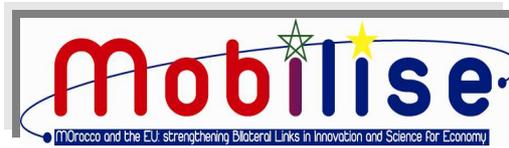


MOrocco and EU: strengthening Bllateral Links in Innovation and Science for Economy

Final publishable summary report

October 1, 2012 & September 30, 2015



MOrocco and EU: strengthening Bllateral Links in Innovation and Science for Economy

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Starting date: October 1, 2012
Ending date: September 30, 2015

Partners:

1. R&D MAROC, Morocco
2. Ministère de l'Enseignement Supérieur, de la Recherche Scientifique et de la Formation des Cadres, Morocco
3. Centre National pour la Recherche Scientifique et Technique (CNRS), Morocco
4. Université d'Aix Marseille (AMU), France
5. VEREIN EURESEARCH (EURESEARCH), Switzerland
6. ASTER - SOCIETA CONSORTILE PER AZIONI, Italy
7. UNIONE DELLE UNIVERSITA DELMEDITERRANEO ASSOCIAZIONE (UNIMED), Italy
8. FUNDACION PARA EL CONOCIMIENTO MADRIMASD, (MADRI+D), Spain
9. VDI/VDE INNOVATION + TECHNIK GMBH (VDI VDE IT), Germany

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Executive summary

The project MOBILISE started on 1 October 2012, for a period of 3 years aims to strengthen bilateral cooperation in Science and Technology between the EU and Morocco. Key achievements are:

Elaboration of a report on foresight exercise for Morocco-EU cooperation in STI:

- *Organization of an experts' mission between 6-9 May 2014 in Rabat and Casablanca in order to discuss with various key stakeholders operating in the field of scientific research and innovation in Morocco.*
- *Organization of a workshop in April 2, 2015 the CNRST, Rabat to present and discuss the findings of the foresight exercises.*
- *Organization of 3 brokerage events during 2013 and 2015*

Organization of three workshops on three chosen thematic (energy, water and environment, Agriculture, food and biotechnologies):

- *Opportunities of cooperation between Moroccan and European institutions in Agriculture, Agro-food and Biotechnologies (AAB) May 5, 2015, Rabat*
- *Thematic Workshop on Energy: Identification of common priorities and thematic needs of cooperation between Morocco and the EU. 27th February 27, 2015, Rabat*

Elaboration of an agreed methodology handbook and indicators set to use in STI cooperation assessment between EU and Morocco:

- *Organization of a study visit Switzerland for three Moroccan responsible (2 from MESRSFC and one from Hassan II Academy of science and technology), in order to exchange with Swiss STI stakeholders and learn from their experience in terms of producing STI indicators, including those related to STI cooperation with the EU, and their use in decision making in Switzerland*

Organization of two training on H2020 in Rabat, Morocco of January 27, 2014 and 29-30 October 2015. European partners "EURESEARCH", "AMU" "ASTER" were mobilized to conduct the training, which was opened by Madam Minister Delegate to the Minister of Scientific Research.

Identification of existing cooperation and cooperation interest - Cluster Cooperation Catalogue:

- *More than 400 Cluster Management Organizations across Europe (COMs) had been addressed in a survey in 2013.*

Visit of EU experts on clusters to Morocco - Promotion for Cluster Management, Good Practice Exchange, and Initiation of Cluster-to-Cluster Cooperation: 4 Moroccan clusters concerned

Visit of Moroccan Experts and Cluster Managers to Europe - initiation of Cluster-to-Cluster Cooperation:

- *Partnerships and collaborations and partnerships of agreed protocols were signed between Moroccan clusters (Morocco Microelectronics Cluster and Cluster Electronics, mechatronics and mechanics) and European Clusters (CAAR, Automotive Cluster Aragon, Spain, Mobility and Multimedia Cluster Hungarian, Hungary and Gerente, FEMAC, Spain)*

Capacity Building for Cluster Management, Training and Networking: Organization of two workshops «Cluster Management and Collaboration Strategy», duration 2014 and 2015.

Specific Topic - Start up-support cooperation:

- *Moroccan and European CMOs were identified, that engage in Start-Up support. It is the intention to match them with a scope to initiate good-practice exchange on that specific cluster-management topic.*

Creating and development the basis for data database of laboratories and analytical platforms nationwide (portal): Link: <http://cnrst.ma/mobilise/>

Develop the training and exchange actions between the European and Moroccan laboratories

Organization of the Conference on Agro Food in Rabat on April 2015, the title of the Conference was “Genomics and Bioinformatics for Agricultural Research

Feasibility study of potential joint research and innovation centres build in cooperation with European partners was put in place

Organization of the workshop, workshop Feasibility study, the study was presented and discussed. Rabat, September 14th, 2015

Summary description of project context and objectives

EU funding is supporting an institutional twinning programme set up to strengthen and bring Morocco's research and innovation system closer to the European Research Area (ERA). The initiative will contribute to standing bilateral initiatives and programmes in the field of science and technology (S&T).

The project “Morocco and EU: Strengthening bilateral links in innovation and science for economy” (MOBILISE) is working to consolidate and build on the achievements of the M2ERA project (2009-2012). The goals include an assessment study of EU-Morocco S&T cooperation and implementing thematic National Contact Points (NPCs) funded by Morocco's Ministry of Education, Higher Education and Scientific Research.

The project is built with high consideration of the aforementioned context, a meticulous reference to the call text, particularly the expected impact, and taking into account the conclusions of the 6th Joint steering committee held in Rabat on 28 September 2011, in particular:

The strategic interest of Morocco in the forthcoming integrated programme “Horizon 2020”, including its innovation component oriented to global challenges, the Competitiveness and Innovation program and the European Institute of Technology;

Synergies between bilateral and multilateral instruments, and between institutional and thematic initiatives;

- Launch of programme level cooperation and possibilities for Morocco to participate in such integrated initiatives;
- Mobilisation of Moroccan scientific Diaspora to strengthen STI cooperation with EU;
- Adoption of common road map

Some key words from the call text be highlighted by the present proposal: support to policy dialogue, new priorities and societal challenges, cooperation through the research to innovation chain, mutual participation and benefit, synergies of programmes and initiatives, joint activities, capacity building and networking.

MOBILISE also envisions improving industry based on S&T cooperation between the EU and Morocco, establishing joint collaboration and networking of technical platforms and research laboratories, and to facilitate industrialisation based on innovation and knowledge. Additionally, the project will work to mobilise Moroccan competencies in Europe and establish thematic joint innovation research centres.

The project is divided into 5 work packages conceived to enable interactions between them and to cover the main objectives listed in the call. The Work package (WP1) has transversal dimension with constant output to the 4 other work packages. In this WP, the new approach added to either the capacity building of NCPs and networking of institutions will have accordingly incidence on the success of clusters and the nature of support that will benefit to them (WP2). The networking of research institutions (WP1), through dedicated brokerage events is in synergy with the first joint workshop of labs networking (WP3) and the mobilization of Moroccan competences (WP4). Mobility for innovative research centers (WP4) will be in mutual exchange and benefits with WP2 achievements. The pilot action plan for scientific Diaspora mobilization planned in WP4 will seek potential synergies with the implementation process of innovation based clusters through building up joint research & Innovation Centers. WP5 will assure the coordination of the aforementioned WP's, the monitoring of the timetables deliverables and milestones, set up the management program, supervision bodies and quality procedures. The identification of existing technical platform will optimally benefit for cluster which certainly needs appropriate equipments and experimental machinery for generated innovative projects. Companies will also be provided local and relevant platforms for their technical R&D test and experiments. WP4 is a crucial vehicular in establishing the networking of laboratories between Morocco & EU planned in WP3. In addition, WP3 and WP4 will develop synergies in common specified thematic.

Description of the main results

WP1: Implementation of studies recommendations: towards an overall strategy

Task 1.1: Foresight Exercise (FE) for Morocco-EU cooperation in STI,(P2, P4 and P7)

The work had been structured according to the following scheme:

Benchmarking Report: a very significant number of existing studies on the STI Cooperation between the European Union and third countries have been analysed in order to identify best practices and pitfalls to be avoided. On this basis a number of key issues to be given attention have been listed.

Researches and documentation to propose useful scenarios Morocco EU collaboration in STI:

- Documentation on other cooperation (UE/India, EU/ China, EU, EU/Russia, European Commission studies on scenario development and foresight exercises methods): extraction of analysis methods, topics and best practices used to develop a STI cooperation framework (studies, questionnaires, etc...).
- Analysis of data and preparation of a benchmarking report to use for foresight exercise regarding EU/Morocco STI cooperation framework.
- Proposal of a benchmarking report with topics (fields), methods and steps to use for foresight exercise of EU/Morocco STI cooperation.

Preparation of Interviews (questionnaire, Stakeholders Identification): In order to collect relevant information needed to elaborate the SWOT analysis a number of Stakeholders were identified by the Moroccan Ministry and contacted in order to set up a series of face-to-face meetings.

Elaboration of the questionnaire addressed to Moroccan researchers and decision makers aiming at answering the questions:

- What do we have to look for on and over the horizon with regard to Morocco EU collaboration in STI?
- What scenario can be usefully applied?

There were taken into consideration the latest findings of relevant projects and initiatives (twining project, M2ERA, MIRA) and have contributed to define:

The questionnaire research;
The list of interviewees.

Organization with a mission from 5 to 9 May 2012 European experts in Morocco. This mission aims to achieve a foresight exercise of cooperation between Morocco and the European Union (EU) in the fields of scientific research and innovation. To do this, the experts met twenty Personalities and Moroccan makers operating in these areas.

In annex I the list of stakeholders is provided.

Results:

Execution of Interviews (18): two experts performed the foreseen interviews and collected very significant information about the problems and expectations of the Moroccan R&D Community in terms of cooperation with the EU.

SWOT Analysis: on the basis of the collected information an extended SWOT analysis of the Moroccan Research and Innovation system in terms of Cooperation with the EU was carried out. This was used as a basis for the elaboration of the future cooperation scenarios

Elaboration of scenarios based on SWOT: The key elements identified through the SWOT analysis were used to build the future scenarios of cooperation, using a methodology where, as far as possible, the positive elements (Opportunities, Strengths) were used to reduce the impact of the negative ones (Weaknesses, Threats). As a result a number of recommendations for improving the cooperation were formulated.

Report on foresight exercise for Morocco-EU cooperation in STI

Organization of three workshops on three chosen thematics (energy, water and environment, Agriculture, food and biotechnologies):

- Opportunities of cooperation between Moroccan and European institutions in Agriculture, Agro-food and Biotechnologies (AAB)
- Thematic Workshop on Energy: Identification of common priorities and thematic needs of cooperation between Morocco and the EU.

Result

- Elaboration of three reports on the mentoring thematic workshops

Task 2: Designing a new approach for Morocco-EU STI cooperation

Preparation of questionnaire to address to adequate personalities to contact in respect to FE EU/Morocco

The MESRSFC has prepared to conduct a national survey aiming to define and propose concrete instruments and modalities of cooperation in science, technology and innovation between Moroccan public and private institutions and their European counterparts

Execution of Interviews: Interviews of 29 persons at various research-related institutions in Rabat and Casablanca from Mai 26 to 28 2015.

Organization of a study visit Switzerland for three Moroccan responsible (2 from MESRSFC and one from Hassan II Academy of science and technology), in order to exchange with Swiss STI stakeholders and learn from their experience in terms of producing STI indicators, including those related to STI cooperation with the EU, and their use in decision making in Switzerland. Euresearch organized a 3 days visit for three Moroccan officials in order to gain insight in the Swiss S&T international cooperation organisation as well as the national systems to collect S&T indicators. A workshop was organized with presentations from a broad range of Swiss institutions active in R&I: KOF Swiss Economic Institute, the State Secretariat for Education, Research and Innovation SERI, the Swiss National Science Foundation and the Swiss Federal Statistical Office, the Swissnex network.

The delegation also had the opportunity to discuss the practical aspects of international cooperation with the Vice-Rector Research of the University of Basel. The University of Basel was selected because of its role as leading house for Africa in the Swiss international R&I policy. Euresearch also presented its set of KPIs.

The presence in Switzerland of the delegation was further exploited for networking with the LEMONOC project (a life long learning project) and various representatives of the Ecole Polytechnique Fédérale de Lausanne (EPFL), in particular M. Capezzali, deputy director of the Energy Center of the EPFL.

Results:

- Elaboration of an agreed methodology handbook and indicators set to use in STI cooperation assessment between EU and Morocco. The document has been presented at a workshop on 2/4/2015 in Rabat and extensively discussed with the audience.

Task 3: Networking of research institutions for S&T cooperation (P2-P5)

The MESRSFC and its partners organized 3 brokerage events.

The first one was held in May 5, 2015 at Hassan II Agronomic and veterinary medicine in Rabat, and dealt with opportunities of scientific cooperation between Moroccan and European institutions in Agriculture, Agro-food and Biotechnologies, and.

The second and third Brokerage Event was (R2B) "Innovat Match" held alongside the International Exhibition Research to Business scheduled for June 2013 and 2015 in Bologna, Italy.

The (R2B) Research To Business (R2B) Exhibition, a very important and successful event that Aster organizes every year on behalf of the Regional Government with the aim to allow entrepreneurs and researchers from all over the world to meet. Since R2B includes, amongst other initiatives, an important brokerage event called "Innovate & Match", it was discussed and agreed with WP1 leader and other partners to invite Moroccan researchers to subscribe to that event, in order to work towards the objectives of Task 3. Thus, on one hand Moroccan partners invited and selected researchers for the event; on the other hand, Aster supported their subscription and organized their participation.

To this end, the Ministry of Higher Education (P1) has launched a call for applications to identify and select three Moroccan researchers in the fields of Food, Renewable Energy, Cultural Heritage, Water & Environment and TIC, to participate in this event.

▪ Selected researchers:

National School of Architecture (ENA) (Participants Catalog : 576)
Abdelkader AIT EL MEKKI
Request: Energy Efficiency EE and Renewable Energy RE

National Institute of Urban Planning and Development (INAU)
Mohammed HANZAZ
Offer & Request: R&D, heritage building, energy efficiency

Cadi Ayyad University in Marrakech (Participants Catalog : 582)
Mostafa MAHROUZ

University Mohammed Premier (Participants Catalog : 583)
Ahmed MEZRHAB
Offer: Cooperation in scientific research in renewable energy and energy efficiency
Offer & Request: Renewable Energy and Energy Efficiency
The Laboratory of Mechanics & Energetic (LME), led by Professor Ahmed MEZRHAB, is located within the Faculty of Science, University Mohammed Premier.

The research themes developed at the LME focus on solar thermal energy and energy efficiency in buildings and focus on reducing costs, increasing the performance of products and systems, sustainability and solar integration on a larger scale. These themes are the solar field and the study of the influence of dust on radiation DNI, the study of the degradation of solar mirrors subject to weather conditions Moroccans, the engineering of solar thermal systems: Improving performance, design new products, the Storage of the energy, the Energy efficiency in Building, etc...

University of Hassan II Casablanca

Professeur Mohamed TAHIRI

Chemistry, Water and Environment Engineering

University Sidi Mohamed Ben Abdellah of Fez

Professor Mohammed EL MOHAJIR

- Department of computer sciences
- Information Science and Technology
- Economics, Law and Business management
- Social sciences and Humanities

USMBA located in Fez, is one of oldest universities of Morocco. It gathers 11 faculties and schools which offer a high number of training programs: 72 bachelors, 66 Masters and 16 training Doctorates in the fields of science, technology, Medicine, economics, social, legal and human sciences. The USMBA is strongly involved in the national training programs such as “offshoring 2010” and “Initiative of 10 000 engineers”, also in the 7PCRD and H2020 projects like MOICT and INPMA. The university has set up an innovation centre “Cité d'innovation et transfert technologique (CITT)” which aims to foster innovation, reinforce partnership university-industry, promote the technology transfer and foreground the research results. Furthermore, USMBA has been involved in international networks and projects on ICT like PAPERTCH, IKONOS, MED-COLOUR-TECH and MAP-IT!. These considerations have led the USMBA to host Moroccan ICT-NCP

University Sidi Mohamed Ben Abdellah of Fez

Professor Abdennebi TALBI

Département TIC,

Task 4: Capacity building of the NIP Morocco and the system of thematic NCP (P2-P5-P7)

The MESRSFC and its partners organized two training on H2020 for the personnel of ICP, institutional contact points, industrial and and other entities involved in STI cooperation to enhance their skills regarding the EU Framework Programme for Research and Innovation.

- One organized in Rabat, Morocco of January 27, 2014. European partners "EURESEARCH" and "AMU" were mobilized to conduct the training, which was opened by Madam Minister Delegate to the Minister of Scientific Research.of Higher Education and Scientific Research at the opening session who gave a speech on this occasion. It was also marked by the participation of 98 persons: NCP coordinators (7), ICP coordinators, officials and executives from MESRSFC, public and private universities and research and/or training institutions (43), and researchers (48).
- Second organized in 29-30 October 2014. Two (2) training days with oral presentations and practical exercises. 62 Participation (NCP, ICP and other resource persons responsible for cooperation). Closing session chaired by the Secretary General of Mr MESRSFC

The training topics are

- Cognitive approach about the basic of H2020 (objective, structure, calls, works programmes...)
- The EC Participant Portal
- How to participate in H2020 (rules)
- Writing a project (guidelines to draft a project)
- Practical exercises in groups to prepare a project proposal

Organization of a working visit of NIP Morocco staff to EUresearch and other Swiss Research Institutions for sessions on best practices. The objective is to establish long standing partnerships targeting best practices and sharing experiences (Mars 29 - April 2, 2014).

WP 2: Work package title Innovation Based Clusters

Task 1: Ex-ante support to identify cluster and their regional stakeholders (P1, P9, and P6)

The work had been structured according to the following scheme:

Identify Moroccan clusters (with specification of their major stakeholders and their management methods) that can build a working node.

Target:

- 6 clusters and 14 similar structures (SC) across Morocco
- Collected information for 12 clusters and SCs
- 3 stated to be already in contact with EU counterparts.
- All the 12 Cs and SCs expressed their interest with regard to cooperation with EU (open topics).
- well matching topics: cover ICT, production (electronics, mechatronics), food or agriculture)

The European counterparts are identified:

Target:

More than 400 Cluster Management Organizations (CMO) across Europe

- 45 CMOs have responded to the survey,
- 5 stated to be already in contact with Moroccan counterparts.
- 1 CMO stated to have no interest in collaboration.
- 26 CMOs specified their interest with regard to cooperation with Morocco,
- 10 more left the topics open.
- Future Interest in Cooperation : Networking and matchmaking, followed by interest in supplies,

Production opportunities and joint projects.

- Well matching topics: Most of them cover ICT, production (electronics, macaronis, and aeronautics), food or renewable energies/energy efficiency.

Task 2: Elaboration of an EU-Moroccan collaboration strategy on promoting innovation-based clusters (P2-P9)

Visit of a Moroccan delegation to pre identified clusters in Europe
September 16/17 and 18/19, 2014 in Berlin, Germany

Participation of a Moroccan delegation, managers of clusters in exhibitions and professional meetings in Europe for marketing and best practices exchange.

▪ Activities:

- ✓ Study Tour, Delegation Visit, Best Practice Exchange
- ✓ B2B meetings for cluster managers.
- ✓ Meetings with Experts for government representatives.

Participants:

- MESFRCS
- Ministère de l'Industrie du Commerce, de l'Investissement et de l'Economie Numérique.
- Agadir Haliopôle Cluster
- Cluster MENARA
- Maroc Numeric Cluster (MNC)

Program September 16/17 (6 events):

- Regional Cluster Policy of the Berlin-Brandenburg Area
- Berlin Capital Region Cluster Strategy
- Science- and Innovation Park Berlin Adlershof
- Go-Cluster - The national German Cluster Programme
- The national German Cluster Policy
- Labelling as Instrument for cluster quality enhancement

Program September 18/19

- Visit of international European Cluster and Matchmaking Conference:
- 2nd BSR Stars Cluster-to-Cluster Conference and Matchmaking
 - ✓ Theme: "Towards new Horizons" (Internationalisation)
 - ✓ 100+ Cluster Managers and policy representatives, hosted by BMWi
 - ✓ Participation to the B2B Session: every cluster manager had an agenda of at least 5 meetings with EU clusters. The objective was the initiation of inter-cluster activities.

Topics e.g:

- ✓ Key success factors for cluster internationalisation
- ✓ Practical insights on cluster internationalisation from the cluster managers
- ✓ International Matchmaking (cluster-to-cluster and policy-maker to policy-maker)
- ✓ Networking

Results:

- Elaborating a platform of reflection that in turn will serve to come up with a collaboration strategy;
- Signing a **Memorandum of Understanding** between relevant partners from EU and Morocco.

Task 3: Networking and capacity building of Cluster Management Organisation representatives (P2-P9-P4)

Organization of two (2) Workshops:

A one Workshop «Cluster Management and Collaboration Strategy», February 4, 2014, CNRST- Rabat

Target Groups: More than 52 Organizations across Morocco

- Moroccan Policy makers and agency representatives (17)
- Representatives of Moroccan Clusters and similar implementation initiatives (12):
- Universities and scientific research centers (23)

A second training seminar was organized by VDI/VDE-IT, R&D Maroc and MESRSFC, for the benefit of 10 Cluster organizations managers. This seminar was held in Casablanca, from 5 to 7 may, 2015.

The seminar was led by a European expert in the field (Mr. Alain Tubiana) in addition to experts representing the German partner VDE / VDI / IT and the Moroccan Directorate of Scientific Research and Innovation.

The 10 Cluster managers who participated had the opportunity to attend the presentation of best governance practices clusters and the Management Manual developed under the MOBILISE project (D2.8). Also, they discussed and developed:

- The main cluster management aspects (services clusters, financing, management, communication and marketing);
- Technology transfer related activities ("research to business");
- Internationalization strategies

Organization of a Visit of European experts in Morocco, February 4 and 5, 2014, - Rabat, Casablanca & Mohammedia

Visits Target Groups: 3 Moroccan clusters

- ✓ 1 Visit : Cluster Morocco Microelectronics Cluster (MMC) in Rabat
- ✓ 2 Visit : MASCIR in Rabat
- ✓ 3 d Visite : Electronique, Mécatronique et Mécanique Cluster (CE3M) in Mohammedia
- ✓ 4 th Visit : Maroc Numeric Cluster (MNC)

European experts:

- Mr. Peter Hahn, VDI/VDE-IT, Germany
- Mr. Nicola Gouze, VDI/VDE-IT, Germany

- Mr. Paolo Pavan, Professor, University of Modena and Reggio-Emilia Italy
- Mr. Barnabas Malnay, Director, Hungarian Mobility and Multimedia Cluster, Budapest, HU
- Mr. Enric Pedros Beyá, Manager/Gerente, FEMAC, Lleida, ES
- Mr. David Romeral Molina, Director, CAAR (Cluster Automotive Aragon) Zaragoza, ES

Visit of a Moroccan delegation to the MICRONORA Fair and Brokerage Event September 23-26, 2014 in Besançon, France

Participation of Moroccan managers of clusters in exhibitions and professional meetings for initiating new collaborations and best practices exchange in the Micro-mechanics / Micro-electronics sectors

Activities (major European trade fair in the Area of Electronics):

- ✓ Matchmaking (2 days, B2B meetings).
- ✓ MICRONORA Mission, Delegation Visit, Best Practice Exchange

Participants: the managers of 2 selected clusters (MMC, CE3M)

- ✓ R&D Maroc
- ✓ Moroccan Electronics, Mechatronics & Mechanics Cluster
- ✓ Morocco Microelectronics Cluster - MMC
- ✓ VDI/VDE-IT, MOBILISE Partner

Program: September 24-26 2014

- Visit of MICRONORA, the international microtechnology and precision trade fair
- Meeting of the Microtechnics Alliance, an Alliance between 4 European Clusters in the field of Microtechnics and Microsystems
- Participation to the 9th Micro Nano Brokerage Event (www.micro-nano-event.eu) consisting in face-2-face meetings with clusters or technology providers
- Participation to the INTERCLUSTERING Session, with presentation of 12 clusters active in the field and initiation of inter-cluster activities.

Results:

- Presentation of 2 Moroccan clusters (MMC & CE3M) on an specialized international fair
- Cooperation profile filled-in and disseminated during the Meeting of the Microtechnics Alliance
- Several promising face-2-face meetings, follow-up and first results to be expected end 2014

- Presentation of 2 Moroccan clusters (MMC & CE3M) during the interclustering meeting, identification of financial support to initiate or sustain collaborations
- Very positive feedback from the Moroccan clusters AND from European Clusters AND from the event's organisers

Task 4: defining management, methodology, guidebooks (or manuals) of cluster management (P2, P9)

A set of documents (guidelines and manual guidebooks) suited to the context has been compiled.

The following Compendium gives an overview about relevant background documents:

- ✓ for practical cluster guidance
- ✓ for practice or policy related publications for the interested reader

1. Good practices governance for Clusters
2. Cluster Management - A Practical Guide. Part A: Overview
3. Cluster Management - A Practical Guide. Part B: Tools
4. EU Projet Omni-NET 2005 - 2008 - Opto-Micro-Nano Innovative Network Exploiting Transversality
5. France Clusters (CDIF)
6. Government of Alberta - Clusters - A key to Rural Prosperity (September 2009)
7. OCDE case study (2009)
8. Development of Clusters and Networks of SMEs - The UNIDO Programme (2001)
9. OCDE - effective policies for small business guide for the policy review process and strategic plans for micro, small and medium enterprise development (2004)
10. World Bank - CLUSTERS FOR COMPETITIVENESS Practical Guide & Policy Implications for Developing
11. Cluster Initiatives (2009)
12. News Business Services, Business Development Services (2003)

WP 3: Euro-Moroccan analytical Laboratories Network

Task 1: Institutional awareness and identification of potential members of the network (P3, P8)

The work had been structured according to the following scheme:

The first action of this project is the realization of a mapping of national analytical capabilities. To do this, information and awareness meetings were conducted with laboratories responsible for analyzes and technology platforms. The initiative for the creation of a national network of analytical laboratories has been adopted and the proposal to create a website (portal) that collects the information necessary for mapping was concretized. Fifty analysis laboratories were originally listed with relevant information on their areas of expertise and their infrastructure. This action has been entrusted by the Ministry of Higher Education and Research, which encouraged the expansion of the mapping analytical capabilities to all academic institutions or research through the creation of an inventory of heavy instruments and the establishment of a state of place on the organization and functioning of the structures that house them. The analysis of the data showed that the national

Park scientific instruments are very rich and its structuring is more than ever a priority for effective use of analysis tools available and to better plan future acquisitions. Many academic institutions are already engaged in the implementation of joint analysis center, such an initiative is fully in the Ministry's strategic guidelines on the creation of local platform, regional or even national.

Creating the basis for data database of laboratories and analytical platforms nationwide (portal):

The interest of the portal is multiple, it will allow, amongst other things:

- To promote the skills and areas of laboratories expertise
- Provide a forum for exchange
- Offer businesses a space for identifying and approaching laboratories
- Create a collaborative space to develop partnerships
- Facilitate the organization of inter-laboratory tests with national and European partners

The main outcomes of the portal

- Have a comprehensive view of the availability of analytical facilities and location.
- Facilitate the organization and structuring of the park to avoid duplication of instruments and to opt for pooling local, regional or national.
- Facilitate the generalization of the concept mutual use (UATRS) at level of each University for (i) strengthening complementarily between the different services of analysis, (ii) standardizing the internal and external procedures, and (iii) establishing good practices of laboratories to facilitate the establishment of quality assurance.
- Have a clear vision of the instrumentation park power based on actual objectives that take into account the socioeconomic environment of each region.
- Ensure proper budgetary planning Provide an investment fund to ensure periodic renewal of scientific equipment.
- Better negotiating maintenance contracts grouped and the formulation of consumable needs through framework contracts (equipment and products).
- Plan specific ongoing training for all national analysts.
- Conduct inter-laboratory comparison testing

Conception of website for laboratories registration to joint the network

Link: <http://cnrst.ma/mobilise/>



MOrocco and the EU: strengthening BIlateral LIinks in Innovation and Science for Economy

WP3- Euro-Moroccan analytical Laboratories Network

A travers le projet Européen MOBILISE, Le CNRST est chargé de mettre en place un portail qui regroupe l'ensemble des laboratoires et plateformes d'analyses sous forme d'un réseau d'expertise dans le domaine analytique.

L'intérêt du portail est multiple, il permet de :

- Faire connaître les compétences et les champs d'expertises des laboratoires
- Constituer un carrefour d'échanges de savoir-faire
- Offrir aux entreprises un espace permettant d'identifier et de se rapprocher des laboratoires
- Créer un espace collaboratif pour faire émerger des partenariats
- Faciliter l'organisation des essais interlaboratoires (d'inter-comparaison) avec des partenaires nationaux et européens.

Pour vous inscrire au réseau, cliquez [ici](#)

Task 2: Integration of the core group of laboratories (P3, P8)

The second action corroborating the first is cooperation with laboratories and European centers of analysis through the creation of a Euro-Moroccan network of analytical laboratories working on common themes of interest as emerging pollutants. In this context, a hard core "core group" laboratory was established and the terms of reference for joining the network have been established to define: (i) the composition of the laboratory core, (ii) the roles and responsibilities, (iii) the mechanisms of decision making, and (iv) means of communication. Concrete actions between members of the network have been defined, including the construction of two technical conferences and courses of training of Moroccan experts in European laboratories.

Integration of the core group of laboratories EU laboratory

Integration of the core group of laboratories Laboratory from Morocco

Task 3: Development of the Network (P3, P8)

The third action comes within the framework of strengthening the Euro-Moroccan network through the implementation of training courses and technical conferences. Moroccan experts of training courses in European laboratories have been made. Indeed, Moroccan experts falling (UATRS, CNRST, Rabat) and (The ESITH) participated in the "Train-Mic" program for training of trainers organized by the reference laboratory equipment within the JRC the European Commission. At the end of this training, it was decided to organize the 7th edition of the Euromaster, an international summer school on the measures of science in chemistry in Morocco. Partners in this event are: (i) CNRST the ESITH the Moroccan side and (ii) the JRC EC. In the medium term Moroccan partners can join this prestigious

consortium "Measurement Science in Chemistry" to benefit from European expertise in the field to set up similar training systems at national and regional level. Other objectives of this action are: (i) Record the Moroccan partners in this international circle; (ii) Establish a training network on analytical techniques and (iii) open the medium-term possibility of creating a Master training in the field of analysis and measurement in chemistry thereby increasing the level training in the field of analysis. Indeed, at the end of the event, the ESITH launched the creation of a Master in management of analytical laboratories and has been accredited by the Ministry of Higher Education and Research.

Regarding training courses three courses were made in favor of the Moroccan expert workshop was an opportunity for consolidated collaboration through joint research projects. A first collaboration project on the evaluation of the toxicity of nanomaterials on agricultural systems has been initiated between UATRS / CNRST; the Plant Biotechnology Unit of INRA's Moroccan side and the Environmental Department of the INIA in Spain on the European side. As part of the extension of the collaboration network between Morocco-European technology platforms, a second collaboration project on environmental genomics is being established between the LBM / UATRS under CNRST INRA and the Moroccan side and the Swiss Institute of Bioinformatics (SIB) on the European side. The collaborative project under discussion includes the use of the new generation sequencers recently installed to UATRS, for the completion of sequencing (i) the genome of the argan tree and (ii) certain bacteria genomes of Coordinated Collection of Microorganisms Moroccans (CSCM) with biotechnological value.

WP 4: Mobility for innovative research centers

Task 1: Action plan for mobilizing Moroccan competencies in Europe into innovative Research Center (P2, P4)

Development of a draft of the action plan

Main areas of action:

- Identification of Moroccan skills in Europe and formulation of tenders and requests.
- Identification of pilot projects in the thematic priority of Morocco
- Benchmark with countries that have established an institutional framework for management and monitoring skills

Task 2: Conducting of a pilot operation (P2-P3-P4)

Operations identified:

1. **Fundamental and clinical neurosciences (2012-2015) : International Research Group (GDRI) Franco - Moroccan**
2. **Medicinal Chemistry : Moroccan Society of Medicinal Chemistry :**
3. **Biotechnology: INRA Rabat / INRA France.**
4. **Mechanics Energy and Processes: FST Tanger / University of Marseille.**
5. **Electronics, Mechatronics : Cluster Electronics, Mechatronics, Mechanical Mohammedia and association ISYC Skills Network Technology Intelligent Systems Moroccan world**

Task 3: Mobilizing of Moroccan competencies in their own institutions.

Apart from studying the structure of Morocco under the point of view of research and innovation, the first activity of the expert was the participation to the workshop titled “Propositions pour la mise en place des centres/structures/platformes de recherche conjoints innovants « organized by the WP leaders in Nancy (France) on 24-25 February 2015, with the aim to get in touch with the selected European organizations which should be the “pilot operations” for the JRICs. During the workshop, the expert presented the “Cross-country cooperation in research”, that is a general model/ concept of Joint Research Centre with several specific examples from Italy and Europe, plus some feedback from her study of the 7 pilot operations involved.

Task 4: Establish Joint Innovation & Research Center

The visit of the expert to Morocco was organized by the Moroccan WP leader in order to let the expert meet and discuss with the representatives of the local participants in the pilot operations. The visit took place between 18 and 23 Mai 2015 with the following schedule:

- 19 May, Mohammadia: meeting with the president of the Cluster of Electronics and Mechatronics GE3M.
- 20 May, Tétouan: meeting with the Chancellor of the University Abdelmalek Essaadi.
- 21 May, Rabat meeting with the Chancellor of the University.
- 22 May, Marrakech: meeting with the Chancellor of the University Cadi Ayyad.
- 23 May, Beni Mellal: meeting with the Chancellor of the University Sultan Moulay Slimane.

The study was presented by the expert during the WP4 final workshop on September 2015 at the CNRST in Rabat to an audience composed by the representatives of the research and institutional organizations such as the Ministry of Education and Research, the CNRST, the Moroccan Universities and other stakeholders as well as many researchers.

Below summary of the study:

The feasibility study is built on these pilot operations conducted in the European research institutes through the Morocco researchers settled in each of them, and on the visits to seven research areas and communities in Morocco (carried out at the end of May 2015) and on the proposed projects provided by each of them.

On the basis of the data collected before, during and after the visits, and of the analysis of the potential of each of the research cooperation areas identified, six areas of cooperation were selected. **Two categories of joint research centres were identified: the excellence poles and the research platforms.** Within each of which three pilots are selected as feasible, i.e. three excellence poles and three research platforms.

The first category concerns the building of a cooperative environment, with the participation and support of all the participants to the joint centre of both Morocco and EU research institutes, based on complementing research and education resources, on coordinating the participation to common research roadmaps, on opening the access to research labs. The aim is enhancing the potential of education, research and innovation of each of the partners through cooperation and complementarity's.

The second category is aggregated around an already existing or fully planned research area/platform, built with the strong support and commitment of both the hosting research institute/university, the regional and national government and the foreign partner/s, and with already invested or identified and committed funds for the realisation of the platform plan. The same aim is pursued in this category of joint research centre catalysing scientific capabilities and technological and instrumental resources in a shared platform for science, technology, industrial application and innovation.

These two categories of research and innovation cooperation centre correspond to two typologies of policy, or rather to two different phases of the cooperation building, with the complementary support of public-private action.

The six joint research and innovation centres (JRIC) selected by the study are the following ones:

Category 1: excellence poles (pôles d'excellences)

1. excellence pole on Materials-Wood (Rabat)
2. excellence pole and demonstration building on Energy efficiency -Building (Tetouan-Marrakech)
3. excellence pole on Environment-Water (Marrakech)

Category 2: research platforms (plates forme de recherche)

4. shared research and innovation platform on Engineering-Science/technology/enterprise (Rabat - TAMESNA)
5. shared research platform on Neuroscience (Beni Mellal)
6. shared innovation platform on Cluster Electric, power electronic, mechatronic (Mohammedia)

The 7th visited potential pilot, the field of Collective intelligence and Robotics (Marrakech) is to be considered as a cross-cutting action which will accompany the establishment and implementation of the two categories of joint research centre.

For each of them a short description is provided, and the presence and quality of the following aspects were examined in order to assess the feasibility:

1. Identify the stakeholders
2. Define the function and structure of each partner, outline the necessary steps for the function and structure matching
3. Define the governance structure and the management committee

4. Financial/economic feasibility
5. Action plan
6. Additionally of the cooperation and coordination (through a joint innovation and research centre), monitoring and assessment/evaluation indicators

Some concern is deserved to those activities which could be run and coordinated in common between the joint research and innovation centres. The activities which could benefit from a national coordination are mainly the education and research mobility selection and match, the fund raising for both investing in scientific and technological equipment and in supporting research, the technology transfer to industrial applications, the development and management of demonstration centres, among other ones.

The options examined during the study, also thanks to the background analysis of researcher mobility and research cooperation, where it worked and how it is organised and funded (*Concept of Joint Research Centres: Survey of the state of the art*), were accompanied by an open mind approach which took into considerations choices going from one extreme to the other of the range for each aspect, i.e. one centre, several centres, without walls/with walls (research facilities), supported by public funding/addressing also private funding, bilateral agreements, addressing the research roadmap outlined in Horizon 2020, focused on research/focused on innovation, applications, and industrial development, etc.

The consistency of the six JRIC research topics with the national research priorities defined, the strong basis of international cooperation on which each JRIC proposal is built, the local and national institutional commitment shown in each JRIC proposal, the already identified potential fund sources to be addressed, together with the quality of the projects, make the Mobilise team confident about the feasibility of the six JRIC projects.

The JRICs have different specialisation, extent, size, weight, number of stakeholders, investment foreseen, priority of activities, goals, type of foreign partner/s.

The amount of the investment required to build and to run each of the JRIC is only roughly defined and requires additional fine tuning, especially concerning the assignment of responsibility to each partner, the activities managed by a national body for all JRICs, the potential joining of additional partners, the indicator parameter for each sub-goal, and other aspects to be defined case by case, e.g. regulation issue.

An assessment plan concerning both monitoring and an evaluation step is contemplated in order to support the adjustment and confirmation of the national research and innovation policy of the country.

WP 5: Quality and project management

The project management of MOBILISE will apply knowledge, tools and techniques to all the activities to be carried out during the project life cycle, in order to achieve the overall project objectives within time, quality and budget constraints. On the basis of the project Workplan, the MOBILISE management will set-up procedures and processes required to properly co-ordinate tasks and participants, ensuring the compliance with the planned effort and time scheduling. In addition, appropriate dissemination tools and initiatives represent a key issue for project success. The Operational Administrative Project Management will be ensured by R&D Maroc, whereas all the scientific management and coordination will be ensured by DT-MESFCRS (P2).

The present work package contains activities related to the contract management as well as to the coordination of the partnership. This includes monitoring of project activities against the workplan, ensuring milestones achievement and production of deliverables. The project manager will take corrective actions whenever there are discrepancies or deviations from the Workplan. Furthermore, the Project Manager is the unique interface between the Consortium and the European Commission; therefore all communications will go through the PM. At the beginning of the project the Project Manager will circulate to the partners the reporting rules, which include the templates of the management reports that each WP leader will have to send to the PM and the related scheduling. The preparation and signature of the Consortium agreement is also part of this task.

It also aims to prepare the preparation of financial reports to be submitted to the EC as foreseen in the workplan. As in the previous cases the PM will circulate at the beginning of the project the templates and timing for the Administrative reports which each partner will have to send to the PM. These reports take two forms: intermediate informal reports whose goal is to monitor the evolution of expenses and the formal financial statements.

So and a management procedure was proposed by R&D Maroc and validated by partners:

1. Communication:

A database of partners project including the names of people involved, the parent organization and contact information has been developed and maintained by R&D Maroc. The flow of information (invitation, agenda, minutes, report ...) is circulated electronically and by fax to all partners.

2. Process used for reporting activities

- Partner Quarterly Activity Report

- + Contribution to the project results, work on project deliverables ect
 - + Dissemination activities (presenting MOBILISE at conferences, workshops etc.), publications (on the MOBILISE website, etc.)
 - + Participation in the MOBILISE meetings
 - + Action Plan for the following 3 months
- **Conference Call (skype...)**
 - + Between the partners project partners were held
 - **Meetings between Moroccan partners :**
 - + In addition to scheduled meetings in the DoW, R&D Maroc (P1) has established a cycle of regular meetings between Moroccan partners to examine the project's state of advancement and to agree on the implementation of future activities.
 - **Report periodic**

Regarding the process used for periodic reporting activities and financial reports (18M), and for a better harmonization, a tool and models have been developed and forwarded to each partner. These models involve the following elements:

- Activities carried out for each WP during the period
- Work progress during the period

Each partner has completed and submitted the required documents following the models shown. Based on these reports (narrative and financial) from partners, a state of progress of the project has been established.

Potential impact & Dissemination

Impact

WP1: Implementation of studies recommendations: towards an overall strategy

- Strengthening PIN Maroc, PCI, universities and research centers
- Dissemination of information on the program H2020
- Initiation of the participants in the technical aspects for participation in the program H2020
- Networking of Moroccan and European researchers through participation in thematic workshops and brokerage events
- A methodological guide on indicators of Morocco - EU cooperation in the field of ST/I
- Grid should be adopted to achieve a monitoring of results of cooperation.
- Launch the indicators surveys (Grid) to produce an annual or biennial report
- Contribution to the efficient design of a global strategy for Morocco-EU cooperation STI

WP2: Innovation Based Clusters

The exchange on policy and CMO level has proven effective, especially in arranging opportunities for matchmaking, networking, good practice exchange, and capacity building.

With regard to cluster-to-cluster cooperation, in principle, on the level of the cluster managers, these are now either already connected or know how to access the European CMO community and how to participate. Therefore, it became obvious, that also straightforward identification and matching of CMOS with each other are a powerful and effective way of bringing the European and Moroccan Innovation areas closer to each other.

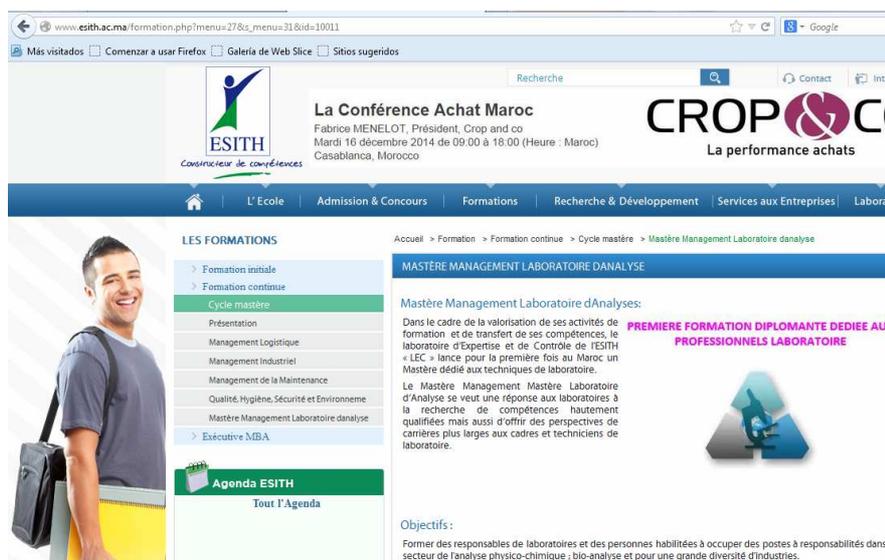
A discussion with EC representatives revealed that in principle Cluster based cooperation is a topic of interest which could well be a subject of future projects,

e.g. responding to the H2020 INT INCO Call, targeted not at individual countries, but at regions.

MESRSFC and VDI/VDE-IT organised a meeting in Rabat with different ministries represented, with the aim to further discuss the elaboration of an EU-Moroccan collaboration strategy on promoting innovation-based clusters (WP2 - Task 2). This meeting showed the need for information exchange and coordination in the Moroccan cluster policy in order to involve stakeholders from public authorities on a higher level.

WP3: Euro-Moroccan analytical Laboratories Network

Creation of the Official Master entitled “Analytical Laboratories Management”, provided by ESITH¹. This Master took advantage of the outcomes of Euro-master International Summer School and of the participation of Moroccan experts in the Train-Mic, training of the trainer actions, which took place in the previous months of the project.



MOBILISE laboratories network was seen as an opportunity to extend the mapping activity to all university across the country. The Moroccan minister of high education and scientific research was informed about the WP3 activity and prompt us to enlarge the mapping activity to all university.

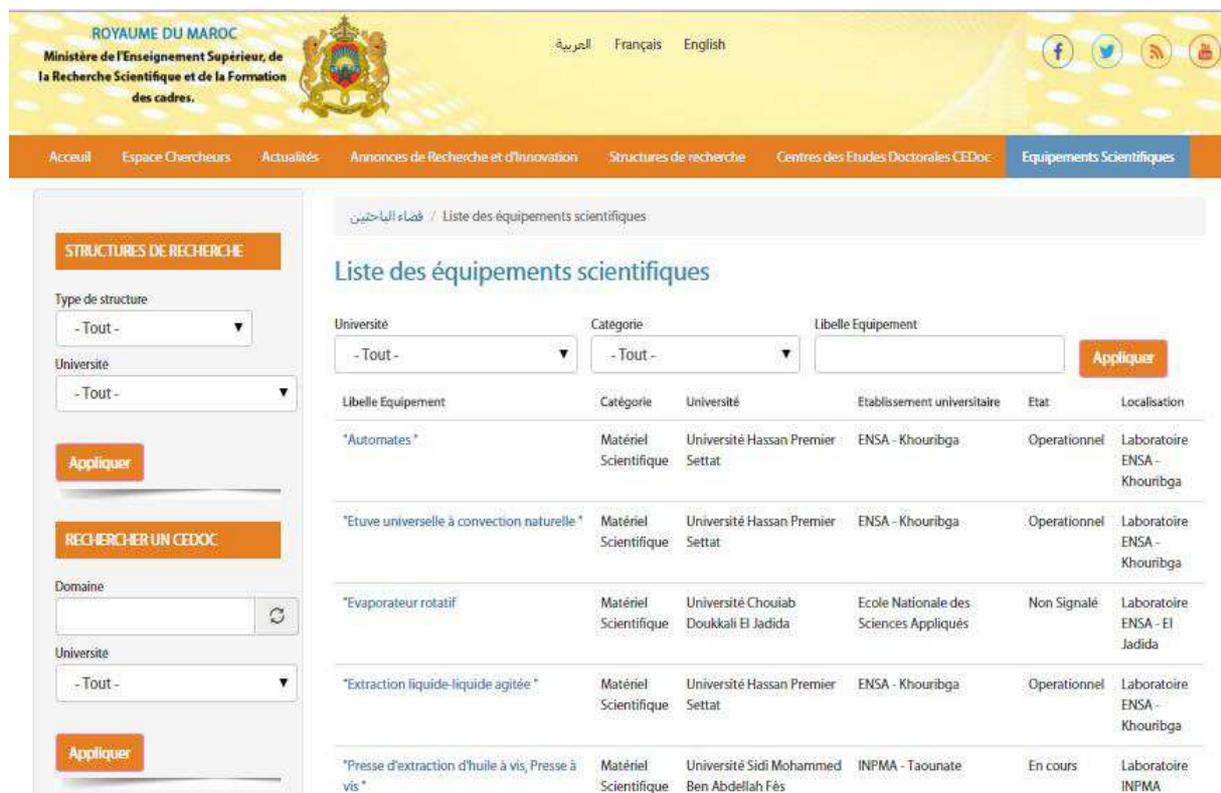
In this context, a first meeting chaired by the minister of Higher Education, Scientific Research and executive education, in 10 February 2015. Representatives from 10 Moroccan universities were attended to this meeting during which the Minister declared formally the extension of mapping analytical activities to all universities. He also officially announced the creation of a portal to facilitate the access to the information related to the analytical capabilities of each university.

¹ http://www.esith.ac.ma/formation.php?menu=27&s_menu=31&id=10011

The minister officially assigned the concretization of this work to experts from CNRST (which coordinates the WP3).

Established a roadmap to achieve the expected output:

3. Make an inventory of all heavy scientific instrumentation
4. Setting-up a strategy to organize this instrumentation in Common Analysis Center in each university
5. Setting up consortia devoted to maintenance activity and training technical staff.



The screenshot shows the website interface for 'Liste des équipements scientifiques'. The header includes the Moroccan government logo and navigation links. The main content area features a search filter on the left and a table of equipment on the right.

Libelle Equipement	Catégorie	Université	Etablissement universitaire	Etat	Localisation
Automates	Matériel Scientifique	Université Hassan Premier Settat	ENSA - Khouribga	Operationnel	Laboratoire ENSA - Khouribga
Etuve universelle à convection naturelle.	Matériel Scientifique	Université Hassan Premier Settat	ENSA - Khouribga	Operationnel	Laboratoire ENSA - Khouribga
*Evaporateur rotatif	Matériel Scientifique	Université Chouiab Doukkali El Jadida	Ecole Nationale des Sciences Appliqués	Non Signalé	Laboratoire ENSA - El Jadida
*Extraction liquide-liquide agitée *	Matériel Scientifique	Université Hassan Premier Settat	ENSA - Khouribga	Operationnel	Laboratoire ENSA - Khouribga
*Presse d'extraction d'huile à vis, Presse à vis *	Matériel Scientifique	Université Sidi Mohammed Ben Abdellah Fés	INPMA - Taounate	En cours	Laboratoire INPMA

WP 4: Mobility for innovative research centers

- To mobilize Moroccans Resident Foreigners competency and their counterparts in Morocco on research projects;
- Seven (7) memoranda of understanding were signed and should be turned into agreement and long-term partnership.

Activities of diffusion and dissemination

- Publication of articles on the activities of project via newsletter (R&D Maroc, CNRST, MESRSFC, UNIMED, AMU, ect...)

- National conference on scientific research and innovation, Rabat, 29 April 2014
- 5th meeting of the Permanent Inter-Ministerial Committee for Scientific Research and Technological Development, 25 June 2014,
- Meeting SCRI (Morocco-EU cooperation)
- TETHYS Network Annual Conference in Palermo (Italy), 10th and 11th of April 2014,
- UNICA's network Mediterranean Conference in Brussels (Belgium), 25th of April 2014,
- Neuromed Network Conference in Marseilles (France), 30th of April 2014,
- TETHYS Network's professional training of trainers : end of May 2014 in Sousse (Tunisia) and mid-June in Oran (Algeria),
- Second AECHE Conference (Arab-Euro Conference on Higher Education), Amman (Jordan), 10th and 11th of June 2014,
- Tethys' website (under renewal at the moment),
- Oral/powerpoint presentations to international cooperation transversal meetings,
- Professional observation training organized in TETHYS network's office in Marseille (France) on behalf of "MonProg" Tempus Project, 18th and 19th of June 2014.
- TETHYS, Aix-Marseille University welcomes in Marseille (France) a Jordanian Universities Presidents delegation, 23rd of September 2014.
- TETHYS, Aix-Marseille University speech to Conference on "Neighbourhood Policy and the Mediterranean Youth", Rome, 30 September - 1 October
- Training session in the Tempus project MonProG.
- Activities of ERANETMED project.
- New member from Italy (CABA-Lab) was included as member of the network.
- In addition, expression of interest was received from Instituto de Salud Carlos III, Centro Nacional de Sanidad Ambiental from Spain.
- Representatives of Swiss Institute for Bioinformatics contacted the network and participated in training actions.

Annex I: List of Interviewed stakeholders

M. Mostapha BOUSMINA

President of the Euro-Mediterranean University in Fez

M. Abdeslam HOUMMADA

Director of Science at the Hassan II Academy of Science and Technology of Morocco.

M. Wail BENJELLOUN

President of the University Mohammed V Agdal in Rabat.

M. Said BELCADI

Member of scientific direction of the Moroccan Foundation for Advanced Science, Innovation and Research (MASCIR).

M. Mohamed SMANI

Director of the R&D Maroc Association.

M. Noureddine BOUYAAKOUB

General Director of Moroccan Cluster for Electronics & Mechatronics & Mecanics (CE3M).

M. Tarafa MAROUANE

President of R&D Committee of the General Confederation of Moroccan Enterprises

M. Mohammed HMAMOUCHE

Advisor of Mrs. the Minister Delegate to the Minister of Higher Education Scientific Research and Executive Training

M. Abdelaziz BENJOUAD

Vice Chancellor for research and cooperation of the International University of Rabat.

M. Badr IKKEN,

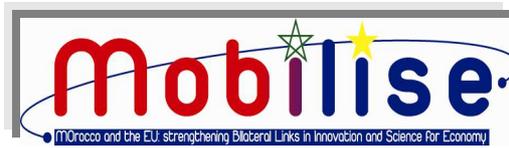
General Director of the Research Institute for Solar Energy and New Energy (IRESEN).

Mrs Sanaa ZEMBAKH,

Deputy Director for Cooperation and Partnership in Hassan II institute for Agronomy and Veterinary Medicine.

Mrs Naima EL-MDAGHRI BENMANSOUR

Director of the Pasteur Institute of Morocco



M. Ahmed HAMMOUCH

Director of the Department of Scientific and Technical Affairs in the National Center of scientific and technical research (CNRST).

M. Slimane Mehdad

Head of Division of promoting and monitoring scientific research at the Directorate of scientific research and innovation, (MESRSFC).

M. Abdelouahid EZZARFI

Head of the Division of coordination of the non-university research in the research scientific and innovation directorate in the (MESRSFC).

M. Mohammed BENBOUIDA

Head of Division of the bilateral and multilateral cooperation in the Directorate of cooperation and partnership (MESRSFC).

M. Abdelhak CHAIBI

Abdelhak CHAIBI, Project leader within R&D Maroc