

N° 17

June 2011

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ISSN 2114-3129

# Watch Letter



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**CIHEAM**  
International Centre for Advanced  
Mediterranean Agronomic Studies

## Rethinking agricultural funding in North Africa to meet the needs of all farmers

Tahani Abdelhakim, Omar Bessaoud and Vincent Dolle  
CIHEAM-MAI Montpellier

Agricultural funding has been one of the favoured instruments for transforming North African agriculture. An important feature of successive public agricultural policy in these countries (massive state intervention in the sixties, disinvestment under the agricultural structural adjustment policies of the eighties, "public-private partnerships" in the first decade of this century), it has been a powerful force for change in socio-economic relationships in the countryside. Genuine progress has been made in certain agricultural sectors (fruit and vegetables, citrus fruit, olive oil, white meat and eggs, milk and sugar) thanks to public subsidies to private concessionaires or farmers, public and private investment to develop irrigated areas (in Morocco, in Egypt, and in the south of Tunisia or Algeria) or to improve fixed agricultural capital (glasshouses, livestock housing, fruit and olive plantations), credit granted to ensure successful crop seasons, and loans and aid from international institutions.

However, agricultural funding systems continue to reflect the countries' social problems, and economic contradictions, as well as the limits to the management of rare natural resources, which have now been reached. These agricultural sectors are faced with the problem of climate change and the need to guarantee food security, which has been severely compromised by the volatility of international prices of basic foodstuffs supplied to markets and local processing industries. The funding on which investment capacity depends is still the favoured instruments for dealing with these problems. What is the diagnosis of the current situation, what are its main limitations, and how is the system to be reformed so that it benefits small farmers in North Africa and offers a new model for much-needed agricultural growth?

### The diagnosis: underfunding and underbanking

The findings of all assessments of the Maghreb and Egypt concur that the agricultural sector suffers from underfunding and underbanking. Since 2000, the proportion of farms with access to credit has been hovering around 7% in Tunisia and less than 10% in Algeria. In Morocco 60,000 farmers have access to agricultural funding out of a possible 400,000 (15%) and in Egypt, while many landless farm labourers are refused credit, small farmers are often forced to depend on loans from big landowners to cover current expenses since they are unable to provide sufficient collateral. The banking sector grants loans either to economically viable agri-food enterprises or to agricultural entrepreneurs or to farms with sufficient mortgageable land and property, operating in the high value-added sector and taking full advantage of marketing circuits and markets. Investment by banks has fallen in Tunisia in recent decades and accounts for only 20% of private investment in Morocco, while very few farmers (10-12,000) in Algeria have had access to loans from the country's Bank of Agriculture and Rural Development (BADR). Only in Egypt do private and public banks help finance work programmes designed to upgrade land and improve farm facilities within the framework of large-scale projects (Toshka, El Salem).

### Agricultural funding as a means of social selection, eviction of small farmers and unequal distribution of agricultural capital

The vast majority of small farmers have been unable to gain subsidies or bank loans because they do not have title deeds to property or the authenticated documents required by credit institutions. Nearly 2 out of 3 million farmers have less than 5 ha in the Maghreb. Their land is often fragmented, jointly owned, without title deeds and unregistered. In the Nile Valley and Delta more than 3 million farms (81% of the total) have less than 1 ha and three quarters of the farms on the new irrigated lands have less than 2 ha. All banks and other credit institutions have applied eligibility criteria based on the creditworthiness of the client and the profitability of their undertakings and have also demanded genuine guarantees based on title deeds and property rights. In this way the capital of banks and agricultural credit institutions has been ploughed into selected farms, lands and territories that are protected from the vagaries of climate and into areas where natural risks have been overcome and crops are profitable (governorates in northern Tunisia, irrigated land producing high added-value crops in Morocco and Egypt, land producing fruit and vegetables in Algeria). Small farmers and the vast majority of peasant

#### CIHEAM

Founded in 1962, CIHEAM is an intergovernmental organisation comprising thirteen member countries from the Mediterranean Basin. CIHEAM is made up of a General Secretariat (Paris) and four Mediterranean Agronomic Institutes (Bari, Chania, Montpellier and Zaragoza).

In pursuing its three main complementary missions (post-graduate specialised education, networked research and facilitation of the regional debate), CIHEAM has established itself as an authority in its fields of activity: Mediterranean agriculture, food and rural development.

At present, Mr Adel El-Beltagy is CIHEAM's President and Mr Francisco Mombiola is its Secretary General.

**Director  
MAI of Zaragoza**

Ignacio Romagosa, the new director of MAI Zaragoza, assumed his duties on 1 May 2011, succeeding Luis Esteruelas, who had occupied the position since 2003.

A former professor at the University of Lleida, Ignacio Romagosa has considerable experience in the fields of research and education. His main areas of research are plant breeding and genetics.

He graduated as an agricultural engineer from the Polytechnic University of Madrid and gained a PhD from Colorado State University (USA). He has been a visiting lecturer to various Universities in the USA, Canada and Europe.

Ignacio Romagosa was Dean of the Agricultural and Forest Engineering School, University of Lleida, and Chairman of the Agricultural and Forestry programmes conducted by the Spanish Ministry of Science and Technology. He has held various posts of responsibility relating to scientific and educational administration in national and international organisations.

His is the author or co-author of more than 80 articles published in peer-reviewed scientific journals.

For more information

[www.iamz.ciheam.org](http://www.iamz.ciheam.org)

farmers have been unable – for want of collateral – to obtain public or private credit or subsidies. Microfinance (in Tunisia, Morocco or Egypt), which is aimed at the poorest populations, has not proved to be a satisfactory alternative.

It would seem then that agricultural funding policies have actually aggravated the process of social differentiation and polarisation in North African rural areas. They have not stopped the deterioration of the material base or the under-funding of the small family farming that represents the main form of agriculture in these countries. As a result, millions of farmers have been evicted and forced to take out various types of informal loan from the world of investors and money lenders – large landowners, industrialists, civil servants, providers of equipment/feedstuffs/veterinary products/inputs, purchasing agents, etc.

Formal and informal funding practices have thus transformed social relations and – in the absence of effective political structures – helped to establish land relationships that are unfavourable to small farmers on public or private land, notably the system of “reverse tenancy” in which small farmers or concessionaires cede their rights to big landowners and other “outsiders”. In recent years, agricultural funding systems targeting farmers who are solvent and have land guarantees have made large amounts of physical capital and agricultural resources available to indirect farmers, entrepreneurs, businessmen, and private investors, whose homes and capital assets are often concentrated in towns.

### **The paradox of farmers in debt in a bankrupt system**

Repeated state intervention has not reversed the trend towards systemic deterioration or bankruptcy reported by the agricultural financial institutions. Microcredit, leaving aside its fairly high cost, has been unable to meet the needs of populations or solve the problems of employment or rural poverty as it was intended to (either in Morocco, Tunisia or Egypt). In 2009 substantial amounts were owed to local financial institutions: nearly DZD40 million to Algeria’s *Caisse Nationale de la Mutualité Agricole* (CNMA), nearly MAD10 million to Morocco’s *Caisse Nationale de Crédit Agricole* (CNCA), and nearly TND400 million to Tunisia’s *Banque Nationale Agricole* (BNA). These figures reflect both the scale of indebtedness and the number of farmers concerned (more than 80% of Tunisian farmers for example). The situation has often prompted the state to resort to various measures: injecting public funds in order to “save the system”, rescheduling debts, or revising downwards the amounts owed to credit institutions.

It is necessary however to distinguish between debts owed by farmers in difficulty and those resulting from the opportunistic and predatory practices of privileged groups that have benefited from public resources through the networks of political clients they have gained access to and made significant profits from the cancellation by the state of the agricultural debt (to the detriment of Algeria’s *Générale des Concessions Agricole* for example). This form of corruption and this abuse of a measure intended to serve the general good has rather undermined the credibility of systems of agricultural funding involving very high transaction costs as well as the confidence of agricultural producers therein.

### **Transition toward a funding system that benefits farmers**

In order to overcome the difficulty of implementing corrective measures and ensure that the preconditions for success are in place, the countries of North Africa have embarked upon a series of agricultural reforms. Following trials begun in the nineties in Tunisia, the *Banque Tunisienne de Solidarité* took over the job of providing funds for farmers who did not fulfil the conditions for eligibility required by the commercial banks. Guarantee funds and agricultural development funds have been introduced in the Maghreb, Tamwil El Fellah was founded in Morocco in 2008, and federative loans, credit leasing or “Crédit R’fig” (interest-free loans) have been introduced in Algeria. These measures, funded from the state budget, are intended to improve the redistributive function of credit and stop the eviction of small and medium-sized farmers and producers in the agricultural production sectors.

The provision of financial services is being diversified with the launch of investment funds by financial groups or commercial banks in Morocco and Egypt. It is of particular interest that Morocco’s *Office Chérifien des Phosphates* (OCP) has launched its own agricultural investment fund: the “OCP Innovation Fund for Agriculture”. This fund is intended to finance agricultural and agro-industrial structures and develop strategies to increase and diversify agricultural output. These projects should provide farmers with high value-added products and they go hand in hand with the farmers’ association projects

### CIHEAM Governing Board

Since the beginning of 2011, four new CIHEAM member country delegates have been appointed to sit on the Governing Board:

Mohamed Fathy Osman, President of ARC, is the new Egyptian Delegate replacing Ayman Abou Hadid.

Mr Bertrand Hervieu, General Inspector of Agriculture (CGAAER-MAAPRAT), is the new French Delegate replacing Mrs Maryline Laplace.

Mr Gianni Bonini, Vice-President of the Terrae Group, is the new Italian Delegate replacing Mrs Giuliana Trisorio Liuzzi.

Habib Amamou, President of IRESA, is the new Tunisian Delegate replacing Fethi Lebdi.

implemented as part of the Green Plan. The *Banque Populaire* with its "Filahi" programme also intends to support the ministerial Green Morocco plan.

These corrective measures to diversify the supply of credit and better provide for the needs of different categories cannot however reverse the trend towards polarisation and social selection. They cannot prevent the adverse effects, described above, of the pillaging and/or channelling of resources by privileged groups, who benefit from subsidies, moratoriums and cancellation of debts incurred but whose investment in local agricultural production has no lasting impact.

It is necessary to introduce a series of measures to give farmers easier access to the capital needed for investment in livestock, facilities, buildings, plantations and technical innovation. The funding system will depend on the agricultural growth model and the adoption of vigorous socio-economic measures intended to improve the rural environment.

Given the uncertainties, the need to manage the natural and economic risks arising from recurrent drought, the increased price of inputs and equipment and the withdrawal of support from the agricultural authorities, how are we to make small family agriculture solvent again and promote strategies that are not simply designed to ensure survival? How can we cope with the effects of climate change, particularly in areas prone to drought, manage unpredictable weather conditions more effectively, and alleviate problems resulting from shortage of water and other natural resources? It is worth drawing attention to the importance of insurance cover in overcoming problems caused by unfavourable weather conditions that lead to loss of harvests and income.

Agricultural credit schemes cannot be effective in poor, ill-equipped rural areas, in which the increasingly numerous, illiterate and disorganised populations subsist. Now more than ever, it is vital that we improve the economic and social conditions of populations and rural territories if we are to break out of the current situation and move towards true sustainable development. The current upheavals in North Africa demand that we rethink the frameworks of analysis and action that have served hitherto as the basis for agricultural funding.

We must examine cases where loan financing has been successful and has had a favourable impact on rural development, and on that basis devise more supportive funding arrangements that will relaunch productive investment in Mediterranean agriculture. Agriculture is a source of jobs and income in rural areas and an essential factor in revitalising the rural economy, which has a vital role to play in consolidating the transition now underway in the South and East of the Mediterranean.

**Tahani Abdelhakim, Omar Bessaoud and Vincent Dolle**

## Financial and agricultural crisis on the southern shore of the Mediterranean

**Gonzalo Escribano**

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The food systems of countries on the southern and eastern shores of the Mediterranean (SEMs) are experiencing a series of successive shocks: financial, climatic, food-related and socio-political. While the repercussions of the international economic crisis have affected their foreign trade balance and their room for manoeuvre in fiscal policy has been reduced, the SEMs have nevertheless revealed a remarkable degree of resilience. It should first of all be emphasised that the effects of the financial crisis became apparent in these countries at a later stage, following the slowdown of demand around the world (and particularly in Europe), and were reflected in declining exports, falling emigration and a drop in foreign direct investment.

The effect of the financial crisis on the European Union (EU) also has implications for the SEMs because the EU is still their most important trading partner. Some European countries (Greece, Ireland and Portugal) have been hard hit by the crisis and the financial bail-outs of these countries and the possibility that the crisis might spread to Spain, Portugal and even Italy have made considerable inroads on the EU's time and political capital. In this situation, the EU's inclination to develop relations with its neighbours to the South is likely to be compromised for a very long time. The deterioration of budgetary balances will hinder financial cooperation with the Mediterranean countries and the forthcoming negotiations on the EU's financial outlook (2014-2020) are likely to be very complex. There will be no rapid fall in unemployment and the EU member states will therefore be even less inclined to open up their markets to the SEM countries, whether to import agricultural produce or to take in migrant labour.

For the SEM countries, the repercussions of the financial crisis have been compounded by the shock of the food crisis. Since 2007 the general trend of the FAO food price index has been one of continuous increase, reaching record highs in the first quarter of 2011: between March 2010 and March 2011, there was a 60% rise in the price index for cereals produced in the SEM countries, the world's leading importers. It seems that there might well be a renewed increase in cereal production in 2011 but that it might not be sufficient to rebuild stocks. Prices could therefore remain high over the 2011-2012 period. The World Bank (2010) estimated that the impact on the import bill of a 50% increase in the price of wheat would correspond to 0.4-0.5% of the GDP of countries like Morocco, Tunisia, Algeria, Tunisia, Algeria or Egypt. The share of subsidies for cereals in the current budgets of these countries has reached record levels but at the same time the increase in international prices did not come about all on its own. For countries like Morocco it may correspond to 4% of GDP in 2011 and certainly poses a threat to social order in the SEM countries (Abis 2011).

The third shock is socio-political. It has steadily been gaining ground across the Arab world and its Mediterranean coastal areas since December 2010. We should begin by analysing it to determine whether it is exogenous or endogenous and thus establish whether the food dimension has catalysed protest and demand for political change in the region. It is true that levels of under-nutrition in the Mediterranean Arab countries are well below those recorded in African and Asian countries. But access to food by the populations of some SEM countries has declined because of insufficient buying power and the steady increase in the price of food. The gap between rich and poor in these countries has led to multi-level food security, varying moreover from one area to another (urban, periurban or rural).

The immediate reaction of the new governments (in Tunisia and Egypt), like that of the regimes in power, was to increase subsidies on food to meet popular demand and alleviate the socio-economic ills ailing the societies in the South of the Mediterranean. The budgetary cost of this strategy was less important than whether these subsidies were effective in maintaining the food security of the populations, particularly the most deprived ones. If reforms fail to target the social classes most affected by food shortages it is probable that protests will only be allayed in the short term and that the elimination of food shortages among the poor is taking second place to the development of world trade in food. From another standpoint, investment in agricultural supply may also be affected by budgetary difficulties caused by the political transitions in progress or, conversely, by the action taken to counter them. Longer term economic measures to remedy the shortcomings of agrifood systems by attacking



## Lebanon

CIHEAM has participated to the Regional Conference on "Food Security in the Middle East and North Africa: The Role of Academic and Research Institutions", which was held in Beirut on 2-3 June.

The Conference was organized by the Faculty of Agricultural and Food Sciences, in collaboration with the Issam Fares Institute for public policy (IFI) at the American University of Beirut, the Lebanese National Council for Scientific Research (CNRS), the International Center for Agricultural Research in the Dry Areas (ICARDA), the CIHEAM and GreenLine.

The purpose of this regional meeting was to investigate the role of academic institutions in supporting food security and policy, in light of the region's challenges along five major themes:

"Public policy advocacy for poverty alleviation and development"; "Capacity building in land and water management, crop and livestock production, fish farming and agro-industry"; "Food and nutrition security"; "Research and food security"; "University education and food insecurity".

their root causes are not likely to be put in place. And yet we know what is needed: better organisation of agricultural professionals and markets, promotion of regional products, etc.

Added to these factors is of course the shock of climate change. While they are not new, extreme weather conditions seem to be becoming much more frequent. The most striking example is from Syria, where drought has been affecting the territory for four years and producing major upheavals for farmers, who are sometimes forced by the aridity of the climate to abandon their farms. This example should remind us that the shock of climate change is of both historical and strategic significance in the SEM countries. And the first victims are their agricultural systems.

Given these circumstances and series of shocks, the available scenarios do not offer simple solutions to economic policymakers. We shall endeavour here to assess the impact of the international crisis, and more precisely the European economic situation, on the agrifood systems in countries to the South of the Mediterranean. For the purposes of this article, we might adopt an approach – albeit a reductionist one, that focuses on the EU response to the three factors adopted here, all of which are related in one way or another to agrifood systems of the countries to the South of the Mediterranean basin: budgetary constraints and economic incentives, price rises, and the socio-economic sustainability of any political changes.

If we adopt a process of elimination, the outlook seems to be least favourable for those involving price stabilisation mechanisms. Experience gained from standard mechanisms of the Stabex kind shows that their effectiveness is limited when prices are volatile. The southern Mediterranean countries have tended to favour management of stocks and price policies to alleviate the effects of price rises or climate change. One solution for the SEM countries might be to establish joint purchasing mechanisms for their international markets. They might, for example, set up a single centralised facility to purchase cereals for the Maghreb countries and thereby weaken the market power of the major producers, obtain lower prices and improve the terms of trade for agricultural goods. But these mechanisms, while they would be the most effective in theory, come up against political and administrative difficulties. First of all it is difficult to imagine certain countries, let us say Morocco and Algeria, coming together to manage such mechanisms. Furthermore, the EU does not seem particularly interested in cooperation mechanisms of this kind.

The interdependence of the two other factors – the impact of the financial crisis on EU budgetary and policy preferences and the ability to sustain political change – is important. Indeed, one of the rare consensus reached by the EU with respect to the changes in its Mediterranean neighbourhood is on the need to reassess European policy towards the region.

The ups and downs experienced by the Union for the Mediterranean in face of the socio-economic and political changes in the southern countries have breathed new life into the original approach taken under the Barcelona Process. The joint communication by the Commission and the High Representative (8 March, COM (2011) 200 final) represents the EU's first explicit response to these changes, offering as it does "a partnership for democracy and shared prosperity with the southern Mediterranean". In addition to a political declaration of commitment to respect the rights of man and democratic values, the communication includes certain observations on Euro-Mediterranean agriculture that are worth highlighting.

In addition to the (modest) increase and redirection of financial cooperation, the communication recognises the economic difficulties being experienced in the southern countries undergoing political change and the need to support them, subject to greater conditionality, by granting financial aid and offering such incentives as liberalisation of the EU's agriculture markets to their benefit and support for their agricultural modernisation and rural development. This new element in the EU position – liberalisation with modernisation – has nevertheless featured in discussions on the Euro-Mediterranean

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agricultural area for a long time. In 2003 the Femise Network drew up a report on this subject for the European Council, proposing that reciprocal, gradual and asymmetrical agricultural liberalisation should be accompanied by an effort to modernise the traditional agriculture of the countries to the South in order to encourage progress in rural development. In other words the report proposed liberalisation “compensated” by measures to boost agriculture in the countries to the South of the Mediterranean and this idea now seems to be gaining new currency.

It remains to be seen whether these incentives will be proposed at all. If they are, their scale, the timetable for their implementation and, most important of all, their scope of application remain uncertain. Will they apply to the whole of the agricultural sector or will they be biased in favour of large landowners and/or modern farms rather than the most deprived small farmers who are particularly in need of agricultural extension measures, financing, and improved institutional arrangements (such as the organisation of cooperatives and associations of farmers/producers/exporters)? While these agricultural “upgrading” measures will be limited by the budgetary shortages affecting EU member states, the liberalisation of the European markets in favour of Mediterranean products will be subject to constraints that have more to do with the unemployment situation in certain major producer countries, such as Spain. This outlook is indicative of “short-termism” and reveals a lack of strategic vision on the part of European producers (and decision-makers). Greater integration of agriculture on both shores of the Mediterranean holds out opportunities in the long term but they are routinely underrated and taken less seriously than the more immediate upheavals in the EU markets.

In this connection, the experience of the last EU-Morocco agricultural agreement, signed at the end of 2009, is quite revealing. The agreement provides for a moderate increase in the EU’s tariff quotas for six sensitive products, without modification of the prices or the entry timetables (the latter being the most stringent protectionist measures). Despite its modest impact, the Spanish presidency of the EU refused to ratify the agreement during its six-month term in 2010, following strong pressure from Iberian producers, thereby demonstrating the limitations of the practice of offering incentives in the area of agricultural liberalisation. It is somewhat disconcerting to note that the Communication of 8 March 2011, which we have just been discussing, is only now drawing attention to this agreement which – along with the new incentives offered to the southern countries – ought to have been ratified much earlier. Under the EU approach it would seem that agriculture was never sufficiently taken into account in the SEM development process. Without an effort to strengthen the basis of agricultural production, the Euro-Mediterranean region will continue to be vulnerable to shocks, whether financial crises, increased food prices, or new demands from populations under regimes which may now perhaps be more sensitive to the problems in their societies.

Gonzalo Escribano

## Innovation in agricultural funding: experience of the Group Crédit Agricole du Maroc

Fatiha Berrima

Director of Pôle Vert, Crédit Agricole du Maroc

### The national and international context

Morocco’s agricultural sector is and has always been one of strategic importance for the socio-economic development of the country. This sector makes a major contribution to the national economy. Agriculture accounted for 13.7% of total national GDP in 2009 (and as much as 20% in previous years), as well as providing 40% of all jobs nationwide (figures provided by the *Haut-commissariat au Plan du Maroc*). It also fulfils an important social purpose, whether in terms of ensuring food security, combating poverty, increasing farmers’ incomes, preserving natural resources or achieving sustainable development.

#### France For’UM

On 31 May 2011, CIHEAM took part in the Forum on Innovation in the Middle East, which was organised by the French authorities. The Centre addressed the session on food security.

This very high-level forum provided an opportunity for wide-ranging discussion with decision makers from the world of politics and private operators active in the Mediterranean Region.

Furthermore, the world economic context over the past three years has been marked by a series of developments, including the increase in the price of agricultural raw materials, the financial crisis and the first signs of a food crisis. This climate has forced the FAO, the World Bank and the IMF to review their general outlook and alert the world to the need to place the agricultural sector and food security back at the top of national and international economic agendas.

Uncertainty in the short and medium term over the availability of agricultural goods, such as cereals, oil-bearing plants and sugar, and the volatility of the prices thereof offers Morocco a twofold opportunity: first, to review its general agricultural policy in order to ensure that national output meets as much of the population's need for basic commodities as possible; second, to consolidate and dynamise exports from sectors producing a surplus of high added-value goods, such as fruit and vegetables.

Agriculture is therefore resuming its rightful place in national and international strategies and economic policies, in Morocco and throughout the world.

This was the context, both national and international, in which the Green Morocco Plan (GMP) was drawn up in 2008, the object being to make Moroccan agriculture the main driver of growth over the next 10 to 15 years. The plan could yield significant benefits:

- Increase in the share of agriculture in GDP: Dh70 billion to Dh100 billion (AGDP x 2)
- Job creation: 1.5 million new jobs
- Increase in the value of exports: from Dh8 billion to Dh44 billion (mainly citrus fruit, olives, fruit and vegetables).
- Progress in the fight against poverty: improving agricultural income of 3 million country dwellers by a factor of 2 to 3.

The GMP, which provides Moroccan agriculture with a clear development strategy, involves a general approach comprising two pillars:

- The first pillar has to do with the development of a modern high added value/high productivity agricultural sector, which relies on private investment estimated at Dh10 billion per year. This pillar in turn involves interprofessional organisation of sectors, contract programmes by sector between the state and the producers, and association as a model of innovative organisation.
- The second pillar is concerned with showing active solidarity to small-scale agriculture by raising the incomes of the harder hit farmers. It calls for conversion to crops that are more suited to local conditions and more profitable, intensification of production and/or diversification (*terroir* products), and organisation of the network of operators.

The MGP will be flanked by a series of sectoral reforms (land, water, taxation, etc.). Moreover, one of the drivers (and therefore the accelerators) of the MGP is the funding of projects, whether they fall under pillar I or pillar II.

### **Involvement of the Group *Crédit Agricole du Maroc* in the GMP**

Established in 1961 to support agriculture and cover its funding needs, *Crédit Agricole du Maroc* (CAM) is the natural partner of the agricultural and rural worlds. Today it is a universal bank but it remains committed to its public service role and its principal mission is to finance agriculture and work relating to the economic and social development of the rural world.

The launch of the GMP in 2008 provided the CAM with a work platform and gave it a clearer idea of the sectors and territories in which it was supposed to operate. To organise its work in this context, the CAM, armed with its experience in the financing of small and medium scale agriculture, proceeded to analyse farms and classify them on the basis of the financial services they required and the financing schemes most appropriate to them.

Faced with a total of nearly 1.5 million farms, according to the findings of the 1996 General Agricultural Census, the CAM has sought to satisfy their many and various needs.

For farms that satisfy the criteria for standard financing practice (10% of the total) the CAM intervenes in different ways, depending on the characteristics of the farms, via a dedicated network of agencies, in competition with the banking system as a whole. It also supports agricultural and agrifood sectors, whether they produce animal- or plant-based foodstuffs, adopting an integrated approach that takes



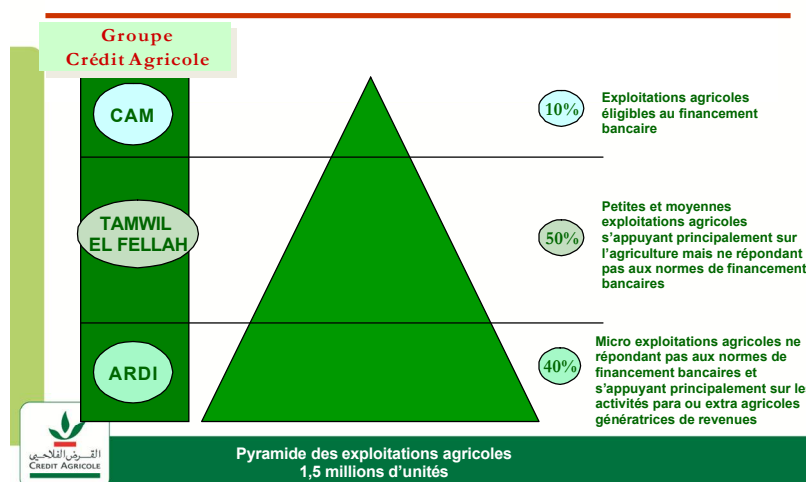
account of the different parts of the sectors and their financing needs (batch production, batch processing, batch storage, batch marketing, etc.). *Crédit Agricole du Maroc* has also made two innovative tools available to these operators:

- the site [www.fellah-trade.com](http://www.fellah-trade.com), a portal dedicated to Moroccan agriculture, which provides players and operators in the sector with round-the-clock news of the latest developments in national and international agriculture and enables CAM to share all of its expertise directly with its clients; and
- the CAM TRADE club, dedicated to exporters from the agricultural and agro-industrial sectors.

For micro-farms (40%), the bulk of whose income comes from para-agricultural or extra agricultural sources, the CAM intervenes through the ARDI foundation, whose strategic mission is to aid rural areas by providing micro-credit.

Farms that fall between these two categories (50%) fail to satisfy the standard requirements either for commercial bank loans (owing to the size and fragmentation of the area farmed, low output, high vulnerability to the vagaries of the climate, uncertainty of land ownership, etc.) or for micro-credit (given their long crop cycles, the need for amounts exceeding the ceilings on micro-finance loans, etc.). For farms falling within this category there is no adequate financial provision. The CAM has therefore proposed the setting up of a financing company for agricultural development, known by the name of *Tamwil El Fellah*, in cooperation with the public authorities.

### SEGMENTATION DE LA CLIENTELE AGRICOLE



Aimed exclusively at farmers without access to standard financing schemes, *Tamwil El Fellah's* operation is based on a number of fundamental principles. Farms may only be eligible for funding in the context of local, regional or national government programmes or projects (ie beneficiaries of pillar II or small associations covered by pillar I). In this way it is possible to offer beneficiaries a package whereby the *Tamwil El Fellah* loan supplements the aid and investment by the state (or other network facilitators) and producers receive technical supervision. This package calls for monitoring of projects, integration of the sector from the upstream agricultural stage to the downstream commercial and industrial stage with organisation of producers (through cooperatives, associations or networks) and development of a relationship of trust between *Tamwil El Fellah* and its clients. All this is essential if the financing system is to operate more effectively over a long period of time.

Details of the financing of each local, regional or national programme are governed by specific agreements that take account of the particular features of each zone and each programme. The agreement specifies the population eligible for funding, the amounts of the contributions from the state, *Tamwil El Fellah* and the other donors, together with conditions, procedures and timetables to ensure that they suit the needs of the target populations and that the populations are able to pay the amount back. *Tamwil El Fellah* favours a local approach involving a network of its own specialised agencies situated in the regions targeted by the state.

Furthermore, a key element in the operation of *Tamwil El Fellah* is the setting up of a “prudential stabilisation fund”. Currently credited with an initial budgetary endowment of Dh50 million, this fund provides partial cover for the risk incurred by the state, which means that a wider range of small and medium-sized producers can have access to financing, without violation of prudential regulations.

These three financing systems: micro-credit (ARDI Foundation), meso-credit (*Tamwil El Fellah*) and standard bank loans (CAM) are intercomplementary and may act synergistically, allowing the rural population gradual access to banking facilities and appropriate financial services, and thus enabling them to integrate the global economy. By making it possible to move from one mode of financing to another the system acts as a driving force in the development of agriculture and the rural world.

In the context of the GMP, the CAM Group has undertaken to support projects by mobilising a budget of 20 billion for the period 2009-2013. This amount will be made available as follows:

- 1 billion dirhams through the ARDI Foundation for microcredit;
- 5 billion dirhams through the *Tamwil El Fellah* company;
- 14 billion through the CAM.

In addition to these three structures, the CAM will also give operators in the sectors access to its business bank HOLDAGRO, which is dedicated exclusively to agriculture and agro-industry.

One last institution has recently emerged to strengthen the Group’s lasting commitment to the agricultural and rural environment, namely the *Credit Agricole Maroc* Foundation for sustainable development. This foundation will give financial and technical support to projects of general interest in three strategic areas:

- professionalisation of sustainable agricultural and extra-agricultural economic activity, solidarity ecotourism and fair trade;
- preservation of natural resources and promotion of renewable energies;
- protection of biodiversity and adaptation to climate change.

With its ongoing innovation, the CAM group is reinventing public service work and funding of the rural world in that it combines all the necessary *modus operandi* and applies them synergistically to ensure that its intervention is effective and long lasting. It incorporates both the social and the economic dimension into its search for ways of improving the standard of living of rural populations.

Fatiha Berrima

#### CAMED

On 6 April 2011, CIHEAM took part in a symposium on environmental governance organised by the *Cercle amical de la Méditerranée* and the French National Assembly.

The Centre gave a presentation on issues relating to multilateral cooperation in management of food and agriculture in the Mediterranean.

## German Cooperation and Work of the GIZ in the Middle East and North Africa

**Malika Bouziane and Anja Hoffmann**  
Freie Universität, Berlin (Germany)

Three quarters of the world’s poor live in rural areas (World Bank 2008). In the region of interest, the Middle East and North Africa (MENA), 42% of the total population lived in rural areas in 2009, while 16,9% of the total population living on less than \$2.00 per day at 2005 international prices (World Bank 2011). They live in extreme poverty without the possibility to guarantee access to food for themselves and their families. Against this background, agricultural development appears to be one option to improve their living conditions, in particular with regard to food, water and health. Moreover, it is argued that agricultural development can pave the way for a sustainable management of natural resources. Thus it is framed as a mechanism that creates income and jobs as an important prerequisite for successful economic development. Therefore, German development cooperation focuses apart from education, health and good governance as well on rural development and sustainable economic development. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH has been established on 1 January 2011 and incorporates three former German institutions working in the field of development, namely the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH (German technical cooperation), the Deutscher Entwicklungsdienst (DED) GmbH (German Development Service),

and Inwent – Capacity Building International. As a federally owned enterprise the GIZ supports the German Government in achieving its objectives concerning international cooperation and sustainable development. This article gives a global panorama on the activities of GIZ in the Mediterranean and Middle East region with focus on rural and agricultural projects and programs.

GIZ is active in 17 countries in the Mediterranean and Middle East region, where in 2009 it employed 231 seconded and 604 national personnel to support its local partners (for information on GIZ cf. GIZ 2011). It has offices in Algeria, Egypt, Jordan, Kuwait, Lebanon, Morocco, Oman, Palestinian Territories, Qatar and Saudi Arabia. GIZ is engaged in the region on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ). In addition to the German Federal Government, GIZ also works by order of international organizations, governments, foundations and companies within the MENA region. These projects are carried out by GIZ International Services (GIZ IS), a business area working with international clients. However, this article will focus on the GIZ projects on behalf of the BMZ. GIZ has defined three priority areas that are: water, education and economic reforms. Besides its priority areas, GIZ also works in the frame of the EU neighbourhood policy and on security questions. Acknowledging regional differences concerning per capita income, political leadership and structures of society and culture, GIZ is convinced that the states still face similar challenges. This applies in particular to the issue of water, as North Africa and the Middle East belong to the most arid regions of the world. This is why the sustainable use of water resources figures a priority in German development cooperation with the region. Besides, German development cooperation encourages economic and social reform. The range of activities extends from the national legal framework to regional programs for vocational and technical education, and to the promotion of small and medium-sized enterprises.

The programs for individual countries are just one instrument of development policy used by the GIZ. In addition, cross-border measures are equally important and seem of special interest for the subject-matter. In the MENA region implemented cross-border projects can be clustered in three different groups, that all have their importance for rural development: an ecological, an economic and a political one.

The first and principal group incorporates projects dealing with environmental questions, for example the protection of water resources, desertification and forestry policies. In the context of climate change and increasing water scarcity these efforts are of particular significance for rural farmers, since on a long-term perspective they are protecting their livelihood. Namely these programs are: "Promotion of the Arab Centre for the Studies of Arid Zones and Dry Lands (ACSAD) in pursuance of the United Nations Convention to Combat Desertification (UNCCD)", "Environment network of Maghreb associations and companies", "Regional Network for Integrated Waste Management in Middle East and North Africa (MENA) Region", "Advisory Services to the UN Economic and Social Commission for Western Asia (ESCWA) and ESCWA Member Countries (in preparation)", "Environmental monitoring of the credit lines of the African Development Bank in the Maghreb" and "Adapting the framework for forestry policy to meet the needs of climate change in the MENA region". The second group aims to improve the economic situation of the (rural) population through vocational education and promotion of small and medium-sized enterprises, the programs are: "Regional Cooperation of Selected Arab States in the Sector of Vocational Education and Training" and "Innovation and Technology Promotion for Small and Medium-sized Enterprises (SMEs) in the Middle East". The last group can be summarized as political measures that are enhancing local participation: "Regional Program on Good Governance – Maghreb" and "Strengthening municipal structures – Maghreb".

To get a more tangible insight on how the work of the mentioned GIZ cross-border programs is promoting agricultural development, one ecological project is presented more detailed. The component that is supporting the work of the Arab Centre for Studies of Arid Zones and Dry Lands, a research institution fostering the regional bodies to put UNCCD into effect, conducts a wide range of projects varying from pilot measures, to workshops, study trips and training activities. Furthermore, methods of conservation agriculture have been introduced and circulated on a trial basis in Syria, Lebanon and Jordan. In Mafraq Area in Jordan a community based water harvesting and rangeland rehabilitation program has been set up aimed at spreading the use of water harvesting structures as a sustainable and

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**Silva Mediterranea**

As part of Mediterranean Forest Week, CIHEAM attended the executive board meeting of the Intergovernmental Committee of Mediterranean Forests.

At the celebration marking the 100<sup>th</sup> anniversary of Silva Mediterranea, the Centre was presented with a commemorative plaque in recognition of its constant support for the work of the Committee.

At the initiative of France, CIHEAM undertook to help develop an integrated strategy for the sustainable development of Mediterranean forest and woodland. The French authorities will be coordinating the project.

renewable water resource to maintain the land productivity and to help in combating desertification. The vegetation cover rehabilitation component targets the improvement of the vegetation cover in order to reduce the runoff and improve rangeland grazing purpose. Artificial re-vegetation is used to rehabilitate the severely degraded rangelands and a surface area of 125 ha was selected to demonstrate the different re-vegetation techniques.

Apart from regional undertakings, GIZ works in numerous single-country projects on its three fields of priority, whereby the majority has an ecological framing. Programs on sustainable integrated resource management in the water and environment sector exist in all countries from Algeria over Egypt to Yemen, with the exception of Kuwait, Oman and Saudi Arabia. In Morocco the project "Integrated water resources management (AGIRE)" offers two examples on the way this kind of GIZ work is taking effect on rural areas. First, the project launched a pilot project on ecological sanitation (eco-san) in the village of Dayet Ifrah in the Middle Atlas, where it constructed urine diversion dehydration toilets (UDDTs), a biogas installation, a separate grey-water collection at the school and the mosque as well as an educational pilot and demonstration garden that shows possibilities of using products of ecological sanitation for agriculture. This combination aims at improving rural living conditions in various ways: it increases hygienic conditions and thus health of the population, offers clean and cheap self-produced energy through biogas and last not least the use of ecological sanitation products as fertilizer could increase harvest. Besides, eco-san is a way of sustainable resource-management and is hence securing livelihood on a long term perspective.

Second, the project encourages the execution of so-called "contrat de nappes" (groundwater treaties), an innovative governance-tool incorporating local stakeholders in the management of ground-water resources on a river basin level. As a first region such a treaty has been signed in the Souss-Massa and Draâ basin, where diverse stakeholders ranging from governmental institutions, over high professionalized industrial farmers to small-scale farmers agreed on a wide range of measures with the objective of preserving the ground-water resources for future generations. A mixture of incentives, notably subvention of drip irrigation, mutual commitment, in particular the introduction of additional fees (redevances supplémentaires) on extracted ground water, and the introduction of a water-police as a new control instance to avoid illegal extraction of water, shall stop the further decline of the groundwater-level. In addition the stakeholders agreed on a wide range of research activities among them the development of new irrigation techniques and the evolution of less water-intensive cultivars. One may highlight that a notable part of the treaties' components is self-financed via the additional fees.

The project "Promoting Renewable Energy and Energy Efficiency for sustainable development in Morocco (PEREN)", which is working on the development of decentralized energy concepts based on renewable energy and energy efficiency, also offers a ground-breaking pilot on rural development. In Ain Lkhil, a small village in the Middle Atlas, a passive solar heating has been realized, making regular schooling possible during winter time. For five years now, the "Management of Water Resources Programme" in Jordan has been directly working with user groups, especially farmers, due to the fact that the agricultural sector currently consumes about 65% of the scarce available water, but accounts for only 3% of gross domestic product (GDP). This project is realized in cooperation with KfW Entwicklungsbank, the Centre for International Migration and Development (CIM) and through public-private partnerships (PPP) in which several German companies are participating. The project's coordination with USAID, JICA and ongoing EU projects is close. It trained about 30% of the farmers in the Jordan Valley in using treated wastewater for irrigation in a way that meets environmental and health standards. Furthermore, farm yields have risen thanks to the establishment of water users' associations that cover about 40% of farmers in the Jordan Valley. According to information given by the project, in irrigated farming water resources are being used more efficiently now, and farmers are showing greater readiness to pay water fees that recover costs. Through stakeholder dialogue with the Ministry of Agriculture the project addresses the critical issue of the overexploitation of groundwater aquifers.

In addition to ecological projects, in the region exist a large number of individual GIZ projects working on the other two priority fields, economical and educational reform, that are supposed to bring profit to rural farmers. For example, in Algeria the "Programme for Supporting Sustainable Economic Development", as part of a microfinance pilot project, has developed an innovative financial service that is conform with Islam and is especially being offered to companies run by women in Ghardaia, a medium-sized oasis town and a centre for production of dates. In Tunisia the project "Support for small and medium-sized industries with regard to the opening up of markets" is promoting the extension of value chains, from agricultural produce to quality export products and is facilitating the standardization

of quality agricultural products for export purposes. A prime example is the value chain for the export of dates that has been developed in corporation with the private sector. A similar project has been planned for the olive oil value chain. Furthermore, the project offers access to needs-based services for small and medium-sized enterprises and candidates for business start-up, as e.g. transfer payments and educational services from public and private sector providers.

In line with its current activities in the MENA region and in corporation with KfW Entwicklungsbank, GIZ has chosen its spotlight of the year 2011 that is 'responsible economic action – sustainable development'. Under the title 'Green Economy', this is one of the central subjects scheduled for the Rio+20 Earth Summit in 2012. Thus in 2011 GIZ is focusing on potential solutions and innovations that enable development reducing poverty and generating income and jobs without damaging the environment or increasing social injustice. With a view to the considerable rural poverty rates combined with scarce natural resources in the MENA region, the success of this new concept seems worth being perused.

**Malika Bouziane and Anja Hoffmann**

## Interview

### **Nadim Khouri**

*Director of Near East, North Africa and Europe Division, International Fund for Agricultural Development (IFAD)*

#### ***What is the nature of IFAD's work in the southern Mediterranean countries and what are its thematic priorities?***

The recent rampant political instability in the region, food price inflation and global recession triggered serious concerns about food security, poverty, and malnutrition. It exposed the vulnerability of countries to a volatile international market and raised the risk of food insecurity on both macro-economic and household levels. This is of particular concern in the region, which is one of the most food import-dependent regions in the world and where malnutrition has increased in recent years. Furthermore, these countries face water scarcity, and they rely on a highly climate-sensitive agriculture.

The thematic priorities of IFAD operations in the Southern Mediterranean region, as in the Near East and North Africa region in general are:

- Management of natural resources (land and water)
- Increasing agricultural production and productivity
- Community-based and area-based rural development
- Income-generation activities
- Rural financial services

There are 16 IFAD ongoing investment programmes in Egypt, Gaza and West Bank, Lebanon, Morocco, Tunisia, Turkey and Syria for the total amount of IFAD investment of \$285 million. More than 373,200 people benefited from these projects as of 1 January 2010, out of them 100,200 women. In the coming three years 2011-2013 IFAD looks to invest about \$ 235 million in the above listed countries, of which \$4 million in grant funding

#### ***What are the most frequently heard demands of rural women who want you to help them overcome hunger and alleviate poverty once and for all?***

IFAD aims for the strengthening women's role in rural development and particularly agriculture production through three objectives mainly:

- Expanding women's access to assets,
- Strengthening their decision-making role in community affairs, and
- Easing their workload by facilitating access to basic rural services and infrastructure.

For example, in 2009 IFAD projects in Egypt, Lebanon, Morocco, Tunisia, Turkey and Syria trained more than 6600 women on livestock and crop production, business skills in 2009; more than 9800 women were provided with a loan to support their business ideas.

In addition to supporting women within the IFAD main programmes, IFAD provides additional grant financing to enhance women participation in productive and income generating activities and improve their technical and business skills. Special attention is given to support young women to enter the labour force.

IFAD provided grant funding in 2010 to support a project of AIDOS, an international NGO, to promote women's active role in the labour market in Syria through the creation of small and micro scale viable enterprises. The project assists women potential and existing entrepreneurs through the provision of an integrated package of business development services including: business orientation, enterprise management and technical training, business planning and counselling, product development and design, marketing and promotion, facilitation of access to micro finance. Another recent grant was given by IFAD to the International Centre for Agricultural Research in the Dry Areas, ICARDA which aims to increase and diversify sources of income of the rural women in the Mountain zones of Morocco through the development of aromatic and medicinal plants value chains.

***Could you give examples that you consider particularly significant of your contribution to training and improving access by small farmers to new agricultural technologies?***

At IFAD, our focus is primarily on the communities, on the local rural level. This also defines are "target group" for training and capacity building as well. Based on the needs for public sector or NGOs to also be involved in supporting these communities, we selectively also support the building of their respective capacity. We have excellent partnerships with lead agencies such as ICARDA, ACSAD, ICBA and others with which we facilitate technology transfer on key regional priorities such as improved water, land, livestock (including fish...) and crop management through improved capacity building. In Egypt's governorates of Fayoum, Beni Suef and Minia in Upper Egypt, IFAD and others' support to Farming Systems Research created strong links between farmers, research and extension in the implementation of integrated crop and livestock production systems on a large-scale. By ensuring proper training and involvement of smallholders, the introduction of new technologies resulted in an increase in land productivity that ranged between 19 and 50 percent. In the upper plateaus of Morocco, water users associations are established and trained, both on the technology and administration of small-scale irrigation systems that optimize revenues. In Syria and Morocco, an IFAD grant with the International Fertilizer Development Centre (because some of our funding is also in the form of grants as compared to loans) is ensuring the training of National Research centres and farmers in the use of modelling systems that combine soils, crop and climate data to ensure the proper and sustainable application of fertilizers.

***In your opinion, which players are likely to be offering flexible, effective ways of funding sustainable rural development projects?***

Well, agriculture—whether small- or large-scale—is a private enterprise and therefore getting more private investment in agriculture is key. So one may ask: then why bother about policies, government program and external assistance? The answer is that there are "market failures" that are preventing a more active role of the private sector in certain areas of rural development—especially smallholder agriculture and many forms of sustainable agriculture. Some of these failures, in countries of the region, are institutional, for example: fuel subsidies that favour overpumping and waste of water. Some are due to transaction costs: getting rural financing to where it is needed, in remote areas. A recent joint study by the World Bank, FAO and IFAD concluded that improving food security in the Arab countries would first require a change in the role that governments have traditionally played in the agriculture sector (to research, technology transfer and quality control— and ensuring proper incentive signals.) In parallel, there is a need to encourage smallholders to group themselves in order to increase their "voice" (and we know how important this is to address the anger now rampant in countries of the region) and also their presence as managers of resources and also mobilisers of funds (savings and credit associations, producers associations etc.) But we know that this meshing of government/public sector actors with smallholders and rural people has not always worked well and require innovative approaches that we now have and can "scale up" for increased impact.

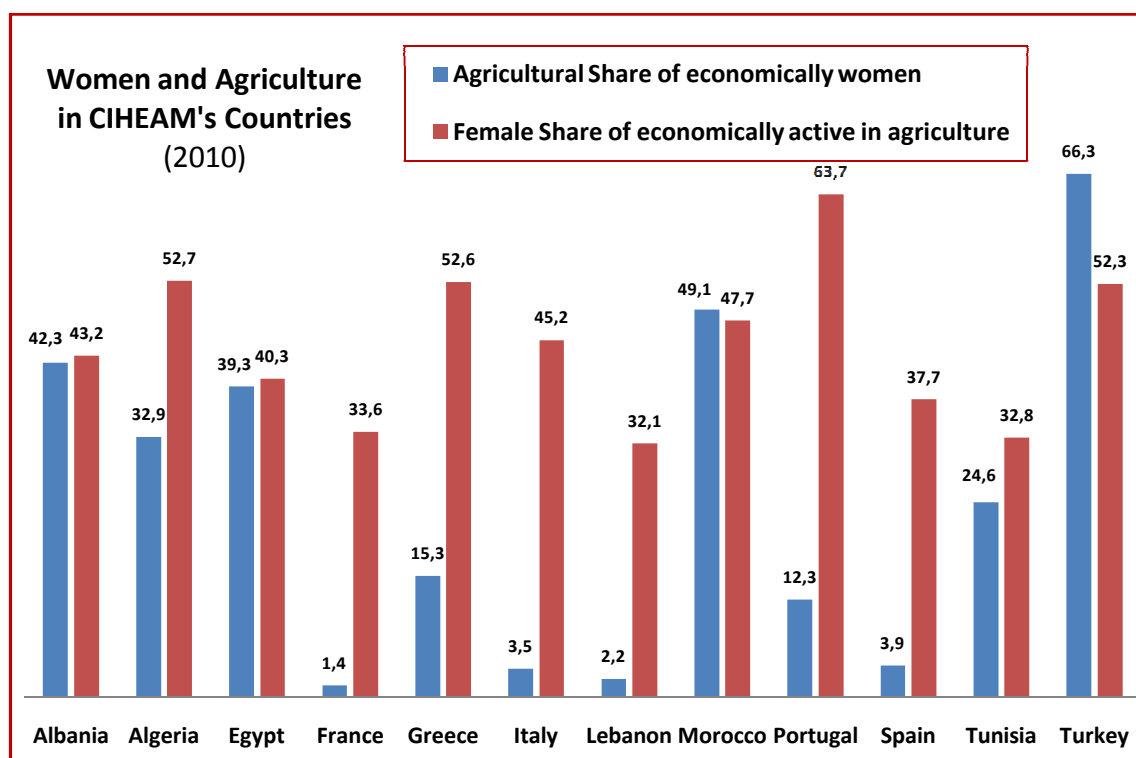


**Which innovative programmes, short-term or medium-term, might encourage funding of agricultural and rural development in these countries?**

Let me mention three such innovations. In Egypt's Alexandria areas, and using the concept of "value chain" development, IFAD and others have facilitated—through technical and financial assistance—the production by small farmers of good quality vegetables (principally tomatoes) that got marketed abroad through innovative contracts with the private sector. In financing, we are innovating through the introduction to the region of instruments such as debt re-financing, equity financing and leasing to overcome some of the market failures in the rural financing sector. Finally, there is more and more of an acceptance that decentralization, today more than yesterday, and in the post-revolution era, is a need and a demand in quite a few countries of the region. In this case, one of the key innovations will be to ensure that many of the decisions that used to be taken in the capitals and involving "strategic crops" and other centrally planned programs need to be devolved to the regions and localities. Smallholder agriculture and rural development being localised activities, they adapt themselves quite well to these types of upcoming models of rural development that rely on a "local economic development" approach. Projects such as in Albania and Morocco and Tunisia IFAD is supporting the creation of flexible and participatory regional mechanisms that evaluate proposals from the regions and allocate matching funds to the best proposals that accentuate rural development. Specific activities include the development of local capacities, the co-financing of local/regional business concepts, the drawing of prioritized regional development plans and, perhaps, the authority to collect funds and manage them autonomously. It can be predicted that a lot of smallholder/sustainable agriculture and rural development will have a "territorial development" approach. This approach contributes to the development of entire regions lagging behind.

**Interview by Hassane TLILI**

Journalist specialising in agricultural and environmental issues



Source : FAO, SOFA Report 2010-2011. Chart prepared by CIHEAM.

## MAI BARI

### EXPO 2015

On Friday 1 April, MAI Bari launched the initiative "Feeding Knowledge: International Network on Research and Innovation for Security", a strategic project of EXPO 2015 proposed in the framework of the creation of the Centre for Sustainable Development, as permanent heritage of the universal exposition event in Milan. The Objective of the project is to improve access to and development of knowledge to favour cooperation on research and innovation for food security.

The project "Feeding Knowledge" is intended to be a powerful tool to the service of governmental bodies (EU member countries, Third Countries), international governmental and non-governmental organizations, and private enterprises, with a view to curb malnutrition through supporting actions that might meet the needs of each single country. The Project will provide the following services: Analysis and Development of knowledge packages on the most innovatory technical-scientific solutions; Technical support to government agencies and other donors for setting up cooperation, research and development projects; Technical assistance for the preparation and implementation of cooperation, research and development projects; Support to paths for process and product innovation in agro-food enterprises; Accompanying the internationalisation of enterprises; Technical assistance to favour aggregation processes both between enterprises on one hand and between enterprises and scientific institutions on the other hand.

The initiatives aimed at pursuing the above-said objectives will initially concern Mediterranean climate areas (North of Africa, Middle East and the Balkans) and will subsequently extend to Sub-Saharan Africa, Asia and Latin America. Evidently, the choice of this geographic area is not related to "food priority", though malnourished people reach some 37 million, but rather to political and technical-scientific considerations: the top interest of EU policies towards this area and related investment programmes; adequate presence and qualification of the research system as well as awareness of relevant political bodies; a consolidated network of institutional relationships and optimal propensity of these countries for international collaboration; a broad community of top level young researchers. Such characteristics make the target area "the best virtual laboratory providing opportunity for development, application and testing of the Platform".

### SCENES Programme

MAIB is a partner of SCENES (Water scenarios for Europe and neighbouring countries) which is a 4-year project developing and analysing a set of comprehensive scenarios of Europe's freshwater futures up to 2025, covering all of "Greater" Europe reaching to the Caucasus and Ural Mountains, and including the Mediterranean rim countries of north Africa and the near East. These scenarios will provide a reference point for long-term strategic planning of European water resource development. SCENES is jointly funded by EC 6th Research Framework Programme and the research programmes of the 23 collaborating organizations. In this context a final workshop was organized back-to-back to the conference "*Futures of European Waters - how should policies adapt?*" held in Budapest (Hungary) in March 24-25 2011 under the auspices of the Hungarian presidency. The Conference aimed at elucidating potential visions of Europe's water resources, in terms of quantity and quality, water use and availability, adoptive strategies and implementation plans in order to reach sufficient water supply in next decades in Europe. The Conference, co-organized by the European Water Partnership (EWP), the SCENES project and the Hungarian Ministry of Agriculture and Rural Development, was also considered as an important step in the consultation process towards the 6th World Water Forum to be held in 2012 in France as well as a contribution towards the 2012 "Blueprint to Safeguard Europe's Waters" to be produced by the European Commission.

## MAI CHANIA

Research proposals approved by the operational Program "Competitiveness & Entrepreneurship" co-financed by the EU and Greece in the Framework of Research Support Framework "SYNERGASIA" of the Greek Ministry of Education, for the period 2011-2013. In the framework of the above mentioned program the following research proposals where MAI Chania participates have been approved.

### **A systems approach into the production of plant and algal diterpenes with high industrial and pharmaceutical value (SysTerp)**

Plants produce an enormous variety of natural products, low molecular weight compounds which have been evolutionarily selected to possess biological targets and actions. This bioactivity renders them substantially rich in compounds with high industrial value and use. The recent application of genomic and metabolomic technologies in plants and especially aromatic and medicinal plants has ushered a new era in the utilization of natural products. The current proposal focuses on terpenes, more specifically diterpenes, compounds with characteristic structures that have repeatedly shown to possess pharmaceutical activity such as taxol, a widely used antineoplastic drug and sclareol which is utilized extensively by the food, flavour and fragrance industry. The combination of comparative metabolomic and genomic approaches will enable the exploration of unknown biosynthetic pathways for sclareol as well as for new bioactive compounds, namely Prevezol A and B produced by red algae. To this aim the full transcriptomes of the plant species *Salvia sclarea* (Mediterranean plant related to sage) and the red algae *Laurencia obtusa* will be sequenced employing the new generation sequencing technology. The genetic information will be analyzed bioinformatically. The candidate genes participating in the biosynthetic pathway will be expressed in heterologous microbial systems (*E. coli*, *S.*).

### **Optimisation of environment control in protected crops for salinity management using -omics technologies**

The use of saline water for irrigation in greenhouses is a major problem causing abiotic stress to vegetable crops compromising production and leading to diminished incomes for the growers. The objective of this proposal is the development of biomolecules into biosensors in order to predict abiotic stress progress and use CO<sub>2</sub> to enhance the response of plants to salinity stress. To this direction, genomics and metabolomics approaches will be used to identify molecules or cellular processes as early predictors of salinity stress progress.

### **Production of open field and greenhouse-grown vegetables with reduced chemical inputs: use of biotechnology for the integrated study of resistance against whitefly-transmitted viruses of the genus, Crinivirus, development of whitefly resistance against chemicals and virus-vector interaction-BIOALEURO-IOI.**

More specifically in this proposal, the following will be studied:

- crinivirus epidemiology (presence, expansion, predominance etc.) in Greece and crinivirus genomes variability at species level
- crinivirus transmission by *T. vaporariorum* and *B. tabaci* whiteflies and the relation between virus transmission and insecticides resistance
- whitefly response to novel control approaches of low (chemical) or zero (biological) toxicity and white-fly response to insecticide resistance management programs and integrated control programs
- pathogenesis and replication of criniviruses in vitro
- the possibility of induction resistance to one or more criniviruses using RNA silencing technology

The reduction of chemical inputs in vegetable production and the exploitation of biotechnological approaches towards crinivirus-resistant plants represent the mid-term objectives of this proposal.

## MAI MONTPELLIER

### Increased cooperation with ICARDA

MAIM is pursuing its strategy of entering into agreements and collaborative ventures with international organisations, particularly those active in the Mediterranean Region. On 2 May 2011, MAIM received Mr Mahmood Solh, Director of ICARDA (International Centre for Agricultural Research in Dry Areas) and Mr Henri Carsalade (Chairman of the Board of ICARDA and the Agropolis Foundation). Discussion revealed the extent to which our interests, goals and objectives overlapped. MAIM and ICARDA, which has been working on an ongoing basis with two other CIHEAM institutes (Zaragoza and Bari), have agreed to establish a two-year collaborative programme to develop joint activities in three main areas:

- Short courses designed to meet specific requirements, whose duration may range from one week to several months and which may include work in the LAMES doctoral platform (*Laboratoire Accueil Méditerranéen en Sciences sociales*), where MAIM's research activity is conducted);
- Masters and doctoral level studies;
- Research and cooperation work-joint-partnership on territorial and regional development; adaptation strategies and resilience of farming systems in the face of economic and environmental change, improvement of rearing systems, and food security. On this last point participants agreed to organise a regional seminar to analyse the policy dimension of food security, relying in particular on comparative analyses of the policies implemented in the Mediterranean countries.

To finalise the agreement MAIM is planning a follow-up mission to ICARDA in July 2011 to give practical effect to the cooperation agreement by conducting joint projects as of autumn 2011.

(Contact: [belhouchette@iamm.fr](mailto:belhouchette@iamm.fr))

### International and Mediterranean Masters degrees

MAIM is working with its regional partners to develop an "MSc and long diploma course platform" which will complement its doctoral platform. Projects of various kinds already exist.

- A course on management in the agrifood sector, in partnership with the Bizerte competitive cluster (PCB) and the National Agricultural Institute of Tunisia (INAT). Introduced in 2010, this course is aimed at senior management executives and is intended to prepare them for an executive role in the sector. The MAIM teaching staff provides nearly 50% of the instruction on this programme, at the end of which successful students are awarded the CIHEAM MSc. (contact: [bencharif@iamm.fr](mailto:bencharif@iamm.fr))
- A Masters 2 course on "Territorial and environmental development engineering (IDTE)" which begins in September 2011, jointly organised and validated with the Lebanese University (Faculty of Agriculture). The MAIM teaching team provides 50% of the instruction and helps supervise the students research work. (contacts: [abdelhakim@iamm.fr](mailto:abdelhakim@iamm.fr) and [belhouchette@iamm.fr](mailto:belhouchette@iamm.fr)).
- A course on food quality management, given in partnership with the Mentouri Constantine University in Algeria. This course is for executives and officials responsible for product quality in companies and public institutions. The Masters degree enjoys the support of the *Agence Universitaire de la Francophonie* (contact: [padilla@iamm.fr](mailto:padilla@iamm.fr)).

## MAI ZARAGOZA

### International events

In the forthcoming months, MAIZ will collaborate in the organisation of two international events in the framework of the networks in which the Institute participates.

- The work of NEMEDCA (Network on Drought Management for the Near East, Mediterranean and Central Asia), founded and supported by CIHEAM-MAIZ, FAO and ICARDA) continues. The network will collaborate in the organization of the 3<sup>rd</sup> International Conference on Drought Management, to be held in Canberra (Australia) on 4-5 October 2011. The main objective of this Conference is to fill the gap that exists between research and policy making in the field of water scarcity and drought management.
- The 2<sup>nd</sup> International Symposium on the Pomegranate (Madrid-IFEMA-Fruit Attraction, and Orihuela, 19-21 October 2011), organised by Universidad Miguel Hernández and CIHEAM-MAIZ, with the collaboration of FEPEX (Spanish Federation of Associations of Producers and Exporters of Fruits, Vegetables, Flowers and Live Plants) and IFEMA (Madrid Fair). The pomegranate is a characteristic species of the south of Asia and the Mediterranean and has traditionally been grown and used for thousands of years. Interest in the pomegranate has increased considerably in recent decades through the study of the plant material and of its nutritional and nutraceutical properties. The objective of the Symposium is to encourage the participation of scientists, technical experts and business professionals in the pomegranate sector in order to enhance cultivation and to promote the consumption of both fresh fruit and derived products. This event is one of the several activities that the Research Network on Underutilised Fruits (including fig, loquat, Japanese persimmon and pomegranate) have carried out in recent years with the support of CIHEAM-MAIZ and different national and international organisations.

For more information: [www.iamz.ciheam.org/pomegranate2011](http://www.iamz.ciheam.org/pomegranate2011)

### Short advanced courses

The MAIZ organizes short advanced courses of one or two weeks in duration aimed at university graduates with professional experience related with the subject matter of the course. The course contents have a fundamentally applied orientation and explore technical aspects or particular methodologies in depth, providing high-level updating of knowledge, which is complemented by the opportunity to exchange experiences within an international framework. The range of courses offered is renewed each year, the topics being selected according to their current relevance and interest. The courses programmed for the following months are:

- Marketing strategies for local food producers (13-17 June 2011)
- Ecological restoration of Mediterranean rivers (19-24 September 2011)
- Quality and safety assessment of fish and fishery products. (Derio, 17-21 Oct. 2011), organised jointly with AZTI-Tecnalia and FAO.
- Use of remote sensing for irrigation management (21-26 November 2011), organised in the framework of the EU project TELERIEG
- Aquatic animal health risk analysis (12-16 December 2011)
- Medicines from plants (16-20 January 2012).
- Advances in fish reproduction and their application to broodstock management (23-27 January 2012), organised jointly with CSIC-IATS.

For more information: [www.iamz.ciheam.org](http://www.iamz.ciheam.org)

## Publications

**World Bank**, *Poor places, Thriving People. How the Middle East and North Africa Can Rise Above Spatial Disparities*, Washington (USA), 2010.

**Mohamed Abu Zeid and Atef Hamdy**, *Encyclopaedia on water resources development and management in arid and semi-arid regions of the Arab world*, 13 vol., Bari, CIHEAM-MAIB, 2010.

**Jean Ziegler, Christophe Golay, Claire Mahon, Sally-Anne Way**, *The Fight for the Right to Food*, New York, Palgrave Macmillan Ed., 2011.

**Carlo Petrini**, *Terra Madre, come non farci mangiare dal cibo*, Bra (Italy), Slow Food Ed./Giunti Ed., 2009.

**Dickson Despommier**, *The Vertical Farm: Feeding the World in the 21<sup>st</sup> Century*, New York, St. Martin's Press, 2010.

**Jean-Claude Lefevre** (dir.), *De l'Eau et des Hommes*, UNESCO, Paris, Editions de Monza, 2011.

**Bernard Duterme, François Polet** (Dir.), *Agrocarburants : quels impacts au Sud ?*, Alternatives Sud, vol. XVIII, No 1, Editions Syllepse-Centre tricontinental, Brussels (Belgium) 2011.

**UNDP**, *The Real Wealth of Nations: Pathways to Human Development*, Human Development Report 2010, New York, 2010.

**Franck Mermier and Michel Peraldi** (Dir.), *Mondes et places du marché en Méditerranée. Formes sociales et spatiales de l'échange*, Karthala (Paris), 2010.

**FAO**, *The State of Food and Agriculture 2010-2011. Women in Agriculture. Closing the gender gap for development*, Rome, FAO, 2011.

**John F. Mariani**, *How Italian Food Conquered the World*, New York, Palgrave Macmillan Ed., 2011.

**Stephen Kline**, *Globesity. Food Marketing and Family Lifestyles*, New York, Palgrave Macmillan Ed., 2010.

**Gilles Pennequin and Antoine-Tristan Mocilnikar**, *L'atlas du développement durable et responsable*, Paris, Groupe Eyrolles, 2011.

## Agenda

### 3 - 4 August 2011 – Marciac (France)

17<sup>th</sup> Controverses de Marciac on the topic « L'Europe, l'agriculture et le citoyen : Est-ce que ça pourrait cadrer ? ». [http://www.agrobiosciences.org/article.php3?id\\_article=3105](http://www.agrobiosciences.org/article.php3?id_article=3105)

### 27-28 October 2011 – Beirut (Lebanon)

Annual conference of the Arab Forum for Environment and Development (AFED). <http://afedonline.org/conference/default.html>

### 31 October – 4 November 2011 – Chania, Crete (Greece)

International conference on biotechnology and olive products quality in the Mediterranean (Olivebioteq) <http://www.nagref-cha.gr/olivebioteq/index.htm>

### 17 – 19 November 2011 – Tunis (Tunisia)

Symposium "Building the territorial equity of Tunisia", <http://www.ifctunis.org/spip.php?article715>

### 22-24 November 2011 – Annaba (Algeria)

1<sup>st</sup> international congress on aid to Algerian agriculture. <http://www.univ-annaba.org/>



## Publications on [www.ciheam.org](http://www.ciheam.org)

### CIHEAM Analytical Note

Sébastien Abis and Fatima Tamlilti, *Les dynamiques agricoles euro-méditerranéennes*, No 63, June 2011.

### CIHEAM Briefing Notes

Pierre Blanc, *Promouvoir les agricultrices pour lutter contre la faim*, No 73, April 2011.

International Institute of Refrigeration (IIR), *The Cold Chain, Food Security and Economic Development*, No 74, April 2011.

Luca Portacolone, *Promotion du tourisme rural au niveau du projet de Parc Naturel de Bouhachem au Maroc*, No 75, May 2011.

### Options Méditerranéennes

Mohamed Elloumi, Anne-Marie Jouve, Claude Napoléone, Jean-Claude Paoli (coords), *Régulation foncière et protection des terres agricoles en Méditerranée*, Options Méditerranéennes, Series B, No 66, CIHEAM-MAIM, Montpellier, 2011.

### NewMedit

Summary of 01/2011 issue of the review, April 2011.

### CIHEAM Watch Letters

Olive Growing in the Mediterranean, No 16, March 2011.

Agricultural trade and liberalization in the Mediterranean area (Arabic version), No 15, March 2010.

### Latest news on agriculture, food and the environment in the Mediterranean area

Press review March 2011

Press review April 2011

Press review May 2011

#### Forthcoming Watch Letter

Watch Letter No 18 will be issued in September 2011 and will address "Urban and Peri-urban Agriculture in the Mediterranean Region".

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