



Coordination of the **Agricultural Research In**
the **Mediterranean Area**

ARIMNet JOINT CALL

FOR

TRANSNATIONAL RESEARCH PROPOSALS

The present document is a pre-announcement of the joint transnational research call of the ERANET ARIMNet, based on funds from participating countries. The call is fitted for large projects involving several partners from different countries of European Union and from the Mediterranean Partner Countries. Taking into account the time needed for preparing such projects, this pre-announcement is aimed at encouraging research teams to prepare as soon as possible their project.

What is ARIMNet?

The ARIMNet Project (**Agricultural Research In the Mediterranean Network**), funded by the European Union, aims at coordinating National Agricultural Research Programmes to strengthen the capacities of its members to address in a coordinated way the major challenges that the Mediterranean agriculture is facing.

While agriculture in the countries around the Mediterranean is facing common issues and challenges, Agricultural Research in the Mediterranean is scattered and requires a coordination effort to step up the cooperation and coordination of research activities carried out at national level by joining forces to promote innovative research and cooperation. It is the purpose and the ambition of the members of the ARIMNet Project.

For more information about ARIMNet, please connect to www.arimnet.net

Joint Transnational Research Call

ARIMNet is launching a joint transnational research call based on funds from participating countries.

It will enable collaborative interdisciplinary projects based on complementarities between scientists, disciplines and countries, and sharing of knowledge in a broad scope of research topics. It aims to promote international collaboration to create research consortia in order to respond appropriately to the global stakes and challenges Mediterranean Agriculture is facing.



Call Topics (see provisional scientific scope of the call in annex1)

1- Production systems and their components: Developing sustainable agricultural production in a context of increasing ecological and climatic stresses

- *Resilience, rusticity, flexibility of the production systems;*
- *Improving the economic and environmental efficiency of production systems, agro ecology;*
- *Integrated approaches to reduce endemic and emerging animal and plant diseases;*
- *Sustainable management of pastoral and rangeland farming;*
- *Water saving techniques, reduction of chemical inputs, soil protection;*
- *Agricultural and agro-environmental policies design.*

2- Food chain from production to distribution: Enhancing the advantages of Mediterranean agriculture in developing products with high added value

- *Production and processing technologies;*
- *Marketing, supply chain organization, transportation;*
- *Food safety;*
- *Quality standards, labeling, geographical indications;*
- *Reducing post harvest losses;*
- *Incentives for innovation, private and public investments;*

3- Landscape and resources uses for agricultural and environmental purposes: Sustainable management of land and natural resources

- *Spatial aspects of agricultural use of natural resources,*
- *Agro-ecosystems and landscape mosaics;*
- *Periurban and urban agriculture;*
- *Relationship between coastal areas and hinterland;*
- *Land property and land structures;*
- *Agricultural, environmental and rural development policies;*

Application procedure

The call will be published officially on the **20th of June 2011**. Proposals should be submitted via Electronic Submission System (ESS) that will be open at this date. The link to the call web site will be put on the ARIMNet website: www.arimnet.net



ARIMNet is an ERA-NET
funded by the European Commission's
7th Framework Programme.

Who can apply?

Funding opportunities will be offered to excellent, innovative and integrative transnational research projects that must meet the following requirements:

- Project consortia must involve researchers from at least three countries members of the ARIMNet project (at least one from the EU and one from the Mediterranean Partner Countries) providing funds for this call;
- Researchers from non funding countries can participate in project consortia by funding their own involvement;
- Industry can participate in project consortia depending on the national regulations of their country and at their own expenses;
- Consortia should combine trans or interdisciplinary collaborations;
- Projects should be of a duration of maximum three years;
- Projects and researchers must comply with national/institutional regulations for funding programmes;

Evaluation of Proposals

The international external scientific review will take into account:

- Scientific excellence and targeted innovation;
- Feasibility of the proposal described by a detailed work plan;
- Resources/implementation;
- Quality of the consortium & management;
- Impact: exploitation of results, dissemination;
- Transnational benefit & added value;

Important dates

- Call publication: June 20th, 2011;
- Deadline of Letter of intent submission (by applicants): July 12th , 2011;
- Call deadline : September 25th , 2011;
- Communication on evaluation results: January 2012.

Participating Funding Organisations

The call is co-funded through a virtual common pot by the Mediterranean countries participating to ARIMNet project (List of countries on www.arimnet.net).



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Annex 1

Scientific Scope of the Call

Context

The countries of the Mediterranean basin face a number of similar problems in relation to agriculture, mainly as regards the use and management of natural resources, such as soil and water, crop protection and threats to the security and sustainability of agricultural production resulting from climate change.

To this respect, Mediterranean basin concentrates almost all the key global challenges agriculture is facing in the world, and thus should concentrate intense research efforts. But for the moment, that is not the case. Issues are too often looked separately each side of the Mediterranean Sea. There is a great need to enhance research effort through multilateral cooperation both to strengthen the economies of the Mediterranean countries and to help to find solutions to global challenges. This has been underlined in several global forum and reports during last years like IAASTD Report on CWANA region (2008), AARINENA e-consultation for the GCARD (2010), CIHEAM Report on the Future of agriculture and food in Mediterranean countries (2008) and the PARME analysis of foresights concerning the Mediterranean area (2010, presented in Palma October 2010). All these documents are a sound and strong basis for designing the call.

The first characteristic of the Mediterranean area is that its natural environment is characterized by a high level of vulnerability. And today, its sensitive ecosystems are threatened by pressures of various kinds. The Mediterranean region is considered one of the regions of the world most threatened by climate change which could worsen stresses that are already high: drought, extreme climatic events frequency, crop and animal endemic and emerging diseases.

Secondly, the Mediterranean region is one of the hotspots of the global biodiversity, with a remarkable richness in cultivated and wild species characterising this area. This diversity is clearly an asset for the region that could be valued through specific agricultural and food products and that could be used to face new challenges such as climate change adaptation. It also has to be preserved as a common heritage.

Thirdly, water is a scarce resource in most of the Mediterranean countries and its availability decreases. In several countries water use is reaching the level of available resources. Besides, overexploitation of ground water raises several other environmental problems such as soil salinity. In the future, agriculture will be more and more seriously in competition with other users, which implies to find solutions for limiting losses and ensuring more efficient use of the water resource.

A better management of natural resources is thus a condition to maintain the sustainability of agriculture. Agriculture has a significant role to play in producing environmental services for the entire society. However, simultaneously, developing agricultural production is a priority for most countries in the Mediterranean region.

Agriculture is already contributing significantly to the economy in particular in the south and eastern Mediterranean countries, where agriculture accounts for 10 to 15% of the GDP (against 2 to 3% in the Mediterranean EU member states) and where people working in agriculture is around 20 % of total employment. In the south and eastern Mediterranean countries rural population is showing no decline in absolute term, and is highly dependent on agriculture, due to the lack of employment in other sectors. Consequently, the development of agriculture in Mediterranean countries cannot follow the same historical path of European agriculture modernization based on a strong decrease of rural population.

Productivity growth in agriculture has been high during the past (often higher in south Mediterranean countries than in EU member countries) but remains globally insufficient to respond to the increase in food demand associated with the high population growth rate. Several Mediterranean countries are large importers of agricultural and food products, with a declining food trade balance. South Mediterranean countries are importing on international markets basic commodities (cereals, meat, vegetable oils), however they are also exporters of products for which they have a comparative advantage: fruits, vegetables and olive oil.

In this context, Mediterranean agriculture should find specific paths to develop simultaneously a sustainable agriculture for producing basic food commodities and to take advantage of its specific assets for more specific products that can generate income all over the supply chains. This development should necessarily be implemented with a high level of attention towards resources management and environmental impacts of land uses.

The present call is part of the ERANET- ARIMNet project that involves 12 partner countries from north, east and south of the Mediterranean, and whose purpose is to strengthen multilateral cooperation in Agricultural Research.

Under this call, we will support projects that will add to the existing programs by addressing the Mediterranean agriculture issues in a collaborative way between Mediterranean countries research teams and through innovative approaches. Different topics and issues can be addressed in the research proposals, compatible with the fields identified by stake holders, through mobilizing a large set of disciplines going from genetic to social sciences and combining/integrating them.

Therefore, the call is mainly defined by impacts and targets as challenge facing Mediterranean basin. Projects should contribute to build sustainable research cooperation dynamics and if possible initiate or strengthen joint structures. Proposals should necessarily include teams from at least three countries of ARIMNet (including at least one from the EU and one from the Southern and Eastern Mediterranean Countries)

Scope of the call

Research proposal should address scientific issues that could help to meet the challenges faced by Mediterranean agriculture. Those challenges are defined in the three following topics and subtopics. Answers could be more focused on some specific points or address transversal issues. Integrated and multidisciplinary approaches would be appreciated as they are generally needed to address complex issues.

1. Production systems and their components: Developing sustainable agricultural production in a context of increasing ecological and climatic stresses

Facing climatic change and pressure in water availability, protecting the natural resources and the environment will need an evolution of the current agricultural production practices. This requires researches on several issues that concern different aspects of agricultural production.

a) Resilience, rusticity and flexibility of production systems

A large proportion of Mediterranean rural population lives in arid, semi-arid or mountainous areas. In these areas, climatic conditions, in particular climate variability, lead to the development of production systems that require the attenuation and mitigation of risk. Rusticity and flexibility of the different components and the whole is a major factor of resilience of the systems and this is required to improve their competitiveness and sustainability. Therefore, research is needed to improve simultaneously the productivity of agricultural system and their sustainability and resilience. Several issues have to be addressed in this perspective: genetic breeding of varieties resistant to drought and to climate hazards, use of local species biodiversity, development of new farming systems combining different activities and species to use their different sensitivities to hazards, diversification of cropping systems using local crop species, etc.

b) Improving economic and environmental efficiency of production systems

Researches that use ecological sciences to improve the efficiency of agricultural systems, such as agro-ecology could certainly be applied in different locations inside the Mediterranean area. Projects that would associate researchers from ecological, agronomic and social sciences to deal with those issues would be appreciated.

c) Integrated approaches to reduce animal and plant diseases

The development of endemic or emerging animal diseases is a major problem for both the productivity of livestock and human health. It must be addressed taking into account different levels of integration: from the ecology and biology of pathogens and vectors, to the issues of sanitary monitoring, health control and economics both at the farm and regional level. The parallel can be made for crop pathology.

d) Sustainable development of rangeland and pastoral farming

Rangeland farming raises specific questions related to their relationship to pastoral landscapes and the natural vegetation they use. The situation is contrasted between the north and the south, with on one side, problems of agricultural decline, under-exploitation of resources resulting in specific environmental problems (fires, landscape degradation) and

on the other side of the Mediterranean, overgrazing resulting in biodiversity loss and risks of desertification. But beyond this difference, similar questions are raised dealing with the sustainability of the grazing activities that should guarantee the integrity of pastoral landscape and the protection of biodiversity.

e) Water saving techniques, chemical inputs use reduction, soil protection

Irrigation induced in many areas of the Mediterranean region a significant increase in agricultural production. However problems associated with overuse of water have emerged that threaten the water resources in terms of quantity. Intensive use of chemicals (fertilizers and pesticides) has also generated water quality and other environmental problems. Several research issues should be considered in order to improve the sustainability of those production systems: water saving techniques, on-farm improved efficiency of input uses, integrated pest management. Erosion and loss of soil fertility are major problems in the Mediterranean area. This should be addressed through different approaches and by collaborative research between different disciplines.

f) Public policies

On all the above mentioned subjects, public policies are largely concerned. And there is a real need of research in economics and other social sciences to help decision makers in designing the policies that could better deal with the new context and challenges. Agricultural policies entered last years in a deep reform period: that is clearly the case for the EU Common Agricultural Policy, but that is also true in other Mediterranean countries. Stabilizing farmers' income and protecting consumers against price volatility, improving the link between agriculture activities and the environment are questions that need innovation in public policies and research is needed in this field.

2- Food chain from production to distribution: Enhancing the advantages of Mediterranean agriculture in developing products with high added value

Several products benefiting from specific Mediterranean natural advantages and know-how are already competitive and provide high added value to farmers and other actors in the supply chains (fruit, vegetables, olive oil...) They already benefit from a domestic and international demand for products entering in the Mediterranean diet. However researches are needed to enhance their development in a way that they can really contribute to the economic development of rural areas. Research topics can concern different stages of the food chain: production, food processing, transport, marketing and policies.

a) Production and processing technologies

The technological aspects of production and transformation are important issues and are closely related to market and food chain organisation and to industrial strategies. In particular, it is necessary to develop new processing technologies for better valorise the local typical products. The utilisation of the Mediterranean biodiversity, the traditional knowledge and culinary heritage could help to develop territories and regions as typical products can benefit from "niche" markets. There is a need to pull them into "formal/organised" sector, by applying modern technologies and standards respectful of their typicality. Researches on

these issues are expected on different fields, and different disciplines from genetics to technological sciences, social and management sciences.

b) Marketing, supply chain organization, transportation

Logistics is the core of efficient food chain governance. Organisation of marketing channels, supply chain management for a better and smoother flow of goods to processing plants and organised large food retailers on domestic and international markets. Improving transportation and supply chain organisation is of major importance to link agricultural producers to urban markets. This must be addressed through researches aimed to lead to organisational or industrial innovations.

c) Food safety

A better control of the quality all along the food chain is an important issue for food safety. In this regard, market regulation by public authorities is necessary, but recognizing the fact that food quality is a consequence of the organization of the whole supply chain, with critical points that could be located anywhere from the production to the retail level. In urban areas, where food supply is ensured through important amounts of products generally coming from agro-industrial systems, problems are often related to technologies that have to be suitable for treating large quantities (i.e. cold chain). Food safety in rural areas may be less important due to the proximity between producers and consumers, and to the smaller scale of the firms (producers, plants ...). Improving the articulation between the domestic production of small or medium enterprises and the food demand of urban population raises specific questions of how to ensure food safety. Researchers from food technology sciences and from social sciences are invited to address those issues in the production, transformation, storage, transportation and marketing fields.

d) Quality standards, labeling, geographical indications

Regarding export markets, complying with public and private quality standards is an important issue, as well as the trade liberalisation negotiations. These standards are required by the consumers of South European countries and their extension is expected in the domestic markets of Southern and Eastern Mediterranean countries as well. On this aspect research is needed on various issues that could highlight issues such as quality certification, geographical indications and labelling.

e) Reducing post harvest losses

Increasing the efficiency all along the food chain includes also reducing post-harvest losses. These remain very high in many Mediterranean countries. In some cases, they may represent up to 30-40%. Reducing these losses can contribute significantly to improve food security. Research is needed to understand the mechanisms and to find solutions to reduce losses all along the chain, from production to storage, transportation and commercialisation.

f) Incentives for innovation: private and public investments

Good functioning of food chains relies highly on physical infrastructure (road construction, linkages to villages, airports, better organization of communication tools) but also on a good management of the whole chain by a better organization of information systems and administration (public authorities) as to better the linkages between different public

authorities. These improvements need public investments and will help to appeal for private investments and arrival of foreign capital. Technological progress call for product and process innovation while marketing and supply chain management as well as economic efficiency of enterprises call for organizational innovations.

3- Landscape and resource uses for agricultural and environmental purposes: Sustainable management of land and natural resources

Conservation of water resources and soil fertility, protection of biodiversity are major challenges in the Mediterranean area. Risks of degradation are high, in relation with unsustainable agricultural techniques, increase of inputs use, climate change. They have to be address at the farm level (topic 1), but also at larger scale. Some issues need to be tackled at the river basin level, some others on larger areas, even in some cases (e.g. water management) on international level. They need integrated approaches combining different disciplines.

a) Spatial aspects of the agricultural use of natural resources,

The spatial organization of agriculture, forest and pastoral areas, whether they are private, public or common resources have a strong influence in terms of soil quality, water resources and biodiversity. The current dynamics in land uses produce new spatial patterns and new relationships between urbanized areas, agricultural areas, hybrid spaces between city and countryside, intensive and extensive agricultural zones, pastoral areas and uncultivated zone (forest, wetland). This has to be analyzed in a perspective of landscape and land uses regulation, including their effect on climate change mitigation.

b) Agro-ecosystems and landscape mosaics

The issue of the spatial organization of production systems and its relationships with other land uses is one of the specific issues of the general issue on spatial dynamics of agriculture. The diversity of production systems – and their eventual complementarities- impact the processes behind soil quality, water resources and biodiversity at several relevant organization levels: from few farms territories to watershed, mountain slopes, catchment areas. The diversity of production systems valorizes the diversity of soils, slopes, wet areas but can also play a non negligible role in water circulation, fauna and flora dissemination or soil distribution. This leads to analyze the role of the spatial organization of land and field patterns, closeness and neighborhood relationships, the eventual role played by network of hedges, woods... on the natural resources and the environment. It is needed to understand and define the means to improve ecological regulations through spatial organization of farming systems.

c) Periurban and urban agriculture

Development of periurban and urban agriculture raises specific issues of environmental and resources management and of marketing channels organisation. These types of agricultural systems represent in some countries significant sources of income for poor household, but can generate both health problems and pollution as well as positive contributions to the urban environment or resource management (use of waste water, environmental

amenities). Thus, peri-urban and urban agriculture needs to be studied from those different points of view.

d) Relationship between coastal areas and hinterland

The increase of the population living in coastal areas is a major change in the Mediterranean area. Seasonal and permanent inhabitants living in coastal cities increased as a consequence of population growth and/or tourism development. It implies a concentration of population in the cities and an urban sprawl along the coasts. Urbanisation competes with agriculture for land that is often the most fertile or easier to irrigate. It can also result in an increase in flood risk. On the other hand, the increase in population in the cities raises food security problems and asks for development of trade flows between agricultural areas of the hinterland and urban areas. Consequences of those population dynamic changes on agriculture should be better analysed in order to find ways to manage this development and the relationship between coastal areas and hinterlands

e) Land property and land structures

There is evidence that land property rights regimes and land tenure structures play a central role in the use and management of natural resources. In the Mediterranean area land tenure structures often constitutes a barrier to both sustainable use of resources and to agricultural development. The situation is often contrasted between landowners that may not cultivate their land and farmers with very limited access to land. In this respect, it is important to consider the paths to reform not necessarily the propriety of land, but the access, the tenure rights in a way that it can allow a sustainable use of resources. It is thus necessary to answer the following questions: What are the current situations and the dynamics in terms of agricultural land market access, land property regimes, land tenure structures? What are the effects of the current land status on the agricultural development, on the ecological characteristics of landscape, on the dynamics of farming systems? How the land structures (in terms of property, market, uses) do affect agricultural development from economic, social and environmental points of view?

f) Agricultural, environmental and rural development policies

Public policies have a major role to play to regulate the impact of agriculture on the environment and to help to the development of rural areas. Implementing new production systems, ensuring spatial organization of land and field patterns that could improve the resource management, developing environmental services produced by agriculture will require specific policy instruments. New fields of research on public policies are open that will have to address the following issues: spatial organisation of land uses, sharing of resources between users, long term management of resources compatible with the development of rural areas.