise in energy and transport costs, leads to a sustained rise in agri-

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2007: *Identité et qualité des produits alimentaires méditerranéens*. 2008: *Les futurs agricoles et alimentaires en Méditerranée*. 2009: *Repenser le développement rural en Méditerranée*. 2010: *Atlas of Mediterranean agriculture, food, fisheries and rural areas*. The illustrations here are mainly taken from these documents. CIHEAM/IAMM 3191, route de Mende, 34093 Montpellier Cedex 5, France. [www.iamm.fr](http://www.iamm.fr)

cultural prices, the effects of which are exacerbated by their instability and volatility.

The 2008 food crisis, and its aftermath in 2009 and 2010, clearly reflects this instability manifested by a sudden and excessive increase in prices, followed by an increase of their volatility in the short term. The price of a bushel of wheat in Chicago over three months rose from 5 USD in May 2007 to 12.80 USD in February 2008<sup>(1)</sup> only to fall sharply to 4.4 USD in October 2009... then to soar again in spring and late summer 2010 due, in particular, to production losses in Russia and Ukraine that were undergoing a prolonged period of drought and harvest fires. More recently, the floods in Australia, in early 2011, and the continued drought in Argentina do not appear to be offset by surpluses of stockable and exportable crops from South Africa, the Sahara and Asia<sup>(2)</sup>. That instability, reflected in the consumer markets, has a strong impact on food consumption especially for the poorest households. The instability in the price of wheat had a significant short-term impact on food security but also an impact in the mid and long-term due to the withdrawal of cereal crops, which price had become low or unpredictable and investment in which seemed unprofitable in the long term.

After a period of consumption which exceeded production, between 2000 and 2008, stocks rose again in 2009 only to fall in 2010 causing new tensions on the market and increasing the costs of livestock feed. In 2008, as a whole, developing countries faced an increase of at least 25% in their food imports, making food security more difficult. The conditions for the emergence of new crises are again present with a potentially more dangerous situation, in that agricultural products have become the financial assets most speculated on. New non-traditional speculators in the agricultural raw material sector have emerged. This situation of potential tension is a reality for many Mediterranean countries that share common characteristics in the evolution of the dynamics of their agricultural and food products. We will summarise the main facts and major trends.

In this context several scenarios are possible. They take into account the strong development trends in the rural and agribusiness sector observed in the Mediterranean region for several years and the recent crises, coupled with the predicted impacts of climate change on the

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(1) Global Economic Prospects 2009. Commodities at the crossroads. World Bank.

(2) Data from Famine Early Warning Systems Network. Sahel and West Africa.

Food Security Perspectives. October 2010- March 2011. bulletin January 2011.

Mediterranean rural sector. These scenarios go from the worst case possible, a scenario of a “crisis in the Mediterranean region”, marked by shortages and growing asymmetries (S1), to a desirable scenario of “Mediterranean convergence” (S3), passing by a “Mediterranean divergences” scenario (S2) characterized by divergences in the rates of integration of Mediterranean countries into the global economy. We propose several ideas for cooperative action for those active in the public and private sectors to move towards an offensive convergence scenario ensuring food security in the Mediterranean area.

## I. Common features of the Mediterranean countries

### **A high population growth and an urbanisation of coastal areas which penalises production in the agricultural sector**

THE URBANISATION concentrated along coastlines increasingly pronounces the split between the inlands and the coastlines of Mediterranean countries. The map showing the distribution of towns and cities in the Mediterranean<sup>(3)</sup> region (**GRAPH 28**) illustrates the population concentration in coastal cities which will be increased with the arrival of 100 million extra people in the next 30 years. This tendency for the countries of the Northern shore is more recent for the countries in the South and the East with two exceptions, those of the Balkan countries and Turkey which still retain a substantial rural population in their inlands

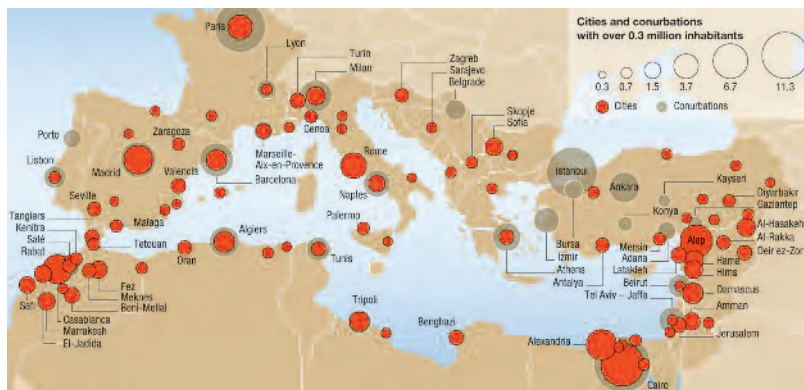
This growth in urbanisation in coastal areas, which often occurs in floodplains and the most fertile estuaries, will increase competition for water and soil for urban and industrial needs at the expense of agricultural activity and production, which is often intensive in suburban locations.

### **Rural population remains important**

SOUTHERN AND EASTERN Mediterranean countries have a significant share of the agricultural labour force (**GRAPH 29**). 25 to 45% of the population of these countries get the majority of their revenues from activities on farms, as farmers or farm employees. If the rural population stabilises in the whole of the Mediterranean around 2020, according to different population projections (**GRAPHS 30**), this stabilisation will be due to two oppo-

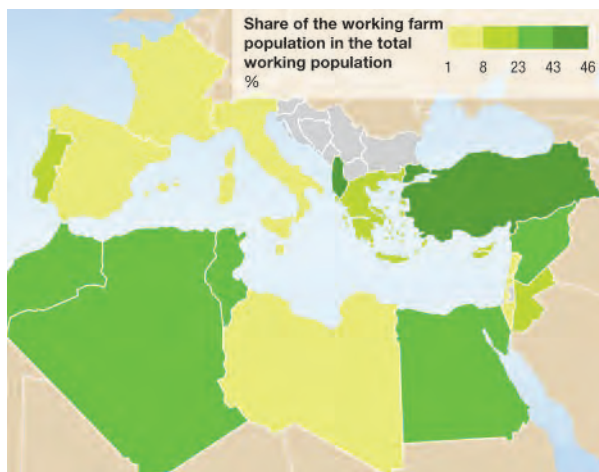
(3) Méditerranée 2010, 2006 data.

**GRAPH 28** Cities and agglomerations in the Mediterranean region (2006)



Sources: United Nations, Demographic Yearbook 2006.CIHEAM, Atlas Mediterra.

**GRAPH 29**  
Agricultural workers in the Mediterranean region (2004)



Sources: Faostat, 2006. CIHEAM, Atlas Mediterra.

ing forces: the endurance of a continued decline in the North combined with growth in the South and the East that will only stabilise in 2020 and beyond.

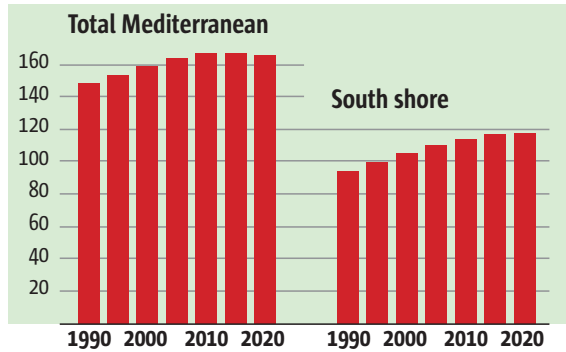
In a Mediterranean region in transition, the issue of agriculture and food remains central, given the persistence of the economic and social importance of the agriculture sector.

Agriculture is the second largest source of work in the world, as in the Mediterranean, after the services sector. The income from these jobs, however, is often lower than for other economic activities in rural areas. Informal work is still of great importance in rural Mediterranean areas.

**GRAPH 30**  
**Rural population in**  
**the Mediterranean**  
**region**  
**(2005)**

(thousands)

Sources: Our calculations, based on the United Nations Population division. *World Population Prospects 2004* (average hypothesis). CIHEAM, Atlas Méditerranée.



In North Africa, agricultural employment accounts for 80% of the rural activity: 35% in Tunisia, Algeria and Egypt<sup>(4)</sup>. In Turkey, agriculture still accounts for more than 65% of employment in rural areas and the Turkish agricultural workforce continues to grow. Diversification is still limited in Southern Mediterranean countries. Rural areas do not attract industrial activities and services that could be developed there. The continued flow of employees leaving the agriculture sector, related to modernisation attempts, are not easily absorbed into other sectors leading to underemployment, unemployment and migration.

Rural employment in SEMC, including agricultural employment, is characterised by many features that often point out its fragility:

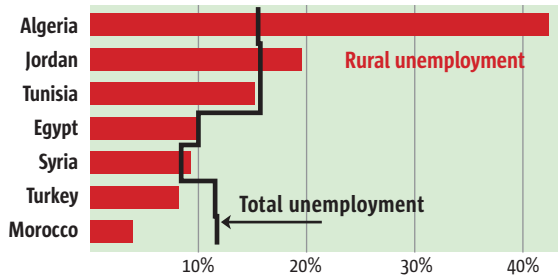
- the strong presence of small family farms and small secondary service businesses associated with primary processing of agricultural products has led to a high proportion of self-employment and independent workers,
- rural employment of women and generally unpaid caregivers is rarely reflected in national statistics although it represents a significant volume of employment,
- rural activity in the Mediterranean area is still strongly influenced by seasonal agricultural production, leading to under-employment of the available workforce out of the season,
- salaried employees are precarious and intermittent in nature, this phenomenon being exacerbated by a lack of labour laws or non-compliance with those existing,
- vocational training is underdeveloped and skill levels and human capital are lower in rural areas than in urban areas,

(4) Rethinking Rural Development in the Mediterranean. What role for agriculture in rural areas? Méditerranée 2009.

**GRAPH 31**  
**Total and rural unemployment in the Mediterranean**

(% of total and active rural population)

Source: Radwan (2007), from national surveys.



- the weakness of the economy is often linked to a deficit in the infrastructures that makes rural areas unattractive for a possible redeployment of new activities,
- under-employment related to seasonal activity, however, could become an advantage for agricultural pluriactivity if freed from many constraints.

In the Southern and Eastern Mediterranean countries, many young rural people seeking jobs migrate to urban areas where the unemployment rate may already be high<sup>(5)</sup> (GRAPH 31). Maintaining employment and incomes in rural areas, creating alternatives outside the agricultural sector in the rural non-agricultural economy becomes a key priority for all SEMC if agriculture cannot provide jobs to cope with population growth.

The example of Algeria illustrates well this phenomenon. Rural unemployment, which exceeds 40%, forces migration to urban areas where unemployment is already high, affecting housing demand. This is consistent across the countries of the Southern shore, with varying amplitudes in each country. Creating jobs and income in rural areas becomes a priority which should be dealt with as a matter of urgency in plans for the development of rural areas in the South.

North of the Mediterranean, especially in the EU27, rural areas represent over 90% of the land surface and 50% of employment. There is however a sharp decline in agricultural employment in rural areas where unemployment is higher than in urban areas. This unemployment particularly affects young people.

In the last 20 years, initiatives driven by the EU in order to develop the rural and non-rural economy in the Northern countries have been largely supported by the Common Agricultural Policy (CAP). They have

(5) Radwan. S. Rural youth unemployment and coping strategies in the North East and North Africa region, Rome. Ifad. 2007.

brought some solutions in the North but they are not transferable to the situation of the SEMC.

In NMC the workforce in rural areas is increasingly older and under-trained. In these rural areas, agriculture is losing 2-3% of its active population per year, but this decline in the working population is socially acceptable because it is often accompanied by compensation policies that are still lacking in the South of the Mediterranean. The employment policies implemented in the European Union, mainly through CAP actions, are at the heart of structural initiatives. Priority is given to rural revitalisation and regional cohesion to reduce the development gap in “disadvantaged” rural areas and the promotion of regional projects. In Northern countries, policies combine different types of schemes, the most important concern vocational training. Other complementary measures, in the form of support to rural areas and diversified financial instruments, enhance the effectiveness of these policies. The whole enables agriculture diversification and an entrepreneurship focused on non-agricultural activities: the sale of food and processed products in proximity circuits, tourism, leisure, activities relocated to rural areas and the creation of goods and services associated with these goods. Different generations of LEADER projects in Mediterranean Europe have led to the creation of rural enterprises that are more independent and sustainable, well beyond the agricultural sectors, e.g., in environmental services or heritage. Which elements of these situations can be reproduced in the South and East shores?

### **The economic and social importance of the agricultural sector is decreasing**

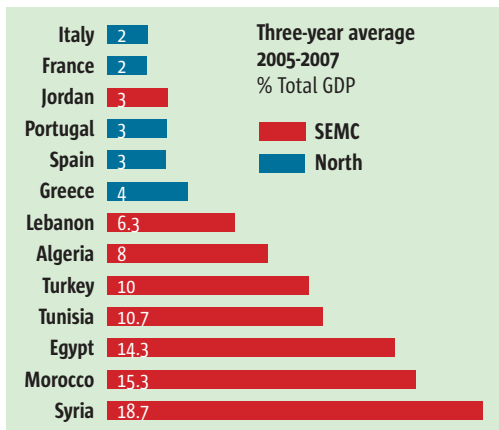
IN A SOCIO-DEMOGRAPHIC context marked by a growth in urban food demand, Mediterranean societies in the SEMC are still under the influence of the rural sector whose gross agricultural production is still important for the gross domestic product (GRAPH 32). However, its economic importance declines more rapidly in the South than in the North. In 2005, Syrian or Albanian agriculture contributed to 1/4 of the total national added value that is 10 times more than that of France or Italy. In 2007, with an annual growth rate of 2.1%, Albanian agriculture still contributed to over 23% of the national GDP (32% in 2001). Looking at another area, growth in agricultural production in Morocco, in terms of average annual growth, decreased from 10.6% for the period 1985-1991<sup>(6)</sup> to

(6) World Development Report. Agriculture for development, Washington (D.C.), World Bank 2008.



**GRAPH 32**  
**Part of the**  
**agriculture sector**  
**in Mediterranean**  
**countries' GDP**

Source: World Bank  
 (www.worldbank.org).  
 CIHEAM, Atlas Méditerranée.



0.25% from 1991 to 2004. In Greece, agriculture GDP decreased from 11% of the total GDP in 1995 to 4.5% in 2007. But it was in Turkey that the decline was fastest relatively, the annual GDP decreased by 18% between 2001 and 2005.

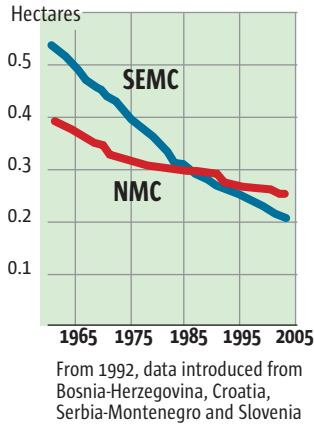
This share of the agricultural GDP, which is still a significant part of the total GDP, often increases in years of high rainfall and decreases in years of drought. The substantial but fluctuating part of the agricultural economy in the global economy of the SEMC is also due to a lack of growth in other economic sectors. The asymmetry of the situation of the SEMC compared to European Mediterranean countries is not only marked by the relative importance of the agricultural economy. It is also accentuated by the ability of the agriculture sector in the countries of the Northern shore to contribute to the development of food industries with high added value.

**Demography and climate change exacerbate the pressures on available resources**

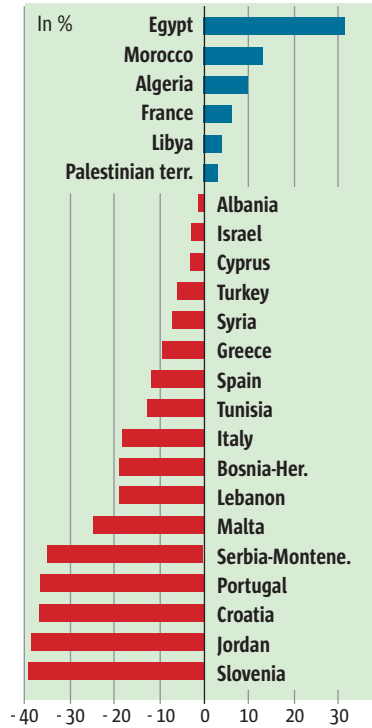
THE ARIDITY THAT characterises many Mediterranean countries naturally limits farming possibilities. The percentage of arable land varies from 30% and upwards for France and 5% for Egypt, Algeria, Jordan and Libya. The improved land and irrigation of new land areas enable Syria and Egypt to slightly increase the area of arable land. But overall, for both SEMC and NMC, population growth is leading to a decrease in arable land per capita (GRAPH 33) which requires an increase in productivity per available hectare to offset this increased pressure on existing agricultural land.

**GRAPH 33**

**Arable land per inhabitant in the Mediterranean (1961-2003) (left) and net loss in arable land (between 1980-2005) (right)**



Source: Plan Bleu, from FAO. CIHEAM, Atlas Mediterra.



Losses of arable land due to eviction from land and natural events, associated with aridity (winds, heavy rain...), are exacerbated by inadequate cultivation and pastoral farming which are responsible for erosion. Soil salinity through irrigation, with ground water laden with minerals or reservoir water high concentrated in salt due to intense evaporation, combined with pollution and the use of pesticides or fertilisers, leads to a loss of land due to it becoming unproductive.

### **Water resources become increasingly scarce and a supply-demand unsuitability**

THE PRESSURE ON water resources (in the Mediterranean, 80% of the water demand is for agriculture) and land (from 0.55 ha per capita in 1960 to 0.30 ha in 2005) in a context of negative effects of climate change on agricultural production makes it more difficult to solve the issue of food security in the Mediterranean: feeding more people with less water and available land with a growing productivity gap between

the North, the South and the East. The agriculture sector has difficulties in maintaining good results, which are irregular and punctuated by erratic weather conditions.

Irrigated areas doubled between 1965 and 2005, reaching a total area of 24 million hectares<sup>(7)</sup>. Major agricultural hydraulic programs have been launched in most Mediterranean countries with increases in the surface area: Turkey (+3 million ha), France (+2), Spain (+1.5) and North Africa (+1.5 with 0.6 in Morocco and 0.3 in Algeria). Gravity irrigation practices remain dominant in the Mediterranean<sup>(8)</sup> region, localised irrigation systems and sprinklers which consume less water are developing, but the overall physical efficiency of irrigation water shows losses of water in irrigation systems of 52% for the NMC countries and 44% for the SEMC<sup>(9)</sup>.

The analysis of exploitation indicators for natural renewable water resources (GRAPH 34), which measure the ratio between the volumes sampled and the volumes available and their change between 2005 and 2025 by country, led to the finding of a predicted shortage<sup>(10)</sup> for the majority of the SEMC. A more detailed regional analysis shows that this could become a reality in many coastal regions of Northern countries.

Northern Mediterranean countries must also cope with situations of hydric stress in economic systems based on tourism and urbanisation as well as intensive agriculture that is a major consumer of water without paying the real price for it. Water supply in the Mediterranean, in the Northern countries just as those in the South, cannot indefinitely accommodate an unlimited demand in a context of irregular rainfall compounded by the different climate change scenarios for the Mediterranean region. The Catalan example<sup>(11)</sup> illustrates this tension which could deprive Barcelona (headquarters of the secretariat of the UFM) of water, and which could result in potential conflicts between autonomous communities. The progress in water demand for agriculture in the Mediterranean area is not compatible with the change in available resources. The growing shortage, linked to exploitation rates that are steadily increasing and the negative effects of climate change, will

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(7) 13 million in the SEMCS and 11 million in the NMCs.

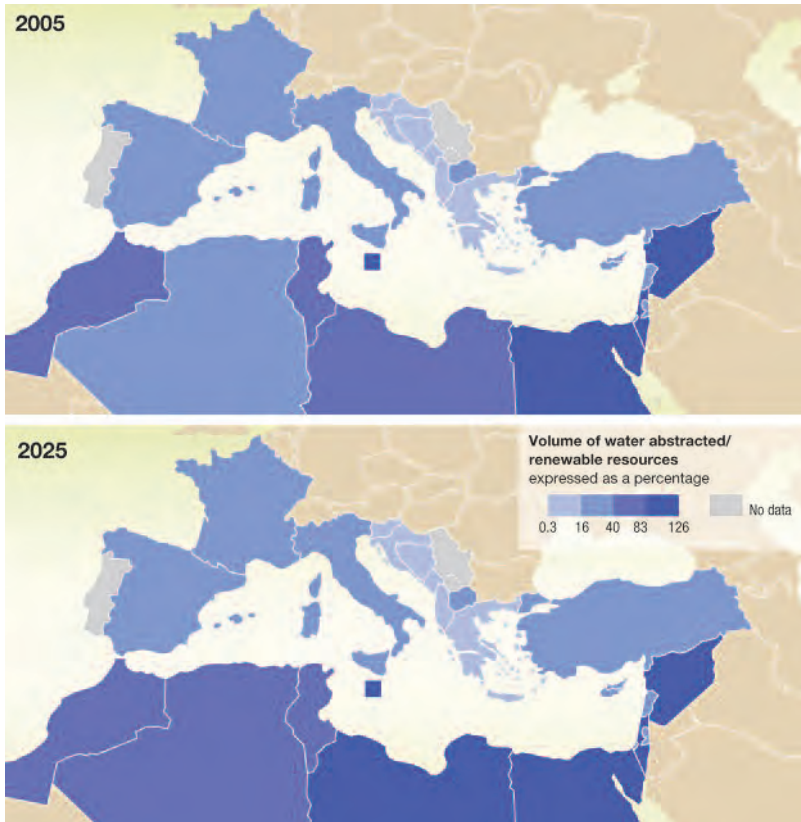
(8) 100% of Egypt's cultivated land is under irrigation. Unique situation in the Mediterranean.

(9) Total Physical Efficiency: transport efficiency x irrigation efficiency. For one country, Syria, irrigation efficiency rose from 50% with traditional gravity irrigation to 78% with spray, to 88% with localised drip irrigation. IAMZ Data 2007 – Abed Rabboh.

(10) See PAM data and Plan Bleu in Méditerranée 2008.

(11) See "The squabble over water in Catalonia" J.P. Nicol. Le courrier de l'environnement from INRA No. 57. July 2009.

**GRAPH 34** Index of exploitation of renewable natural water resources in the Mediterranean region (2005, 2025)



Source: Plan Bleu, *Les perspectives du Plan Bleu sur le développement durable en Méditerranée*, Sophia Antipolis, Plan Bleu 2008. CIHEAM, Atlas Méditerranée.

require a heavy revision of water management policies by sector of use. Irrigated agriculture in the Mediterranean, the main consumer of water, will therefore become the sector where potential economisation of water is most important. Revision of water strategies is needed, its success or failure will lead to certain crisis or possible developments.

### **Fragile food and agro systems and increasingly dependent food security**

THE PERFORMANCES of food production systems and trade results have been following inverse dynamics in the North and the South of the Mediterranean region since the early 1960s and mainly for the 1964-

2004<sup>(12)</sup> period. The EU countries have stabilised their share of world agricultural imports to around 25-40%, while doubling their share of world exports from 22 to 45%<sup>(13)</sup>.

The countries in the South and East have experienced the opposite trend over the same period, becoming, since the 1970s, gross structural importers of agricultural commodities and food. The deficits in their agricultural trade balances are long-term (more than 8 billion dollars for the SEMC in 2001) with contrasting responses associated with varying abilities to import products from Europe but increasingly from other regions too (60% of agricultural and food imports outside of Europe in 2005). These countries have become chronically dependent for their food security. In 2004, the negative trade balance of the SEMC in world agricultural trade reached 9 billion dollars. Turkey is an exception, displaying a positive agricultural trade balance in 2004 of 1.3 billion dollars, providing nearly half of agricultural exports of the SEMC and importing 22% of the total SEMC imports<sup>(14)</sup>.

Euro-Mediterranean agricultural trade remains highly skewed. While only 2% of agricultural imports and exports in Europe are done with the SEMC, the EU absorbs more than 50% of the agricultural exports from the SEMC and 30% of their agricultural imports. If Turkey has gradually become an agricultural and food power, Morocco and Tunisia have succeeded, in good crop years (i.e. years with high rainfall), in balancing their trade balances with the EU, while Egypt and Algeria are significant in the overall SEMC deficit (**GRAPH 35**). Privileged exchanges are also developed between countries. Euro-Mediterranean trade is often targeted. Five EU countries alone cover 75% of agricultural exports from the EU to the SEMC<sup>(15)</sup>. The four main SEMC exporters are Turkey (47%), Morocco (22%), Israel (14%) and Tunisia (12%). The main SEMC importers from Europe are Algeria (25%), Turkey (14%)<sup>(16)</sup> and Egypt (13%). Privileged bilateral exchanges have developed between certain countries like Germany/Turkey, France/Morocco and France/Algeria.

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(12) FAO data stat 2006.

(13) France plays a major role in this evolution, remaining the second largest agricultural exporter in the world.

(14) Data from Mediterra 2008. Geo-economic context. S. Abis, P. White, J. Ould Aoudia.

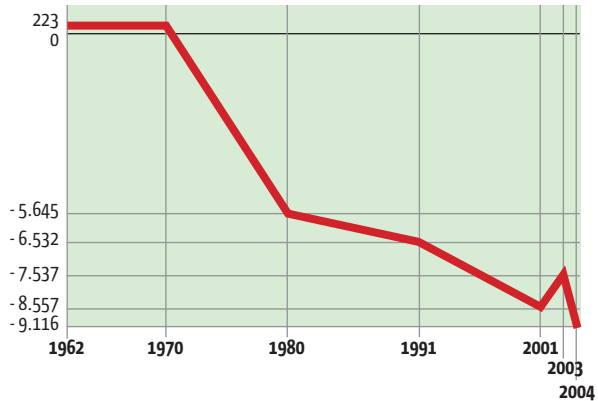
(15) Shares of the 5 countries: France 30%, Netherlands 15%, Germany 12%, Spain 9%, Italy 5%.

(16) Part of Turkey's cereal imports are processed in Turkey and exported to Northern Africa (biscuits, pasta).

**GRAPH 35**  
**Evolution of**  
**agricultural trade**  
**balances**  
**of the SEMC**

(millions  
of dollars)

Sources: Faostat 2006,  
 CIHEAM, Atlas Mediterra.



There are also specialised Euro-Mediterranean trade exchanges depending on the agricultural specificities of the two shores. More than 50% of the imports from the EU are fruits and vegetables, then goes olive oil (10%) and seafood (10%). The SEMC mainly import from the EU cereals (16%), dairy products (15%) and sugar (8%).

### Dependence on cereals remains

THE CEREAL ISSUE remains strategic for the SEMC which have cornered almost 15% of world cereals imports while representing only 4% of the world population. This structural deficit increases in periods of severe crisis (Algeria, Morocco, Tunisia and Egypt held 18% of the market at the time of the crisis in spring 2008). Import volumes are growing<sup>(17)</sup> and projections for future years show a growth in imports of cereals for food and feed. In the “North Africa” region<sup>(18)</sup>, consumption of wheat increased sharply again. In six years, it rose from 32 million tonnes (2004-2005) to 40 million tonnes (2010-2011). This growth rate of 25% is two and a half times higher than that seen globally. This continued growth in consumption doubles that of production. It cannot be met by imports, whose prices will continue to increase. How to ensure access to food for the poorest populations in the Mediterranean will become a strategic problem to overcome for most countries in the South.

In the trade negotiations between Europe and the Mediterranean countries since 1995, the agricultural issue is still a delicate subject. It was not dealt with in EU- SEMC relations until 2002. The free trade area

(17) Between 1965 and 2005, Algeria and Morocco multiplied their net cereal imports by 20. Tunisia by 13 and Egypt by 4. Source: FAO Stat 2006.

(18) North Africa: Morocco, Algeria, Tunisia, Libya and Egypt. USDA data.

is organised for industry but it is not done for agriculture for reasons of competitiveness for industries developed in the North and in the South (fruit and vegetables, olive oil). The first Euro-Mediterranean conference in Venice, in 2003, opened the matter that was firmly on the agenda of the relaunched Euro-Mediterranean partnership in 2005. Since then, bilateral negotiations (EU-country) are under way with Tunisia and Morocco and other countries, but they often lead to the establishment of non-tariff barriers for imported products coming from SEMC under the guise of quality and safety reasons.

Scenarios concerning the future of Euro-Mediterranean trade depend on the results of several ongoing negotiations<sup>(19)</sup>. The agricultural opening of the SEMC envisaged in the context of the World Trade Organisation (WTO) negotiations should guarantee objectives that are compatible with those of other ongoing negotiations. How to maintain trade preferences for access to the European market while safeguarding trade in goods where the SEMC are not competitive? The ongoing negotiations for a new CAP in Europe from 2013 could greatly impact the development of agricultural production in the SEMC if, for example, the prospect of opening and liberalisation of trade go on accompanied with the implementation of reforms of the common market organisations (for example for wine, fruit and vegetables).

These important elements of the Euro-Mediterranean regional situation will strongly influence the sequence of different scenarios for the future of the SEMC.

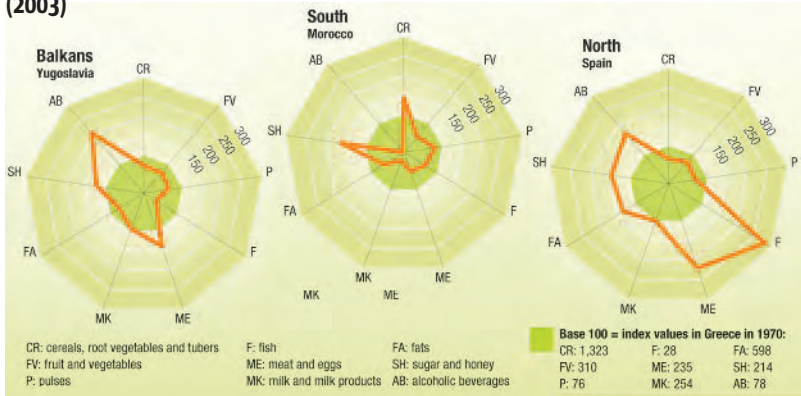
### **Consumption habits moving away from Cretan diet**

SINCE A LONG-TIME, the Cretan food model provides many nutritional benefits that have a strong impact on consumers' health who combine the Cretan diet with regular physical activity. The variety of the Mediterranean diet, coupled with many conservation and cooking techniques, characterises a Mediterranean lifestyle which originally combined frugal meals, conviviality and cultural tradition. The division of the basic diet components (cereals, sugar, fruit and vegetables, milk, meat, fish, etc.) make up three major types of diet in the Mediterranean region as compared to the Cretan diet (**GRAPH 36**).

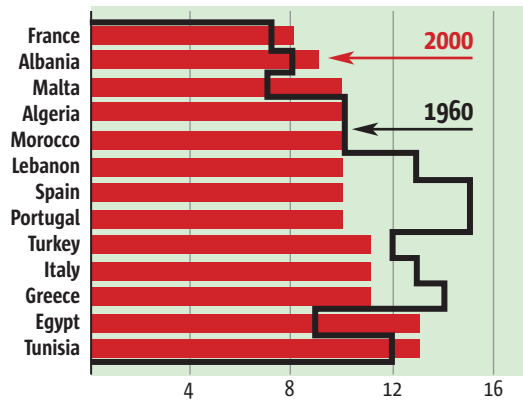
From recommendations on the level of nutrient uptake, a composite index of food quality (IFQ) is calculated from the consumption

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(19) CIHEAM Analysis notes – May 2006. La question céréalière : un enjeu stratégique en Méditerranée. B. Hervieu, R. Capone, S. Abis, June 2006.

**GRAPH 36** The 3 diet types in the Mediterranean compared with Cretan diet (2003)

Sources: Our calculations based on Faostat data, CIHEAM, Atlas Mediterra.

**GRAPH 37**  
Indicator of food quality (1960-2000)

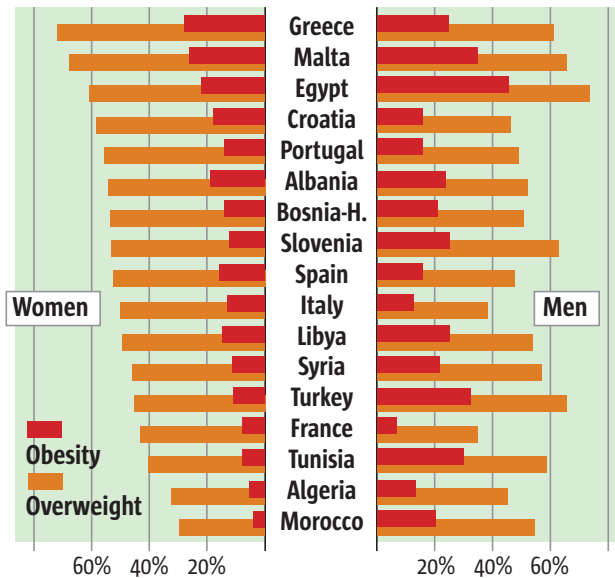
Sources: CIHEAM calculations, CIHEAM, Atlas Mediterra.

score<sup>(20)</sup>. In 40 years, several countries have seen their food quality indicator deteriorate (**GRAPH 37**): Spain, Portugal, Italy, Greece, Turkey, etc. Others have improved: France and Tunisia, while the IFQ of Morocco and Algeria have stabilised. This global data on a country level obtained through nutritional surveys can barely conceal the disparities related to consumer purchasing power and access to certain foods for people who spend 60 to 80% of household budgets on food, as is the case in the Maghreb countries.

(20) The score varies from 0 to 2 for each variable: eg. consumption of olive oil in g/day: from the least satisfactory: <5g = 0, 5 to 15 g = 1, to the most satisfactory > 15g/day = 2.



**GRAPH 38**  
**Obesity and**  
**overweight**  
**in the**  
**Mediterranean**  
**(2009)**



Sources: WHO, CIHEAM, Atlas Mediterra.

Changes in eating habits in the Mediterranean<sup>(21)</sup> linked to urbanisation, the feminisation of the economic activity and a greater mobility are causing a loss in the transmission of traditional know-how. Culinary traceability, the increased number of meals eaten at home, just as the increased consumption of street food and sugary drinks are practices affecting the health of Mediterranean populations, particularly the poorest. Obesity (**GRAPH 38**), excess weight, diabetes and cardiovascular diseases are increasing rapidly in Egypt, Turkey, Morocco, Slovenia and Albania, in both men and women.

These diseases are linked to malnutrition and strong nutritional deficiencies... Future proactive public health policies focusing on nutrition information and prevention actions should help modify the eating habits at the origin of these new chronic non-communicable diseases and push for the return of the Cretan diet, which is now far from the current habits.

(21) *Comportement et sécurité alimentaire en Méditerranée*. Padilla M. Futuribles, January 2009.

## 2. Possible scenarios for the future

FROM THIS OVERALL PICTURE that highlights the fragility of the productive agricultural sector as well as the permanent food insecurity, several scenarios can be drawn. The first scenario (S1), “crisis in the Mediterranean region”, confronts the North-South asymmetry and confirms the South shore’s dependence on food with the emergence of crises correlated with rising food prices and the continued marginalisation of Mediterranean rural areas. This scenario should be avoided but it will take place<sup>(22)</sup> if the trends described continue or accelerate. Food crises lead to economic and social crises... the results of crises and democratic transitions can then open the door to other scenarios.

The second scenario (S2), “Mediterranean divergences”, is the emergence and differentiated integration of some Southern and Eastern countries in the global economy (Morocco, Tunisia and Turkey) catching up with Northern Mediterranean countries falling behind in their European goals (Greece, Portugal, Italy...). Mediterranean agriculture in the North and the South shut itself off as increasingly challenged by imported products from Latin America and Asia. Poorly protected quality chains are also faced with competition from labelled chains from North America, South America and Australia. Food security is provided temporarily for some Southern countries if they manage to contain the growth in cereal demand and manage water demand for agriculture.

The third scenario (S3), “Mediterranean convergence”, is based on the desire of Mediterranean players for strong change and the implementation of concerted investment policies in rural areas to boost Mediterranean agricultural production. This boost must be accompanied by agricultural policies intended to control fluctuations in agricultural prices. Better coverage of food safety is thus ensured by the provision on domestic markets of quality products and services supporting production and the economy in rural areas. This is the scenario of a Euro-Mediterranean food security pact.

These different scenarios will be quickly raised in light of the essential diagnosis of the state of Mediterranean agriculture and food systems. The last scenario of convergence for a better control of food security involves many prerequisites that shall be presented in order to point out implementation measures and necessary actions.

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(22) Update: this occurred in Tunisia on 14 January 2011 and Egypt on 11 February 2011.

## Major trends

SOME QUANTIFIED approaches are needed to better outline the possible evolutions in the major variables used for food security, distinguishing for analysis: quantitative food security related to the energy content of the daily diet and qualitative food security correlated with food security and nutritional value aspects<sup>(23)</sup> and energy of the products on the market.

The changes in dietary energy supply (DES) used by countries for the quantitative approach are not available for all Mediterranean countries. The analysis of the DES, when available, for example for Tunisia, shows the impact of food aid programs and the fight against poverty<sup>(24)</sup> making, from 1960 to 2000, increase the DES from 2 000 to over 3 000 kcal/per capita per day<sup>(25)</sup>.

Available data and updates concern the quantification of food resources for the MENA region<sup>(26)</sup>. It is calculated from the amount of plant, animal and aquatic calories<sup>(27)</sup> available. The calculation of available plant calories links per capita calorific efficiency hypotheses and cultivated land for food production. The available animal calories are calculated, on the one hand, from proteins produced by fodder production and, thus, from the evolution of fodder land and, on the other hand, from the production of protein from animal feed (sensitive to changes in cereal prices in general imported by the SEMC). For aquatic calories, the assumption is that resources from regional production cover regional needs.

The evolution of these different interacting variables (which makes it difficult to build up detailed scenarios from the quantification of food resources) allows, however, drawing the evolution of major trends from population data, available area, regional crop yields, etc.

Regarding the evolution of the population, specialised scenarios detailed elsewhere are referred to. The overall figure is 500 million inhabitants in the Mediterranean region in 2030. The average hypo-

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(23) See point 8 of the food quality indicator.

(24) To better take into account food security: Actualisation concertée de la politique agricole, Minister of agriculture-AFD Tunisia-CIRAD-GRET-IRAM, Nov 2010.

(25) The intake was less than the quantities available. Individual energy needs vary between 2000 and 3000 kcal/day according to gender, height, weight, physical intensity of activity carried out...

(26) Millennium Ecosystem Assessment – MEA – 2005 which proposes different scenarios for the future based on the weight of the issues of globalisation and regionalisation and the capacity to tackle environmental aspects related to development.

(27) Agrimonde – Agricultures et alimentation du monde en 2050. Scénarios et défis pour un développement durable. INRA-CIRAD, 2nd edition Sept 2009.

thesis used is that the level of food consumption reached would be 3 000/3 300 Kcal/day/person according to the diet specificities of each country (see point 8). Food consumption is derived from economic growth under different scenarios<sup>(28)</sup>. This overall average availability does not take into account at this point large intra-regional disparities such as the one related to animal and vegetable foods making up the diet.

To quantify changes in food demand, we will retain the changes in the demand for cereals and more particularly the demand for wheat, whose significance has been underlined given the structural deficit of the SEMC (excluding Turkey). The need for further work on food demand for cereals for human consumption and animal feed becomes pertinent. Between 2000 and 2030, cereal demand will increase from 85 million tonnes to over 140 million tonnes<sup>(29)</sup>.

The factors limiting the growth of cultivated areas due to the low potential of arable land, water stress, probably on the increase due to climate change, and loss of areas already cultivated as a result of urbanisation, reduces the capacity for the cultivation of new land. The maximum increase of the cultivated area is estimated at +10% for areas under cultivation (food and non food areas) in the MENA region.

The increase in agricultural production due to intensive farming will be translated into increased food calories per cultivated area. This production has followed an annual growth rate of 2.5% between 1961 and 2000, whereas it will grow between 0.25 and 1%<sup>(30)</sup> between 2000 and 2050. Under these assumptions for population growth, changes in the consumption of plants and animals, cultivated area and yield, the balance sheets show a constant<sup>(31)</sup> food deficit.

If regional production rose in a steady trend from 40 to 70 MT, the MENA region would have to import, in 2030, over 50% of its consumption, i.e. more than 70 million tonnes of cereals to meet the growing needs related to a sharp increase in meat (+104%) and milk (82%). The SEMC will, therefore, address this constant deficit importing so to feed its population.

Given the volume of renewable water production (in m<sup>3</sup> per capita per year) in Maghreb, Mashreq and North Africa and coupled with population growth projections for the period 2000-2030, the average assump-

(28) Quantity available (production +/- stocks + imports - exports).

(29) Increasing Food Security in Arab Countries. FAO-World Bank Study, 2009.

(30) Food yields and annual growth rates in an agricultural forecasting scenario. See note 28.

(31) The calculation of this deficit is the difference between local production and consumption (food + animal + human + other uses of seed food biomass).

tion adopted for the same period with a population increase of 70%, insufficiently compensated by increasing agricultural production by 20%, results in a food deficit of 1,150% (see note 25). This overall outcome aggregates very different results as the trade deficits balance varies by country. In this scenario, Tunisia would occupy a more favourable position<sup>(32)</sup> with only 27% of additional demand for cereals in the next 10 years and 34% for oils. For the Maghreb region (Algeria, Morocco, Tunisia and Libya), there is an overall increase in imports of 50% for oils, whilst 75% for cereals.

For the evolution of food prices, the observed trend is that of prices of wheat and oil on the futures markets<sup>(33)</sup>, strategic raw materials for food security (food, energy). The rapid fluctuation in the price increase (**GRAPHS 39 & 40**) is a primary trigger for the food riots which take place in the Mediterranean since the early 2005.

The trend chosen for the evolution of wheat prices is a steady increase in the long term with significant variations related to the permanent price volatility and in the absence of effective regulation stocks<sup>(34)</sup>.

The implementation of these scenarios depends on the ability of Mediterranean agriculture to cope with the fundamental challenges of agribusiness:

The improvement in food production will depend on:

- agriculture and rural development due to intensive farming going beyond the constraints of growth of arable land and competition on land resources and water;
- the ability to innovate, to develop more complex production systems, to manage the input demand, to ensure access to resources and to services that support production.

To accommodate the food demand to the available resources will depend on:

- changes in eating habits, in the implemented institutional policies, in the capacity to control the consumption of animal calories<sup>(35)</sup> and to reduce losses in production chains, processing and food distribution;

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(32) Min. Agri. Ress. Hydrauliques et Pêche, Tunisie – Vers une nouvelle stratégie pour le développement du secteur agricole 2008 – cited in note 25.

(33) Data cited by Nicolas Bricas, UMR Moisa-CIRAD. January 2011.

(34) The price of a tonne of wheat stored in Ile-de-France passes for an identical product (same place and same storage capacity) from €130 in July 2010 to €270 in February 2011.

(35) Significant decrease for the countries of the North shore.

**GRAPH 39**  
Prices of wheat  
on the futures  
market



**GRAPH 40**  
Crude oil price



Source:  
FT, 28/01/2011  
by N. Bricas

- the establishment of new national and interregional governance schemes in order to secure supplies and regulate markets and prices.

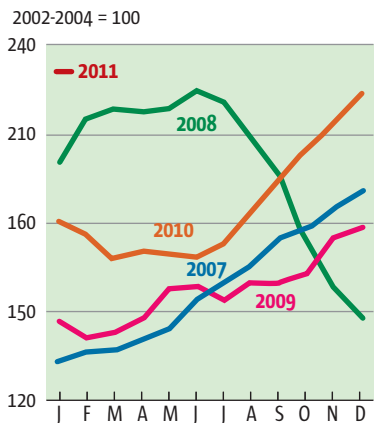
For the baseline scenario and the adequacy of resources and food demands, we will retain, on the horizon of 2030, the following key figures:

- cultivated land: a maximum increase of + 10%
- grasslands: maintained or with a decline of 5%
- forested areas: a decrease of 30%
- a rainfall deficit of + 10% to + 20%
- increase rate in food yields per hectare: from +0.25 to + 1% per year
- agricultural production increased up to 20%
- human food consumption 3 000 K cal/inhab/day including 2,500 plant and 500 animal
- food yields kcal/ha/day: 14 500
- increase in overall food deficit of more than 100% (doubling)

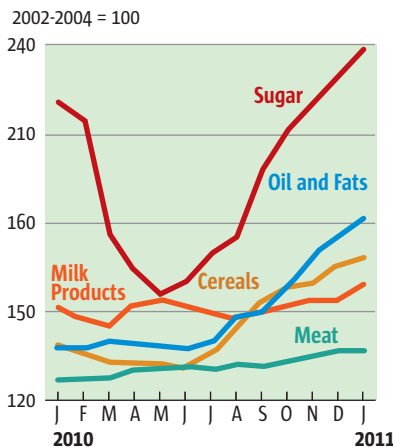
### **The scenario of “crisis in the Mediterranean region”: a convergence through the bottom and a break (S1)**

IN THIS SCENARIO the previous trends are confirmed and accelerated. The crises will continue with a rise in the prices of agricultural commodities and food products that will be sustainable. These higher prices will be accompanied by strong variations related to active speculation and a lack of food stocks with a minimum price regulations and the absence of food security stocks. The first part of this scenario is cur-

**GRAPH 41** FAO Index for food prices



**GRAPH 42** Food commodity price index (2010)



rently playing out, according to the FAO index on the evolution of food prices<sup>(36)</sup> (GRAPH 41). At the start of 2011, this index, which has risen every month for 7 months, it was up of 3.4 in January 2011 and reached 231 points, its highest level since 1990, the inception date of the index.

The price of food soaring in one month (sugar: +5.4%, oils and fats: +5.6%, cereals: +3%) (GRAPH 42). If the price of meat at the world level remains stable, this is due to lower prices in Europe<sup>(37)</sup>. The food crises become permanent and States respond individually to the crisis of Tunisia. Beginning of January 2011, Algeria bought 1 million tonnes on the international market<sup>(38)</sup>. On January 12<sup>th</sup> 2011, Morocco launched a tender for 150,000 tonnes of wheat and 100,000 tons of barley; Libya for 100,000 tonnes of wheat. Market tensions accelerate because of uncoordinated national policies. Food insecurity may then be transformed into high vulnerability of the States. Food crises and related riots will spark other crises.

World prices of agricultural materials globally increase. However, in the Mediterranean, the ripple effect of prices on agricultural income is

(36) [www.fao.org/worldfoodsituation/foodpricesindex](http://www.fao.org/worldfoodsituation/foodpricesindex).

(37) A lowering of prices following the crisis of confidence in December 2010 and January 2011, consumers associated with the consumption of livestock feed (Germany) offset by higher export prices by the U.S. and Brazil.

(38) Order of 6 January 2011 after five days of riots in the cost of living in Algeria, followed by purchases of 600,000 tonnes of milling wheat and 50,000 tonnes of durum wheat in mid-January 2011.

lower for family farms, which are a majority, in terms of number of farms and in agricultural assets working in or for these farms. Besides, they mainly focus on the subsistence production of food crops combined with farming and dry tree crops.

This scenario leads to the gradual withdrawal of cereal crops in areas where climatic conditions are too strong with, in the short term, the collapse of rainfed (non-irrigated) agriculture in the Southern shore and the Middle East, in a context of accelerating trade between North and South, in an open unregulated market. Agriculture in the SEMC, except for some export sectors to the North shore of the Maghreb, Israel and Turkey, lose their competitiveness on foreign markets as well as on domestic markets.

In this scenario of convergence through the bottom and acceleration of the identified trends for the reference scenario, access to water resources leads to conflicts. The increasing demand for agricultural water is only satisfied by a limited supply, without the possibility of increasing or improving irrigation efficiency (losses, surface irrigation remaining majority without significant developments of drip irrigation).

The lack of professional organisations, associations or unions of farmers cannot allow the access to support services for agriculture and the market. Small farms, technically framed, live of transfer incomes and multiple jobs that ensure their survival. The agricultural business sector, increasingly dominated by non-agricultural operators, concentrates land ownership primarily on communal lands and then State areas<sup>(39)</sup>. It may continue its modernisation by improving yields and overall production. In the same period, smallholder agriculture sees its population increase but exodus and emigration no longer absorb the increased population. These small farms decapitalise their physical and financial land resources, pressure on natural resources increases, so... we witness the spread of poverty and the raise of social and regional inequalities. The rupture scenario is thereby reinforced with forced migration, uncontrolled migration flows, asymmetry and imbalance. The North shore, trying to get out of the economic and financial crisis (more marked in the European Mediterranean countries than in the countries of the North), cannot invest in policies to mitigate these asymmetries... The fall of foreign direct investments observed in the Mediterranean in 2008 and 2009 is confirmed as well as the decline in remittances from

(39) *Mediterra 2008*: In the Maghreb area 1.5% of total holdings are larger than 50 ha and account for 20% of the cultivated area. 2 of 3 operations are under 5 ha.



expatriate workers and the reduction in tourist flows. The decline in exports<sup>(40)</sup> is accompanied by a raise in unemployment and inflation rates. Budget deficits grow and annual GDP growth rate slows down, for the Maghreb countries, from 5% to less than 3%... The construction of a Euro-Mediterranean economic area disappears for a long period.

### **The “Mediterranean divergences” scenario: a disparate insertion in the world economy (S2)**

IN THIS SCENARIO, the Euro-Mediterranean partnership subsists in a free market economy open to the world. The free trade agreements, negotiated by each country with the EU, grow asymmetrically but with more benefits for the Northern shore than for the South. These agreements continue to exclude agriculture and ultimately prevent the expansion of exports from the South and East to Europe. This asymmetry, in favour of the North, is increased as South-South or South-East regional integration still cannot see the day in the absence of political will of governments in power who prefer isolated negotiation and the status quo to a regional agreement. The negative impact of blocking boundaries<sup>(41)</sup> with higher transaction costs between the Maghreb countries than the ones with Europe, do not promote regional integration either. This lack of common approach is highly prejudicial to the Maghreb countries. In their negotiations to purchase cereals on the world market, for example, and given the weight of imports, cumulated total imports of wheat for Algeria, Morocco, Tunisia and Egypt count, at the height of the 2008 crisis, for 20% to 25% of world imports of cereals. In this context, trade between the SEMC and the EU continues to decline. Brazil reinforces itself as a partner of the Mediterranean countries. Mercosur strengthens its alliances and negotiates agreements with Egypt, Morocco and Turkey. The agri-food exports from Brazil to Egypt and Algeria grow rapidly. Egypt imports nearly all of the meat and imported sugar from Brazil<sup>(42)</sup>.

Only some Mediterranean countries, foremost among which stands Turkey, maintain growth rates of total GDP and agricultural GDP around 5% per year benefiting the mechanised farming sector. For most SEMC, family farming continues to decline and is marginalised; intensive and mechanised agriculture is developing. The insolvent rural population

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(40) Exports decline by 21% in Tunisia in 2008 and 18% in 2009. Source O. Bessaoud. CIHEAM/IAMM. Seminar GTZ /INRA/IRD Tunis. November 2010.

(41) For lasting security in the Maghreb, a chance for the region, a commitment for the European Union. Thomas More Institute. April 2010.

(42) See *Confluences méditerranéennes, la méditerranée sans l'Europe*, N°74. Summer 2010.

has more and more difficult access to resources, goods and services, while part of the solvent urban population keep its access to the globalized market, the big retail stores, to services, education and health. This scenario sees continued urbanisation with a widening gap between coastal and inland rural areas. In order to ensure its food security, the Southern shore of the Mediterranean turns gradually to other emerging partners, Brazil, China and India, where agricultural production and food eventually compete with those from the Northern shore.

**The “Mediterranean convergence” scenario: top-down convergence and a set of concerted agricultural and multisectorial policies (S3)**

THIS IS A SCENARIO that changes things, with a progressive convergence towards a co-development pact that enhances regional food security. For this scenario to take place, Mediterranean countries need to, collectively, assume their food security by implementing concerted and complementary regional agricultural policies. The evolution towards this scenario implies some prerequisites in terms of sharing common goals of food security, the creation of European and Mediterranean agricultural policies converging on some key points such as control of agricultural prices, market regulation and the constitution of security stocks for food security.

Massive public and private investments are done in agriculture, which is essential to ensure a steady increase in agricultural GDP from 3 to 5% per year. These investments should grow at the same pace as agricultural GDP growth and be concentrated in sectors like the mobilization of water resources, transportation and localized distribution of irrigation water but also in strengthening devices on rainfed agriculture and on economy of water resources in farming systems, making attractive grasslands and areas of supplementary irrigation<sup>(43)</sup>. Agricultural public investment must be accompanied by a reinforcing of human capacities for monitoring the implemented policies. They will facilitate market access for farms weakened by years of structural adjustment and market liberalisation policies.

Create jobs and income in rural Mediterranean areas – a prerequisite to better ensure food safety – necessitate the development of an agricultural policy consistent with other sector and intersector public policies (import controls, tariffs, quotas and tariff measures backup, etc.).

(43) These may include provisions for spreading, protection and restoration of soils, micro structures, catchment ponds for supplemental irrigation, etc.

Within each Mediterranean country<sup>(44)</sup>, public and private investment in the productive sector can be upgraded with an industrial policy promoting local products and bringing international norms and standards for products and processing companies. The implementation of the convergence scenario, with a annual growth of agricultural GDP above 3%, will also require, in the countries of the Southern shore, to couple to a policy of incentives for production elements of general economic policy to support agricultural credit and the setting up of insurance and tax measures such as aid for the storage and production of quality seeds. Access to investment and equipment also implies specific allocations to agriculture at subsidised rates managed by professional financial services. The development of public policies in the agriculture and food sector requires the presence of an organised professional sector, real partner of the government, contributing to the rehabilitation of public action.

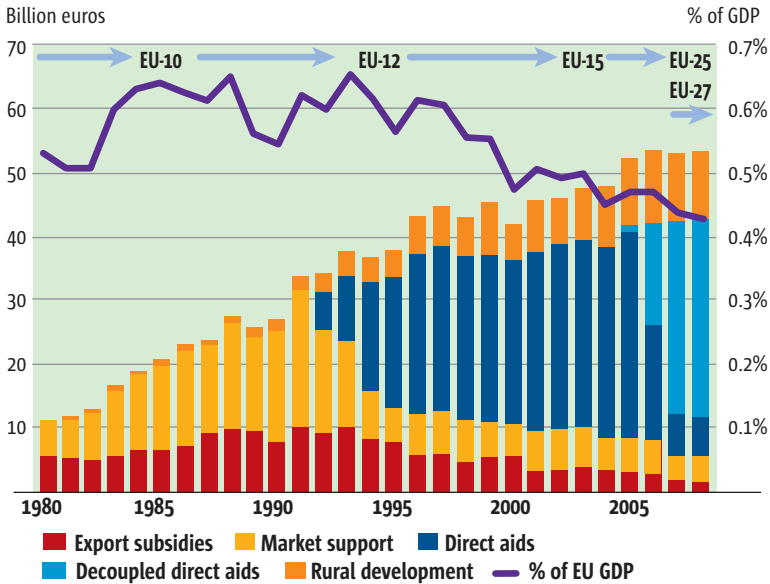
Policies for land records are deemed essential to stimulate investment in the long-term and funding of agricultural activity. Complementary environmental policies of rational management of water resources and land, infrastructure and transports policies and land planning must also accompany the investment policies in the productive sector.

### 3. Towards a new common agricultural policy

THESE INTEGRATION schemes require the mobilisation of significant financial resources over time. The Northern Mediterranean countries, in order to succeed their integration policy, have benefited from stable and long-term public policies and received massive financial support (45 billion Euros per year for the EU27 until 2012). It does not seem possible that these policies and supports can be gradually extended to the SEMC given the low capacity of these countries to collect taxes to feed a system of coaching and aid to rural development. Modes of governance in use, a lack of appropriate legislation as well as adjustment and upgrade schemes, make the establishment of such policies barely possible in the short-term. This context is not the one of Southern and Eastern Mediterranean countries. The recent food crises have shown, however, that the established doctrine of risk management without affecting

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(44) See a recent analysis of Tunisia cf. Note 25.

**GRAPH 43** The path of CAP reform and CAP expenditure

Source: The CAP – moving with the times, Zagreb, 12 June 2009

agricultural prices should be questioned. There may thus be a place for the development of new concerted agricultural and food policies in the North and South of the Mediterranean, with a significant amount of aid to the rural development sector. These resources allocated to “second pillar” actions, representing a small amount of the funds allocated by the current CAP, could evolve in the next CAP from 2013 (GRAPH 43).

A dynamic of this type could be implemented in a concerted manner between Mediterranean countries and the EU. The implementation of the “Green Morocco” plan must be followed carefully by measuring the impacts of “second pillar” actions to restart family farms and create jobs and income in rural areas. The November 2010<sup>(45)</sup> communication from the Commission to the European Parliament which follows numerous exchanges, internal and external consultations<sup>(46)</sup> and public debate offers strategic options for the long-term future of European agriculture and rural areas. The new CAP 2013, in its current stage of development, acts the maintaining of the two pillars to structure a CAP that should

(45) See Communication - COM (2010) 672 final.

(46) Brussels Conference on the future CAP 2013 on 16 July 2010.

remain a strong European common policy organised to meet three strategic objectives:

- Ensuring long-term food security of Europe while contributing to global food demand where there is continuous growth. Preservation of food production potential must be done in a context of climate change and with increased pressure on land resources and water.
- Support the production of food that must be varied, of quality and having an added value, produced with an approach respectful to territorial development.
- Preserve the viability of rural communities that create local jobs.

These general elements stress the importance of agriculture to the European economy and society with options for reorienting the CAP 2013 budget. The existence of two supplementary pillars is confirmed, the first pillar offering market measures and direct payments but more ecologically based and more equitable than currently. The second pillar proposes multi-annual measures of rural development but they are more oriented towards competitiveness, innovation and the environment in a climate change context. These guidelines are consistent with development priorities of Mediterranean agriculture, although the drafting of the future CAP does not include any measures of the impact of future CAP on trade in goods between the North, the South and the East of the Mediterranean.

#### 4. The European Neighbourhood Policy: an enhanced cooperation for the convergence of health standards

THE EUROPEAN NEIGHBOURHOOD policy (ENP) aims to provide greater economic integration between the EU and its neighbours, including Mediterranean Partner Countries (MPC) members of the Barcelona Process. This policy, different from the enlargement policy, seeks to establish closer cooperation with no prospect of accession. It therefore provides a status less exigent than membership but more than that of the association to countries that commit to a series of politic and institutional reforms, primarily aimed to the promotion of Mediterranean agricultural products to export but also for domestic markets.

For MPC, the convergence of health standards with those of the EU becomes a must for all products they export to the EU and especially for fruits and vegetables, which represent 56% of exports from Medi-

terranean countries to EU(25) in 2005-2006. The low current capacity of MPC companies to control the quality of health products is often an argument used to oppose the liberalisation of trade in agricultural and food products. Reforms that would create health agencies are required to address these new non-tariff barriers. They involve the compliance of national legislation with international commitments but also the accountability of private actors themselves, the promotion of quality and traceability, ensuring a better competitiveness of the products in domestic markets. In this context, it becomes essential to develop a concerted effort between the North, the South and the East for a plan promoting the quality of products based, for example, on a network of laboratories of analysis to characterise, validate and certify the sanitary quality of Mediterranean agricultural products and food for the domestic and export markets. Health regulations are central features of food safety in Europe for public or private traders, mainly from the retail sector.

The European Food Safety Authority (EFSA) was established in 2002 to assess existing and emerging risks in food. Its scientific work, the results and advices it publishes should help decision makers in the adoption of EU legislation on food safety of animal and plant products. The creation of a common trade area for agricultural products and food between Europe and the Mediterranean needs the introduction of closer legislation where future circulation of products is less hindered than currently. This convergence of food standards between MPC and the European Union can help accelerate the modernisation of MPC channels and contribute to the progressive creation of a Euro-Mediterranean economic area. This will involve the mobilisation of specific resources for compliance layouts, for the consolidation of financial capacities and the strengthening of technical skills. It will also go beyond institutional constraints relating to the health quality of traded products and the organisation of MPC channels.

## 5. The co-development scenario

### **Building a rural co-development pact**

A MAJOR FACTOR of food security lies in the instability of agricultural prices that is often the result of speculation and the incapacity of agricultural and rural actors to anticipate. The use of different schemes to manage this instability becomes crucial<sup>(47)</sup>, either by the stabilisation of prices or by a better control of market risks, using policies combining market regulation and public intervention. Public policies to stabilize food prices must be conceived in the medium and long-terms. These public policies should combine arbitration, hedging against risk, transfer insurance schemes and support measures. Temporary controls on production, through imports and exports regulations, must be designed with the establishment of quotas for imports and exports. Modernising production systems and adapting them to climate change, investing in the productive sector and mostly in the processing and marketing involves the control of the prices stability at different levels. The modernisation of production structures and intensive farming environmentally friendly is one form of stabilisation.

Complementary public interventions will strength the control on speculation by calling up international markets or the management of stocks. Export controls in times of crisis can also help improve the management of physical stocks. Associated mechanisms of varied taxes on imported goods can also help offset the excessive price fluctuation. It is a set of measures that must be implemented for a stabilizing intervention and in order to reduce risk and anticipate future interventions. This set of measures articulates: control of prices and markets, incentives to production for the domestic market, strengthening the professionalization of channels and farmers' organisations. All these elements of agricultural and food policies, implemented in a concerted manner between Northern, Southern and Eastern Mediterranean countries, could form a genuine rural co-development pact with mutual benefits. It would then be possible to accept some forms of protectionism, on a transitional period, to help consolidate the income of farmers which will have access to local markets at profitable prices. Control systems deve-

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(47) See *Volatilité des prix internationaux agricoles et alimentaires et libéralisation en Afrique du nord*. François Lerin, Sylvaine Lemeilleur, Michel Petit, in "Perspectives des politiques agricoles en Afrique du Nord" CIHEAM-AFD. *Options méditerranéennes*. N° 64. 2009.

veloped in the North and in the South would allow market regulations and promote quality food production that ensures jobs and incomes in the rural inlands of Southern and Eastern Mediterranean countries.

In this context, the setting up of stocks of Euro-Mediterranean cereals could be organised to make emergency responses more effective. Storage policy, including in the Mediterranean ports, could be revived in a concerted manner between countries bordering the Mediterranean. This partnership agreement on cereals would have as a main aim to guarantee farmers prices, as well as consumers, by limiting the impact of speculation. Northern cereals channels could establish an agreement with Southern and Eastern countries on the basis of a global agreement guarantying, for the Northern countries, new markets. In compensation, Northern countries would ensure food security in the framework of a common mechanism for management of stocks. This regional agreement could be directly settled between actors of the cereal channels and benefit from guarantees from the States. Southern countries, also exporters of agricultural inputs (natural phosphates and fertilisers coming from the petrochemical industry), could introduce these elements in the future agreement to be negotiated. These elements could eventually include an indexation of the price of cereals on the price of energy. At a geostrategic level and in the long-term (5-10 years), such a project would make sense as, over a period of 20 to 25 years, a hundred million people around the Mediterranean would have to be fed. This implies, in particular for Europe, to be engaged in a partnership in order to support the reform of agriculture in developing countries in the Southern Mediterranean through transfers of resources as done for the Eastern European countries. It would, thus, be a question for the food, agribusiness and rural development sectors to elaborate a regional development policy, articulated around the European neighbourhood policy, allowing the progressive construction of a real pact of rural co-development for the Mediterranean area and not just engage the enlargement of the CAP in a new formula for the South and the East.

### **Organising priority channels**

THE FRUITS AND VEGETABLES sector remains the sector with the major potential trade between the North, the South and the East of the Mediterranean to the extent that the cereal sector is structurally a sector of import of the “Souths” from diversified “Norths”. The launching of a Euro-Mediterranean co-development dynamic would allow the organi-



sation of the production and the Mediterranean trade of fruits and vegetables in such a way that it could be, later on, extended to other channels. The objectives of this organisation could be formulated as follows:

- create jobs and added value through domestic and international trade, by promoting quality and the Mediterranean origin of goods and by consolidating Euro-Mediterranean partnerships between enterprises;
- boost the consumption of Mediterranean fruits and vegetables by offering quality products, resulting from certification process, at acceptable prices, and raising awareness on their nutritional benefits;
- control the negative effects on the environment by developing integrated and biological food productions resulting from ecologically intensive farming and valuing the expertise and innovations available;
- decrease greenhouse gas emissions as well as the emission of particles at high environmental footprint by reducing South-North and North-South road transports and incorporating some elements of eco-conditionality in trade.

In a Euro-Mediterranean area, which would share a minimum of common rules in order to guarantee the quality of traded products, channels of quality products (with a growing economic impact in the North) represent a significant potential of development, employment and income in rural areas (**GRAPHS 44 & 45**).

### **Better management of Mediterranean food security risks**

THIS SCENARIO of convergence and co-development needs to strengthen risk management in order to build food security. To do so four axes must be developed:

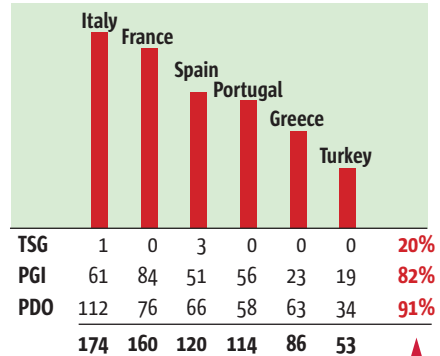
- ensure availability of basic food by combining domestic production and import capacity;
- ensure, throughout the year and in the long-term, the regularity of available products;
- maintain access to food while preserving the purchasing power, transport infrastructure and storage capacity as well as balanced negotiations between channel actors from production to consumption;
- guarantee the nutritional quality of food.

To ensure long-term food security, the Euro-Mediterranean cooperation, strengthened in the food security area, could focus efforts in agri-business markets and enterprises, in production and exploitation systems and in farmers, on ten priorities:

**GRAPH 44**  
**PDO, PGI and TSG quality products in Northern countries (2009)**

(numbers)

TSG: Traditional Specialty Guaranteed  
 PGI: Protected geographical indication  
 PDO: Protected designation of origin



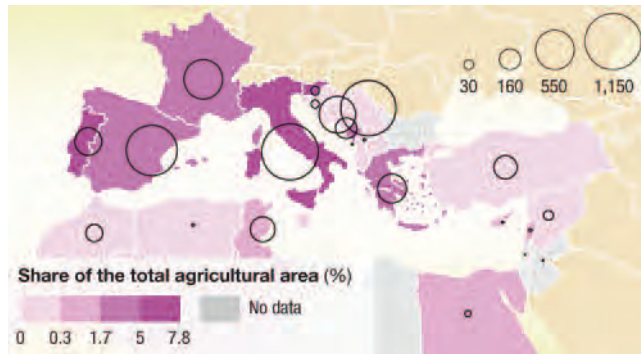
Share of European Mediterranean countries in the EU total

Sources: CIHEAM,  
 Atlas Mediterra.

**GRAPH 45**  
**Organic agriculture and quality products in the Mediterranean region (2006)**

(thousands hectares)

Sources: CIHEAM,  
 Atlas Mediterra.



1. Encourage the integration between local and export channels. The exporting firms, which have the required expertise in implementing quality standards, could be encouraged to disseminate their know-how into the domestic market. Develop the necessary economic process for the construction of proximity food systems<sup>(48)</sup> promoting short distribution networks and under regional food-processing transformation, creator of jobs and incomes in rural areas.
2. Encourage the transfer of know-how in reasoned production systems and expertise on standardization by establishing joint ventures producing in the North and the South to ensure continuous supply of the same distributors.

(48) See *Prospective du système alimentaire mondial : modèle agro-industriel ou modèle de proximité ?*, in *Le système alimentaire mondial. Concepts et méthodes, analyses et dynamiques*. Jean-Louis Rastoin, Gérard Gheris. Quæ 2010.

3. Develop a program to support quality and health standards, targeted for identified producers, adapted to production conditions and socio-cultural values of MPC that ensures them an active contribution to the development of these standards.
4. Develop research, training, higher education and technology transfers for climate change: irrigation systems to strengthen production systems, integrated fight against devastating pests, conservation of farming. Promote local products with low environmental impact and using biodiversity.
5. Significantly invest in the production and support of innovations and technical and managerial skills in export channels as well as in traditional industries where products are meant for domestic markets. These plans, built on the diversity of Mediterranean agricultures, will enhance the quality of their products based on the great potential for development of domestic markets.
6. Better control price volatility through mechanisms of market control, tightened in speculation periods by using dedicated funds on basic food products.
7. Consumers' education for better nutrition. Develop nutrition programs that improve economic and social development as well as poverty reduction.
8. Building systems to adapt to climate change impacts based on mutualised insurance schemes. Control risks related to aridity by developing adapted production systems, low consumers of water resources and enhancing the local workforce and know-how.
9. Boost a preservation Mediterranean agriculture protecting grounds, biodiversity and less emitter of GHG<sup>(49)</sup>, thanks to incentive agricultural policy measures, being able to benefit from payments for environmental services (PES)<sup>(50)</sup>.
10. Strengthening the development of knowledge and useful data for the development for the emergence of Euro-Mediterranean networks of education, research and cooperation. Connecting universities and research systems on life sciences, creating centres of expertise with a regional distribution of their teams (Maghreb, Southern Europe,

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(49) GHG: greenhouse gas, see *L'agriculture peut-elle accéder aux marchés de carbone ?* FARM study, December 2010.

(50) See *La rémunération des services environnementaux rendus par l'agriculture. Document de travail prospective et évaluation*. N° 2, March 2009. MAAP: Service de la statistique et de la prospective.

Mashreq, Balkans...), supporting targeted programs focused on common priorities and assigned to qualified Euro-Mediterranean lecturer-researchers being able to move more freely between the Northern, Southern and Eastern shores of the Mediterranean.

## 6. The Mediterranean spring and food safety: new opportunities?

CLIMATE UNCERTAINTY in the Mediterranean always leads to some caution on the sustainability of positive developments. Wet and green springs are sometimes followed by dry summers, not confirming the promise of spring. Revolutions engaged in the Mediterranean region are processes needing long periods in order to be stabilised. But from this situation and vis-à-vis food security, new opportunities could emerge promoting efficient South-South and South-East regional cooperation, which is an essential prerequisite for strengthening the Euro-Mediterranean area.

Almost nonexistent trade among the countries of the Southern shore could boost local productions, regional markets, jobs and incomes in rural areas. GDP gains from the actual reduction of corruption, and thus of transaction costs, invested in dynamic reduction of food insecurity could accompany new regional dynamics of resource management<sup>(51)</sup> to develop food production. A regional financing system of local development could support rural development and non-farm economies settled in rural Mediterranean areas.

In this context of openness and possible strengthening of the cooperation, the Union for the Mediterranean, currently paused, could be relaunched by placing food safety and the right to food among its priorities at the risk of observing the strengthening of the role of other non-European players who have seen the issue of an active partnership with the Mediterranean again becoming an important element in the global arena.

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(51) Like the international institutions for managing resources in fossil waters in the Eastern Maghreb or in the Middle East.

**IPEMED** ~the Mediterranean world Economic Foresight Institute  
IPEMED is a non-profit organisation whose aim is to integrate the countries to the North and South of the Mediterranean via economic means. IPEMED raises awareness of the common future and interests of the Northern and Southern countries of the Mediterranean. Financed through private funds, IPEMED adheres to the principles of political independence and North-South parity in its governance and operations. IPEMED accords priority to the economy, favours an operational approach to projects, and works to a long-term perspective. Radhi Meddeb is its president and Jean – Louis Guigou its Delegate general.



### ***Building the Mediterranean***

Building the Mediterranean collection was launched by IPEMED in 2009. In these publications, IPEMED experts from both sides of the Mediterranean bring together their ideas, contributing to the debate on major Mediterranean issues, fostering a new approach to North-South relations, and devising useful propositions for inhabitants of Mediterranean countries.

The publications are available on the IPEMED website.

→ [www.ipemed.coop](http://www.ipemed.coop)

### **EXISTING TITLES**

*Région méditerranéenne et changement climatique,*  
Stéphane Hallegatte, Samuel Somot and Hypahie Nassopoulos, 2009

*Eau et assainissement des villes et pays riverains de la Méditerranée,*  
under the direction of Claude Martinand, 2009

*Méditerranée 2030. Panorama et enjeux géostratégiques,  
humains et économiques,*  
Guillaume Alméras and Cécile Jolly, 2010

*Convergence en Méditerranée.*  
*Les entreprises de la Méditerranée s'engagent dans un plus fort  
transfert de valeur ajoutée entre ses rives, vecteur capital  
pour une intégration économique régionale,*  
Maurizio Cascioli and Guillaume Mortelier, 2010

*Méditerranée : passer des migrations aux mobilités*  
Pierre Beckouche and Hervé Le Bras, 2011

*Régulations régionales de la mondialisation.*  
*Quelles recommandations pour la Méditerranée ?*  
Coordinated by Pierre Beckouche

*Realisation coordinated  
by Macarena Nuño  
with Patricia Jezequel  
and Alain de Pommereau.  
Impression done in November 2011  
by France Quercy  
on certified paper FSC.*

**The Mediterranean** is facing great uncertainty regarding its future. However, a rich web of economic, institutional and human relations is constantly being woven, inviting us to ask ourselves questions about its future. In front of obvious synergies and challenges to which countries cannot respond individually, several scenarios can be drawn up. This is exactly what the “Mediterranean 2030” consortium has done in this publication. The prospect of countries disparately slotting into the world economy, or a scenario made even darker by the 2008 financial crisis, leading to bottom-up convergence and the marginalization of Mediterranean countries, are both plausible and unfavourable for regional integration. Yet another future is possible. Hinged on pro-active political action shared by all countries, Mediterranean convergence can be envisaged, based on promoting complementarities, greater redistribution of wealth and stronger competitiveness in a regionally integrated system that benefits from the four freedoms implemented by the EU. To achieve this, nine recommendations for a Mediterranean “ecosystem” have been set out.

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