



MED 7

**THEMATIC WORKSHOPS
FOR THE DEFINITION OF THE S&T
EURO-MEDITERRANEAN POLICY
WITHIN THE SEVENTH FRAMEWORK PROGRAMME**

FP6-2002-INCO-COMultilatRTD/SSA-5 [INCO-2004-TC-SSA]



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Rationale of the Initiative and Background Scenario

The Political Scenario

The VII Euro-Mediterranean Conference of Ministers of Foreign Affairs held in Luxembourg on 30-31 May 2005 (“Barcelona VII”) allowed Ministers to assess what has been achieved so far and to discuss general guidelines and actions for the future of the Euro-Mediterranean Partnership. The year 2005 has been welcomed by European Union as the **Year of the Mediterranean**. Ten years have passed since 1995 when the Euro-Med Partnership was launched in Barcelona during the First Meeting of the Ministries of Foreign Affairs of the 15 European Union Member States and the 12 Mediterranean Partners concerned (Algeria, Cyprus, Egypt, Israel, Jordan, Lebanon, Malta, Morocco, Syria, Tunisia, Turkey, Palestinian Territories) plus Libya – hereinafter referred also as MPCs.

For the first time the Euro-Med region was conceived as a unique important geo-political area, where collaboration could cover political, economical and social aspects, according to the following inter-connected forms of partnership:

- 1 - Political and Security Partnership, establishing a common area of peace and stability
- 2 - Economic and Financial Partnership, creating an area of shared prosperity
- 3 - Partnership in social, cultural and human affairs

Cooperation in Science and Technology was considered as one of the pivotal elements to achieve most of the objectives to be pursued. RT&D was assumed to be the *driving force* for the development, in the Med-Area, of a “KNOWLEDGE BASED SOCIETY”. The fundamental role of the research, in a society rapidly evolving towards a global economy ruled, more and more, by sophisticated technologies, was pointed out during the European Council of Lisbon in 2000 and underlined in the “Communication from the Commission on “the International dimension of the European Research Area”¹ and – above all - in the “Proposal for a Decision of the European Parliament and of the Council concerning the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013)” of 6.4.2005².

The Euro-Med Partnership is consistent with the European Neighbourhood Policy (ENP) launched by EU, following the enlargement of Europe to other 10 Member States of which two Mediterranean ones: Cyprus and Malta. As a matter of fact, with the ENP Europe is willing to implement cooperation with all neighbouring Countries, and in a particular way, the Mediterranean Third Countries, by selecting joint mutual strategies and actions to solve common problems as well as new policies to ensure security in the area concerned.

The present initiative moves from this scenario and from the consciousness of the members of the ‘Monitoring Committee for implementing Euro-Mediterranean Cooperation in Science and Technology’ (MoCo) (settled in 1995 following Barcelona Declaration) that now time has come to valuate what has been realised in ten years of Euro-Med Partnership and to start reflection on the achieved objectives and on the effects produced, even in relation to the amount and the modalities of the funds allocated, having in mind that Euro.Med co-operation needs to be renewed through a redefinition of priorities areas and goals as well as operative

¹ COM(2001) 346

² COM (2005) 119 final

and financial instruments, taking in due consideration the evolution and socio-economic changes occurred in the Mediterranean area.

The definition of the European Research Policy, for the period 2007-2013, through the elaboration of the 7th Framework Programme of EU for Research, Technological Development and Demonstration Activities, should represent a unique occasion, for the enlarged European Union, to elaborate a renewed and courageous policy for Euro-Mediterranean cooperation with the identification of new financial resources and instruments able to implement the Barcelona Partnership.

The enlargement of European Union cannot and must not be perceived by MPCs as a way to shift the centre of gravity of EU policy irremediably toward North-East Countries, thus failing to take into due account the cooperation with Southern Countries at its boundaries. The development of the Euro-Med region needs to be one of the main scopes of European Union, a “*mission*” to which is not possible to abdicate.

The Mediterranean basin is unique, in terms of history, cultural heritage, and environmental, climatic, biological and social and economic diversity. However, its fragile ecosystem, the global climatic change, the overexploitation of its marine resources, the progressive scarcity of water, the migrations of people for economic reasons or tourism, together with the severe risks associated to natural hazards of human conflicts, create a specific scenario of problems where the RTD cooperation can be used as a source to provide knowledge and intervention tools. To fulfil the aims of EURO-MED partnership the EU should take into consideration the specificities of the Mediterranean region and should make every effort to enable all Mediterranean countries to participate in 7th Framework Programme and thus become integral players in the European Knowledge-based society.

The action of the European Union through its former INCO-MED Programmes intended to develop collaborative research capacity addressing the common research needs of the societies and economies of the EU and MPCs in order to foster competitiveness and to exploit the results of scientific research and development. Concrete action plans and projects have led the way to policies for innovation and competitiveness in MPC and their RTD relations with the EU. The main stakeholders of this policy are the scientific and technological institutions. However, the incorporation of the enterprises and the regional and local intermediary organizations that promote, enhance and foster innovation and technological development is an unavoidable target to reach the objectives of the Euro Mediterranean partnership.

The Common Interests

The Mediterranean Partner Countries and the European Union are engaged in a common economic and political future. They share a common destiny and common competitive challenges:

- The promotion of a sustainable capacity to compete at the global scale,
- The development of a long-term capacity to create new and better jobs,
- The setting up of a socio-economic environment providing citizens with better quality of life

The Mediterranean Countries have an economic evolution of their industrial sectors characterized by low development levels. They face with some problems which are also common to some EU countries or regions:

- Continued reliance on the traditional technological schemes. Dominance by small and medium enterprises (< 200 employees) with limited investment capabilities and lack of skilled operators,
- Traditional industry covering domestic markets and lacking capabilities for international competition
- Weak adoption of quality schemes
- Lack of appropriate facilities to check quality standards
- Lack of appropriate programs concerning prospects for innovative processes and novel products.
- Lack of awareness of the impact of research on industry development
- Weak coordination between industry and teaching/research institutions
- Lack of technological watch

The whole Mediterranean area has a mild average climate which is attracting population to its shores, but it is affected by severe summer climate. The actual trends in building design (imported from northern latitudes) and the rising living standard in Mediterranean countries have promoted a massive use of energy, with peaks of consumption due to the use of air conditioning systems. Unfortunately, these new trends do not take into account the indigenous traditional architectural concepts, which were better adapted to the climatic conditions and could represent a source of energy saving. Energy production is a common problem in the Mediterranean basin. Renewable energy sources must be developed to guarantee energetic independence, fight against the greenhouse effect and obtention of water from the sea by desalinisation processes. Although energy production from organic waste and crops has been developing in many countries, its application in Mediterranean region is very limited. The cheapest forms of biomass for generating electricity are residues and wastes. Energy crops are still in the early stages of development, although progress has been made. In the long term, energy crops could be a very important biomass fuel source. At present, however, wastes (wood, agricultural, municipal or industrial) are the major biomass sources. Moreover, the development of green-houses agriculture produces excess of residues that can be sources of biomass for energy production. Technologies such as combustion, gasification, anaerobic digestion, fermentation, bio-diesel will still benefit from mass to energy efficiency improvements.

Needless to say, the common interest in the preservation and sustainable exploitation of the Mediterranean cultural heritage, including the common roots of the enormous varieties of traditional cooking.

A common feature of all countries of the Mediterranean Basin is the handling of Risk assessment, and the management of mitigation strategies related to:

- Risk related to water supply and quality, which is perhaps the most important issue
- Natural hazards, such as drought, fires, floods, earthquakes, volcanoes, etc.
- Plant and animal diseases, related or not to water scarcity
- Contamination of air, seas, rivers and soils, coupled with atmospheric phenomena such as heat waves or sand storms.
- Emergent diseases related to immigration, displacement of populations or contamination.

The protection of cultural heritage and local knowledge in the Mediterranean region in the context of globalization, climatic change, the increased urbanisation of the shores and the development of tourism infrastructures. Vandalism, political turmoil and wars are serious risks for the preservation of cultural heritage that also needs to be assessed

The EU-Med RTD cooperation could create the basis for sustainable development of the Med countries and the improvement of the quality of their governance by:

- Developing and implementing appropriate programs concerning prospects for innovative processes and novel products, and knowledge transfer about the techniques that can be used to a scale justifying industrial production.
- Upgrading the skills of the human resources using the Mobility instruments of FP7
- Setting the basis to develop Good Manufacturing Practices and Hazard Analysis and Critical Control Point (HACCP)
- Encouraging projects that favour regional integration and contribute to ameliorate political stability
- Supporting national initiatives for up grading scientific and technical skills in view of the Free Trade Area foreseen in 2010.
- The MPC industry must move toward higher added value products, processes and enterprises using the benefits of incorporating into Technological Platforms.
- Optimizing the use of the existing bilateral, multilateral and world-wide RTD cooperation instruments
- Increasing consistency between the CAP, the Water Directive and the natural resources policies to meet agriculture and environment challenges in MED countries
- Strengthening the existing "centres of excellence" and encourage disseminate scientific, technological and institutional knowledge through networking

Specific Objectives of MED 7

The MPCs have actively promoted the transformation of their scientific and technological research structure; strengthen the insertion of the research potential in the international scientific community both at a regional level and EU-MPC level, and intensively promoted RTD activities. Building the national RTD system in each MPC has been an objective of the past INCO-Med activities following the recommendations of the MoCo Meeting in Cairo in 2003, and will be an objective for the near future. Some of the common scientific and technical objectives for cooperation have been identified and presented.

“MED 7 - Thematic workshops for the definition of the Science and Technology Euro-Mediterranean policy within FP7” has been co-financed by European Commission as a Specific Support Action (SSA) under the INCO-MPCs (International Cooperation with Mediterranean Partner Countries) Activity of the 6TH Framework Programme for RT&D (2002-06). It is coordinated by the *Spanish Council for Scientific Research (CSIC)* and involves the following Institutions as contractors and partners of the initiative: *Direction of Technology of the Ministry of Science and Higher Education- Morocco; National Hellenic Research Foundation (NHRF)-Greece; Israel-Europe R&D Directorate for EU Framework Programme (ISERD)-Israel; Centre de Cooperation internationale en recherche agronomique pour le developpement (CIRAD)–France; Malta Council for Science and Technology - Malta; Consiglio Nazionale delle Ricerche– Dip. Attività Internazionali - Servizio III – Mediterraneo e Medio Oriente – Italy.*

MED7 has been designed to answer to the ever pressing need to have a better targeted and a more incisive policy and instruments for enhancing RT&D in the Mediterranean area. Thus it is aimed at:

- strengthening coordination and complementarity with activities carried out by means of Community foreign policy instruments, specifically MEDA;
- supporting particular joint efforts by the Community and the Member States to the opening up of the European research Area to the rest of the world.

The focus and the main objective of the initiative is the identification of relevant topics, priorities and instruments to be tackled within the Euro-Mediterranean RTD cooperation perspective in the 7th Framework Programme, as well as the best approaches to address these issues.

The SSA consists of the organisation of five thematic working groups (WGs) formed of experts from euro-med countries plus a Synthesis Conference aimed at refining all the conclusions of the WGs and elaborating a final documentation that can provide European Commission and the MoCo members with clear recommendations for the implementation of the euro-med RTD policy.

The meetings and the final conference have been held in different Countries, according to the nation of the partners involved in the initiative. They are the followings:

THEMATIC WORKING GROUPS	Place and Date	Organising Institution and Partner of SSA
Innovative production systems and processes	(Morocco, 6-7 May 2005)	Direction of Technology- Ministry of Science and Higher Education of Morocco
Water risk management and renewable energies	(Greece, 16-17 May 2005)	National Hellenic Research Foundation (NHRF)
Public Health	(Israel, 25-26 May 2005)	Israel-Europe R&D Directorate for EU framework Programme (ISERD)
Agro-food and Industrial agriculture	(France, 9-10 June 2005)	Centre de Cooperation internationale en recherche agronomique pour le developpement (CIRAD)
Cultural heritage	(Malta, 16-17 June 2005)	Malta Council for Science and Technology
Synthesis Conference	(Italy, 25-26 June 2005)	CNR – Dep. of International Activities – III Division – Mediterranean & Middle East.
Information and Communication Technologies	(Brussels, Belgium, 15 September 2005)	CSIC – Spanish Council for Scientific Research
Transport (including Aeronautics)	(Brussels, Belgium, 15 September 2005)	CSIC – Spanish Council for Scientific Research
Socio-Economic research and Humanities	(Brussels, Belgium, 15 September 2005)	CSIC – Spanish Council for Scientific Research

The **MED 7 Synthesis Conference** has been organised in Naples by the Italian National Research Council – Department of International Activities - Third Division - Mediterranean and Middle East.

Its Conclusions and Recommendations have been illustrated to MoCo members during the MoCo meeting of Tunis (28-29 June 2005) and addressed to the European Commission representatives to be further refined and endorsed.

Conclusions and Recommendations

General Issues

In this work we tried to give a contribution to the activities of policy making, which aim at the use of R&D to promote economic development in the Mediterranean Partner Countries as one of the objectives of the Barcelona agenda. In order to do so, it was decided to follow a coherent and integrated approach, by:

- going through the local specificities of each context, trying to deeply integrate into the analysis the social, cultural, political and environmental features, which policy actions will have to deal with, if it aims to have effective results and impacts;
- bringing into the debate European scholars with a specific expertise, jointly with scholars, policy makers, representatives from the industry and the productive sectors coming from all the MPC;
- highlighting as concrete priorities for policy action only those issues, which we obtained a wide consensus about, among all the participants;
- identifying the specific channels and instruments, which can effectively use and implement the agreed recommendations; in particular the FP7 as the main instrument of the Euro-Mediterranean co-operation in S&T.

The consensus among the participants arose about policy actions needed in order to:

- create pre-conditions for the development of innovation systems, paying special attention to the role and quality of the intermediaries, acting as catalysts for all the other stakeholders;
- provide “intelligence” and timely recognition of emerging opportunities, make more and better use of forecasting activities;
- exchange knowledge in form of shared experiences, cooperation in research and technological development, mobility of human capital in order to establish a positive cultural flow;
- improve the quality of governance in this issue;
- help building an environment conducive to innovation, by investing more in education and intangibles³;
- create the conditions for networking, public-private partnerships and international cooperation, by making more use of existing organisations (i.e. *R&D Maroc* and *LIRA*);
- help improve the absorptive capacity of research and industry in mature sectors;
- promote the development of common standards and regulatory norms to meet international standards.

It was recognized that transition to the knowledge based economy of MPCs requires:

- a) an economic and institutional frameworks able to promote the efficient use of knowledge and the flourishing of innovative forms of entrepreneurship;
- b) an educated and skilled population to create, share and use knowledge;
- c) dynamic information infrastructures;
- d) an efficient integrated Innovation Systems of firms and research centres;
- e) a competitive National Research System suitable to create synergies with industrial and socio-economic apparatus.

³ - Central elements of the investments in intangibles are (OECD, 2002): R&D, public expenditures in education and training, software, which in the total of the “advanced economies” account for more or less 8% of GDP

The influence of the EU-MPC RTD cooperation on the above requirements could be instrumented through actions to:

- 1) Building a Support System for RTD
- 2) Identification and selection of the more appropriate priorities for MPCs taking into consideration aspects such as: complementary, synergy and contiguity with EU priorities (MEDA and Framework Programmes) and with bilateral projects on national scale; regional specificity and diversity.
- 3) Instruments and measures able to: increase funds available for MPCs and reduce parcelling out of funding; increase the number of partners from MPCs taking part to FP7 projects; value and exploit the results and the research developed;
- 4) Implementation of measures allowing an easier access and the participation of MPCs to the **nine thematic areas** of Cooperation Programme of the 7th FP; assuming that funds allocated will be additive to those reserved for INCO-MED PRIORITIES.

The inclusion of International Cooperation within the regular activities of the Priorities of FP7 is both a challenging opportunity and a threat. The opportunity springs up from the possibility of inclusion of Med groups in the leading research activities of the EU. However, the specific orientation of the priorities to EU common issues, and the highly competitive character of FP7 participation, makes uncertain the usefulness of most of the topics addressed for the Med countries and positions the Med research groups and companies in a weak position compared to their European equivalent. **Of most importance is the identification of topics and areas of common interest in order to create sections of the Specific Work Programmes of the FP7 priorities oriented to the fostering of EU-MPC collaboration.** The setting of a strong RTD system in the MPC was identified as a prerequisite to guarantee their fair participation in the FP. Actions are being taken to reach this objective, but at the present moment, and for a few years more, the EU-MPC cooperation in RTD needs to focus on the topics of common interest, where the MPC are making efforts to develop scientific groups, to create infrastructures and to push innovation in the industrial tissues.

Up to now, the action of the European Union through its INCO-MED Programmes intended to develop collaborative research capacity addressing the needs of the societies and economies of MPCs in order to foster competitiveness and to exploit the results of scientific research and development. The MPCs have shown some improvements in their scientific and technological research structure and activities; they have strengthened the insertion of the research potential in the international scientific community and have intensively promoted RTD activities.

In this period, when the Mediterranean Countries are showing a growing interest and better understanding of the opportunities offered by the cooperation with the EU through the INCO-Med RTD Program, and when Med Countries Governments are stressing the importance of their relationships with the EU, it is the moment to strengthen the participation of their industrial sectors in the programs and priorities defined by the FP7 and to implement well targeted, specific and decisive actions that in the near future will generate the benefits pursued by both parties during all the latest years. For this reason this work highlights the necessity to reinforce the international cooperation dimension of the forthcoming FP7, but without neglecting the potential that specific cooperation with Mediterranean countries has for our own competitiveness, sustainable growth and development.

Participating in FP7

The participation of the MPC in the 7FP should be structured according to the provisions established for International Cooperation in the four Specific Programmes and the specific demands for RTD cooperation in topics of common interest identified by the MoCo, which should be included in the specific Work Programmes and developed through specific calls for proposals where the consortium composition must include a number of MPC partners. Moreover, in order to facilitate the opening of the 9 priorities of the Cooperation Programme to MPC partners, specific tracks and procedures should be envisaged to encourage the incorporation of MPC teams or individuals in the consortia formed to develop the research projects.

“COOPERATION”

The Thematic Workshops organized by the MED7 SSA on the topics defined by the MoCo Meeting in Carmona (Spain) as priorities for the RTD EU-MPC cooperation have identified the areas of common interest of the EU and MPC to be incorporated as specific subjects within the corresponding thematic priorities of the Cooperation Programme of FP7. See the annexes with the final recommendations of each one.

“IDEAS”

This Programme offers unique opportunities to work in the edge of scientific knowledge. It is of the outmost interest of high quality scientific groups of the MPC to participate in these actions perhaps by incorporating scientist from MPC in the IDEAS teams using specific Marie Curie grants.

“PEOPLE”

This programme is of very special interest for the MPC because, as stated before, the human capital is the basis for the Knowledge Society. The interest of the MPC makes necessary to:

- Networking of research institutions, researchers and research teams fostering regional cooperation and capacity building.
- Promoting mobility of scientists with special emphasis on early-stage researchers. Skills and career development. Encourage the exchange of doctoral students through actions including “Marie Curie”. Return grants for research institutions and private industries
- Set up researchers’ mobility centres in the MPCs and to create a mobility portal for the MED-AREA with the assistance from EU-Commission. This would facilitate the uptake, for instance, of Marie Curie Fellowships by young researchers from MPCs.
- Develop research and training networks based on the concept of distance learning.
- Promote an assessment, benchmarking and foresight of the opportunities for training and mobility in the MED-AREA in order to match demand with offer.

“CAPACITIES”

The improvement of RT&D INFRASTRUCTURES and CAPACITY BUILDING in the MPC could be related to the implementation of a number of horizontal actions related to the establishment of:

- a more interdisciplinary and integrated research and innovation system in the MPC,
- technological parks, business incubators and innovation poles;
- conditions leading to the accessibility to large scale RT&D facilities;
- trans-national networks based on national centres of large facilities.
- incentives for the participation of SMEs to demonstration projects connected to the exploitation of know-how obtained in the course of previous FPs
- clusters to favour the merging of enabling technologies in sectors of regional interest
- cross bilateral and regional activities.
- taking advantage of the new information and communication technologies and foster their massive implantation and use in: training (e-learning), knowledge sharing and dissemination (communities of practices), early alarm system related to risk management

Moreover, the implementation of national capacity building and RT&D infrastructures, for MPCs, can be only fulfilled through the elaboration of An Action plan (complementary to national dedicated plans) with specific measures to be adopted under MEDA Programme and with corresponding funds allocated.

The increase in CAPACITY of SMEs to be PART of an INTEGRATED SYSTEM of INNOVATION may be realized only through the application of frontier technologies in the different fields and the implementation of specific instruments where groups, belonging to university and research bodies, to enterprises, stakeholders and intermediaries, have the possibilities to participate with the appropriate conditions of participation in projects dedicated to develop research and innovations.

Such a target can be accomplished if the EU Commission gives the opportunities, to SMEs of MPCs to take full advantage from:

- Co-operative Research Programmes (CRAFT);
- Collective Research Projects;
- Joint Technology Initiatives (including the instrument of Technological Platforms).

Specifically addressed to industrial fields of common interest, either traditional or emerging, such as textile, electronic, agro-industries, nanotechnology, etc.

ACTIVITIES OF INTERNATIONAL CO-OPERATION

This activity of the CAPACITY programme deserves special attention because it specifically addresses the problems of mutual interest between the EU and the MPC and complements the activities of International Co-operation addresses in the other three programmes.

Within the scope of the mutual interest is of the outmost importance to continue with the line of action of SYSTEM BUILDING SUPPORT because to foster RTD cooperation between the

EU and the Mediterranean Partners Countries a consistent RTD system should exist to direct, support and facilitate the activities. These points were stressed in the recommendations of the Cairo MoCo Meeting in 2003, and several SSA projects are being developed at present (EUROMEDANET, ESTIME, ASBIMED). Several actions should be carried out:

- Actions for the building of national RTD and innovation systems, in view of the establishment of a Euro-Mediterranean Research and Innovation Spaces
- Identification of key industrial and economic sectors
- Increasing the technological and innovation awareness, and fostering and sharing dissemination of information
- Monitoring and analysis of public policies and industrial strategies
- Monitoring and analysis of public policies and industrial strategies
- Enhancing and making the most of International Cooperation with specialised organisations from EU Member States supporting Innovation and Competitiveness of SMEs.
- Including training program within research projects

Moreover, the following key actions were considered essential to determine a more advanced REGULATORY and INSTITUTIONAL RT&D FRAMEWORK for MPCs:

- Definition and provisions of financial and fiscal instruments to stimulate industrial investments in RTD and innovation
- Set up suitable benchmarking methods for national research/innovation system and with foreign competitors will help develop the global view which allows local actors to learn from best practices, exploit research results, tend to excellence, and compete at an international level.
- Modernize administrative procedures for financing research and innovation in public and private sector and for transfer mechanisms of know-how from research centres and industry.
- Simplifying administrative procedures for increasing research efficiency by making proposals more accessible for non EU Mediterranean countries, and by providing technical support for the preparation of proposals to the researchers through the recently established National Contact Point networks in the MPC
- To create new forms of incentives to promote mobility from university to industry and vice-versa.
- Involving researchers in policy making within national systems.
- Helping Governments to improve legislative systems related to RTD policy and the creation and maintenance of research infrastructures. Training and expertise for decision makers in RTD.
- Engaging all private and public sectors and stakeholders including researchers with the development of local infrastructures.

INSTRUMENTS FOR COOPERATION

Considering the circumstances mentioned above, the instruments to be used to facilitate the participation of the MPC in the 7FP could be summarised in the following list:

- SSAs to support the on going building of the Euro-Med RTD and Innovation Space;
- Traditional instruments of action adapted to the capabilities and managerial skills of the MPC, such as networks for capacity building and communities of practices, small scale projects.
- Demonstration activities.
- Mobility grants (senior and junior scientist and engineers) aimed at facilitating the scientific and technological transfer between the EU and the MPC, e-learning facilities and structures, new opportunities for training (training networks), etc.
- Implement calls for proposals targeted on specific EU-MED interest topics within the thematic priorities
- Funding of actions by bilateral and multilateral international cooperation agreements, in a coordinated way with the FP7 activities.
- Special attention deserves Co-operative and Collective Research Projects and Technological Platforms funded by the EU Framework Programme for RTD, which are the best example of the strategy to involve in the same project SMEs and research institutes, universities, research laboratories, research companies, etc..., from the EU and MPC, to generate new and economically useful knowledge, at disposal of the SMEs and research institutes.

The specific calls for proposals in the different programmes addressing the topics of common interests should explicitly indicate the need to include a number of MPC teams in the consortium. Moreover, MPC participants should have the right to act as coordinators of these activities.

Of most importance is the increase in **Awareness and Dissemination of RTD policy and results**. Some important actions to be taken are:

- Develop a local “culture of innovation”. Develop slowly but firmly an environment and common awareness of the importance of innovation and competitiveness for the human wellbeing of population.
- Develop organisations able to act as Intermediaries. Improve the quality of the existing Intermediaries. Promote their action by engaging all the relevant stakeholders in a dialogue aimed at creating framework conditions conducive to entrepreneurship.
- Show the opportunities that research and economic dynamism can offer to improve life conditions.
- Foster emulation and imitation of best practices, as a way for strengthening positive values in the society.
- Encourage networking and cooperation among firms and research institutes, mostly using as a reference and a practical tool, in a first stage, European Programmes.

Annex 1:

Workshop on Innovative Production Systems and Processes

A New Priority for Inco-Med - Towards a Euro-Mediterranean Innovation Space (EMIS)

Conclusions of the Workshop held in Casablanca, Morocco, 6-7 May 2005

1. INCO-Med and the Setting up of the EMIS

Up to now, the action of the European Union through its INCO-MED Programmes intended to develop collaborative research capacity addressing the needs of the societies and economies of MPCs in order to foster competitiveness and to exploit the results of scientific research and development. Concrete action plans and projects have led the way for the policies for innovation and competitiveness in MPC and in relation to Europe. The main stakeholders of this policy are the scientific and technological institutions, the enterprises and the regional and local intermediate organizations that promote, enhance and foster innovation and technological development.

The MPCs have actively promoted the transformation of their scientific and technological research structure, strengthen the insertion of the research potential in the international scientific community and intensively promoted RTD activities. Building the national system of innovation in each MPC will be an objective for the near future. The integration of the national systems of innovation into a Euro-Mediterranean Innovation Space appears as a necessary way to reinforce competitiveness and promote sustainable growth in both sides of the Mediterranean basin. It is also necessary to address the issue before the Free Trade Area with the European Union is implemented, forthcoming in 2010. The setting up of a **Euro-Mediterranean Innovation Space (EMIS)** is not only crucial for Mediterranean countries development perspectives, but also for the European Union sustainable growth and development.

In the view of the Free Trade Area with the European Union and of the growing phenomenon of globalization, the Mediterranean Partner Countries are urged to clearly establish a strategy for competition in this new, challenging and probably irreversible framework.

There is a need to identify the key issues related to the improvement of industrial sectors, their scientific and technological capabilities and the institutional set-up that will be the building blocks of the **Euro-Mediterranean Innovation Space (EMIS)**.

The Euro-Mediterranean Innovation Space (EMIS) will be part of the larger policy of the EU in developing an Innovation Policy for Europe and the 7th Framework Programme for research, technological development and demonstration activities. It will also relate to the efforts deployed by the European Union in enhancing its neighbourhood policy with Mediterranean Partner Countries, following the recommendations of the Lisbon process⁴.

PT⁴ - The Common Strategy of the European Council of 19 June 2000 on the Mediterranean Region (2000/458/CFSP) - Art 1, Art 2, Art 3.
COM(2005) 119 final - 2005/0043 (COD); 2005/0044 (CNS)

2. The need for a Euro-Mediterranean Innovation Space

The Mediterranean Partner Countries and the European Union are engaged in a common economic and political future. Innovation as a strategic priority for development and sustainable growth is at the core of the forthcoming public policies, in developed as well as developing countries. It will be a priority in the EU, and it is an urgent need for Mediterranean Countries. The establishment of a coherent, coordinated and long term oriented Innovation strategy can be a powerful engine for catching up for Med Countries. The development of Med Countries is a necessary condition for the EU sustainable growth and development.

The EU and the Mediterranean countries share a common destiny and common competitive challenges: the promotion of an innovative capacity to compete at the global scale, the development of a long-term capacity to create new and better jobs, the setting up of a socio-economic environment providing citizens with better quality of life. In this context, the building up of a **Euro-Mediterranean Innovation Space** is the necessary step to be done, in the view of the achievement of those objectives. Only through the development of an effective and durable innovative capacity, based on local strengths and assets, which will certainly be specific for each country, a system of innovation can be built up. And only through the interaction, the coordination and the integration of these systems into a **Euro-Mediterranean Innovation Space** the EU and the Mediterranean countries will be able to implement a common strategy addressing common interests.

Policy actions are needed in order to:

- create pre-conditions for the development of Innovation Systems, paying special attention to the role and quality of the Intermediaries, acting as catalysts for all the other stakeholders;
- provide “intelligence” and timely recognition of emerging opportunities;
- exchange knowledge in form of shared experiences, research and technological development cooperation, human capital mobility;
- improve the quality of governance;
- help building an environment conducive to Innovation;
- create conditions for networking, public-private partnerships and international cooperation;
- help improve the absorptive capacity of research and industry in mature sectors;
- promote the development of common standards and regulatory norms to meet international standards.

In this period, when the Mediterranean Countries are showing a growing interest and better understanding of the opportunities offered by cooperation with the EU, and when Med Countries Governments are stressing the importance of their relationships with the EU, it is the moment to strengthen the participation of their industrial sectors in the programs and priorities defined by the FP7 and to implement well targeted, specific and decisive actions that in the near future will generate the benefits pursued by both parties during all the latest years.

3. Characterisation of the current situation

In the EU we have 25,3 million non-primary private enterprises, 99.8% of whom are craft and SMEs. Crafts and SMEs employ more than 53% of Europe's workforce and are responsible for half of Europe's total turnover. SMEs and craft enterprises are therefore the rule in Europe and not the exception, being a key source of jobs and a breeding ground for business ideas. They are the main driver for innovation and employment creation, as well as for social integration. This situation is similar, in some respects, to the one that prevails in Mediterranean Countries, since SMEs are the “backbone” of local economies and the potential for the creation of an innovation system.

The focus of public policies for innovation and competitiveness must be, on the one hand, the creation of the best possible environment for SMEs that want to compete in a global view with world standards, on the other hand, the provision of the right instruments to access to EU knowledge, EU-Med cooperation and funding. This is why instruments specifically dedicated to SMEs may represent very useful tools, for these economies in the future INCO-Med activity in FP7.

The most relevant problems that Med Countries face with, in view of the setting up of an innovation system, are:

- Poor “culture of Innovation” among SMEs.
- Lack of entrepreneurship and innovation in the education system and curricula. Most of the SMEs staff is still composed by semi or unskilled part-time personnel. Need for continuous education and training.
- Lack of partnership between R&D centres and SMEs (interface industry/research). Research is performed, but not “absorbed” by the local economies. Insufficient awareness among experts of the actual and potential needs of SMEs. Lack of interest in R&D from the private sector and especially SMEs due to scarce awareness of the impacts and potential benefits of research results in respect to the challenges, legal, technological and societal that they face with.
- Lack of common standards and regulatory norms. Insufficient quality control systems.
- Lack of cooperation between R&D activities of North and South MED
- Value is not added in many South-MED countries industrial sectors. The paradox of using high quality raw materials for low quality products. Insufficient design and testing capabilities.
- Lack of forecasting (analysis of future trends and opportunities). Lack of appropriate programs concerning prospects for innovative processes and novel products.
- Most of production systems and management are traditional ; Continued reliance on the traditional technological schemes and local market
- Redundancy of research topics in the academia;
- Lack of a well developed IPR system.
- Lack of research infrastructure; insufficient access to ICTs; low technology capacity within SME's.
- Dependence on imported technology ;

4. Proposals for an Action Plan

The proposed methodology for an action plan to foster Innovation and Competitiveness in Mediterranean Countries consists of four ensembles:

- Actions for the building of national innovation systems, in view of the establishment of a Euro-Mediterranean Innovation Space
- Key industrial and economic sectors identification
- Financial and cooperation instruments
- Technological and innovation awareness and dissemination of information

4.1 Building the system

Main actions to be implemented at a National level, preferably with the support of EU knowledge and expertise, have been identified:

- Develop a culture of Innovation. Invest in education, development of education programs to promote entrepreneurship and innovation. Train human resources within SMEs to a better dialogue with research centers.
- Incentive SMEs to hire educated young experts. Continuous education of technical personnel.
- Introduce and diffuse an entrepreneurial spirit into education.
- Training of experts able to deal with international (and EU in particular) opportunities for innovation. Development of management capabilities.
- Shift from a traditional view of the innovation process as a linear one, with R&D activities like only input, to a systemic approach, considering all the relevant functions and activities as potential generators of innovation, and knowledge as the main object of the interactions. Better understand the links between Research and Technological Development and Innovation.
- Favour access to knowledge sources and database relevant to particular industrial sectors.
- Promote quality control systems to meet international standards.
- Strengthen the linkages between R&D centers of North and South MED and also South-South. Promote cooperation and exchange of best practices between intermediaries (both North-South and South-South). The role and methods of intermediation could be itself an issue of research to be supported by the EU.
- Invest in ICTs in order to embed them in the production system; and create, develop and use IST tools and infrastructures for communication and interaction among SMEs (e-business) and opt for open sources (software and hardware) and platform development tools.
- Share the successful technology incubators experiences across countries in order to develop innovative enterprises; develop more incubators; establish networking between regional researchers and industry and make use of the existing organisations (i.e: R&D Maroc and LIRA : Lebanese Industrial Research Association).
- Create high quality research centres and promote collaboration through sharing of these resources; Regional Mediterranean centres/networks of quality including universities, research centres, SMEs, and industry.

- Mobility of scientists, especially SMEs/industry to universities and research centres; Dissemination of expertise and know-how. Marie Curie grants for priority issues of the Mediterranean countries.
- Taxation policies designed considering their potential effects in stimulating innovation
- Establish and support national offices for innovation and develop a Mediterranean strategy for research/development/innovation through coordination of national initiatives.
- Follow up these measures by means of a EUROMED INNOVATION OBSERVATORY.
- Provide more information about trends and perspectives: benchmarking (also with other countries), technological roadmaps, company diagnostics and surveys, technology forecasting.

4.2 Key sectors identification

The nine themes identified for the Cooperation by FP7 are to be considered for specific cooperation actions with the Med Partner Countries (pag15) in coordination with the provisions of the “People” and “Capacities” part of the Framework Programme covering the needs of SMEs of these Countries.

Moreover some specific sectors not explicitly covered by the FP7, but extremely relevant and strategic for Med Countries sustainable development should be considered (i.e: Textile and Leather industry; Extended concept of Cultural Heritage to new sectors such as traditional food; Mineral resources management).

In analysing the field, it will be important to: know and analyse the key sectors with the best potential for job creation and for competing at least at a European scale. Identify key actors, establish relationships with them, understand them and their heterogeneity, identify and organise their common needs and interests in the view of innovation and broad competitiveness. Such an action will determine the priorities for economic public policies, in a bottom-up approach. The common and relevant interests of the actors of the system will act as glue keeping together the critical mass of actors involved in the process.

Innovation will be important in all industries, from high to low tech. Policy makers must not be seduced by the *glamorous* industries. A big effort should be oriented towards the building up of the most durable and value-adder asset with the objective of strengthening the attractiveness of the local activity sector and of the local economy to foreign knowledge and investments.

4.3 Instruments of action

Co-operative and Collective Research Projects, funded by the EU Framework Programme for RTD, are the best example of this strategy, trying to involve in the same project SMEs and research institutes, universities, research laboratories, research companies, etc..., which should finally generate new and economically useful knowledge, at disposal of the SMEs and research institutes.

Actions to be implemented could be:

- Defining instruments for actions: SSA to support the building of the Euro-Med Innovation Space; grants, projects funded by bilateral and multilateral international cooperation, networks, FP CRAFT projects, to perform the research activities linked to the industrial exploitation by SMEs.
- Providing financial and fiscal instruments. In a first stage, being aware that an effective innovation-friendly fiscal environment cannot be created easily, taxation policies should be designed considering their potential effects in stimulating innovation.
- Benchmarking with foreign competitors will help develop that global view which allows local actors to learn from best practices, tend to excellence, and compete at an international level.
- Enhancing and making the most of International Cooperation with specialised organisations from EU Member States supporting Innovation and Competitiveness of SMEs.

4.4 Increasing Awareness and dissemination

The last, general, crosscutting ensemble of policy measures to be realised towards the creation of a valid and solid innovation system, is constituted by the following actions:

- Develop a local “culture of innovation”. Develop slowly but firmly a vibrant environment and common awareness of the importance of innovation and competitiveness for the human wellbeing of population.
- Develop organisations able to act as Intermediaries. Improve the quality of the existing Intermediaries. Promote their action by engaging all the relevant stakeholders in a dialogue aimed at creating framework conditions conducive to entrepreneurship.
- Show the opportunities that economic dynamism can offer to improve life conditions.
- Foster emulation and imitation of best practices, as a way for strengthening positive values in the society.
- Encourage networking and cooperation among firms and research institutes, mostly using as a reference and a practical tool, in a first stage, European Programmes.

5. The Normative Frame

The Common Strategy of the European Council of 19 June 2000 on the Mediterranean Region (2000/458/CFSP):

Art 1. The Mediterranean region is of strategic importance to the EU. A prosperous, democratic, stable and secure region, with an open perspective towards Europe, is in the best interests of (...) Europe.

Art 2. The Mediterranean region continues to be faced with political, economic, judicial, ecological and social challenges. (...) the EU and the Mediterranean partners must work together with a common vision, sensitivity and mutual respect.

Art 3. The EU's Mediterranean policy is guided by the principle of partnership (...) actively supported by both sides. The EU will work with its Mediterranean partners to: develop good neighbourly relations; improve prosperity; eliminate poverty; promote and protect all human rights and fundamental freedoms, democracy, good governance and the rule of law; promote cultural and religious tolerance, and develop cooperation with civil society (...). It will do so by (...) using its bilateral relations to pursue these objectives, and by contributing to the creation of a peaceful environment in the Middle East.

COM(2005) 119 final

2005/0043 (COD); 2005/0044 (CNS)

Proposal for a DECISION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the seventh framework programme of the European Community for research, technological development and demonstration activities (2007 to 2013) Brussels, 6.4.2005

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International co-operation

International cooperation actions under this part of the Framework Programme will be:

- The opening of all activities carried out in the thematic areas to researchers and research institutions from all third countries, with a strong effort to encourage them to seize this opportunity.
- Specific co-operation actions in each thematic area dedicated to third countries in the case of mutual interest in co-operating on particular topics. Closely associated with the bilateral co-operation agreements or multilateral dialogues between the EU and these countries or groups of countries, these actions will serve as privileged tools for implementing the co-operation between the EU and these countries. Such actions are, in particular: actions aiming at reinforcing the research capacities of candidate countries as well as neighbourhood countries; cooperative activities targeted at developing and emerging countries, focusing on their particular needs in fields such as health, agriculture, fisheries and environment, and implemented in financial conditions adapted to their capacities.

This part of the Framework Programme covers the international co-operation actions in each thematic area and across themes. They will be implemented in coordination with those under the “People” and the “Capacities” part of the Framework Programme.

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RESEARCH FOR THE BENEFIT OF SMEs

Objectives

Strengthening the innovation capacity of European SMEs and their contribution to the development of new technology based products and markets by helping them outsource research, increase their research efforts, extend their networks, better exploit research results and acquire technological know how.

Rationale

SMEs are at the core of European industry. They should be a key component of the innovation system and in the chain of transformation of knowledge into new products, processes and services. Faced with an increasing competition in the internal market and globally, European SMEs need to increase their knowledge and research intensity, expand their business activities on larger markets and internationalize their knowledge networks.

Most Member states actions relevant to SMEs do not encourage and support trans-national research cooperation and technology transfer. Actions at EU level are necessary to complement and enhance the impact of actions undertaken at national and regional level. In addition to the actions listed below, the participation of SMEs will be encouraged and facilitated, and their needs taken into account, across the Framework Programme.

Activities

Specific actions in support to SMEs are conceived to support SMEs or SME associations in need of outsourcing research to universities and research centres: mainly low to medium tech SMEs with little or no research capability. Research intensive SMEs who need to outsource research to complement their core research capability may also participate. Actions will be carried out in the entire field of science and technology. Financial means will be allocated through two schemes:

- Research for SMEs: To support small groups of innovative SMEs to solve common or complementary technological problems
- Research for SME associations: To support SME associations and SME groupings to develop technical solutions to problems common to large numbers of SMEs in specific industrial sectors or segments of the value chain.

The Competitiveness and Innovation Programme will provide support to networks of intermediaries and national schemes for actions to encourage and facilitate the participation of SMEs in the Framework Programme.

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ACTIVITIES OF INTERNATIONAL CO-OPERATION

To become competitive and play a leading role at world level, the European Community needs a strong and coherent international science and technology policy.

This international policy has two interdependent objectives:

- To support European competitiveness through strategic partnerships with third countries in selected fields of science and by engaging the best third country scientists to work in and with Europe;
- To address specific problems that third countries face or that have a global character, on the basis of mutual interest and mutual benefit.

Cooperation with third countries in the Framework Programme will be targeted in particular at the following groups of countries:

- Candidate countries;
- Countries neighbouring the EU, Mediterranean partner countries, Western Balkans and the Newly Independent States;

- Developing countries, focusing on their particular needs;
- Emerging economies.

The theme-oriented international cooperation actions are carried out under the “Cooperation” programme. The international actions in the area of human potential are carried under the “People” programme.

Under the “Capacities” programme, horizontal support actions and measures with a focus other than a specific thematic or interdisciplinary area will be implemented. Efforts will be undertaken to improve the coherence of national activities by supporting the co-ordination of national programmes on international scientific co-operation. The overall coordination of the international cooperation actions under the different programmes of the Framework Programme will be ensured.

Proposal for a DECISION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a Competitiveness and Innovation Framework Programme (2007-2013). COM(2005) 121 final . 2005/0050 (COD)

(Page 2)

The Competitiveness and Innovation Framework Programme (CIP) will bring together into a common framework specific Community support programmes and relevant parts of other Community programmes in fields critical to boosting European productivity, innovation capacity and sustainable growth, whilst simultaneously addressing complementary environmental concerns.

(Page 3)

The CIP will be open for participation to the members of the EEA, candidate countries and countries of the Western Balkans. Other third countries, in particular neighbouring countries or countries interested in co-operating with the Community in relation to innovation activities can participate in the framework programme if bilateral agreements with them provide for this.

Annex 2:

Workshop on Water Risk Management and Renewable Energy Sources

Conclusions of the Workshop held in Athens, Greece, 16-17 May 2005

Introduction

Experts on Water issues and Renewable Energy Sources from both sides of the Mediterranean met in Athens to propose topics of mutual interest to be considered for the new (7th) EU Framework Programme.

The experts reviewed the state of the art and highlighted the best practices in EU Member States and in the MPCs.

The general understanding concerning the two themes was as follows:

Considerable research has already been performed in the field of Water technologies. In contrast, very important issues such as Integrated Water Management have not been addressed sufficiently. It is therefore important, beside some still remaining technological research topics, to give a specific attention to the above mentioned issues.

On the other hand, there is a variety of topics to investigate concerning Renewable Energy Sources (RES), especially for new applications, increased efficiency and improved reliability.

Finally, RES and water can have a common area of investigation and innovation on water processing using RES.

For every theme the experts proposed key topics for research of particular importance and potential positive impact in the MPCs.

Report of the RENEWABLE ENERGY SOURCES' GROUP

Five main fields of intervention have been identified, namely:

- Sustainability in building design and retrofitting for Mediterranean Areas;
- New sources for renewable energies;
- Technology adaptation to Mediterranean conditions;
- Renewable energy and water;
- Socioeconomic issues.

For every field, the state of the art and the relevance to the Mediterranean region are briefly described along with the proposed topics for research.

Sustainability in building design and retrofitting for Mediterranean Areas

State of the art

Even though passive concepts and techniques for heating and cooling of buildings have received considerable scientific and technical attention, which guarantees their feasibility, in practice their implementation is rather limited mainly due to:

- Lack of knowledge about the techniques that can be used to a scale justifying industrial production.
- Lack of knowledge, guidelines and tools allowing the designers and promoters to apply those techniques as an alternative to conventional systems including their appropriate design, integration, sizing and control.

Relevance to the Mediterranean Region

The severe summer climate, the actual trends in building design (imported from northern latitudes) and the rising living standard in Mediterranean countries have promoted a massive and unnecessary use of air conditioning systems.

Consequently, the energy consumption for cooling of new and existing buildings will become a serious problem in the near future.

It is proposed to recuperate the indigenous traditional architectural concepts adapted to the present construction practices.

Proposed topics

- Domestic solar cooling
- Passive techniques/ bioclimatic architecture
- Integration of solar energy in design of buildings

New sources from renewable energies

1. Hydrogen from renewable energy sources (mainly solar)

State of the art

Hydrogen is an essential energy carrier. Researchers are developing a wide range of processes for the production of hydrogen in an economically and also environmentally friendly way. Hydrogen can be derived from water by electrolysis, using electricity generated from renewable energy sources such as solar, wind, or hydropower. Electrolysis requires substantial amounts of electricity. Many developed countries are working on solar hydrogen production systems. They are developing their systems by using existing energy sources. In parallel, recent research is focusing on producing hydrogen rich gas (syngas) from biomass by

thermo-chemical gasification. In subsequent syntheses liquid fuels are produced, that can be used in motorcars.

Relevance to the Mediterranean Region

Due to the abundant resources of RE in the MED region and the need of storage technologies, hydrogen in various synthesis paths is a promising option in this field. Therefore, research should be carried out to develop and optimize such systems, which can produce and store hydrogen at competitive costs.

2. Energy from organic waste and crops

State of the art

Biomass offers many applications for power generation, from co generation to distributed generation. Biological resources are still mainly used for heat production, as in combined heat and power plants, and can be used and stored in different forms (solid, liquid and gaseous).

The most economic forms of biomass for generating electricity are residues and wastes. Energy crops are still in the early stages of development, although progress has been made. In the long term, energy crops could be a very important biomass fuel source. At present, however, wastes (wood, agricultural, municipal or industrial) are the major biomass sources. The most important technical issue for biopower relates to feedstock and conversion technologies.

. Technologies such as combustion, gasification, anaerobic digestion, fermentation, biodiesel will still benefit from mass to energy efficiency improvements. The advent of energy crops for power production might open a new market for agriculture

Relevance to the Mediterranean Region

Although energy production from organic waste and crops has been developing in many countries, application in Mediterranean region is very limited.

The use of crop residues and livestock manure obtained from Mediterranean region as fuel can improve the economics of farming while solving environmental problems.

Technology adaptation to Mediterranean conditions

State of the art

PV and solar thermal systems have been relatively well developed for moderate climatic conditions and small to medium scale applications. The climate and weather conditions in MED countries are quite different in some aspects (sand and dust, higher radiation, hot ambient temperatures, different types of heating and cooling systems, crops...). In order to meet these conditions and to speed up market growth, equipment and systems of RE have to be adapted and optimised.

Relevance to the Mediterranean Region

MED environment allows large RE-plants (PV, solar thermal, crops in some areas) and these countries have high potential of self-supply with RE and are potential exporters of RE to central Europe. Furthermore, there are many remote areas (islands, oases,...) where decentralised multi-functional systems (heating, cooling, power) are required.

Further research of operation under severe external conditions, in small grids, in areas with weak grid, which are problematic for absorbing bigger quantities of changeable renewable energy, will assure higher efficiency, better performance and long term acceptance by the investors.

Proposed topics

1. Improving PV systems performance under severe external conditions (cooling, coatings, cleaning)
2. Improving solar thermal systems performance under severe external conditions (coatings, cleaning, stagnation)
3. Improving solar collectors and systems efficiency
4. Big solar power plants (stability, control, simulation of operation)
5. Integration of solar energy in industrial applications
6. Distributed electricity generation including storage and microgrids in remote areas (control, connection to the grid, small communities, islands)

Renewable energy and water

State of the art

Various RES are presently used for seawater and brackish water desalination: PV and wind power for reverse osmosis, solar thermal and geothermal for multi-effect distillation and wind power for mechanical vapour compression. These technologies are not yet commercialised. Problems are still the variability of the RE power source, missing control strategies and economic constraints.

In wastewater treatment RES are applied for disinfection in form of high concentrated solar radiation. Another application of RES is drying of sewage with low-temperature solar thermal energy. For solar drying some technical solutions are in the first steps of commercialisation but still research has to be done to optimise the process.

Relevance to the Mediterranean region

Water scarcity is increasing in Mediterranean regions, where potential of RES is high at the same time. Desalination of water is an option to improve life conditions in remote areas. Anyhow, this is an energy consuming technology and harnessing of RES would decrease input of fossil energy and thus costs and CO₂ emission. Furthermore, treatment of wastewater with RES would contribute to safety and security of water supply via increased hygienic status and potential reuse.

Proposed topics

1. Use of renewable energy sources for desalination and water supply
2. Use of renewable energy sources for waste water treatment

Socioeconomics issues

Despite the strong political support of RES in many countries, their deployment has been often delayed for reasons related to local acceptance and readiness to use. In certain cases,

although working successfully during their commissioning period, they fail later because lack of proper maintenance and due to the lack of continuous financial support.

It is therefore essential, in parallel to the development of the technology, to prepare the grounds for its deployment. In some cases this, by itself, implies a research effort, especially when the local conditions are not very well known or understood.

Proposed topics

Actions to be undertaken to counteract the abovementioned situation are:

- Development of participative approaches for dissemination of RES technologies to the local populations and stakeholders to obtain large acceptance.
- Education and training in maintenance activities, both for end users and professionals.
- Networking schemes at local, regional and national level, including demonstration and deployment activities.
- Identification and improvement of the legislation and policy framework in order to support the technological development and implementation of RES.

Recommendation

The group recommends that the Commission promotes the construction of large renewable energy power plants in the Mediterranean region. The plants will be used to demonstrate the basic concepts under a proper scale and will enable the introduction and testing of many new related relevant technologies.

Report of the “WATER RISK MANAGEMENT’S Group

State of the art

The scientific literature produced during the last decades in the Mediterranean shows that research in the water sector has been very much oriented to developing sector perspectives in water resources, or exploring and assessing new conventional water resources to meet the increasing demand, or assessing water related natural hazards (drought and floods) or the control of water quality to protect the functional and structural characteristics of the ecosystem, or explore more and more water saving options. Water quality and quantities are at risk, this condition putting at risk also the cohesion and the socio-economic development of the entire region. In Mediterranean countries water shortage generally limits the development of industry, agriculture and tourism. Conflicts in the Southern Mediterranean due to water are higher than anywhere in the world, undermining efforts for global peace and stability. The main consumer of water resources in the southern Mediterranean is the agriculture that absorbs about 75% of the available resources. Therefore the development of new technology for water saving, best water management practices and the obligation to use non-conventional water resources become a necessity. This obligation can only be approached with an integrated vision. Policies and decision-making processes on water issues have to be based on appropriate information and modelling results, as widely acknowledged in literature. This information is mostly provided by the environmental monitoring networks that assume a fundamental role also in the Water Framework Directive implementation. Environmental monitoring has demonstrated its capacity in supporting the decision process in such areas as: characterization of baseline conditions, surveillance, detection of change, description of recent status and trends, long-term understanding or prediction of processes, resource management, and establishing the need for, or success of, interventions. Moreover, the Mediterranean region is subjected to extreme events, therefore the risk of flood and drought needs to be investigated.

Floods, in a general sense, can be described as situations of extreme water run-off during which human lives, property and infrastructure are threatened.

Drought is a recurrent feature of the Euro-Mediterranean climate, occurring in both high and low rainfall areas and in any season. It can affect large areas and recent events have demonstrated the vulnerability of the Mediterranean countries to this natural hazard. The impacts depend on the severity, duration and spatial extent of the rainfall deficit but also, and to a large extent, on the environmental and socio-economic vulnerability of the affected areas.

Expected impacts in the Mediterranean Partner Countries

MPC experience chronic water scarcity and increasing incidence of extreme events which might be pronounced by global environmental change. Technical solutions, improvement of managerial capacity, and modernization of governance structures are urgently needed to improve livelihoods and mitigate water conflicts. Some advance has been made on technical solutions but more emphasis should be put especially on management and governance. Linking up with the European Water Initiative could have considerable impact on

- Expanding the knowledge base on sustainable water resources management

- Harmonization of standard procedures in Water Risk Management approach (set up of common methodologies, data collection procedures etc)
- Strengthening the MPC's capacities to cope with water resources conflicts
- Tightening the strategic partnership between EU and MED to develop a sustainable common space for research and innovation in the MED region based on the ERA recommendations for Water Risk Management in order to enhance competitiveness
- Improve access to financial and juridical tools
- Improve capacity of self-networking, participation to management, and co-decision rights
- Integration of gender dimension in water management
- Increase transparency and public participation
- Improve coordination among water boards
- Strengthen public communication and confrontation on water

Key topics for FP7

1. Integrated water risk management

Water management risk in the Mediterranean is generally linked to the concept of limited water resources, as the great part of the region is characterised by arid and semi-arid conditions. However, management of water risk should encompass both quality and quantity aspects of water as well the impact of extreme events and the linkage with health. In particular, risk to water supply and quality, and risk due to flood and drought should be at the centre of research and public discourse in the region.

Topics to be considered are:

1.1. Risk to water supply and quality

- Water saving in agriculture promoting water productivity and pollution control.
- Development of integrated methodologies for modernization of irrigated areas
- Water savings in urban uses by improving efficiency and reliability of distribution system
- Risk assessment of water security in urban area and planning of emergency measures
- Management of dynamics of whole demand from catchment to regional scale
- Development of non-conventional water resources such as brackish, sea and waste waters, accounting also for the use of renewable energy sources
- Setup of appropriate tariff rules
- Protection and restoration of coastal and endangered water bodies.
- Erosion and hydrogeological control in vulnerable areas to protect the landscape morphology, reduce siltation in reservoirs, secure production systems.

1.2. Risk due to extreme events

- Assessment of flooding risks and planning of flood technical and non-technical emergency measures, accounting also for input from historical information and paleo-data.

- Support the needs for more pro-active (risk management) approaches rather than reactive ones (crisis management), requiring the use of all phases of the drought management cycle and flood.
- Drought management to improve the effectiveness of preparedness and response efforts, by enhancing monitoring and early warning, risk and impact assessment, and mitigation and response.

1.3. Horizontal issues (support to decision making)

- Improving water monitoring technologies and modeling on natural water bodies and existing water infrastructures.
- Decision-making processes to be based on appropriate information & monitoring systems (e.g. community-based monitoring), and on consolidated technical and sustainability indicators, development of water knowledge-base systems and tools.
- Development of guidelines for sustainable development of basin management, trans-boundary issues, climatic variability and global change impacts.

2. Water policy and regulatory framework

One of the major issue in water management at both EU and MED partner countries is the building of operational interlinkages between policy and the specific requirements of the water sector-self to enhancing sustainable water management accounting for social, economic, environmental dimensions and technology-innovation. In addition, water policies are still inhomogeneous among MPCs, inducing unavoidable negative effects in regional or trans-boundary water management (conflicts, fragmented knowledge and actions, only partial understanding of large scale water yields, and water supply-demand dynamics). Moreover, the alignment of relevant policies of MPCs towards the EU Water Framework Directive and EU future water strategies need to be improved. Addressing water policy as such calls upon the need of addressing water governance, as adequate policies are derived if a system of minimum governance regime is in place, where societal shared knowledge (among institutions, stakeholders and citizens), networking and participation, collective (institutional and community) capacity and ability to develop innovation and technology are important pillars. Securing sustainability and efficient allocation of water resources will benefit from the improvement of water policies. Harmonisation and alignment of MPC's different regulatory frameworks will enable more effective regional water management; open exchange of information to strengthen Euro-Mediterranean scientific cooperation on water; stronger MPC's capacity to mitigate conflicts and EU-MED partnership; ensure water system efficiency and performance.

- Water policy analysis and improvement of interlinkages with water governance.
- Develop common indicators to assess water policy objectives and policy implementation in function of sector technical and sustainability targets.

3. Socioeconomic aspects

Increasing public awareness on water in terms of sustainability is a priority, meanwhile promoting and enhancing public participation in decision-making. Concerning the economic aspects of water, the implementation of economic instruments like pricing, taxation and the application of the "polluter pays" principle is among the most effective ways to achieve Water Demand Management and Control. Managing water not only as an economic good, but also

as a part of the ecosystem having an intrinsic natural value, should be seen as an important target for the sustainable development of natural resources.

- **Public Participation** (Actions promoting Public Participation; Public Involvement to Decisions; Establishment of pilot groups consisting of stakeholders coming from the Government, the Administration, NGO's, end-users, etc.).
- **Public Awareness** (Actions promoting and enhancing public awareness through education, seminars, media, Internet, Networking; Publication of journals, books with information on the water problems).
- **Putting the European W.F.D. (2000/06) into practice** (Taking advantage of its socio-economics provisions for use and implementation in the Mediterranean Countries).
- **Assessment and development of Economic Incentives to control water demand** (Use of economic instruments as incentives to improve efficiencies; Application of the "Polluter Pays" Principle; Economic instruments to provide social acceptance and reducing social reaction to the reform; Definition of water demand curves in various uses).

Proposed activities for their implementation

Joint research

Clusters of research on the proposed topics should be created in order to develop specific research projects and share experiences and results. Joint research should be accompanied by training and learning efforts.

- Promote collaborative research
- Selection of pilot studies
- Training and joint PhD programs
- E-Learning platforms

Networking

Networks such as the Mediterranean Basin Organization (MedBO) are very useful in developing lasting relations among investigators, water managers and stakeholders. Activities to support networking could be:

- Collaborative research networking
- Sustainable multi-stakeholder networking
- Mobility
- Short courses decided on participatory basis

Annex 3:

Workshop on Public Health

Conclusions of the Workshop held in in Tel-Aviv, Israel, 25-26 May 2005

This document is the outcome of a 2-day workshop on public health held within the framework of the project MED7. Participants included representatives from Austria, Croatia, France, Germany, Israel, Italy, Jordan, Norway, the Palestinian Authority and Spain (see Annex 1 for list of participants). In addition, input was received from the Commission and the participants who have bi-lateral contacts with scientists in the Maghreb countries (a document from the Algerian Medical National Committee for Genetics was presented).

Having in view the Commission's proposal for FP7, the participants recognized several themes in the '*COOPERATION*' programme which have direct relevance to public health issues. **The participants endorse the outline of the Commission's proposal in relation to public health and wish to see the recommendations detailed below integrated into the specific programmes related to the Mediterranean region.**

The participants emphasize the high potential and added value of regional Mediterranean and European cooperation on public health research activities. This research highly impacts the health and wellbeing of individuals, families and populations, regional economic development, social cohesion and the financing of health and social care systems. Nevertheless, the rather low level of activity and number of projects implemented in this area through previous FPs show that stronger efforts are needed to fully valorize this potential in FP7. **Parallel efforts, by the Commission, the Member States, Associated Countries and the Mediterranean Partner Countries (MPC), need to be made in order to promote the success of collaborative projects conducted under the 7th Framework Programme.**

Public health needs of the Mediterranean countries are very broad. The following recommendations do not, and cannot, encompass all these needs and have therefore been established after a process of systematic selection according to the following:

- **Being of high importance to the development of the public-health situation around the Mediterranean basin.**
- **Taking into consideration the relevance to the public health policies and needs of the EU.**
- **International research and sustainable cooperation being of high added-value in the recommended research-topics.**

Recommendations

While most recommendations fall within theme 1 ('health') of the '*COOPERATION*' programme, some of the issues concerned fall under themes 2, 3 and 8 ('food, agriculture and biotechnology', ICT, and 'socio-economic sciences and the humanities', respectively). Certain recommendations fall also under the '*PEOPLE*' and '*CAPACITIES*' programmes. **The participants note that the FP7 Commission proposal relates to the issues of child health and to the health of the elderly as cross-cutting issues. The participants stress the high relevance of these issues and of gender issues to the public health situation in the MED countries.**

Topic: Public spectrum of nutritional disorders

Under-nutrition, in its two facets, malnutrition and micronutrients deficiencies, is prevalent along the Mediterranean basin across the age-span. Besides, overweight (including childhood obesity) is also a common observation. Furthermore, existing research in the field suggests that timely intervention such as nutrition education, supplementation and fortification, has been reported to be extremely cost-effective.

Research should focus both on diagnostic and interventional research.

Recommendations:

- Study and analysis of predisposing factors and etiological patterns.
- Relation to chronic and other diseases.
- Development of population-based, culturally sensitive lifestyle intervention programmes.
- Research on the variability of nutritional needs.
- Social and cultural determinants of nutritional habits and malnutrition.

Topic: Major chronic diseases

We focus on common chronic diseases/disorders that are responsible for a heavy burden of ill health and show strong variations in occurrence both among and within

Mediterranean countries. These contrasts may facilitate the search for new etiologic factors. Wide scale migration of Mediterranean populations to European countries offers unique opportunities for comparative studies among migrant and host populations concerning morbidity and mortality.

Recommendations:

- Epidemiological research and research on the gene-environment interaction in cardiovascular diseases, type 2 diabetes and other metabolic syndromes; COPD, cancer (e.g. breast, colon, lung...) and autoimmune diseases.
- Socio-economic and cultural determinants of morbidity and mortality of cardio-vascular diseases.
- Study the effect of migration on major chronic diseases.

Topic: Infectious diseases

The participants would like to encourage the Commission's proposal to **prioritize research in infectious and parasitic diseases**, especially in view of the high frequency of travel of people from either side of the Mediterranean. In the context of the Mediterranean countries the participants would like to see collaborative research being done in several areas:

Recommendations:

- TB: Research to improve TB surveillance, operational research to improve the implementation of DOTS in the region, studies on drug-resistance. Molecular epidemiology studies to understand the impact and consequences of the new TB pandemic.
- HIV: Research to improve surveillance, (including drug resistance among HIV affected population). Research on preventive targeted-group oriented strategies, including provision of antiretroviral agents to pregnant women and counseling.
- Zoonosis and parasitic infections: Research can include studies on prevalence/incidence of diseases, immunopathogenesis, new (and low cost) methods of diagnosis control and treatment.
- Research on new strategies for the prevention of antibiotic resistance, including studies on surveillance and consumption patterns.
- Research on new orphan-drugs and vaccines.

Topic: Consanguinity related diseases

The high rate of consanguinity in the MPCs makes research on genetic and reproductive diseases essential to the area, as well as to Europe. Cross-cutting issues include education, genetic counseling, women's health and social patterns.

Recommendations:

- Identification of disease genes of public health relevance in the MPC
- Genetic predispositions for cancer and infectious diseases.
- Operational research on health care improvement in the perinatal period.
- Cost-effectiveness studies of screening for congenital disorders.
- Research on the social, economic and cultural determinants of the phenomenon.

Topic: Mental health

*Public health research must consider the increasing recognition of social and medical burden of mental health problems in the MED region including behavioral, emotional and stress-related disorders across the age-span. **Research should analyze specific approaches of prevention in this field and in different target groups.***

Recommendations:

- Research on attention deficit hyperactivity disorders (ADHD), especially among children, its factors and elements of prevention.
- Research on epidemiology of depression and its neurological, emotional and social aspects.
- Research on substance abuse, violence, suicide, post-traumatic stress disorders.
- Impact of chronic stress on chronic diseases.
- Social, cultural and gender differences of all those conditions.

Topic: Injury prevention and safety promotion

The high rate of injuries in the region calls for a strong research effort to strengthen the capacities for injury prevention and promotion of safety in the communities and various social and institutional settings.

Recommendations:

- Research on the regional patterns and determinants of injuries.
- *Research on appropriate approaches to the prevention of injuries and the promotion of safety.*
- Evaluation of community and organizational injury programmes.

Topic: Public health problems related to social inequalities

In the MPCs, as much as in the rest of the developed world, socioeconomic status and health concerns are strongly related. The comparably low GDP per capita of the MPCs (18.1% of the EU average in 2004 according to Commission data), further highlights the importance of this research to the Mediterranean countries. Further research on the patterns and interactions of socio-economic determinants such as poverty, migration and gender, are essential in order to combat public health problems related to social inequalities.

Recommendations:

- Strengthen the research in this area from European countries to MPCs.
- Research on the impact of socio-economic status on perinatal, infant and child mortality.
- Impact of social inequalities on diseases and risk-taking behavior.
- Impact of social inequalities in the access to, and the use of, health services.
- Occupational health and safety research.

Topic: Health Systems Research

Research aiming at strengthening and improving the quality of health services and systems. This will include research on the effectiveness of public health interventions. The modeling of awareness tools and health promotion is, as well, of high importance to the enhancement of the public health in the Mediterranean countries.

Recommendations:

- Research aiming to the improvement of Health Information Systems.
- The influence of health system decentralization on the population's health.
- Studies on effectiveness and cost-effectiveness of health interventions, services and policies.
- Improvement of equity in provision of health care, health promotion and participation as well as information of the civil society.
- Operational research on the provision of health care.

Finally, the participants would like to stress that research in itself could not bring about a breakthrough in public health conditions in the region without improving the related research capacities and infrastructures. In this regard we identify the following actions:

- Networking of research institutions, researchers and research teams fostering regional cooperation and public health capacity building.
- Promotion of mobility of scientists with special emphasis on early-stage researchers.
- Strong programs in post-graduate education and training for all health professions.
- Taking advantage of the new information technologies (diagnostic and communication devices).
- Fostering cooperation with networks of patient organizations in research, modeled on the European experience.

Annex 4:

Workshop on Agro-food and Industrial Agriculture

Conclusions of the Workshop held in Montpellier, France, 9-10 June 2005

1. General framework

Agricultural production is the basic means of ensuring adequate food. Domestic productions together with a predictable and stable trading system are central elements in global and national food security. However, food security does not depend only on farmers and food production. Other factors—the distribution of land, and access to water, to capital, labour, markets and social acceptability—all play a significant role.

In recent years, most of the research initiatives for food security have focused on the four key components of the FAO's definition:

- *Availability* — Providing a sufficient supply of food for all people at all times has historically been a major challenge. Although technical and scientific innovations have made important contributions focused on quantity through intensification of the production, the sustainability of such practices should still be improved.
- *Accessibility* — Equity of access to food is a key dimension of food security. Due to the national and regional gaps in development, inequities have resulted in serious entitlement problems, reflecting class, gender, ethnic, racial, and age differentials. Measures to provide emergency food aid have limited success in overcoming the structural conditions that perpetuate such inequities. The *lack of access* to food is largely considered as “poverty” related and its alleviation may lie in a combination of policies that also include increased local production.
- *Acceptability* — Food and food practices reflect the social and cultural diversity of humanity. Efforts to provide food without paying attention to the cultural role of food in people's lives have failed to solve food-security problems. This dimension of food security is highly important in determining whether information and food-system innovations will be accepted in a country, given the social, cultural and ecological concerns of its citizens.
- *Adequacy* — Food security also requires that adequate measures are in place at all levels of the food chain to guarantee the sustainability of production, distribution, consumption, and waste management. A sustainable food system must maintain ecological integrity and integrate conservation and development

For an other hand, one of the priorities of the 7th framework program is a significant research contribution to the consolidation of the Agro-food sector in Europe while ensuring high quality, safe and abundant rich food to European citizens and the sustainable use of land and biodiversity. So, the Science and Technology Euro Mediterranean policy must emphasize that this objective must be taken into account for both sides of the Mediterranean Sea, as an instrument for the economical growth of the south non-member states as well as their real participation to the knowledge based society and specifically to the increase of science achievements in the agro-food sector.

To overcome these challenges, answers to following issues have to be sought:

- how to define a “quality” policy in the agricultural and food industry sector ?
- how to evaluate consumer perception of risk and quality ?
- how to identify changes in the role of agriculture in its different externalities and in relation to the expectations of society ?
- which technological procedures should be implemented to satisfy market opportunities and systematic management of agricultural activities ?
- what are the roles of public policies in innovation management and the promotion of exchanges?
- how to make converge short term research for less developed countries needs and front line science focused on bio economy and advanced bioscience ?

2. Specificities of MED countries

The Mediterranean basin is unique, in terms of history, cultural heritage, environment, climate, biological and social economical diversity. To fulfil the aims of EURO-MED partnership the EU should take into consideration the specificities of the Mediterranean region and should make every effort to enable all Mediterranean countries to participate in 7th Framework Programme and thus become integral players in the European Knowledge-based society.

The Mediterranean diet associating specific products and practices would contribute to reduce the incidence of some chronic diseases and to improve the welfare of consumers. Nevertheless, urbanization trends are now determining structural changes in lifestyles and consumption habits. As a consequence, the consumer is often placed in an ambivalent situation between modernity and tradition while lacking information and education. On the other hand, the increasing trading liberalization at local, regional or international level is leading to the widespread of supermarkets, large scale distribution and fast foods.

Private food industry is trying to appropriate for itself the added value to be gotten from the manufacture of traditional foods with acceptable sanitary quality mainly for export markets. But, harvesting and collecting products, processing and trade are carried out by the "formal" as well as by the "informal" sector.

Local food systems offer long-term sustainable solutions, both for the environment and for local and regional economic development. So, preserving and promoting the traditional authentic Mediterranean foods should be a priority. Most of these traditional foods are “home-made” or manufactured in artisan factories. To develop these products on an industrial scale one needs to transform the traditional “know-how” into “knowledge”.

The Mediterranean countries, taken separately or as a geographical area have many assets for the development of the agro-industry

- Diversity of agro-climatic conditions and ecosystems
- Sustained Political and economical support of agriculture and livestock management
 - Irrigation infrastructure
 - Greenhouse equipment
- Expansion of the range of basic products to promote agro-industry
- Rich cultural heritage of traditional foods
 - Traditional foods with potential nutritional and health attributes.
- Growing food produce demand

- Steady raise in the Local Demand in the processed agricultural products, due to: increasing urbanization of populations; changes in the consumption habits; increase of purchasing power and development of the local market for transformed foods
- Raise in the Demand worldwide, due to Demographic growth and increasing international market opportunities

At the same time, the specific agro-ecological conditions of the region induce stresses to an already fragile environmental equilibrium, leading risks on:

- Desertification
- Soil erosion
- Limited access to water resources
- Water management
- Drought
- Land management (overgrazing of pasture land)
- Agriculture production under conflict situation

3. Common problems and needs

The Mediterranean Countries have an unequal evolution of the agro-industry sector depending on the level of development. Less developed countries face with some common problems:

- Continued reliance on the traditional technological schemes.
 - large dominance by small and medium enterprises (< 200 employees) with limited investment capabilities
 - lack of skilled operators,
- A food sector organized mainly through typically traditional one (domestic market)
- Lack of out reach/extension units
- Weak adoption of hygienic and quality schemes
- Lack of appropriate facilities and laboratory equipment to carry out the required analyses.
- Lack of appropriate programs concerning prospects for innovative processes and novel products.
- Lack of awareness of the impact of research on industry development
- Weak coordination between industry and teaching/research institutions
- Lack of technological watch

A summarised list of common needs to remedy such issues could be the development of:

* Quality control in every step of the food chain;

* Risk management related to:

- drought, fires, floods
- plant and animal diseases
- contaminants
- Emergent diseases

* Access to water and land

* Adequate policies

- Develop and implement appropriate programs concerning prospects for innovative processes and novel products
- Upgrade the skills of the human resources
- Promote marketing of innovative products.
- Good Manufacturing Practices and Hazard Analysis and Critical Control point (HACCP)
- Lack of policies in agricultural and industrial sectors, taking into account health aspects

4. Action plan

Topic 1 : Bio physical environmental and technological development

Objective : to develop "clean" technologies as a response to market needs

- Interaction between farming systems and ecosystems
- Biotic and abiotic stress adaptation of plants, including applied genomics to multi-parallel analysis and data collection, evaluation, interpretation and predictions
- Low input production systems
- Optimal application of agrochemicals, effluents and recycled waste material
- Raw material quality
- Strategy to cope with animal and plant diseases risks
- Assessment of climate hazards (drought, floods, fires, ...)
- Development of appropriate Information and communication technologies (e.g. GIS, data bases, SIT, agri-environmental indicators, ...)

Topic 2 : Promote traditional products

Objective : to explore the science base of traditional food to facilitate development of new processes and technologies that will convert "home-made" to manufactured products that have commercial value and a potential global market.

- Identification and characterization of health benefit to human nutrition together with risk assessment of Mediterranean food.
- Adaptation of new advanced technologies in processing, preservation and food safety of products of great interest to Mediterranean countries.
- Exploring / improving the traditional Mediterranean food quality through innovative technology.
- Biological basis of the effects of Mediterranean environmental stresses (drought, high temperatures and salinity) on plant derived food quality and nutraceutical value.
- Natural and cultivated sustainable fish production in Mediterranean ecosystems.

Topic 3 : Analysis and comprehension of Mediterranean ways of consumption and commercialisation of agro-food products

Objective : to know whether or not and to what extent the Mediterranean diet is still the dietary regime/habit followed by Mediterranean people and to create an appropriate environment conducive to the establishment of synergies among the main stakeholders

- Better understanding of consumers' preferences about traditional and modern food (type of products, nutrients, share of industrial products, consumers practices)
- Quality perception by the consumer (organoleptic, sanitary aspects, nutritional characteristics) for traditional (historical, certified, labelled) and new products (GMO, bio, organic food, functional food, ...)
- Need to develop new methods of information and education for consumers (about labels, quality standards, scientific knowledge, regulations, etc...);
- Establish relationship among main actors across the food chain, and evaluate the interactions with the value chain;
- Understand how modern catering can coexist with the traditional one;
- Assess the role of the informal sector, its organisation, its economic relevance, its impact on the social wellbeing, on the safety and quality of food
- Define the role and the institutional set up in order to guarantee quality, safety and security

Topic 4 : Policy and institutional aspects for sustainable agriculture and rural development

Objective : to develop a comprehensive knowledge-based framework for institutional capacity building to support policy decision making towards sustainable rural livelihoods

- Impact of agricultural, rural and environmental policies
- Medium term effects of cross compliance on rural development
- Impact of norms and standards on trade
- Macroeconomic policies (monetary, fiscal, trade, social, credit ...)
- Develop and strengthen market-based organizations to improve food security and alleviate poverty
- Develop negotiation tools for conflict resolution between rural-urban
- Property rights structure (access to land, water, credit, ..., land tenure, ...) and IPR
- Gender issues (role of women in farm management and processing activities)

5. Instruments

"Appropriate" financial instruments to:

- Preserve traditional instruments on specific EUROMED topics : STREP, CA
- Implement calls for proposals targeted to specific MED issues in the collaborative research theme "food, agriculture and biotechnologies", with specific programs to transfer the available tools developed in advanced countries needed for the specific questions of this region
- Include training program within research projects
- Give a special attention toward the MED countries to let them taking part to large initiatives as the Technological Platforms
- Need to simplify administrative procedures to increase research efficiency by making proposals more accessible for non EU Mediterranean countries and by reducing bureaucratic burden on researchers

6. Cross-cutting issues for enhancing regional co operation

A general issue is to create an environment that will truly promote exchange of views regarding social and cultural issues associated with food within the region with the aim of alleviating and/or minimising the potential for misunderstanding that may occur as a result of lack of knowledge of the regions diverse cultural heritage:

- Encourage projects that favour regional integration and contribute to ameliorate political stability
- Support national initiatives for up grading scientific and technical skills in preparation to the 2010 free trade area
- Optimize the use of the existing cooperation instruments
- Increase consistency between the CAP and natural resources policies to meet agriculture and environment challenges in MED countries
- Strengthen the existing "centres of excellence" and encourage disseminate scientific, technological and institutional knowledge through networking.

Annex 5:

Workshop on Preservation of Cultural Heritage

Conclusions of the Workshop held in St. George's Bay, Malta, 16-17 June 2005

FINAL REPORT

1. Introduction

Objectives

The objective of this report is to focus on the role of cultural heritage in the FP7 framework. It provides the rationale for the integration of cultural heritage in the programme and the detailed priorities that can be identified within the four major headings. To effect this process there is the need for a monitoring of the programme by cultural heritage experts and determine the best practice by comparative analysis and evaluation. The consequences and costs of non-management of cultural heritage and its dysfunction might result in a body without soul and the rejection of many programmes of research due to lack of concern and apathy. The loss of cultural heritage due to any cause is a disaster that humanity can ill afford and the exclusion of a specific programme on cultural heritage in FP7 is regrettable. This report proposes that 'dialogue, democracy and debate' will be conducted through the efforts of cultural heritage of the EuroMed.

Concepts

Past cultures and human activities have spread over vast areas transcending present day divisions and classifications making current political borders inconsequential in cultural heritage management. The protection of cultural heritage is the mutual responsibility for the common heritage sharing a stake in its maintenance and protection.

Concepts of cultural heritage change over time and affect the political, economic and scientific evolution of societies. This was recognized in the Athens 2002 conclusions preceding the FP6 programme. The continuing vision of cultural heritage in the Euro-Mediterranean region is strengthened by the priorities of the programme research, technological development and demonstration activities of the European Community.

Cultural heritage represents the widest facets of our society including tangible, intangible, moveable and immoveable heritage and its relationship to nature and the environment. It continually evolves and demands interpretation through a multidisciplinary approach.

In the context of globalization and climatic change, the attitudes to the protection of cultural heritage and local knowledge is to be seen in the wider context not of the isolated monument or site but its landscape and environment.

The cultural heritage is a cumulative effort of human activity and technology including the traditional knowledge and crafts that produced the built environment and its artifacts. The

revival and maintenance of this knowledge is critical both for itself and for the protection of cultural heritage.

Considering the commitment of the International and European community to the safeguarding of cultural heritage, its prevention and resolution of conflicts, cultural heritage must be used in recognizing our past and present communities as a bridge for peace for the future by resolving ongoing and post-conflict situations.

The safeguarding of cultural heritage against natural disasters, during times of conflict and in areas of turmoil through proper documentation and preparation of risk-assessment and disaster preparedness plans in accordance with International conventions.

Cultural tourism is not only a vehicle for understanding cultural traditions but a generator for research activities, new opportunities and as an economic driver for European competitiveness in the order of Euros 335 billion per year, ensuring employment for eight million people, bringing employment through creative cultural and cottage industries to regional peripheries. It is the responsibility to protect and conserve for the benefits of future generations.

The experts who reviewed the EuroMed documents identified shortcomings including national cultural heritage inventories and technological advancements. There is a need for the strengthening of the themes identified in FP6 to build on these partnerships.

Intangible cultural heritage practices need to be understood to prevent their misinterpretation and support the economic development of an area or region. This raises the issues on the emphasis we place on intangible cultural heritage as recognized in the UNESCO Convention for the Safeguarding Intangible Heritage, 2003.

Development of cultural heritage assets includes the recognition of sustainability as defined in the Barcelona and Lisbon agendas. It recognizes that cultural heritage is part and parcel of our lives and therefore must be in each of the defined FP7 themes.

2. Background and state-of-the-art

Existing policies

Recalling the European commitments to international conventions, declarations, and other mechanisms on cultural heritage, there is a need to translate these obligations into concrete actions within the FP7. The Valletta Convention (1992) on the Protection of Cultural Heritage, the Barcelona agreement (1995), the Lisbon agenda (date) and the European Landscape Convention (2002) have reaffirmed these commitments to cultural heritage.

The ten-year anniversary of the Barcelona agreement is a milestone for the re-evaluation of the integration of cultural heritage in the Euro-Med programmes being reinforced by the European Community decision on Culture 2007-2013 programme and the London Declaration 2004 on sustainable cultural heritage research. The experts recognize the importance of TEMPUS in the building of university capacity and training.

The many UNESCO mechanisms, including the World Heritage Convention, and other related recommendations underscore the mutual responsibility and global cooperation needed to protect cultural heritage in changing societies, environments and technologies. Mention should be made of the UNESCO Forum – Universities and Heritage programme for scientific excellence, cooperation and knowledge sharing. Other bodies, including ICCROM, ICOMOS, ICOM, Union of International Architects (Heritage Chapter), European Association of Archaeologists are the supporting stakeholders in the consideration of cultural heritage and the ethics through their many charters and codes.

Other institutions, including the World Bank, UNEP, FAO, etc should be considered committed partners to the protection of cultural heritage.

Current situation

The experts noted the lack of focus on cultural heritage and management and protection policies of Euro-Med countries and draw the attention of governments to:

- place cultural heritage on the European and national agendas;
- facilitate participation of researchers in the many varied programmes;
- encourage coordinated decentralization in order to better public awareness, accessibility and inclusion;
- widen the involvement of researchers and academics in decision-making processes related to cultural heritage policies;
- the necessity to identify gaps of knowledge in cultural heritage in science, technology and historical periods;
- the importance of coordination of existing strategies, including the European Strategy Forum for Research and Infrastructures.

Networks of Excellence should be expanded and capacity built to allow the wider participation of Mediterranean countries.

In order to resolve the conflict among tourism and development, cultural heritage and sustainability, private and public stakeholders should be involved in common research and technological development to ensure integration and the building of knowledge. Cultural heritage is the laboratory of time in the human and natural landscape laboratory of place.

State of the art

The experts recognized the importance of documentation as a means for the preservation and protection of cultural heritage as a common concern for all the EuroMed countries.

Cultural landscapes provide an integrated framework for the study and protection of natural heritage, marine and coastal, urban historic landscape including sites and monuments. They integrate the intangible heritage, local and indigenous/traditional knowledge as well as a means for the participation of their communities and the public in all aspects of management.

The historic urban landscape is under constant pressures of change and needs innovative and comprehensive action. Representing the evidence of the cumulative human achievement it should be conserved and integrated in the social and economic functions of the evolving urban communities.

The understanding and protection of cultural and historic urban landscapes, archaeological sites and natural heritage assumes the monitoring, risk assessment methodologies, mitigation, regular maintenance of cultural heritage and the development of best practice guidelines.

The conservation, preservation and restoration of the built environment, artifacts and other cultural heritage items require the study of pathologies, diagnostic analysis and remedies using non-destructive technologies and reversible treatments.

Excavation, as an element of conservation, interpretation and presentation strategy, is a tool for understanding and protecting the past. It is also recognized that excavation is important as a tool of cultural heritage impact assessment of development projects and as a means for salvaging archaeological remains in rescue situations, e.g. infrastructure building and dam construction.

Information Communication Technologies are an important tool in the protection and valorization of cultural heritage and related to documentation, knowledge sharing and dissemination.

Intangible heritage is an integral part of cultural and natural heritage and is to be integrated in all aspects of heritage management and conservation.

The experts recognized the need for the establishment of regional and thematic networks, integrated specialized centers of excellence, research-driven clusters, communities of practice, and other capacity building programmes.

There is a need to acknowledge the various risks that affect cultural heritage in the Euro-Mediterranean area. These include the impact of tourism, vandalism and the development of tourism infrastructures, natural disasters, neglect and destruction due to political turmoil and wars.

3. Expected impact of this report in the EuroMed countries

The experts considered the impact of cultural heritage in the FP7 with its integration in all nine themes given exposure and awareness of the cultural diversity in all facets of research and technological development. These can be affected by demonstration activities to be identified by the Euro-Med countries.

The impact in the four specific programmes corresponding to four major objectives corresponding to European research policy: cooperation, ideas, people, capacities.

- Cooperation

Encourage an awareness of a common cultural heritage of humankind through the whole range of research activities and collaborative projects between the Euro-Med countries.

- Ideas

Make better impact if MED7 connects directly with Euro-Med countries for “frontier research”.

- People

Involve researchers in policy making within national systems.

Help Governments to improve legislative systems related to cultural heritage through research infrastructures.

Skills and career development for the sustainable use of cultural heritage assets.

Encourage the exchange of doctoral students through actions including “Marie Curie”.

Training and expertise for decision makers in cultural heritage in multidisciplinary applications.

- Capacities

Engage all private and public sectors and stakeholders including researchers with the development of local infrastructures.

Greater return for research institutions and private industries involved in cultural heritage.

Specific activities for international cooperation in capacity building monitored by a group of cultural heritage experts.

In addition, demonstration activities will give a high level of impact and exposure to citizens’ and tourists’ experience of cultural heritage. These can include case studies demonstrating the improvement of the interpretation of sites and landscapes. This can be initiated only by adequate budgets and supported by other programmes and instruments.

4. Scientific topics and priorities

Based on the country reports presented by the experts, six domains have been identified as principal themes for EuroMed cultural heritage priorities: Natural and cultural landscapes; Documentation; Materials; Heritage, Society and Development; Capacity building; Management.

1. Natural and cultural landscapes

1. Identification and valorization of natural sites and cultural landscapes of particular EuroMed cultures which are of global significance.
2. Risk assessment methodologies.
3. Dynamic interaction between local communities, culture and landscape.
4. Knowledge systems, sustainable maintenance and development of landscapes.
5. Use of new technologies of remote sensing, space archaeology, coring, ground penetrating radar and other new geophysical techniques for characterization and mapping.
6. ICT modelling and simulation.
7. Identification and mapping of anthropogenic and natural hazards.

8. Survey, data retrieval, excavation in the context of conservation and landscape management strategy.
 9. Geo-technical assessment, restoration and the rehabilitation of the built environment.
 10. Integration of traditional and scientific knowledge for sustainable management of landscapes.
 11. Use of natural, historical urban and other cultural landscapes for the maintenance of biodiversity and cultural diversity.
2. Documentation
1. Conduct research to develop methodologies and technologies for the generation of national, regional, thematic and trans-regional, compatible databases, archives, inventories, national registers and atlases, following best practice guidelines and successful cases. The experts noted the excellent presentation made on CULTNAT Egypt.
 2. ICT, multimedia and any other methods of information and dissemination as deemed necessary.
 3. ICT/GIS based documentation and mapping of cultural heritage.
3. Materials
1. Research on diagnostic techniques for identification, including dating and imaging, of materials and pathologies of materials.
 2. Research of deterioration processes and mechanisms and their effect on material cultural heritage in Mediterranean environments.
 3. Experimentation for the development of protective and other conservation materials, integrating ancient and new technologies in the conservation of artefacts and the built environment.
 4. Assessment of different restoration and preservation techniques following accepted professional codes and conventions.
 5. Development of methodologies in the study and preservation of artefacts and built environment with special attention to the promotion of non-destructive methods.
 6. Identification, recovery, evaluation and adaptation of traditional materials and technologies for sustainable development.
 7. Study appropriate microclimatic and environmental conditions for the development of appropriate methods for conservation of archaeological and historical materials.
4. Heritage, society and development
1. Integration of cultural heritage in sustainable development, security and socio-economic programmes in the fields of food, health, energy, transport, ICT, environment and climate, new materials and socio-economics.
 2. Promote research on eco and cultural tourism, creative traditional, rural and urban industries integrating archaeological, traditional and ICT knowledge and technologies.
 3. Conduct research on the management of archaeological, urban historical, other cultural sites and natural landscape.
 4. Encourage research on public participation in all aspects of cultural heritage management projects, including the use of new ICT technologies, and the active engagement/involvement of local communities in cultural heritage development activities.
 5. Encourage the rehabilitation of traditional settlements including historical urban towns.
 6. Promote research on the multicultural aspects of EuroMed cultural heritage to enhance mutual understanding of the common past.

5. Capacity building

Based on the major objectives from Paragraph 3, as outlined above:

1. Application of cutting-edge science and technology in socio-environment through “Science in Society” programme and the establishment of an integrated network of specialized centres of excellence.
2. Establishment of national, thematic, regional, trans-regional and international networks.
3. Curricula development, training and life-long development.

6. Management

1. Encourage research on cultural heritage management projects.
2. Mitigation strategies and activities.

5. Modalities and Instruments for participation for INCO MED countries in International Co-operation actions

Considering the four specific programmes of FP7 as outlined in paragraph 3 above:

(h) Co-operation

Within the approved themes of FP7, specific actions and priorities for Co-operation have been identified as follows:

(h) Health

- Mediterranean specific sustainable health systems: health and diet, traditional medicine, alternate medicine, hygiene.
- Traditional methods against epidemic diseases (public bathing, garbage disposal, sewage treatment)

(h) Food, Agriculture and Biotechnology

- Archaeological and traditional farming and herding/pastoral subsistence activities in rural communities and cultural landscapes
- Traditional food industries, traditional food preparation, ethnogastronomy

(c) Information and Communication Technologies

- Use of ICT in public participation and education: visualization multimedia production, web sites and Internet portals, virtual communities
- e-learning.
- Establishment of national registers, inventories, archives, atlases and other documentation methodologies.
- Application of ICT in tangible and intangible creative heritage industries
- Computer modelling and simulation of historical landscape dynamics (e.g. GIS – Stella)

(d) Nanosciences, Nanotechnologies, Materials and new Production Technologies

- Integrating new knowledge and technologies with archaeological, historical and traditional knowledge in the production of new preservation and restorations materials

- Development of non-destructive examination and assessment methods and techniques.

(e) Energy

- Integrating traditional archaeological historical knowledge with space age innovations for sustainable development

(f) Environment (including Climate Change)

- Application of environmental technologies in monitoring, protecting, safeguarding and conserving cultural heritage sites, monuments and the built environment (anthropogenic environment)
- Application of environmental technologies and knowledge paradigms in the rehabilitation of cultural landscapes
- Sustainable management of sites, monuments and landscapes
- Integration of traditional, archaeological and historical knowledge in sustainable management and development of cultural and natural marine and non-marine landscapes.
- Sustainable management and development of characteristic past and present Mediterranean landscapes, including riverine and coastal landscapes, historical towns, desert habitats, oases, pastures
- Computer modelling and simulation of the impact of climate changes on Mediterranean landscapes through an analysis of the sea level changes, hydrological parameters, ground water and vegetation using archaeological and environmental and palaeo-environmental proxies.
- Identification and assessment of cultural strategies for coping with climate change – for forecasting and mitigation efforts against adverse climate events

(g) Transport (including Aeronautics)

- Integrating traditional transport systems with new technologies in sustainable management schemes, especially in fragile environments and in the rehabilitation of urban historic centres and historic itineraries

(h) Socio-economic Sciences and Humanities

- Rehabilitation of historical urban settlements
- Rehabilitation of rural and pastoral habitats and communities
- Revival of traditional arts and crafts
- Implementation of new technologies and knowledge in the sustainability of traditional environments and settings
- Development and management of eco-cultural tourism
- Support of the use of intangible heritage in creative industries
- Assessment of cultural heritage values in social market economy

(i) Security and Space

- Application of space technologies in prospecting, monitoring, assessing and rehabilitating all natural and cultural landscapes
- Development of a management strategy for the security of sites and museums.

2. Ideas

- Reinforce excellence, dynamism, and creativity in European research on cultural heritage and to improve the standing of Europe for developing the best research by researchers from both European and partner countries.

- Collaboration among scientists from European and partner countries in joint research initiatives to advance research in frontier, competitive areas of cultural heritage.
- Develop appropriate mechanisms to support young scholars and emerging teams in the field of cultural heritage research.

3. People

- Possibility for using the best practices in training, career development, and research.
- Make use of instruments and tools to support the residence of European scholars in partner countries for developing advanced research in cultural heritage, and *vice versa*.
- Encourage Dialogue among Euro-Med and international scholars in the field and domains of cultural heritage research and research development.
- Support for training workshops, seminars, conferences and symposia in Mediterranean cultural heritage.

4. Capacities

- Support the development of local infrastructure for cultural heritage actions and research.
- Development of complementary networks of specialized Centres of Excellence in different domains of cultural heritage (natural and cultural landscapes, documentation, materials, heritage, society and development and capacity building) strengthening existing trans-Mediterranean development of high school and university curricula, textbooks, CD and DVD in cultural heritage. This will utilise synergies with programmes such as TEMPUS and UNESCO uni-twin chairs.
- Development of a network of experts and institutions in Mediterranean cultural heritage.
- Support the development across Euro-Med countries of regional research-driven clusters of universities, research centres, private sectors, NGOs and local communities.
- Establishment of a Mediterranean cultural heritage expert advisory facility for (1) setting regional and thematic priorities in cultural heritage research, (2) enhancing the development of S & T in cooperative projects and partnerships, (3) assisting in the coordination of international and national cooperation in cultural heritage investigations and applications, (4) overseeing and harmonizing regional research clusters, infrastructure development, education-related activities and thematic centres of excellence. The advisory board is to include experts in different cultural heritage fields with representation from all Euro-Med countries.

5. Increasing Awareness and Knowledge Sharing and Dissemination

Cultural heritage is an integral part of education, leisure and pleasure of Mediterranean local communities and visitors alike. Promoting cultural heritage knowledge through research, technology and demonstration activities enhances the protection of cultural heritage.

Citizen's participation

- Strengthening local awareness for the protection of cultural heritage.
- Strengthening the role of civic society in the governance of cultural heritage
- Promoting the role of people in continually shaping landscapes, cultural, natural and urban, in accordance with mechanisms as the UNESCO World Heritage Conventions, UNESCO Man and Biosphere Programme, and the European Landscape Convention.
- Empowering citizens, individuals and NGOs for local action and active participation in all aspects of cultural heritage management.
- Harnessing existing European programmes and initiatives on gender and poverty-alleviation in cultural heritage activities.
- Promoting the participation of local communities in the impoverished regions in cultural heritage development projects, and the promotion of creating jobs through cultural heritage development.
- Developing programmes of cooperation and participation linking researchers, decision-makers and local stakeholders.
- Promote public awareness through municipalities, local councils and all other stakeholders.

Knowledge sharing and dissemination

- Amplify the place for cultural heritage in the “Science in Society” programme.
- Ensure and facilitate the attendance of all EuroMed countries in the launching of the FP7 programme.
- Encourage the sharing of knowledge and research through projects of varied group sizes and geographic clusters thus leading to “Communities of Practice”.
- Increase the role of schools and informal education, especially for youth, in the dissemination of knowledge related to cultural heritage.
- Improve accessibility of scientific knowledge.
- Make use of creative industries in sharing and disseminating cultural heritage knowledge.
- Encourage the establishment of “e-learning” and the establishment of virtual communities in cultural heritage domains.

Annex 6:

Extension Workshops – Brussels, 15 September 2005

Conclusions of the Workshops on:

- **Information and Communication Technologies**
- **Transport (including Aeronautics)**
- **Socio-Economic research and Humanities**

Introduction

The main objective of the MED 7 Project “Thematic Workshops for the definition of the Science and Technology Euro-Mediterranean Policy within FP7” is to provide the European Commission and the Monitoring Committee for the Euro-Mediterranean co-operation in Science and Technology (MoCo) with elements to identify and select in a concerted manner, the most relevant topics and instruments to be tackled within the Euro-Mediterranean S&T co-operation perspectives of the next Framework Programme, as well as the best defined approaches to address these issues.

A set of 5 workshops, and a final synthesis one, were already held, to define main topics of common interest for EU as well as Mediterranean Partner Countries (MPC) in strategic areas:

- **Innovative Production Systems and Processes**
- **Water Risk Management and Renewable Energies**
- **Public Health**
- **Agro-Food and Industrial Agriculture**
- **Preservation of Cultural Heritage**

However, the new structure of the 7th Framework Programme forces to identify the remaining topics of common interest EU-MPC that fit the priorities of this FP.

Then, on the basis of MoCo and Commission’s suggestion, an extension of the MED7 project was organised in order to cover most of the thematic priorities presented in the Commission Proposal for FP7.

On September 15 2005 a set of three thematic workshops was held in Brussels, with the aim to complete MED 7 Project and to integrate its conclusions in the remaining priority areas presented in the Commission’s Proposal for FP7:

- **Information and Communication Technologies;**
- **Transport (including Aeronautics);**
- **Socio-economic research and the Humanities.**

The Spanish Council for Scientific Research – CSIC, coordinator of the MED 7 Project, was in charge of the organisation of these three workshops with the collaboration of the MoCo members

Overview of the three workshops

The three thematic workshops highlighted some important suggestions and common indications:

The role of Europe in the world: it seems necessary and useful to promote studies and develop knowledge about third countries, taking into account that what is happening in the EU is affected by what happens outside the EU. Europe must look at neighbour countries. A lot of research emphasises the role of Europe in the world and how Europe influences the rest of the world. But there is also a need for research on how Europe is influenced by the rest of the world and to fully understand the cultural, social, political, and environmental features of third countries.

Foresight activities appear to be more and more important. Statistics should be harmonised on a regional basis, at least. We need regional indicators, able to explain the real situation. Indicators, consequently, should be built on a context specific base, with a special attention to developing countries, in particular MPC.

In order to support participation of MPC to Standardisation Bodies and support political decision, it seems necessary the establishment of some problem oriented infrastructures, for instance: a Mediterranean Open-Source Platform in order to provide appropriate OSS (Open Source Solutions) to the EU-MPC Researchers' Community. A special case is the establishment of open e-learning platforms (Digital Literacy, Virtual campuses, School eTwinning and different Transversal Actions: eLearning "Designing Tomorrow's Education", DG EAC/BH D(2004)). Another important infrastructure should be the creation of a Mediterranean Transport and Mobility Research Institute, to deal with the important common issues related to transport by all means in both sides of the Mediterranean sea, including the specific Mediterranean climate, cities, transport behaviour and social relations.

An important synergy between ICT and Transport research arises: Information and Communication Technologies (ICT) applied to vehicles and transport infrastructure (Intelligent Transport Systems, or ITS) make possible to increase the productivity, sustainability and safety of the entire transport infrastructure. And vice versa transport infrastructures (as road or railways) offer wide possibility for broadband network, particularly, to reduce the digital divide and the inclusion of the Galileo initiative to transport applications and the opening-up to the Mediterranean Partner Countries.

Social aspects of freight transport, transport workers' rights and commuters were presented as relevant to the two priorities. Improving safety and security were also presented as priorities.

Funded research project in the EU-MPC RTD cooperation within these areas should be focused on what is really relevant, and what is having an increasing relevance. Energy, in its diverse aspects of production, transport and management, should be considered a cross-cutting issue.

A general trend in all European countries is that the State, the Regions, the local authorities are re-focussing now on their basic missions: organise, give incentives, guarantee privacy and security of citizens. As transport sector cannot rely only on market forces there is room for developing Public Private Partnership. Private sector is therefore interested in a range of activities. They can be traditional activities such as infrastructure building and operation or new types of services such as demand responsive transports, traveller information. So Mediterranean Partners Countries have to strengthen such partnership.

The so-called *European Paradox* should be further studied: good science and poor exploitation, which is also, and in a higher degree, a common problem with MPC. How can we approach the fundamental problem, by using social sciences' aid and tools? Social science research should focus on this issue, especially by analysing innovation policies. Main factors affecting innovation and the impact of each of them in different contexts and conditions should be the object of research projects in social sciences. The new focus could be linking science to innovation and specific cultural settings.

In order to avoid brain drain, it seems to be necessary to set up a Euro-Mediterranean Doctorate Schools Network for EU-MPC Research and Innovation, involving the productive sectors for supervising students' careers during their researches and encourage their mobility between education and economic activity.

Workshop on Information and Communication Technologies

1. Introduction

1.1. General objectives

Opening up the European Research Area to other countries and specifically to Mediterranean Countries according to Barcelona Declaration (1995) in order to build the Information Society from both sides of Mediterranean Sea.

To enable MPC to help drive and stimulate innovation through ICT use and ensure that ICT progress is rapidly transformed into benefits for MPC's citizens, businesses, agriculture, education, industry and governments.

The main goal is share and disseminate knowledge through a wide EU-MPC Network in order to improve co-operation. This should help bridge the gap of the digital divide that exists between the MPC and European countries, and inside MPCs.

The establishment of an Euro-Mediterranean Innovation and Research Space. The use of ICT as development enabler and as a tool to meet these objectives development.

1.2. Targets

- **Eliminating of illiteracy and poverty**
- **Achieve the sustainable development and innovation**
- **Ensure open and equal access to information and knowledge (e-health, e-learning,...) to all the citizens by guaranteeing an affordable access to the Internet**
- **Definition of a common open standards policy in order to enhance co-operation and interoperability through ICT networks. At this point, one of the main objectives should be to ensure participation of MPCs to standardisation bodies (W3C, CEN/ISSS, etc.), especially the gap referred to non-Latin languages (Arabic, Hebrew, Greek, etc.)**
- **Raising awareness about the ICT tools employment**
- **E-Governance: efficiency, openness and accountability, for a world-class public administration and links to citizens and businesses, supporting democracy.**
- **Promoting mutual exchange to Mediterranean Cultural Heritage in order to enhance the dialogue and comprehensiveness between cultures**
- **Building Research and valorisation structures (middleware) linked to the economical sectors**

2. Background

2.1. Existing policies: The MPC background and current regional ICT policy development

The 2005 eReadiness rankings published by the Economist Intelligence Unit (http://www.eiu.com/site_info.asp?info_name=eiu_2005_e_readiness_rankings) and the Middle East Internet Usage and Population Statistics (see: <http://www.ictdar.org/>) show that the MPC have diverse characteristics regarding their ICT development and consequently their RTD interests.

Priorities for EU-MPC cooperation in ICT RTD should take in consideration the policy planning work being carried out by regional agencies for economic development. It should seek to establish synergies with the programmes implementing such policies. A partial list of such documents follows:

The UN Economic and Social Commission for Western Asia issued lately the following documents:

- **Regional Plan of Action for Building the Information Society**
- **Regional Profile of the Information Society in Western Asia (180 pages)**
<http://www.escwa.org.lb/wsis/reports/main.html>
- Higher Education: Enhancement of Quality Assurance and Institutional Planning in Arab Universities + Arab Human Development Report
<http://www.ictdar.org/newsletter/index.htm>
- Workshop on Novel Telecommunication Technologies for Socio-Economic Development - Beirut, 11-13 July 2005
<http://www.escwa.org.lb/wsis/meetings/11-13july/main.html>
- The ICTDAR – UNDP ICT for Development in the Arab Region work plan (<http://www.ictdar.org/workplan2005.htm>) include the following services: ICT Awareness raising; Pro-poor growth and employment generation; Capacity development and strategy implementation, and Dynamic Poverty Reduction Interventions
- **The ICTDAR – UNDP is implementing the following projects (see: http://www.ictdar.org/ICTDAR_projects.htm):**
ICT for Small and Medium Enterprises (SMEs) ; Community Access Centers; Regional e-Government institute; WRCATI - Promoting the rights of women and children through the use of ICT
- **EUMEDIS connection (<http://www.eumedis.net>)**

2.2. Current situation

The first question we have to ask is: where MPC stand on with regard to Information society criteria. Many experts stress on the ICT “leapfrogging” effect. From an analysis of MPC needs through the last 15 years, we find, despite the great efforts done by some of them, that there are still many obstacles in different MPC countries that hamper the integration to the Information Society; these include:

1. a lack of measurement of ICT indicators telling where each MPC stands with regard to Information Society and Knowledge Society targets,
2. a lack of an enabling environment having adequate communication access and Broad Band connectivity for ICT services at affordable prices,
3. a lack of a regulatory framework environment that is supportive of ICT entrepreneurship and that promotes the mobilization of domestic resources;
4. a public sector suffering from weak human resource capacity (knowledge) in using ICT that hampers the modernization of public services and administrations,
5. a lack of supporting "scaling-up" of ICT-based pilot programmes,
6. a lack of supporting local producers, programmers (creativity actors) and small businesses in the applications and content fields. The definition of an EU-MPC common open-source resources (open software tools, open standards and interoperability) policy and strategy by the implementation of a technological platform will help to this point.
7. a lack of supporting ICT small business incubators,
8. the inexistence of ICT applications and content aimed at customers, communities and local institutions in MPC.
9. a lack of sustainable digital Arabic content industry that produces content and applications suited to local needs. To augment research and development in Digital Arabic Content (DAC). The definition of a EU-MPC common policy and strategy by establishing a network of research centers/institutions to adopt and set Arabic digital linguistic standards and technical specifications will help to this point and will promote research and development in automatic Arab language processing and collaboration.
10. In some MPC, the constraining regulatory context does not ease the introduction of new actors in ICT, especially SMEs.
11. In addition, public structures and bodies have relatively poor means and expertise to manage big European projects in some MPC.

3. Expected impact of this report in the EU and MPC (corresponding to European Research Policy -FP7)

Due to the main above issues related to ICT and MPC it should be necessary to keep the Mediterranean presence into the Framework Programme in the same proportion both in projects as well in budget.

Increasing the MPC participation into FP7 taking into account the following expected impacts:

- Enhance the MPC capacity to face the challenge especially with support for administrative, management and organisation tasks
- Effectively create an EU-MPC Network in both Research and Innovation Areas

- **Stimulate an active participation of new MPC actors (Universities, SMEs,...) in the FP7. The establishment of the new Information National Points of Contact must be directly from these involved actors.**
- **To create the appropriate tools for evaluating the actions engage (level of participation, etc.) to guarantee their effectiveness**

4. Scientific topics and priorities

Key concepts about technology and development referred to MPC include the following:

To establish the appropriate Technological Platform based on ICT tools in order to build an EU-MPC Excellence Centers Network in order to provide solutions to:

- **ICT Internationalisation – Semitic Languages (Arabic and Hebrew):**
RTD for Internationalisation of ICT, with a particular emphasis on Semitic languages, should be a priority for EU-MPC International Cooperation in the FP7. The common interest of the MPC in this matter creates an unique opportunity for EU-MPC cooperation (Natural Language Processing with speech input/output command functionalities, optical character recognition (OCR) and full indexing techniques).
- **Contents creation and delivery taking into account the above referred language specificities especially that it is directly related to e-content development which is the driver for the Information Society development.**
- **Semitic languages written from right to left pose challenges in Characters, Fonts, Language, Text formatting, Bidirectional text, Resource identifiers, Locale specific data, Forms, Structure & metadata, Display issues. The Internationalisation of the Speech Síntesis to include these languages will have an strategic long term role due to the rates of illiteracy in the region. Arabic Natural Language Processing with speech input/output command functionalities, Arabic optical character recognition (OCR) and Arabic full indexing techniques are other priority areas.**
- **Multi-purpose community tele-centers in order to stimulate the internal development and participation of MPCs**
- **Open, InterOperable and market driven standards; Open Source Solutions (OSS) Applications for private sector and commercial use in SMEs, Research and Education Institutions. Establishment of a Mediterranean Open-Source Platform.**
- **Connection with other sectors (business and industry) applications**
- **ICT meeting societal challenges (health, inclusion, mobility, government...). Special attention should be paid here referred to e-health initiatives (telemedicine, virtual hospitals,...) as well the inclusion of the disease**

prevention (TB,HIV), early diagnosis (gender issues: mammography, ...) and personalization (consanguinity)

- **Development of ergonomic and human interface devices and systems**
- **Manufacturing: rapid and adaptable design to provide competitiveness into the global market**
- **To create the open Knowledge Bases based on GIS (databases, timetables, connection, map) in order to enhance EU-MPC cooperation**
- **Low cost devices and systems for dissemination**
- **Development of remote sensing applications for mine-field removal and environmental monitoring**

5. Modalities and Instruments for participation for INCO MED countries in International Co-operation actions:

5.1. Cooperation

In Page 3 of the “Decision of the European Parliament and of the Council” concerning the seventh framework programme of the European Community for Research, Technological development and demonstration activities (2007 to 2013) COM(2005) 119 final it is written:

“Cooperation: Support will be given to the whole range of research activities carried out in transnational co-operation, from collaborative projects and networks to the coordination of research programmes. International co-operation between the EU and third countries is an integral part of this action”

In this way, Information and Communication Technologies (ICT) will be the enabler to drive such cooperation specially oriented to MPC. Also, this is reflected into the budget assignation in FP7 “Decision of the European Parliament and of the Council” concerning the seventh framework programme of the European Community for Research, Technological development and demonstration activities (2007 to 2013) COM(2005) 119

5.2. Ideas

At this point, it should be considered the relationship between the future European Research Council (ERC) and the MPC Researchers’ Community. MPC should be an active actor in this future institution in order to support investigator-driven “frontier-research” carried out by individual teams competing at the EU-MPC level in multidisciplinary thematic.

5.3. People

- **In order to avoid brain drain, it seems to be necessary to set up a Euro-Mediterranean Doctorate Schools Network for EU-MPC Research and Innovation, involving the productive sectors for supervising students' careers during their researches and encourage their mobility between education and economic activity.**
- **To provide stability in the sense of their further insertion in their original local economical tissue, involving researchers in policy making within national systems.**
- **Training and expertise for decision makers in ICT in multidisciplinary applications.**
- **Encourage the exchange of doctoral students through actions including "Marie Curie" and co-supervision of PhD students with financial means to ease their mobility.**
- **Skills and career development for the sustainable use of ICT assets.**
- **Deployment of e-learning platforms to support the contents dissemination and quality.**

5.4. Capacities

- **To guarantee the sustainability of research and education connectivity between the EU-MPC communities (through the Eumedconnect and GEANT projects) and facilitate broadband access to knowledge and digital content.**
- **To provide a Mediterranean Open-Source Platform in order to provide appropriate OSS (Open Source Solutions) to the EU-MPC Researchers' Community. A special case is the establishment of open e-learning platforms (Digital Literacy, Virtual campuses, School eTwinning and different Transversal Actions: *eLearning "Designing Tomorrow's Education"*, DG EAC/BH D(2004))**
- **To support participation of MPC to Standardisation Bodies.** For example the CEN and CEN/ISSS activities; ICAN; the W3C ; the IETF , IAB and Internet Society; IEEE; mPEG and more. It's necessary to have performant search engine as well. This will call of course on normalization as well as domain naming policy]
- **To integrate the MPC actors (Research, Education, Vocational Institutions, SMEs...) of multiple disciplines into the pan-European Grid initiative (EGEE and EGEE-II www.eu-egee.org), by encouraging / adopting appropriate national and regional efforts (such as the EumedGrid project)**

6. Increasing Awareness and Knowledge Sharing and Dissemination: Building Knowledge

- **Development is based mainly on "knowledge." Science and technology are the main pillars upon which any form of development is based.**
- **To increase the world availability of scientific knowledge through all possible means is a challenge as well as a new frontier for progress.**
- **The world's population needs education for a systemic world development to prepare for the new millennium that has practically begun. We need this education now and on a worldwide scale.**
- **The ICT could be accessed very easily from Mediterranean Partners Countries if the technology is developed to meet this end.**
- **All this could be a unique occasion to make real progress in many of our communities. In the very near future, the world of electronic communication could become the center of a social revolution for world development if open and equal access continues to be a priority in the formation of the information highway.**
- **Amplify the place of ICT in the "Science in Society" programme through the main stakeholders participation (not only researchers, but citizens)**
- **Employment of ICT tools to improve accessibility to knowledge sharing and dissemination through projects of varied group sizes and geographic clusters thus leading to "Communities of Practice"**
- **Encourage the establishment of "e-learning" and virtual communities in ICT domains for capacity building**

**Special Recommendations to the Commissions (if any)*

- **Information and Communication Technologies (ICT) applied to vehicles and transport infrastructure (Intelligent Transport Systems, or ITS) make possible to increase the productivity, sustainability and safety of the entire transport infrastructure. And vice versa transport infrastructures (as road or railways) offer wide possibility for broadband network, particularly, to reduce the digital divide and the inclusion of the Galileo initiative to transport applications and the opening-up to the Mediterranean Partner Countries**
- **E-learning to develop an e-learning industry. Promote research and development with the aim of triggering innovative modalities and teaching and pedagogical methods with a greater impact on learning and MPC society.**
- **To provide a Mediterranean Open-Source Platform in order to provide appropriate OSS (Open Source Solutions) to the EU-MPC Researchers' Community. A special case is the establishment of open e-learning platforms (Digital Literacy, Virtual campuses, School eTwinning and different Transversal Actions: eLearning "Designing Tomorrow's Education", DG EAC/BH D(2004)), as well to promote the Open, Interoperable and market driven standards; Open Source Solutions (OSS) Applications for use in SMEs, Research, Training and Education Institutions**
- **Existing initiatives for International Co-operation in S&T in Mediterranean Area should continue to be supported in FP7**

Workshop on Transport (including Aeronautics)

Objective

Based on technological advances, develop integrated, “greener” and “smarter” pan-European transport systems for the benefit of the citizen and society, respecting the environment and natural resources; and securing and further developing the leading role attained by the European industries in the global market.

Rationale

Transport is one of Europe’s strengths - the air transport sector contributes to 2.6% of the EU GDP (with 3.1 million jobs) and the surface transport field generates 11% of the EU GDP (employing some 16 million persons). However, transport is responsible for 25% of all the EU emissions of CO₂, hence the absolute need for a “greening” of the system to ensure more sustainable transport patterns and compatibility with growth rates, as developed in the White Paper on “European Transport Policy for 2010: time to decide”. The enlargement (increasing land surface by 25% and population by 20%) and economic development of the EU present new challenges for transporting people and goods efficiently, cost-effectively and in a sustainable manner. Transport also has direct relevance on other major policies such as trade, competition, employment, cohesion, energy, security and the internal market. Investment in RTD in EU transport industries is a prerequisite to ensure technological competitive advantage in global markets.¹⁹ Activities at European level will also stimulate the restructuring of the industry, including the integration of the supply chain and in particular SMEs.

The research agendas of these European Technology Platforms will be taken into account in the different activities.COM (2001) 370. The European aeronautics industry invests 14% of its turnover in research, the European car industry almost 5% of its turnover; and the EU shipbuilding industry competitive advantage relies exclusively on RTD.

The research agendas developed by European Technology platforms support the need to take a new “transport systems” perspective that considers the interactions of vehicles, transport networks and the use of transport services, which can only be developed at European level. RTD costs in all these fields are rising substantially, and collaborative activity at EU level is essential to enable a “critical mass” of diverse RTD providers to address the scale and multi-disciplinary challenges in a cost-effective way, as well as meeting the political, technological and socio-economic challenges on issues such as the “clean and safe vehicle” of the future, interoperability and inter-modality with particular reference to rail transport, affordability, safety, capacity, security and environmental impacts in an enlarged Union. Also, developing technologies in support of the Galileo system and its applications will be essential in implementing European policies.

As well as the strong industry relevance of the themes and activities set out below, the needs of policy makers will be addressed in an integrated way covering economic, social and environmental aspects of transport policy. In addition, support will be provided to

respond to existing as well as new policy needs, for example relating to developments in maritime policy.

Introduction: Background

The Mediterranean area has thousands of years of tradition on culture and urban functionality. Also human, social relations and trade, as well as behaviour are specific. The cities, with major mix of activities and a high degree of compactness create an environment that must be studied in a research program, basis to transport system decisions.

Recommended Activities:

COOPERATION PROGRAMME

- *The greening of transport: reduction of environmental and noise pollution; Development of clean and efficient engines, including hybrid technology and the use of alternative energies and routes/modes for transport applications; end of life strategies for vehicles and vessels; Special attention to rapid rail connections through the north-south natural barriers is required.*
- *Increasing time efficiency: improvement of the efficiency of operating schedules focusing on innovative traffic management systems in line with the effective implementation of transport policy; Research on Airport Operation and Management, as well on Air Transport Improvement; Land and Water Transport Research.*
- *Improving safety and security: as inherent to the transport system, in transport operations related to drivers, passengers, crew, cyclists and pedestrians, in the design of vehicles, vessels, and within the total transport system;*
- *Encouraging modal shift and decongesting transport corridors: development of innovative, inter-modal and interoperable regional and national transport networks, infrastructures and systems in Europe; cost internalisation; information exchange between vehicle/vessel and transport infrastructure; optimisation of infrastructure capacity: In special, growing Infrastructures in Euro-Mediterranean Area : The Euro-Mediterranean traffic should benefit from the increase in transport long distance and the effects of concentrations of flows on axes, where is envisaged significant adjustments of the railway infrastructures such masterly Luxembourg-Spain eco-freight or the new connection Lyon-Turin. So, to ensure the continuity of long distance transport (road, railway, sea and air) towards the Mediterranean Partners Countries the new multimode platforms must be implemented.*
- *Ensuring sustainable and safe Mediterranean urban mobility: innovative organisation schemes, including clean and safe vehicles and non-polluting means of transport, new public transport modes and rationalisation of private transport, communication infrastructure, integrated town planning and transport. Special attention to pedestrians;*
- *Maintenance, safety and security issues for passengers and freight transport in peripheral locations;*

- **Establishment of a Mediterranean transport network (road, railway, maritime, aeronautic) and interconnection with the Trans-European Networks, especially on long distances and the natural barriers;**
- *Identification of the transport networks in the Mediterranean basin and interoperability (special attention to the rail mode);*
- *Road user behaviour, especially in relation with road standards;*
- *Social aspects of freight transport and commuting;*
- *Social costs perception (externalities) in the Mediterranean countries;*
- *Impact of tourism on the transport systems;*
- **ICT solutions adapted to MED conditions;**
- *Collection and analysing comprehensive transport statistics in the Mediterranean countries, in line with the Eurostat standards;*

CAPACITIES PROGRAMME

- *Support to the European global satellite navigation system (Galileo): precise navigation and timing services for use in a range of sectors; efficient use of satellite navigation and support to the definition of second generation technologies.*
- **Mediterranean Transport and Mobility Research Institute: research on specific common problems including the connectivity between networks from the two sides of the Mediterranean, cultural behaviour of transport users, etc, and training activities, including the specific Mediterranean climate, cities, transport behaviour and social relations.**

Workshop on Socio-Economic research and Humanities

In Social Science there should be a stimulus to give up all the universal and standardised approaches and shift to region specific, context specific approaches, in order to really find the factors that favour development. There is a need to develop and produce appropriate approaches for research in social sciences.

COOPERATION PROGRAMME

Social Sciences Indicators should be built on a context specific base, namely the MPC characteristic and cultural context. We find no harmonisation of statistical data in many developing countries, particularly MPC. Statistical offices do not offer a sufficiently organised set of reliable data. On the other side, many specific factors relevant for economic development of third countries, are not captured by global institutions statistics built on standard economic models and approaches for the analysis. Statistics should be harmonised on a regional basis at least. We need regional indicators, able to explain the real situation, and global indicators to check comparable data.

There is a need to conduct further research about the IPR, and ethical issues in the S&T Cooperation.

Foresight activities should be focused on what is really relevant, and what is really relevant now is energy. The Information Society development depends on energy.

Europe in the world: develop studies and knowledge about third countries, taking into account that what is happening in the EU is affected by what happened and what is happening outside the EU. We must look at our neighbour countries. A lot of research emphasises the role of Europe in the world and how Europe influences the rest of the world. But there is also a need for research on how Europe is influenced by the rest of the world and to fully understand the cultural, social, political, environmental and territorial features of third countries.

A lot of research has been about EU role and influence in the world, but most of EU trends are affected by outside: shift and complement the point of view.

How coherent is Europe's role in the world, in terms of development, environmental, and economic policies?

The current energy situation is a good opportunity to connect with citizens because it is having a negative impact on their budget. Energy has a symbolic importance in the history of European integration – the Schuman plan was based on energy. A sort of new Schuman Plan for energy is needed today.

European Paradox: good science, poor exploitation. How can we approach the fundamental problem, by using social sciences' aid and tools? The problem is not only a European one; it is common to most of developing countries. Social science research should focus on this issue, especially by analysing innovation policies. Main factors affecting innovation and the impact of each of them in different contexts and conditions

should be the object of research projects in social sciences. Linking science to innovation and specific cultural settings.

In this sense, some topics should be considered in the Mediterranean Area:

- **Challenges Facing Knowledge Society:** human development Cultural modernization – life long learning – scientific knowledge and scientific culture- professionalization and competitiveness.
- **Technology and Society in a Mediterranean environment:** problems of technology transfer – technology and development – cultural aspects of technology.
- **Environment:** environmental ethics – misuse of environment – water issues – environmental and social problems in overpopulated urban areas. **Environment and tourism.**

CAPACITIES PROGRAMME (Science in Society)

Insist on the capacity of civil society to influence and have impact on politics and research (wto negotiations). New structures for research. There is a need to perform more political research by considering civil society, not only academy.

Role of citizens in the EU: what citizens want from the EU is that it should link its policies to more concrete problems. Conduct research on the role of the EU, to increase citizens' perception of what the EU does well.