

STUDY N° 63 / November 2012

Promoting Innovation in the Mediterranean

*Profiles and expectations of business incubators,
technology parks and technology transfer offices*



ANIMA Investment Network
Together for a competitive Mediterranean

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and technology transfer offices*

*Study No. 63
November 2012*

ANIMA Investment Network

Sébastien Dagault, Amina Ziane-Cherif,
Arturo Menendez

References

This report was drafted by the ANIMA team, in coordination with MIRA within the framework of the IT1 programme.

The IT1 programme is an initiative of the Marseille Centre for Mediterranean Integration (CMI) and coordinated by the European Investment Bank (EIB). It deals with issues relating to the promotion and funding of innovation in the Mediterranean region. Its objective is to help increase the flow of innovative projects in the region and further strengthen the innovation chain, from the early stages in the project life cycle through to the final funding. For more information, visit the website at www.cmimarseille.org.

ANIMA Investment Network is a multi-country platform supporting the economic development in the Mediterranean. The objective of ANIMA is to contribute to a better investment and business climate and to the growth of capital flows into the Mediterranean region. For more information, visit the website at www.anima.coop.

MIRA (Mediterranean Innovation and Research Coordination Action) is a project led by the Research DG of the European Commission as part of the 7th R&D Framework Programme (RDFP). Its aim is to build a platform for Euro-Mediterranean dialogue dealing with the promotion of scientific and technological cooperation. For more information, visit the website at www.miraproject.eu

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Authors

Study carried out by Sébastien Dagault and Amina Ziane-Cherif in collaboration with Arturo Menendez (Madri+D Foundation, MIRA project partner), with contributions from Zoé Luçon (methodological support), Emmanuel Noutary (proposals and recommendations), Manal Tabet (financial institutions and investment funds), Samir Abdelkrim (diaspora issues and ASI case study). English translation by Sharon Benmussa (Transitwrite).

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ANIMA and all partners involved in this study cannot be held responsible for the data supplied. Any error or inaccuracy should be signalled to info@anima.coop. ANIMA is interested in receiving your feedback, complementary information and updates. Thank you.

Who is the study aimed at?

This study is essentially aimed at the key innovation stakeholders in the Mediterranean and European Union:

- entrepreneurs, innovation managers of small businesses or major groups, researchers working on innovative projects, all of whom are interested in finding the adequate interface, partners and anchor institutions;
- intermediary bodies that promote innovation in the Mediterranean (technology parks, incubators, business centres, entrepreneur networks), interested in exchanging on good practices and joint initiatives;
- governmental organisations (Ministries, innovation agencies) and non-governmental organisations offering support in the area of technology transfer and innovative entrepreneurship, interested in improving synergy with existing programmes;
- financial institutions from the public sector (funding bodies) and the private sector (investment funds, banks, venture capitalists).

Acronyms

- AFD: French Development Agency
- ANIMA: Euro-Mediterranean network for economic development
- ANIMA-MIPO: Mediterranean Investment and Partnership Observatory
- API: Investment Promotion Agency
- BA: Business Angel
- CMI: Marseille Centre for Mediterranean Integration
- EBN: European Business & Innovation Centre Network
- EIB: European Investment Bank
- ERA: European Research Area
- EU: European Union
- FDI: Foreign Direct Investment
- GIZ: International cooperation enterprise for sustainable development (Germany)
- ICT: Information and Communication Technologies
- IT1: Innovation support programme for the Mediterranean region, led by the Centre for Mediterranean Integration (CMI).
- MED: Group of 11 EU neighbouring countries, including 9 EU Mediterranean partner countries, 1 country with observer status (Libya) and 1 country which has applied for membership (Turkey).
- MENA: Middle East - North Africa = MED + Mauritania, Sudan, GCC countries + Yemen, Iran, Iraq, Afghanistan and Pakistan
- MIRA: Mediterranean Innovation and Research Coordination Action
- MRC: Mediterranean Research Centres
- OCEMO: Office of Economic Cooperation for the Mediterranean and the Middle East
- OECD: Organisation for Economic Cooperation and Development
- RDFFP: Research and Development Framework Programme, the main funding instrument used by the European Commission for research and innovation projects
- SME: Small and Medium sized Enterprises
- TTO: Technology Transfer Office
- VSE: Very Small Enterprises / Micro enterprises
- WIPO: World Intellectual Property Organisation

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Summary

Developing innovation economies is even more important during a crisis and this is why virtually every country in the world is **striving to remain competitive**. Their aim is to generate added value and create sustainable jobs.

The development priorities for all countries, and in particular for the MED countries include developing promising new industrial activities in various areas of excellence, encouraging entrepreneurship and pushing forward future economic leaders, attracting foreign investment in high end business areas and ensuring that technology parks and innovation showcases play a role in knowledge exchanges.

Yet in response to these challenges, **several countries in the Mediterranean region are falling behind on different levels**. They find it difficult to acquire sufficient critical mass for investments and installations. They also lack global visibility and perform poorly when commercialising research results and public-private partnerships are difficult to establish.

The study entitled Promoting Innovation in the Mediterranean is the result of field work, a survey of existing programmes and various workshops conducted alongside the "agents of change in the Mediterranean". It takes stock of current innovative ecosystems that are being developed in the Southern Mediterranean region.

Three types of innovation support structures are targeted: **technology parks, business incubators** and **technology transfer offices**. The 7 MED countries concerned include: Algeria, Egypt, Jordan, Lebanon, Morocco, Palestine and Tunisia.

The study is not simply an analysis of macro-economic issues, it identifies the key elements required to drive new innovation dynamics across the Mediterranean. They include the promotion of best practises, the need to identify and involve industry leaders as well as networking between communities and innovation clusters at regional level.

State of play: Stakeholders and innovation policies in the Mediterranean

The majority of all research and development activity (R&D) in the Mediterranean region is carried out by public universities and research centres (over 90%, compared to 54% on average in the European Union). Amounts invested in R&D are low compared to international averages: between 0.2% and 0.7% of GDP in the MED countries (Tunisia is an exception with approximately 1%), compared to almost 2% in Europe.

There is a **significant lack in funding for research and facilities across the Mediterranean. Innovation systems are inefficient** in terms of overall strategic vision, research excellence and international visibility. Problems are encountered when commercialising publications and patents and managing the innovation environment. In addition, the MED countries are all suffering from the brain drain phenomenon. However, it is worth noting that there are large differences between certain countries. Performances in countries such as Tunisia and Jordan are very similar or even better than those registered in some countries of southern Europe (France and Italy for example), whereas Algeria is lagging behind in virtually all areas.

Generally speaking, the private sector still shows **relatively low commitment to innovation, but is also undergoing fundamental change**. A new generation of entrepreneurs and innovative SMEs is coming up, the venture capital industry is developing and there is a broader involvement of the major groups, along with the introduction of increasing numbers of innovation support programmes on the national and international levels.

Profiles of the key players in Mediterranean innovation

Type of players	Profile	Innovation focus	Expectations	Interface/ international
Traditional micro-enterprises /SMEs	Informal structures Family-based management	Low tech Services Food industry	Innovation management Product offering	Chambers of Commerce Federations Local clusters

Promoting Innovation in the Mediterranean

Type of players	Profile	Innovation focus	Expectations	Interface/ international
Start-ups/ new SMEs	High innovation International teams	Mid tech Services High tech	Coaching Seed funding Access to local and global markets	Innovative clusters Business plan competitions Business incubators, technology parks
Major local and international groups	Leaders in innovation Little interaction with local networks	Infrastructures Energy Banks ICT	Talent sourcing Product promotion R&D partnerships	Professional federations Innovative clusters Government and/or promotion agencies
Public universities and R&D centres	Poor research funding Lack of visibility in areas of excellence Brain drain	High Tech Environment Food industry Health ICT	Marketing Improved governance Co-funding and public-private partnerships	International support programmes Technology transfer offices
Financial bodies	Strong development of venture capital over last 10 years Slow emergence of business angels	Consumer goods Infrastructures Services High Tech	Project sourcing Lower due diligence costs Coaching networks	Business angel networks Regional venture capital funds

Profile of innovation support structures: technology parks, business incubators and technology transfer offices

The study focuses on three types of structures and highlights various issues regarding innovation promotion in the Mediterranean:

- **Technology parks** are at the heart of all policies adopted by Mediterranean countries to attract investment and address the question of synergies between public and private players;
- **Business incubators** deal with questions regarding the financing of innovation projects and the involvement of large companies in innovation ecosystems;
- **Technology transfer offices** raise the problem of governance and the need for public sector research to adapt to market needs.

The study lists **41 technology park projects** that have either been completed or announced in the 7 MED countries targeted. Almost **three quarters of them were created after 2005**, and they are mainly located in Tunisia (12) and Morocco (9). Often located outside the city centre, they are held back by weak local ecosystems and a lack of critical mass (lack of companies and research centres). The majority of these technology parks house companies in the **ICT sector (36%)**, but the food sector is also well represented (18%).

90 incubators are listed in the study and half of them are located in Morocco and Tunisia. They are divided into three categories: traditional university incubators with little activity, small business centres concentrating mainly on providing administrative services and innovation accelerators offering short term assistance and close ties with financial networks. The majority of these incubators (53%) serve a wide range of business sectors. More than a third of them (37%) **focus on the ICT sector**.

Over 50 technology transfer offices in the MED countries are listed in the study. They were also created very recently (80% of them after 2008) and generally speaking, they have neither the structure nor the teams required to provide full time service. They are located mainly in Egypt (14) and in Algeria (13). The centres often provide services for in-house teams (student researchers) and are rarely business or globally oriented. Only a quarter of TTOs target specific sectors such as agronomy, biotechnologies or health.

Innovation dynamics and partnerships in the Mediterranean: What are the difficulties and opportunities?

In the current context where innovation is increasingly based on open, international networking built around innovation ecosystems, the **lack of proximity and trust between public and private sector stakeholders, rigid administrative frameworks, poorly trained innovation managers and governance problems** all represent major hurdles that prevent MED countries from pushing forward dynamic innovation policies.

Yet **new dynamics are already at work** with for example, the recent development of a **culture of entrepreneurship** across the Mediterranean as well as the creation of **South-South partnerships** involving key players in innovation. The MED countries can rely on attractive sources of **leverage** to boost their innovation systems, for example using **public procurement** or by inviting **talented expatriates in the diaspora** to contribute to the development of their home countries.

<p style="text-align: center;"><u>Strengths</u></p> <ul style="list-style-type: none"> ▪ Innovative high-growth sectors (ITC, tourism and services, food industry and health) ▪ Skilled workers in the diaspora communities of Europe, the USA and the Gulf countries ▪ Success stories and role models 	<p style="text-align: center;"><u>Weaknesses</u></p> <ul style="list-style-type: none"> ▪ Poorly developed innovative culture ▪ Lack of trust and proximity between private and public stakeholders ▪ Poor understanding and visibility regarding international issues ▪ Rigid regulatory framework ▪ Lack of seed funding
<p style="text-align: center;"><u>Threats</u></p> <ul style="list-style-type: none"> ▪ Falling behind the rest of the world in terms of global knowledge and investment flows ▪ Under-investment and dispersion of available resources ▪ Crisis situation and reduced direct foreign investment 	<p style="text-align: center;"><u>Opportunities</u></p> <ul style="list-style-type: none"> ▪ Entrepreneurial spirit ▪ Leverage of public procurement ▪ New key players are keen to get involved (major groups and business angels) ▪ New innovation policies ▪ South-South partnerships?

12 Proposals for action at the regional level

There are several elements in favour of Euro-Mediterranean action being taken. These include sharing resources that are currently insufficient in both the north and south of the Mediterranean region. There are also potential synergy opportunities in problem areas or common fields of expertise such as mobility, water management or urban development and there is a pool of skilled workers willing to develop innovative projects in collaboration with Europe and the Mediterranean.

The following proposals address actual problems and seek possible synergies with existing policies and programmes. They involve various players in innovation and are introduced in four stages (**see table**):

In the short term, a regional action plan (priorities, players, activation means and leverage); **proposals 1 and 2**

In the medium term, identification of instruments that may be shared to obtain the critical mass required and synergies between those involved in innovation in the Mediterranean; **proposals 3, 4 and 5.**

In the longer term, coordination of national schemes to ensure continuity of service for innovators in the Euro-Mediterranean region; **proposals 6, 7, 8 and 9.**

Conducted in parallel, governance support for innovation is proposed at different levels to guarantee long term involvement of key players in innovation policy; **proposals 10, 11 and 12.**

Promoting Innovation in the Mediterranean

Proposals	What?	How?
An online platform for collaboration and promotion (MedIn 2.0)	List of stakeholders Database of 100 key technologies Value chains and priority areas for innovation in the Mediterranean Promotional tools (videos, success stories)	By building on the exchange sessions and mapping conducted by the IT1 group. By decentralising platform management. By coordinating national programmes for innovation, RDFP and regional competitions
4 regional sector-specific task forces	Green Economy Food industry ICT Sustainable tourism and services	With task forces involving 5 stakeholder types and based on regional objectives and action plans
Training programmes	4 priority areas: financing, promotion and technology transfer, communication and intellectual property management	By using case studies and bringing together mentors, innovation stakeholders and market players. By coordinating existing training systems developed in each country
Monitoring service	Alerts and news about opportunities in specific business sectors, innovations and technologies as well as cooperation opportunities.	By developing partnerships with specialised media, platforms monitoring institutional bodies, public research laboratories or major groups
Promotion and prospecting campaigns	"Mediterranean Pavilions" at international fairs, with stands and promotional workshops	Using available expertise in the diaspora (ambassador communities) and by attracting private sponsors for ongoing long term partnerships

Promoting Innovation in the Mediterranean

Proposals	What?	How?
International business development	"Mediterranean agencies" in target regions, featuring network leaders, co-working spaces and low-cost market research services	By targeting specific regions: European capital cities, the Gulf countries and the USA
Mentoring and managerial support	Groups offering sector-specific mentoring at regional level	By offering a regional dimension to existing programmes. By bringing together major groups
Seed funding	A framework offering seed funding for Mediterranean projects: project sourcing, co-financing support, joint investments via regional funds	Nomination of a committee of experts, an approval committee and marketing team
Innovation project prototyping	A network of Euro-Mediterranean prototyping and proof of concept platforms (living labs).	By encouraging major groups to sponsor these platforms. By networking with European living labs
Develop a strong entrepreneurial culture within innovative clusters	Early stage financing and support tools to help new projects emerge (interest free loans and mentoring) and assistance for the best innovation projects.	By organising business plan competitions and involving investment funds. By measuring the impact of these funds and providing incentives to the innovation managers

Promoting Innovation in the Mediterranean

Proposals	What?	How?
Coordination of measures to attract investment with industrial and innovation policy	Creation of a strategic network of policy committees in charge of business support as well as the creation of a one-stop shop for innovation at operational level	By using the National Contact Points that are part of the 7 th R&D Framework Programme By organising an annual conference on the theme of innovation governance
At transnational level: improving the mobility of innovators	Mediterranean Innovation Mobility grants for the 100 most innovative projects in the southern Mediterranean	Based on the Erasmus for Young Entrepreneurs programme or the Euraxess initiative by the European Commission

Introduction and framework of the study

Introduction

Developing innovation economies is even more important during a crisis and this is why virtually every country in the world is **striving to remain competitive**. Their aim is to generate added value and create sustainable jobs. The development priorities for all countries, and in particular for the MED countries include developing promising new industrial activities in various areas of excellence, encouraging entrepreneurship and pushing forward future economic leaders, attracting foreign investment in high end business areas and ensuring that technology parks and innovation showcases play a role in knowledge exchanges.

Yet in response to these challenges, **several countries in the Mediterranean region are falling behind on different levels**¹. The MED countries are not only quite low ranking in terms of innovation performance, they are also losing their positions despite the introduction of proactive policies and infrastructures in the majority of countries.

Table 1: Performance of MED countries in the area of innovation

Country	2011 rank (out of 142)	2010 rank (out of 139)	2009 rank (out of 133)
Jordan	77	68	59
Lebanon	115	112	No ranking
Tunisia	37	31	38
Egypt	103	83	74
Morocco	80	81	96
Algeria	132	107	114

Source: World Economic Forum. (2011, 2010, 2009). *The Global Competitiveness Report*

¹ Global Competitiveness Report, Global Innovation Index as well as the Shanghai Ranking

Promoting Innovation in the Mediterranean

In practice there are no, or very few, internationally recognised companies, research centres or universities, in other words leading innovators with global visibility and offering the necessary driving force behind innovation dynamics and promotion. The Mediterranean offers little incentive for innovation: work on this study highlights the problem of clarity in terms of what the Mediterranean region has to offer for innovation (it is indeed difficult to obtain the necessary indicators on this subject) and there are questions that need to be addressed regarding quality. Where are the areas of excellence in innovation in the Mediterranean?

The Promoting Innovation in the Mediterranean study is the result of field work alongside the "agents of change in the Mediterranean". It takes stock of innovation ecosystems that are currently being developed in the Southern Mediterranean region.

The study is not simply an analysis of macro-economic issues, it identifies the key elements required to drive new developments in innovation across the Mediterranean: a review of existing programmes and support tools. They include the promotion of best practises and identification of the key leaders that need to be involved in implementing the various measures.

Positioning

Technological and non technological innovation...

Innovation, as a means of creating value and mobilising players and efforts required for the development of new goods or services, is one of the current priorities for economic development and job creation.

This study takes a close look at **all types of innovation**. Of course, there is an analysis of technological innovation, but the fields of innovation are much more diverse², in particular for countries in the Southern Mediterranean. The study therefore adopts a broader approach to innovation, adopting the OECD's definition, based on the Oslo Manual to consider 4 principle forms of innovation:

² In Europe for example, only 4% of innovations are based on scientific sources. See SITRA. (2008). *Is Finnish innovation policy utilising 4% or 96% of Finnish innovation potential?* www.sitra.fi/en

Promoting Innovation in the Mediterranean

1. Product innovation: technical improvement of a product;
2. Process innovation: improvement of production or distribution methods;
3. Organisational innovation: changes in practices, organisation of the workplace or external business relations (for example networking);
4. Marketing innovation: changes to the design, packaging, positioning, promotion and pricing of a product (for example a new marketing and design strategy).

... meeting the market

What is on offer and the demand

The study summarises the early stages leading up to implementation of an innovation system, including definition of a research policy, development of technological infrastructures and issues concerning the status of researchers for example.

It focuses more on **downstream results of innovation and how it joins up with the market**, dealing with key questions regarding the promotion of innovation:

- **What is offered in terms of innovation?** The study highlights how **innovation projects** are presented (sale of patents, creation of start-ups, research partnerships and the selling of expertise), marketed and sold to investors, buyers, partners, sponsors and more broadly to any player interested in getting involved in innovation clusters in the Mediterranean.
- **Where is the demand?** The study looks at how innovation is perceived by market players (major groups, investors and entrepreneurs etc); where there is potential to develop innovation with regard to sectors and geographical zones to be targeted; and the possible leverage tools and players required to stimulate demand.

The role of intermediaries and partnerships

This study focuses mainly on matching supply and demand, in other words on the **intermediaries and means of coordination between players and resources at different levels**: between researchers and entrepreneurs, but also between local and international players.

For companies, public universities and research centres, "**open innovation**" is a **necessity**, in other words openness and ongoing interaction with other markets and players, sharing of resources (information exchange and co-

funding arrangements for projects etc.) and means (technology platforms and living labs).

How are Mediterranean players part of these partnership dynamics in the field of innovation? What can be used to provide leverage and which barriers must be overcome? This study focuses on these core issues in its analysis and final recommendations.

Structures, players and target countries

Three types of innovation support structures are studied in detail:

- **Technology parks**, which provide a showcase for Mediterranean areas of excellence, playing the catalyst role in innovation dynamics in a given area;
- **Business incubators and small business centres**, provide support and networking opportunities for **innovative entrepreneurs**;
- **Technology transfer offices** act as a bridge **between the world of research and the market**.

Innovation is currently organised around networks, clusters and ecosystems. The study aims to highlight the dynamics that are emerging around **these 3 structures** that group together **players** of diverse origin and whose profiles, expectations and potential roles are analysed:

- players on the ground directly involved in innovation projects: universities, research centres and entrepreneurs;
- market players, both customers and producers of innovation: small businesses, major groups and investors;
- governments and support structures, expected to play a driving role and provide facilitation services;
- foreign investors and talented expatriates (Diaspora), providing expertise and new opportunities.

7 countries³ are targeted as part of this study: Algeria, Egypt, Jordan, Lebanon, Morocco, Palestine and Tunisia. The study examines the state of play in the area of innovation and provides recommendations for action at regional level. The objective of the study is to identify **the common needs of players selected in the 7 MED countries** mentioned above, to fuel reflection at a regional level and suggest recommendations that contribute to the development of common solutions.

Methodology

Means deployed

The drafting of this study relied on the creation of a database identifying players involved in innovation, describing over 200 structures (technology parks, incubators and technology transfer offices), some of which were analysed in closer detail (13 case studies). To do this, ANIMA and the Madri+D Foundation / MIRA carried out the following operations:

- bibliographical review⁴ ;
- participation in workshops, capitalising on the results of several Euro-Mediterranean projects: innovation workshop organised by the Medibtikar Working Group on Industrial Cooperation as well as innovation oriented workshops and initiatives within the framework of the Invest in Med project;
- issuing of a questionnaire⁵ in French and in English that was sent to 150 contacts (with a response rate of 25%);
- fact-finding missions in Egypt, Jordan, Morocco, Tunisia and Algeria;
- over 100 interviews with key players in Mediterranean innovation⁶ : managers of technology parks, incubators and technology transfer offices, institutional stakeholders in the area of innovation promotion, entrepreneurial and innovation support structures run by non government organisations, venture capital investors and business angel networks.

³ To ensure coherence and consistency, Israel, which is renowned for its innovation performance was not included in the study.

⁴ See Bibliography page 139

⁵ See the list of people interviewed page 142

⁶ See the survey distributed to the innovation players page 147

Approach and structure of the study

The aim of the study is twofold:

- to highlight examples of good practice, trends, sticking points and positive innovation promotion dynamics in the Mediterranean ;
- to determine common expectations and suggest precise areas of cooperation at regional level.

The study is divided into four parts:

- The first chapter provides a snapshot of the **stakeholders** that are at the heart of innovation in the Mediterranean region (research centres, universities, companies, financial bodies) as well as the main **support measures** currently employed.
- The second chapter is devoted to the 3 types of structure used to develop and promote innovation in the Mediterranean: **technology parks, incubators and technology transfer offices**. How are they characterised, how are they positioned, what good practices do they develop and what are their expectations?
- The third chapter takes a non-exhaustive look at the **interfaces and partnership building and coordination dynamics between innovation stakeholders**. It lists the main sticking points and opportunities at cultural, organisational and operational level, as well as the future development opportunities.
- In the light of these observations and analyses, the final chapter suggests **recommendations for action** for the short and medium term: which key players need to be mobilised? What are the priority areas? How can we take concerted action at regional level?



State of play: Stakeholders and innovation policies in the Mediterranean

This first chapter details the main performance indicators in the MED countries, an overview of the different innovation stakeholders (universities, public research centres, major companies and financial bodies), and a brief description of related policies.

Research and development driven mainly by the public sector

Universities and research centres

There are over a **hundred public universities** in the MED region⁷ (the majority were created after the 1960's) and the larger ones are in Cairo and Alexandria, where there are over 150,000 students (See Table 2).

Table 2: Number of public universities in the 7 MED countries studied

	Algeria	Egypt	Jordan	Lebanon	Morocco	Palestine	Tunisia
Public universities	27	19	11	1	15	11	13

Source: MIRA. (2012)

When these public universities were built, their **initial and sole priority was education**: priority themes for research and development programmes, exposure to the private sector and global markets were only tentatively taken into account in the early 1990's. In Jordan for example, for the last few years, all public and private universities are obliged to devote at least 5% of their budgets to research and development.

In 2011, **only one university in the region, the University of Cairo, was ranked in the list of 500 major world universities** issued by the Jiao Tong

⁷ In addition to private universities, technical colleges, engineering and management schools that are not recorded in this publication.

University of Shanghai (ARWU, 2011). In another well known international ranking (Webometrics, 2012), universities in the MED countries were ranked between 770th and 6002nd in the world.

As far as research centres are concerned, over 90% of them are public organisations. Only Morocco and Tunisia have developed a slightly larger private research sector (in comparison, private sector research accounts on average for more than 54% of overall research in the EU states). The majority of research centres were created from the 1970's onwards, mainly in the food, water, energy and health sectors. More recently activity has expanded to biotechnologies, microelectronics and nanotechnologies. The exact number of research centres in the Mediterranean is difficult to establish, due mainly to a lack of homogeneous data.

Research centres have developed according to an integrated planning system, with the State as their main client and with operations principally in the areas of public procurement such as health, agriculture and energy. A number of organisations play a role in coordinating public sector policies with regard to technology transfer in various sectors: examples include the Centre for the Development of Renewable Energies ([CDER](#)) in Algeria, and the Institute of Agricultural Research and Higher Education (IRESA) in Tunisia. The role of IRESA is to promote research, to develop and manage agricultural research programmes and ensure a complementary approach between research centres, higher education establishments and regional clusters.

New models based on public-private partnerships have started to emerge, with for example the creation of the MAScIR Foundation in Morocco and the Egypt Nanotechnology Centre, initiatives of public authorities, ITIDA (Information Technology Industry Development Agency) and the IBM Group.

Lack of research funding

Amounts invested in R&D are low compared to international averages: between 0.2% and 0.7% of GDP in the MED countries (Tunisia is an exception with approximately 1.1% of GDP), compared to almost 2% in Europe. However, the trend is increasing and overall R&D expenditure in the MED countries is approaching the (low) levels recorded in certain North Mediterranean countries: Morocco fares better than Greece, and Tunisia is almost on the same level as Spain or Portugal (see Table 3 and Table 4).

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Table 3: R&D spending in MED countries

	Algeria	Egypt	Jordan	Lebanon	Morocco	Tunisia
Total expenditure on R&D (% of GDP and reference year)	0.40 (2010, est.)	0.21 (2009)	0.42 (2008)	0.30 (2006)	0.64 (2006)	1.10 (2009)
Proportion of private expenditure in total R&D expenditure (est. %)	<0.10	10	3	N/A	22.7 (2006)	14.1 (2005)

Source: UNESCO. (2010)

Table 4: R&D expenditure in certain EU Mediterranean countries in 2007

	Cyprus	France	Greece	Italy	Malta	Portugal	Spain	EU
Total expenditure on R&D (% of GDP)	0.45	2.08	0.57	1.14	0.60	1.18	1.27	1.83
Proportion of private expenditure in R&D expenditure (est.%)	15.9	52.4	31.1	40.4	45.4	36.3	47.1	54.5

Source: UNESCO. (2010)

This under investment explains **the lack of researchers in certain countries**: less than 200 researchers per million inhabitants in Algeria, just over 600 in Egypt and in Morocco compared to 3,500 in Germany and France. **However the situation is not the same everywhere: Tunisia and Jordan** register respectively 1,600 and almost 2,000 researchers per million inhabitants, which represents **more than certain countries in the South of Europe**, for example Malta or Greece.

The interviews that were carried out highlighted the **lack of technical means** dedicated to the development of innovation projects: ageing research facilities, lack of technical staff and the scarcity of funding instruments.

Publications and patents – what results do they provide?

There was a sharp increase in the number of publications over the last decade: +55% for the MED countries between 2002 and 2008. Yet, **with an average of 53 articles per million inhabitants, the region is far behind the world average of 147 articles per million inhabitants**. Yet again, there are large differences **between the MED countries** (see Table 5): Tunisia, Jordan

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and Lebanon recorded scores close to international averages, whereas Morocco, Algeria and Egypt remain well below⁸. Within the countries themselves, differences remain: scientific publications are mainly produced by a small number of regional leaders such as the AUC (American University in Cairo) or the University Mohammed V - Agdal in Rabat.

Table 5: *Scientific publications per million inhabitants*

	Algeria	Egypt	Jordan	Lebanon	Morocco	Tunisia
2002	15.4	35.2	101.4	80	36.3	76.4
2008	37.5	48.6	157.1	140.9	36.9	196.2

Source: UNESCO, Thomson Reuters Web of Science. (2010).

Apart from the number of research publications, there are also the issues regarding the **level of quality and marketing potential**. In the majority of MED countries, with the notable exception of Tunisia, research institutes are of poor quality and this has a direct impact on their scientific production (see Table 6). These disappointing results are worsened by **the brain-drain phenomenon** and the result is that their best researchers leave their countries for the United States, Canada and to a lesser extent Europe. The reasons include low resources (equipments, salaries) but more importantly the lack of recognition and autonomy.

Table 6: *Quality of scientific research institutions (ranking out of 142)*

Country	Algeria	Egypt	Jordan	Lebanon	Morocco	Tunisia
Ranking	126	113	104	127	96	52

Source: World Economic Forum. (2011). *Global Competitiveness Report 2011–2012*

The diagnosis is equally as serious for patent publications:

- the number of patents registered is low compared to European countries with a tradition of technological innovation (8,900 patents registered in France in 2009), but is comparable to the numbers in countries in Southern Europe (107 patents in Portugal and 103 in Greece);

⁸ Information on the number of publications and patent applications could not be found for Palestine.

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- only a few of these patents are active or registered on international markets (between 1 and 5 per country and per year)⁹;
- in most cases, patents are registered by foreign entities which carry out registration to protect intellectual property rights in the country, thus illustrating the significant role played by international companies in the area of innovation.

Table 7: Number of national and international patent filings

	Algeria	Egypt	Jordan	Lebanon	Morocco	Tunisia
Patents filed by non-residents	765 (2007)	1452 (2009)	446 (2009)	N/A	856 (2010)	N/A
Patents filed by residents	84 (2007)	490 (2009)	60 (2009)	N/A	151 (2010)	N/A
Average annual rate of patent applications filed with the USPTO¹⁰ (2002-2006)	0.4	5.6	1.4	2.8	0.8	0.6

Source: UNESCO. (2010)

Private sector involvement in innovation is still lacking

Low levels of private-sector R&D expenditure

Several managers of technology parks explained that local companies have little R&D activity and prefer to purchase off-the-shelf technology solutions. This trend is also observed in international league tables of corporate R&D expenditure (see Table 8). With the exception of Tunisia, all MED countries rank among the lowest in the table. In comparison, the emerging countries such as Indonesia and Malaysia rank 31st and 13th out of 142 respectively, whereas the rankings of other Mediterranean countries are as follows: Italy: 34, Spain: 47, Turkey: 62, Israel: 8.

⁹ The measurement of innovation performance is a sensitive issue in the Mediterranean and indicators regarding patents are particularly difficult to obtain.

¹⁰ United States Patent and Trademark Office

Table 8: R&D expenditure by MED companies (ranking out of 142)

Pays	Algérie	Egypte	Jordanie	Liban	Maroc	Tunisie
Rang	139	106	108	113	104	42

Source: World Economic Forum. (2011). *Global Competitiveness Report 2011–2012*

A study by the World Bank¹¹ also shows that the best performing countries in the Mediterranean region export approximately 1,500 types of goods, the majority of which are low-tech, whereas countries such as Poland, Malaysia or Turkey export almost 4,000.

Corporate R&D activities: the case of Egypt

In **Egypt**, a survey carried out in 2010 by the Ministry of Scientific Research and involving 2,943 Egyptian companies revealed that almost **20% of the companies surveyed carry out R&D activities**.¹² These activities fall into two categories: product innovation (13.2%) and process innovation (17.9%) or both simultaneously. Most innovation is performed in-house. The survey also shows that innovation activity tends to be concentrated in the **service sector**, representing 25% of the companies surveyed (152 of which are in the finance sector and 253 in the gastronomy and tourism sectors).

As far as company profiles are concerned, **the major companies are the most active in R&D (50%) and particularly in process innovation**, whereas micro enterprises (less than 5 employees) and SMEs conduct less activity. 40% of the companies surveyed point out that the costs of innovation represent the greatest deterrent. Finally, **less than 1% of companies reported receiving financial support from public agencies**.

Innovation practices in MED companies

A majority of traditional micro enterprises

The industrial sector in MED countries is composed mainly of small and micro enterprises, with operations mainly in the service, agricultural and textile sectors. The World Bank estimates that over 90% of Tunisian,

¹¹ World Bank (2009). [From Privilege to Competition](#)

¹² The Ministry of Scientific Research in association with the Fraunhofer Institute for Production Systems and Design Technology (IPK). (2010). *Executive summary. Evaluation of the Egyptian Science, Research and Technology Landscape for the Design of the Egyptian Innovation Policy and Strategy*

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Egyptian, Jordanian and Moroccan companies employ less than 100 people and more than 80% of businesses are very small enterprises with between 1 and 5 employees. These very small Mediterranean enterprises continue to be traditional, family run businesses that are relatively reluctant to adopt innovative management practices, take risks and embark on innovation projects. The World Bank¹³ points out that "companies in the MENA region are, on average, twice as old (19 years old) as those in Central Asia (10.5) and that their directors are in the older age groups despite the fact that the region's population is very young". Studies carried out as part of the [Medibtikar](#)¹⁴ programme show that they have little understanding of their own innovation expectations due to a lack of reflection about internal strategy.

A number of very small enterprises do nevertheless participate in innovation awareness programmes and decide to join regional networks and clusters like the agri-food clusters developed by UNIDO in Egypt. Their main expectations as far as gaining access to innovation are concerned focus mainly on defining their offer (with new developments for existing products and services), innovation management and access to financial instruments.

A recent development of start-ups and innovative small businesses

In the Mediterranean region, new types of highly innovative small businesses and start-ups created by managers with international training are spreading. They include industrial companies with a new generation of managers at the helm, spin-offs of major public groups and start-ups. According to work carried out within the framework of the [Medibtikar](#) programme and the study by [MedFunds](#)¹⁵, each year the **Southern Mediterranean is potentially capable of creating between 1,500 and 2,000 high added value start-ups (60% of which could be created by talents in the diaspora).**

What these start-ups and small businesses with high innovation potential essentially need is assistance on issues including market access, mentoring and sponsorship, international team building and seed funding.

¹³ World Bank (2009). [From Privilege to Competition](#)

¹⁴ 2007-2009, see www.medibtikar.eu

¹⁵ ANIMA. (2011). MedFunds 2011: overview of capital investment in the MED region. This study is based on a survey involving more than 300 investment funds in the Mediterranean.

Major nationwide groups are relatively disconnected

The presence of a few major national companies with leading positions on their local markets is commonplace in the MED economies. For the most part, these major groups operate in traditional business sectors such as energy, petrochemicals, agriculture, real estate and tourism (OCP, Cevital, Sonatrach and Sonede), and a few new sectors such offshoring and ICT (Maroc Telecom, Meditel, Tunisie Telecom and Orascom, etc.).

Rarely mentioned by innovation stakeholders, the major national groups seem to have **built very few partnerships with local innovation clusters**. Above all, they consider that these innovation structures provide the means to promote their products and recruit talent. New and more open process innovation dynamics are gradually emerging (open innovation) and in the ICT sector in particular, but innovation is still largely dominated by major foreign groups such as IBM, Orange or HP in the Smart Village cluster in Egypt for example.

Key role of foreign companies

Foreign Direct Investment and innovation partnerships

Foreign investors play an essential role in two ways: they both need innovative products and services and at the same time they represent sources of knowledge transfer. For instance, Powerex, a joint-venture involving the Americans General Electric (GE) and Westinghouse the semiconductor specialists, located in Tangier since 2010, won an award in Morocco in 2011 in the "Investment and technology knowledge transfer category". In terms of strategy, foreign investors do indeed need to underline their territorial commitment and build close relations with local innovation stakeholders and clusters to promote their products and secure recognition within their adoptive market.

The ANIMA-MIPO Observatory¹⁶ of investments and partnerships in the Mediterranean detected 545 innovation related foreign investment and partnership projects¹⁷ between 2003 and 2010 in the MED countries (see Figure 1). Apart from Israel and Turkey which account for the lion's share, innovation projects are above all concentrated in Morocco and Tunisia, with

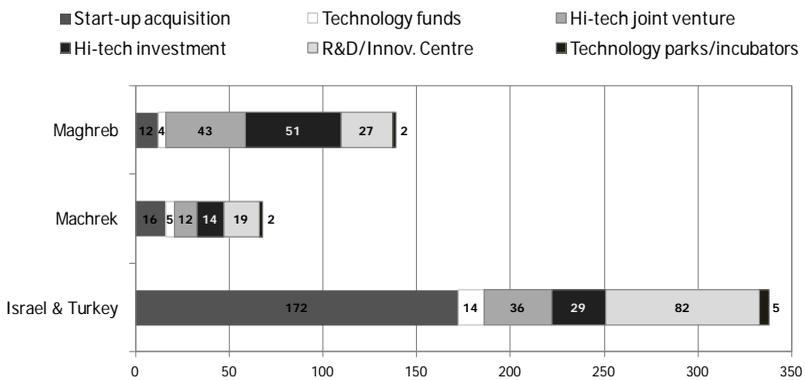
¹⁶ www.animaweb.org/mipo

¹⁷ Defined as projects enabling a foreign company to access a domestic MED country market, assisted by an identified partner or by opening a local office.

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respectively 58 and 49 projects, followed by Egypt with 31 projects. In the 7 MED countries included in the study, and notably in Morocco and Tunisia, a large number of projects are found in the **hi-tech sectors: ICT, aeronautics, solar energy and biotechnologies**. Several new R&D centre projects have also been registered in **Morocco, Egypt and Tunisia**. As for **Jordan and Egypt**, they attract 75% of all local start-up acquisition projects. Finally, **investments involving technology parks or incubators are poorly represented**, as are investments made by or through innovation funds.

Figure 1: Innovation by foreign companies - number of projects out of a total 545 innovation projects



Source : ANIMA-MIPO Observatory, 2003-2010

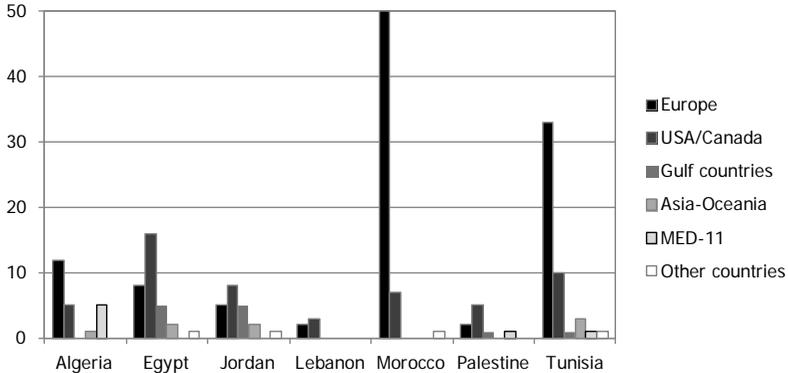
The leading role of European and American multinationals

Multinationals seem to be developing a lasting presence in the field of innovation in the Mediterranean: they generate 45% of all investment and partnership projects in innovation identified by the ANIMA-MIPO Observatory, compared to approximately 25% for SMEs and 30% for major companies (500 to 10,000 employees).

European companies are clear leaders in innovation investments in the region (57% of total projects, see Figure 2), particularly in Morocco and Tunisia. They are followed by American and Canadian companies, accounting for 27% of the projects. The Gulf countries are less active, representing only 6% of the listed projects, essentially in Egypt and Jordan.

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Figure 2: FDI and innovative partnerships per region of origin and country of destination



Source : ANIMA-MIPO Observatory, 2003-2010

Seed funding and early stage financing: venture capital and business angels

The **venture capital** sector has grown strongly since 2000, with 534 investment funds registered in 2011 in the MED countries, compared to less than fifty 10 years ago. This development is confirmed by Global Venture Capital ranking (see Table 9), in which Algeria is the only country lagging behind.

Table 9: Venture capital availability (ranking out of 142)

Country	Algeria	Egypt	Jordan	Lebanon	Morocco	Tunisia
Ranking	110	41	62	60	30	35

Source: World Economic Forum. (2011). *Global Competitiveness Report 2011–2012*

According to the ANIMA-MedFunds study (2011), these funds have a significant impact on the economy, representing 330,000 jobs and a 20 billion dollar turnover generated by stakeholders since 2000. Part of these funds is devoted to innovative companies or sectors. The Sadara venture capital fund based in Palestine, which raised 28 M\$ (19 M€) to invest in twelve Palestinian start-ups provides an illustration. Investors already include Google, Cisco, George Soros and Steve Case who followed the European Investment Bank (EIB).

In this area of seed funding, **Business angel** networks are also emerging slowly but surely. **In general, these networks work closely with entrepreneurs, providing an interface between the world of finance and innovation stakeholders.**

The needs of investment funds and business angels with regard to Mediterranean innovation projects can be summarised as follows:

1. assistance with sourcing and evaluation of innovation projects: support from networks of experts or entrepreneurs with specialist knowledge on market or technology related issues, capable of analysing subjects that are "too" innovative;
2. better innovation project managers: insufficient business development and team management skills are regular complaints expressed by investors;
3. international partners to generate added value for investment projects.

The catalyst role of national and international policies

Emergence of innovation support measures

The OECD lists several definitions of a National Innovation System, including the Metcalfe definition (1995) which describes this system as "a set of distinct institutions which jointly and individually contribute to the development and diffusion of new technologies and which provides the framework within which governments form and implement policies to influence the innovation process"¹⁸. Although innovation support policies exist in certain countries studied since the 1990's, they are today being implemented and are structured around innovation systems (in Morocco and Tunisia in particular).

Morocco

To strengthen the innovation value chain and to ensure that it improves the competitiveness of companies and territories, the Moroccan government **launched the Morocco Innovation strategy in 2009**. The aim of this measure is to develop the innovation and entrepreneurial ecosystem with the creation of 1,000 patents and over 200 innovative start-ups by the year 2014. Several initiatives were also launched, including:

¹⁸ OECD (1997). *National Innovation Systems*. www.oecd.org/dataoecd/35/56/2101733.pdf

- the creation of the **Moroccan Innovation Centre (CMI)**,¹⁹ **the first centre in Morocco dedicated to providing guidance and raising awareness about innovation within a single structure**;
- the launch of the **"Innovation Cities" project** within 4 Moroccan universities whose mission is to manage R&D projects and provide incubator services for innovative start-ups;
- the creation of 15 sector-specific clusters, operational by the end of 2013;
- new funding tools: Intilak (seed funds for promising young Moroccan start-ups) and Tatwir (co-funding of R&D expenses incurred by a Moroccan company in its development phase);
- the Moroccan Innovation Club, a social network organising exchanges and gathering together various stakeholders in innovation, including students, entrepreneurs, researchers and academics, etc.

Tunisia

The new national industrial strategy for the years leading up to 2016²⁰ **lays the foundations for innovation policy based on the strategy plan entitled "Tunisia, the Euromed Valley for Industry & Technology".** It involves 3 main development areas: building on Tunisia's strong experience in back office and industrial nearshore activities, its position as one of the 5 major Euro-Mediterranean hubs, and finally, the shift towards a knowledge-based economy, with for example the introduction of the TunisiaIQ label (Innovation Quotient).

The mission of the **Agency for the Promotion of Industry and Innovation** is to implement the actions detailed in this strategy plan, in coordination with other players such as the Foreign Investment Promotion Agency (FIPA). An incentive scheme to encourage creativity and innovation in the area of Information and Communications Technologies (RIICTIC) was introduced, as well as a number of financial instruments to support R&D activities, including:

- PIRD: Grant for Investments in Research and Development;
- VRR: Programme for the Valorisation of Research Results;
- PNRI: National Research and Innovation Programme;
- ITP: Priority Technology Investments

¹⁹ www.cmi.net.ma

²⁰ Agency for the Promotion of Industry and Innovation (2008). *National industrial strategy for the years leading up to 2016*. www.tunisieindustrie.nat.tn/fr/download/CEPI/Synthese.pdf

The National Agency for the Promotion of Scientific Research (ANPR) and the National Institute for Standardisation and Industrial Property (INNORPI) also coordinate their efforts within the framework of the PASRI support programme for innovation and research²¹. This 12 million Euro project is financed by the European Commission and boosts development of the research and innovation system in Tunisia.

Egypt

There was a broad reflection on the creation of a national innovation system by Egypt²² in 2010, as a result of work carried out by the **Research, Development and Innovation** programme (RDI), with the support of the European Commission and directed by the Ministry of Higher Education and Scientific Research. The conclusions highlight the need to coordinate efforts by different ministries to promote innovation and to foster links between research and industry. Several projects have been developed in this way by the RDI and the ministry expects a 40 M€ return on investment (for a budget of 8.5 M€). Preparations for phase 2 of the RDI programme are already underway. Projects carried out so far have focused notably on:

- the creation of an applied research consortium, combining laboratories and private stakeholders from Egypt and Europe with activities in the energy, health, ICT and agriculture sectors;
- the creation of technology transfer offices (or industry liaison offices) whose role is to help commercialise research results produced by universities (Alexandria University, Helwan University and Assiut University);
- the introduction of training sessions in innovation management.

The **STDF (Science and Technological Development Fund)** provides financial instruments for researchers and companies (notably for prototyping), often in partnership with the industrial development agency: Industrial Modernisation Centre (IMC). Created in 2007 under the leadership of the Ministry of Higher Education and Scientific Research, the STDF published, at the beginning of 2012, a list of recommendations for the

²¹ www.pasri.tn

²² The Ministry of Scientific Research in association with the Fraunhofer Institute for Production Systems and Design Technology (IPK). (2010). *Executive summary. Evaluation of the Egyptian Science, Research and Technology Landscape for the Design of the Egyptian Innovation Policy and Strategy*

implementation of a new innovation ecosystem in Egypt²³. With the exception of this system, Egypt has very few institutional stakeholders working to promote a transversal approach to innovation. **On the other hand, there are initiatives within individual sectors: in the ICT sector, there is the ITIDA** (Information Technology Industry Development Agency), whose missions include "research and innovation".

Algeria

Algeria has not yet developed an innovation policy in the strict sense. The five year programme 2010-2014 does indeed mention objectives for development of the knowledge economy and support for scientific research, but concrete initiatives are struggling to emerge. According to the Algerian Ministry of Industry, "a national innovation system (NIS) will be introduced to support measures for innovation promotion and technical development"²⁴. Now they just need to take the necessary action. The country intends to create national and regional innovation agencies and technical centres. For the moment, the only clear institutional stakeholder in the field of innovation is the National Agency for the Promotion and Development of Technology Parks (ANPT), set up in 2007.

Jordan

There is no official innovation support policy in Jordan either, although they are fully aware of its importance. Again, according to the stakeholders and previous studies carried out, there is a lack of coordination between the different ministries²⁵. Government initiatives focus mainly on R&D and to a lesser extent on cluster activities.

However, interviews carried out for this study reveal that civil society and the private sector are very active in the field of innovation, leading to the emergence of "natural clusters" as well as the creation of technology transfer networks. If we focus specifically on innovative entrepreneurship, **the governmental organisation JEDCO (Jordan Enterprise Development Corporation) stands out as a major stakeholder, notably for its involvement with business incubators** and its financial arrangements offered to start-ups.

²³ STDF. (2012). *Egypt's innovation ecosystem*

²⁴ www.mipmepi.gov.dz

²⁵ See VDI/VDE-IT. (2009). *Study on the national innovation system in Jordan*. Available here: <http://www.iit-berlin.de/Jordan.pdf>

Lebanon

In Lebanon, innovation is not on the political agenda and **remains a totally new concept according to the local partners interviewed**. A new science, technology and innovation policy (STIP) ²⁶ was launched in 2006 but has been slowed down, notably because of conflicts that have plagued the country. The results of the interviews show that the only structures capable of providing innovation support are the Chambers of Commerce and the National Council for Scientific Research (CNRS). The mission of the latter is to guide the Government and businesses in the area of science and technology application, through its research centres or in collaboration with other academic and scientific institutions. It acts as the national contact point for the 7th EU Research and Development Framework Programme and participates in several projects dealing with water management, marine resources and ICT.

Palestine

Palestine is a special case. Testimonies emphasised the difficulties that are all worsened by the conflict in the region, which thwart attempts to provide an attractive framework. Only the Palestine Investment Promotion Agency (PIPA) is mentioned by stakeholders in incubators and other entrepreneur associations.

Key role of the European Commission

Innovation and neighbourhood policy

The introduction of the **Common Knowledge and Innovation Space (CKIS)** is one of the objectives of the new neighbourhood policy adopted by the EU in May 2011 and revised following changes that came about in the Southern Mediterranean countries.

The **Research and Development Framework Programmes (RDFP)** are the main instruments used by the EU to support research and development, with **over 40 million Euros** granted to Mediterranean partner countries via the **7th framework programme**. Although all neighbouring countries are involved in actions, some of the Mediterranean partner countries have signed scientific and technological partnership agreements. This is notably the case of Morocco, Tunisia, Jordan, Egypt and Algeria. The next

²⁶ The United Nations Educational, Scientific and Cultural Organisation (2008). *Science, Technology and Innovation Plan (STIP) in Lebanon*

framework programme, **Horizon 2020**, plans to grant at least the same amount for the Mediterranean and will give priority to environment oriented projects (reduction of pollution in the Mediterranean and water management).

Cooperation activities are mainly carried out by 3 Directorates General (DG) of the European Commission: The DG for Research and Innovation, the DG DevCo and the DG Enterprise, intervening at regional or bilateral level.

Regional Cooperation

Regional cooperation is based on the use of instruments for dialogue and collaboration at the highest levels, as well as programmes to promote networking between players.

The coordination of Euro-Mediterranean innovation and research activities is handled by the **MoCo**, the Monitoring Committee for Euro-Mediterranean Cooperation in Research and Technological Development, which defines the priorities and areas for collaboration. MoCo relies on the Euro-Mediterranean project **MIRA** (Mediterranean Innovation and Research Cooperation Action - INCONET) which brings together representatives of research ministries and major research laboratories in more than 20 countries. MIRA participates in selecting the priority areas of mutual regional interest in the fields of energy, environment, health, agriculture, biotechnologies and ICT: 55 specific actions were recommended. In addition, the **Euro-Mediterranean working group for industrial cooperation**, alter ego of the MoCo for industry, is working on several innovation themes, including clustering policy. Recommendations for action in the area focus essentially on training, and were adopted as a result of the innovation workshop organised in November 2011.

From an operational point of view, there are several projects and initiatives designed to promote **networking between platforms and innovation stakeholders at regional level**, including:

- **Medibtikar** (7.4 M€), introduced between 2006 and 2010 to provide support for incubators, technology parks and technology transfer offices in the Mediterranean. The project provided the opportunity to identify players who need to be mobilised, the requirements in this domain (internationalisation, management and the creation of project "deal flows" etc.) and to take the appropriate actions. So far, there has been no follow up to Medibtikar.

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- The **ERAWIDE** initiative (representing over 15 M€ in the 7th RDFP) provides networking opportunities for European and Mediterranean stakeholders involved in technology transfer. The last call for proposals resulted in the launch of 27 technology transfer projects in the Mediterranean. One example is the BioProtech project led by the the Turin based biotechnology park BiopMed, with the aim of developing new innovation processes and providing complementary expertise to the technology transfer unit at the Biotechnologies Centre in Sfax (CBS). This enabled the creation of a specialised incubator and a technology transfer unit (offer database, marketing operations).
- **European Cluster Collaboration Platform (ECCP)** is an initiative of DG Enterprise and its mission is to develop a set of good practices for training and to foster relations between European and international clusters. Agreements have already been signed with international partners (Brazil, Japan), and agreements are expected to be signed in 2012 with 4 Mediterranean countries: Morocco, Tunisia, Lebanon and Egypt;
- **Invest in Med (2008 - 2011)** is a programme implemented by the MedAlliance consortium directed by ANIMA with the aim of strengthening partnerships between small Euro-Mediterranean businesses. Several activities exist to help companies when internationalising innovation and entrepreneurship projects and in particular the MedVentures service platform. It identified 120 start-ups who were given the opportunity to promote their activity and receive assistance on international markets;
- The **Enterprise Europe Network (EEN)** is a pan-European network involving approximately fifty countries in total. The Mediterranean member countries are Egypt, Israel, Syria, Tunisia, Turkey and Morocco which just became a member. The EEN's 600 structures provide innovation support and promotion services across Europe, offering several regional integration tools for the promotion of innovation: Electronic forums for technology exchanges and partnerships, central regulatory information system, financial mentoring, business meetings and fairs;
- The **European Business and Innovation Centre Network (EBN)** includes over 200 members involved in innovation promotion across Europe (mainly incubators, small business centres and technology

parks). EBN has developed a co-incubation service (Soft Landing) to assist entrepreneurs across several countries. This service was tested in 2010 in the Mediterranean as part of the MedVentures initiative and involved working with the PICTI incubators in Palestine and Berytech in Lebanon;

- **2 initiatives involving universities:** the Euro-Mediterranean University **EMUNI**, located in Slovenia and set up within the framework of the Union for the Mediterranean, and the **TEMPUS** programme which finances programmes to support innovation promotion;
- The **CBC MED** programme attracts the interest of various Euro-Mediterranean consortiums with regards innovation, whether it be vertical (sector based) or transversal (based on themes such as entrepreneurship) types of innovation.

Support for the implementation of bilateral innovation policies

Bilateral support programmes (**BILAT**) focus on implementing common priority research policies and setting up national contact points. Examples include the SHERACA programme in Egypt and the EU-JordanNet programme.

Further down the line, **the EU also backs the development of new innovation policies on the ground.** In Tunisia for example, the aim of the **PASRI** project is to support the Tunisian research and innovation system to be able to propose solutions for the main problems identified along the innovation chain, from the company to the research team. Similarly in Jordan, the SRTD project with a budget of 5 M€, provided support for research, technological development and innovation as well as strengthening capacities in these sectors to create employment and boost economic growth. In Egypt, the RDI programme aims to modernise the country's innovation system, both in terms of governance and international development.

Institutional twinning, an initiative of the European Commission, is designed to promote cooperation and enhance the capabilities of member countries. For example, institutional twinning between Morocco and France-Spain is currently underway and aims at developing a National Research System (NRS) in Morocco that will be part of the European Research Area (ERA).

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Other European tools include the TAIEX programme and the European Training Foundation (ETF) which now provide funding for concrete actions in the countries (training and international events).

Other key international players

The European Investment Bank

The European Investment Bank (EIB) intervenes at three levels in the promotion of innovation in the Mediterranean:

- **development of technology parks:** a large number of technology parks in the Mediterranean receive support from the EIB. One example is the Sousse Technology Park which received financing for the infrastructure of its nanotechnology and microelectronics research centre and the engineering school building. It also benefited from technical assistance for their implementation;
- **support for financial bodies,** notably venture capital and business angel networks: the EIB has a partner role (Limited Partner) in more than 10 funds across the region (including Sadara) and provides technical support ;
- **networking between innovation stakeholders:** the EIB chairs the IT1 working group, an initiative of the Marseille Centre for Mediterranean Integration (CMI). The programme's aim is to bring innovation stakeholders together to work on a regional basis to improve innovative project deal flows and set up new joint operations (particularly for funding).

Bilateral cooperation agencies

Bilateral cooperation agencies in the European states (GIZ, AFD, UK Aid, CIREM, etc.) play an important role **in ensuring long term innovation development at grass roots level**. The GIZ has almost 100 people in and around Tunisia, who train and provide support for innovation managers, start-ups or research programmes. GIZ Tunisia has made a significant contribution to the emergence of a national innovation policy in the country. Another example is the AFD which supports the competitiveness cluster in Sousse (Tunisia), by providing assistance in creating a mechatronics cluster to develop joint projects.

The increasingly important role of the USA

The USA plays an increasingly important role in supporting innovation, particularly since 2011. The priority is given to coaching talents with strong potential, expected to become future economic leaders in the region.

More than ten **American universities** are present in major Mediterranean cities. The American University in Cairo (AUC), founded in 1919 trains over 5,000 students each year, with its training and joint research teams. These universities provide the boost needed to implement training policies in the areas of technology transfer or support for entrepreneurship.

The US State Department, via its special MEPI programme (Middle East Partnership Initiative) places particular emphasis on supporting innovation and entrepreneurship as part of its foreign policy in the region. The [PNB – NAPEO](#) Initiative (Partner for a New Beginning - North Africa Partnership for Economic Opportunity), led by the ASPEN Institute, aims to mobilise leaders in innovation in the MED countries by associating multinationals (notably Intel) and regional leaders. Two advisory boards were set up in April 2011 in Algeria and Morocco, bringing together entrepreneurs and recognised researchers. A NAPEO Maghreb conference was held on 17-18 January 2012 in the presence of political leaders, including Madeleine Albright, in order to define a plan of action to support innovation and entrepreneurship. The plan involves:

- support for investment funds and business angel networks such as Casbah Business Angels in Algeria;
- the launch of business plan competitions in the region and mobilisation of the Arab diaspora in the USA in favour of their countries of origin (GIST – Maghreb Start-up Initiative, launched at the end of 2011);
- the creation of cross border incubator networks: North Africa Innovation and Technology Incubator;
- the creation of training courses in entrepreneurship and innovation management: North Africa Centre for Excellence on Entrepreneurship.

International institutions

The World Bank has been supporting several regional incubators over the last years via the [infoDev](#) programme, providing technical support, training programmes and benchmarking operations.

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UNIDO supports young entrepreneurs with its local presence and the organisation of competitions or programmes to support incubators, in particular with the [EDIP](#) programmes.

In the MENA region, **the OECD** created the [MENA 100](#) competition for entrepreneurs, and leads a working group including institutional bodies and investors involved in innovation and entrepreneurship in the Mediterranean.

The Union for the Mediterranean (UfM) aims to play a role in developing regional innovation activities, notably by deploying financial instruments and providing support for start-ups.

What about South-South regional innovation policies?

Arab innovation support organisations such as ISESCO (Islamic Educational, Scientific and Cultural Organisation) or ASTF (Arab Science and Technology Foundation), often confined their work to institutional projects: organisation of conferences and seminars to coordinate activities between innovation policy stakeholders. These players are not often mentioned during interviews.

On the other hand, the **Gulf countries** (Dubai and Qatar in particular), are often mentioned as particularly attractive targets for entrepreneurs in Arab countries. Although no official cooperation exists, major players such as the Al Maktoum Foundation or the Abraaj Fund are closely following the progress of innovation support policy implementation in the MED countries.



Profile of innovation support structures: Technology parks, business incubators and technology transfer offices

This chapter focuses on the profiles, positioning and ecosystems of three types of innovation support structures in the Mediterranean:

- technology parks, innovation clusters involving private and public players and which are at the heart of policy incentives for innovation;
- incubators whose role is to help new business development;
- technology transfer offices set up within universities and research centres, whose objective is to promote research findings.

Other types of innovation support structures are also mentioned further on in this study and are included in the recommendations: clusters, technical support centres for businesses and business entrepreneur associations to name just a few.

The development of innovative territories: Technology parks

Technology parks, innovation hubs

Creating a fertile environment to accelerate the process of innovation

A technology park²⁷ is a **geographical concentration of companies and research institutions (universities and R&D centres)** located in a specific zone (in general spread across a few hectares of land, unlike clusters, which may be spread out over a specific territory or region). Proximity (physical, organisational and cultural) is **an advantage and enables joint collaboration and networking**. The transfer of knowledge, made easier by strong interaction between the different players, can range from simple sharing of communication tools to joint research projects.

²⁷ For the purposes of this study we employ the term Technology Park. The terms "Science and Technology Park (STP)", "Technopark" and "Technopolis" (derived from *techno*-'technologically advanced, innovative' and *-polis* 'city') are also employed frequently by innovation stakeholders.

Several types of relations and dynamics are sought after in the technology parks, which offer advantages such as:

- resource sharing and economies of scale: pooling means for research, testing and prototyping and involving joint research teams (universities, research centres and companies);
- business promotion and interaction with the market: connecting players in public research and SMEs/major groups or financial bodies by organising activities for business creation, patent leverage and shared research;
- cross-sector innovation dynamics: cross-fertilization between different activity sectors (for example several technology parks focus on the "creative industries", involving players in several industries such as textile and fashion, ICT and microelectronics to name only a few);
- a base for international activity: showcase for areas of excellence, a critical mass effect and a range of services for international investors;
- access to a territory: creation of a network of connections (particularly for transport services), creation of open spaces for recreation (sports facilities, parks and restaurants etc.) and networking activities (events, communities) with the neighbouring urban areas.

Technology parks are key elements in territorial promotion policies as they are the showcase for innovation potential. They also provide the ideal place for deployment of sector and industry oriented policies.

The importance of forums and communities

Space-sharing is a central theme in new technology parks. It involves sharing workspaces (common workplaces, open spaces and coffee areas) or recreational areas ("start-up cafes", restaurants, parks and leisure facilities). Support for innovation communities (on student campuses in particular) is also provided via the web 2.0 and networking.

Open and extremely cohesive urban areas

They were once designed as mega-infrastructures and treated like sanctuaries, located several dozen miles from city centres (like the Research Triangle Park in North Carolina). Nowadays, technology parks are more like urban innovation networks, located in city centres, for example the TechCity in London or the Digital Media City in Seoul, without forgetting the 22@Barcelona Technology Park. This international hub is designed to accommodate 1,000 start-ups and small businesses within the ICT and medical health sectors and is situated in the historical centre of Barcelona (in the former textile factory neighbourhood).

Overview

41 technological clusters created or planned for in the 7 MED countries

The growing importance of the knowledge economy concept has led to the creation of a number of technology parks and clusters in the MED countries: 41 technology park projects have been created or have been announced as being in the planning stages in the 7 countries targeted by the study. Among these, **13 are in the very early stages (feasibility study)**, notably in Lebanon (Beirut Emerging Technology Zone (BETZ), Edde Global Village, Makse Park), in Egypt (Smart Village Damietta, Smart Village Alexandria, Sinai Technology Valley), and in Algeria (El Boustene TechnoPark and the Sidi Bel Abbes and Bejaia Technology Parks, etc.). If we only take into account the **developed projects, in other words those currently underway or already created, the number of technology parks falls to 28** (see Figure 3 and Table 10).

Figure 3: Map of technology parks in the MED countries



Source: ANIMA, screenshot supplied by the MedMaps geographical information system²⁸, www.medmaps.eu/en

²⁸ MedMaps provides the geographical location of technology parks, incubators and technology transfer offices, as well as investment and partnership projects listed by the ANIMA-MIPO Observatory. For more information: www.medmaps.eu/en

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Table 10: List of technology parks in the MED countries

Name	Country	Establishment	Sector
Sidi Abdallah Cyberpark	Algeria	2009	ICT
Sid Amar Technopark (Annaba)	Algeria	2011	ICT
Mubarak City (MUCSAT)	Egypt	2000	Generalist
Smart Village Cairo	Egypt	2001	ICT
The Hashemite University Technology Park (HUTP)	Jordan	2001	ICT
El Hassan Science City	Jordan	2007	Generalist
CyberCity	Jordan	2001	ICT
Rabat Technopolis	Morocco	2009	ICT
Casablanca Technopark	Morocco	2001	ICT
Agrotech Souss Massa Drâa	Morocco	2006	Agribusiness
Berkane Agro-technopole	Morocco	2011	Agribusiness
Meknes Agro-technopole	Morocco	underway	Agribusiness
Nouaceur Technology Park	Morocco	2005	Aeronautics
Oujda Technology Park	Morocco	2011	Biotechnologies
Tan Tan Oceanopole	Morocco	2010	Marine resources
Haliopolis Park	Morocco	2009	Agribusiness
ElGazala Technopark	Tunisia	1999	ICT
Manouba Technology Park	Tunisia	2011	ICT
Sfax Technology Park	Tunisia	1999	ICT
BiotechPole Sidi Thabet	Tunisia	2002	Biotechnologies
Bizerte Technology Park (competitive cluster)	Tunisia	2007	Agribusiness

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Name	Country	Establishment	Sector
Borj-Cedria Ecopark	Tunisia	2008	Renewable energies
Sousse Technology Park (competitive cluster)	Tunisia	2006	Electronics (mechatronics)
Medenine Technology Park	Tunisia	underway	Natural products from the Sahara
Gafsa Technology Park (competitive cluster)	Tunisia	2008	Generalist
Beja Technology Park (competitive cluster)	Tunisia	underway	Generalist
Gabes Technology Park (competitive cluster)	Tunisia	2010	Generalist
Monastir-El Fejja Technology Park -Mfcpole (competitive cluster)	Tunisia	2006	Textile

Source: ANIMA - Innovation players database 2012

Globally speaking, the technology parks are recent: 20 of the 28 technology parks listed (72%) were created after 2005 or are in the launch phase. The date on which the technology parks were created should also be looked at in perspective. It is often the **date on which the management structure was set up, with actual activities beginning later**. For instance, the Sidi Thabet Biotechnology Park was created in 2002, but it only began activity towards the end of 2008.

Uneven distribution of technology parks among the 7 MED countries

Apart from the five projects in the study, two technology parks focusing on ICT projects have just been launched in **Algeria**, the Sidi Abdallah Cyberpark near Algiers and another in Annaba.

In **Egypt**, two technology parks are listed: the Smart Village in Cairo, established in 2001, and the Mubarak City for Science and Technology, established in 2000. The latter would appear to be in difficulty and is often described as being "at a standstill" for the moment.

Jordan for its part has tried to develop 3 technology parks, 2 of which are dedicated to ICT and were set up in the early 2000's: CyberCity in Irbid and

the Hashemite University Technology Park in Zarqa. However, little information is available about when they plan to start operations (a report²⁹ confirms that these 2 structures were still not functioning in 2008). Today, only the El Hassan Science City in Amman reports regular activity.

In **Lebanon**, no technology parks correspond to how we generally would define this type of structure. Berytech in Beirut is the closest example. Established in 2002 by a private university, banks and businesses, it currently has two sites: a science campus and a technology campus and activities focus on medical sciences. Berytech is described as an incubator but its ambition is to become a technology park within the next ten years. It plans to achieve the required synergies before investing in infrastructures.

The 9 technology parks registered in **Morocco** are on the whole quite heterogeneous. Since 2006, several agribusiness technology parks were launched in Agadir, Meknes and Berkane. Other structures that group together business according to their geographical location or sector of activity were created in Nouaceur, Oujda, Agadir and Tan-Tan. The Casablanca Technopark is often quoted as being the flagship technology park in Morocco, although it focuses mainly on incubator services for start-ups and providing office space for businesses rather than on developing an ecosystem where universities, researchers and companies may converge. The Technopolis project in Rabat would appear to attract a more diverse community and is notably home to the MAScIR Foundation³⁰.

Tunisia was one of the first MED countries to develop this concept with the creation of the Elgazala Technology Park in 1999. It invested massively in the infrastructures and now has 12 technology parks, including 5 competitive clusters (Sousse, Monastir, Gabes, Gafsa and Bizerte). Three key elements characterise competitive clusters in Tunisia: an industrial park, a technology park and a network of national and foreign partners.

Finally, no technology parks were identified in **Palestine**.

²⁹ InfoDev/World Bank. (2008). *International Good Practice for Establishment of Sustainable IT Parks. Review of experiences in selected countries, including three country case studies: Vietnam, Russia & Jordan.* <http://www.infodev.org/publications>

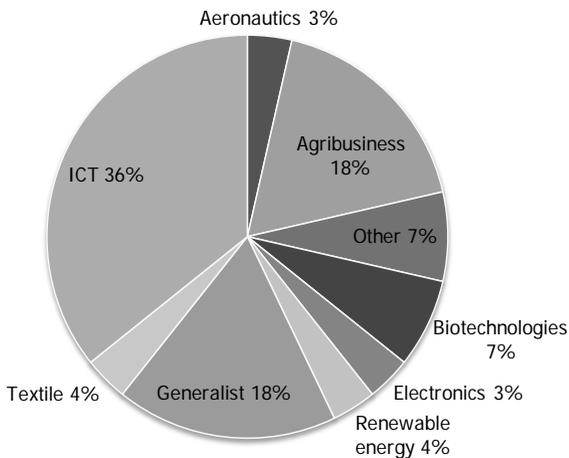
³⁰ Moroccan Foundation for Advanced Science, Innovation and Research

Sector positioning

The ICT sector arrives in pole position: it is present in 36% of the technology parks registered and in all MED countries that have developed technology parks (see Figure 4). The agribusiness sector is also well-represented (18%), whereas almost 20% of technology parks are multi-sector (generalist).

Tunisia and Morocco have more technology parks than their neighbours do, so quite logically they represent a more diverse array of sectors: ICT, agribusiness, aeronautics and electronics in Morocco, and biotechnologies, textile and renewable energies in Tunisia.

Figure 4: Sector positioning of technology parks in the MED countries



Source: ANIMA - Innovation players database 2012

The activities of ICT oriented technology parks generally focus on specific areas. **This specialisation seems to stem from observation of projects within the field, i.e. the supply, which then enables them to define the target niche sectors.** As a result, there is a trend towards specialisation in ICT niches such as **web 2.0, web content, mobile applications and software.**

On the other hand, **generalist technology parks seem to encounter more difficulties** in identifying niche markets. **There are also differences in levels of specialisation of technology parks working on sectors other than ICT.** The Sidi Thabet Biotechnology Park, the Monastir-El Feja Technology Park, the Sousse Technology Park (Tunisia) and the Agrotech (Morocco)

mention both in their official publications and during interviews carried out for this study that they are currently looking into niche markets that they could target. Among those mentioned, were the niche markets for **seafood products, olive oil, medicinal and aromatic plants, textile finishing, microelectronics, water management and packaging for agricultural produce**. This trend towards specialisation in the Mediterranean mirrors the current approach adopted by European technology parks.

Governance, method of financing and budgetary choices

The public-private form of partnership is the main governance model in the region. With the exception of Algeria, where technology parks are managed by the National Agency for the Promotion and Development of Technology Parks (ANPT), under the leadership of the Ministry of the Post and Technology, Communications and Information, the MED countries are gradually opting for the public private form of partnership. This is reflected in the capital structuring of their technology parks. In Tunisia, a report on the first five years of activity led the authorities to privatise the technology park management units, which initially came under the Ministry of Higher Education.

In technology parks run on a public-private basis like for example the Casablanca Technopark, the Sidi Thabet Biotechnology Park (see case study 1), the Bizerte Technology Park and the Monastir-El Fejja Technopark, the private sector **is mainly represented by banks**: Sicar Amen Bank and Arab Tunisian Bank (Tunisia), Attijariwafa Bank (Morocco). The shareholders in the Smart Village in Cairo are of relatively diverse origin and include banking groups and insurance companies (MISR Bank and Suez Canal Insurance) as well as **companies** such as Orascom (Construction/ICT), EgyNet (ICT) and Raya Holding (ICT). The participation of **private investment fund managers** (Tuninvest) and leasing companies (Tunisia Leasing), in Tunisia remains quite an exceptional occurrence. Finally, in Jordan, **property developers** have shares in the capital of two technology parks (CyberCity and Hashemite University Technology Park).

Generally speaking, public authorities and financial institutions (for example the CDG in Morocco) have strong control over technology parks. Employers' federations (UTICA in Tunisia) may also play a consultant role with regard to strategy related issues. **The variety of private stakeholders represented is limited and represents a hurdle to development of bold innovation promotion strategies.**

Promotion is the principle activity carried out by a technology park and requires the appropriate budget. However, several players interviewed pointed out the predominance of **real estate matters in the decision regarding financial resource allocation**. The budget dedicated to promotion is quite low in light of the set objectives that are notably promotion, the creation of synergies and collaboration. Acting more like property developers rather than network managers, shareholders in technology parks tend to place more emphasis on creating installations and maximising the park's occupancy rate.

This "maximum occupancy" policy becomes even more of a priority because of the need for technology parks to generate revenue and ensure financial independence. Indeed, an increasing number of technology parks adopt a self-financing strategy or have plans in the near future to cover their running costs by invoicing their services. Several technology parks stressed that they do not receive State subsidies and self-financing is the only choice they have. This is often the case for management structures in Tunisia. In Morocco, the Tan Tan Oceanopole receives financial aid from the State for a period of 3 years, after which it will need to find a means of becoming totally financially independent.

Case study 1: Sidi Thabet Biotechnology Park (Tunisia)	
Date	Created in 2002. Activities started at the end of 2008
Financing	Self-financing (billing of services): 100%
Shareholders	Public organisations: 60% (Pasteur Institute of Tunis, Société des Industries Pharmaceutiques de Tunisie, Société Tunisienne de Banque and Banque de l'Habitat). Private players: 40 % (Sicar Amen Bank, Arab Tunisian Bank).
Sector and niches	Biotechnologies → niches: Bio Bank, Genomics, Genetic diagnoses, Therapeutic proteins, Biologically active molecules, Antibodies and vaccines, Medicinal and aromatic plants, Medical devices
Key figures	Annual operating budget: 200K Tunisian dinars (100 K€) Number of businesses established: 3 (in progress). Research centres: 2 (National Centre for Nuclear Sciences and Technologies, 120 employees/ National Institute for Research, Physical and Chemical Analysis, 150 employees) Number of students: 750 Surface area: 115 ha

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<p>Services and activities</p>	<p><i>Accommodation/IT services:</i> 15 "turnkey" offices, shared facilities (training and meeting room), 5 laboratories, technical installations.</p> <p><i>Business support:</i> management training sessions, fund seeking, market prospecting and partner search services.</p> <p><i>Services being implemented:</i> solutions for extension or delocalisation of activity for Tunisian and foreign industrialists and investors: bio industrial zone (planned for end of 2012), multi-sector industrial zones (2015).</p> <p><i>International:</i> partnerships with several foreign technology parks and notably some French parks: Genopole Biotechnology Park, St Etienne Medical Technologies Park and the PASS cluster (Perfumes, Aromas, Scents and Flavours). Founder member of the international federation I2MAP (International Innovation on Medicinal and Aromatic Plants), member of IASP (International Association of Science Parks).</p>
<p>Good practices</p>	<p>Self-financing (receives no State subsidies).</p> <p>Attribution of a specific budget for international operations: 20% of the total budget (40 K Tunisian dinars).</p> <p>Collaboration with the ANPR (National Agency for the Promotion of Scientific Research) for the creation of a technology transfer office.</p> <p>Reflection on the niche markets to target.</p> <p>Public-private partnership model and involvement of the Pasteur Institute of Tunis in steering the activities.</p>
<p>Contact</p>	<p>www.biotechpole.rnu.tn Nouredine Bouzouaïa, CEO</p>

To finance their partnerships with international structures, the majority of technology parks in the MED countries turn to international cooperation programmes for help in covering the costs generated when searching for partners, travel and other networking activities. In Tunisia for example, the new competitive clusters benefit from cooperation programmes set up by the French and Italian embassies.

An uneven provision of services

All of the technology parks listed mention the following **four service categories** in their official publications:

- accommodation: laboratory, shared space, work stations;
- business support: advice, coaching, marketing strategy guidance;
- access to financing: first customer acquisitions, introduction to investors;
- promotion/networking: organisation of events and development of real and virtual communities.

Nevertheless, it remains difficult to identify which **services are actually offered** in practice. Interview results provided an overview of **basic services** that include accommodation, maintenance and upkeep. **Business support** is mainly in the form of legal advice on business regulations, although training sessions are also occasionally organised (topics include business plans and marketing strategy). Very little practical information was available regarding "**access to financing**".

Managers of technology parks recognize the growing importance of organising **promotional events that provide the opportunity to inform and meet clients as well as for networking**. As a result, all of the technology parks organise events to develop public awareness and promote their activities. The vast majority also organise special seminars for researchers and entrepreneurs. On the other hand, only a few technology parks in the Southern Mediterranean region are involved in **developing online communities and exchange platforms**. These services are hardly used, even though 70% of those interviewed would like to see the introduction of online tools enabling them to share information and find partners. The In'tex network, developed by the Mfcpole (Monastir-El Fejja) provides a good example of a collaborative technology watch and business intelligence platform, involving local and international players.

The example of the El Hassan Science City (HSC, see case study 2) is the perfect illustration of the importance of the **learning and knowledge building phases before a technology park can propose a range of services**. The challenge is to achieve effective service coordination between the different units in the technology park (incubator, technology transfer centre, etc). After reflection on how relevant their services were, the management team at the El Hassan Science City decided to pool their support services by creating the El Hassan Business Park in 2010. This provided them with the

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opportunity to fully exploit potential synergies and build a value chain. The innovation and entrepreneurship programmes, based at the El Hassan Science City, were indeed up until then managed separately by distinct units and there was little communication between them.

Case study 2: HSC Technology Park - El Hassan Business Park (Jordan)	
Date	Established in 2007. Facility sharing began in 2010
Shareholders	Royal Scientific Society (50%), Higher Council for Science and Technology (50%)
Sector	Generalist
Key figures	Annual operating budget: 500 K\$ (360 K€) Management structure: 4 employees Total area: 3,000 m ² (business park)
Constituent entities	<i>Ipark</i> (established in 2003) → incubator providing facilities and services dedicated to innovative start-ups. <i>IPCO</i> Intellectual Property Commercialisation Office (created in 2008) → links between university-industry and intellectual property. <i>QRCE</i> Queen Rania Centre for Entrepreneurship (created in 2004) → entrepreneurship support and coaching. <i>Bedaya</i> - Start.Alliance Angel Network (created in 2009) → network of Business Angels, seed funding and mentoring.
Services and activities	<i>Accommodation:</i> turnkey office space <i>Shared facilities/IT services:</i> videoconference room, auditoriums, research library (technical and business publications), restaurants and laboratories. <i>Access to financing:</i> entrepreneurs are introduced to members of the Business Angels network Bedaya. <i>Event planning/networking:</i> organisation of the annual "Global Entrepreneurship Week", seminars and workshops. <i>Business support:</i> coaching, training on the theme of business plans and business models (5-10 sessions per year), guidance on strategy/positioning, identification and search for partners, consulting services (protection of Intellectual Property), technology transfer and valorisation of research results.

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	<p>International: member of EBN soft landing networks, GIST "Global Innovation through Science and Technology" and the infoDev programme of the World Bank.</p> <p>Other activities: advocacy work with public authorities to improve the business and innovation climate.</p>
Good practices	<p>Resource and skill sharing: grouping together of all strategic departments within a single entity.</p> <p>Organisation of business plan competitions and of events designed to bring together academic research and industry.</p> <p>Operations to attract student attention towards entrepreneurship and innovation.</p> <p>Creation of an "Innovation Avenue" that geographically connects the university campus and the business centre, to foster an ongoing spirit of collaboration.</p> <p>Free provision of resources belonging to the Royal Scientific Society for companies in the incubator.</p>
Contact	<p style="text-align: center;">www.ehsc.jo</p> <p>Wissam Rabadi, Executive Director at El Hassan Business Park</p>

Ecosystem

Information about the **number of companies located** in the technology parks is sometimes difficult to obtain, and the technology parks do not employ the same methods to provide information about the companies they house. The data gathered reveals that the recent technology parks house very few companies (between 0 and 10). The technology parks who attract the largest number of companies are ElGazala (100 companies, of which 10 are start-ups), the Casablanca Technopark (170 companies of which 50 are start-ups) and the Smart Village in Cairo (160 companies of which 30 are start-ups). As for the Rabat Technopolis, it is the only one of a few to provide a list of companies on its website in the section entitled "Companies that trust us".

Despite their ambition to become leading innovation hubs or cities, Mediterranean technology parks are not designed to be places for living. They **often lack pleasant and welcoming meeting places and are cut off from city life.** The term "conviviality" was hardly mentioned during the interviews and very rarely figures in communications material either. Only the Smart Village

in Cairo mentions, on its website, that an informal meeting area is made available: the "Think Tank Café" is presented as a comfortable meeting place for people in the park to meet, interact and discuss. The El Hassan Science City set up an "Innovation Avenue", which brings together the university campus and the business centre to encourage greater collaboration.

The interviews carried out also demonstrated that the academics, researchers and companies who form part of the technology parks exist alongside one another but interact rarely. The synergies between different components of these structures are not totally optimised. This lack of collaboration is pointed out frequently, and according to Nejib Karafi, CEO of the Borj-Cedria Ecopark: **"We have a number of top quality research centres and industrial zones but we are incapable of achieving synergies between research, training and production"**.³¹ It is very difficult to build new innovation communities and this is why technology park managers tend to neglect this aspect. The result is that the technology park's role is reduced to that of a marketing tool, used simply to attract investors to the region. With this type of approach, there is a risk that the park will become home to businesses with little interest for innovation, their focus being mainly on production.

The choice of geographical location is also a highly strategic issue: technology parks situated too far from city centres struggle to attract innovative companies and start-ups. This is the case of the Cybercity, established in 2001 by Jordan within the framework of its national REACH programme (Capital, Human Resource Development) to speed up development of the ICT sector. A report by the World Bank³² also highlighted the difficulties experienced by the technology park in the early stages of its creation, located far from the centre of the capital city Amman, home to the majority of Jordanian start-ups.

³¹ "Signature of a partnership agreement for the development of the Borj-Cedria Technology Park", Tunisian News Agency, 28/02/2012: www.tap.info.tn

³² infoDev/World Bank. (2008). *International Good Practice for Establishment of Sustainable IT Parks. Review of experiences in selected countries, including three country case studies: Vietnam, Russia & Jordan*. Available at <http://www.infodev.org/publications>

Contacts between universities and businesses: a potential source of collaboration so far under exploited

Even though the majority of Mediterranean technology parks highlight the element of "training and higher education" in their official communications, the people interviewed rarely mentioned joint initiatives between universities or schools as being part of their ecosystem. A rare example is provided by El Hassan Science City with its support structure for entrepreneurs, the Queen Rania Centre for Entrepreneurship (QRCE).³³ The centre organises competitions between students as part of the programme aimed at bringing industry and university closer. Entrepreneurs are invited to propose challenges to students (generally a problem experienced by their company), who are then asked to find a solution. This is just one step towards collaboration between industry and the academic world.

The Bizerte Technology Park would like to create a technology transfer department in order to provide the expertise of its engineers to businesses, but this initiative is only in the early stages. On the other hand, the Monastir-El Fejja Technology Park³⁴ has already achieved concrete results by connecting the University of Monastir, which holds a patent for the Alfa fibre extraction method, with a textile entrepreneur who purchased an exclusive licence for this patent. The Monastir Technopark also provided assistance for the provision of a corporate financing package and helped with the search for partners. Nevertheless, the interviews carried out tend to indicate that such "success stories" are currently quite rare.

³³ See case study 2

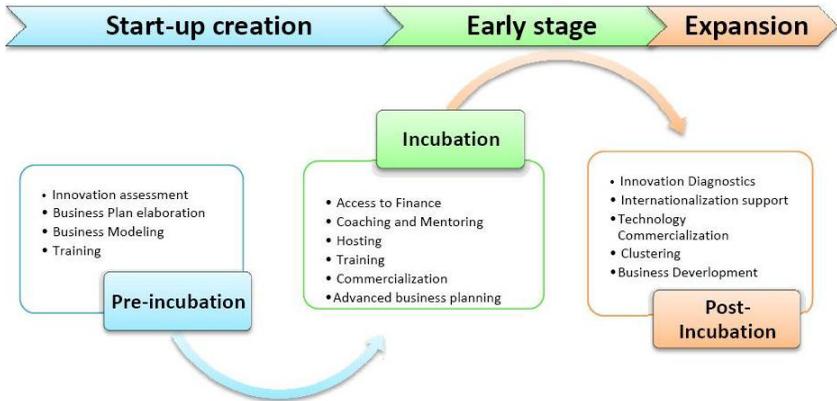
³⁴ See case study 12

Promoting entrepreneurship: Business incubators

Typology: Incubators, small business centres and innovation accelerators

The term "incubator"³⁵ groups together different tools used to support innovative projects during the following three stages of incubation.

Figure 5: Incubation process and stages involved



Source: EBN (2010). *Smart Guide to Innovation-Based Incubators*

In the MED countries, there are three types of incubators: (in order of importance):

University or research-based incubators are located next to universities and major schools to develop their students or graduates projects, or to commercialise the results of their researchers. Essentially, they play a role in the early pre-incubation phase, fostering the emergence of projects.

Small business centres focus on accommodating businesses and, more recently, on networking. They are often located within technology parks and are closer to the industrial world than public research and innovation. Examples of this include the Casablanca Technopark Incubation Centre and the Incubator Centre in the Smart Village in Cairo.

Innovation accelerators, or Business accelerators, have been recording fast growth in the region since 2010. Examples include Oasis 500 in Jordan, Flat6 Labs in Egypt, WikiStart-up in Tunisia and Seeqnce in Lebanon. These

³⁵ In English, the word "incubator" refers both to incubators and small business centres.

accelerators function according to the Anglo-Saxon model and are often managed by financial stakeholders. They are characterised by the careful pre-selection of projects (in the pre-incubation phase), coaching and mentoring are provided for short periods (3 to 6 months) and the emphasis is placed on networking and open workspaces (start-up boot camps etc.).

Overview

90 incubators were identified in the 7 countries targeted by the study (see Figure 6), half of which are located in Morocco and Tunisia.

Figure 6: Map of incubators in the MED countries



Source: ANIMA, screenshot supplied by the MedMaps geographical information system www.medmaps.eu/en

Tunisia has 32 incubators throughout the country and they are managed for the most part by the Agency for the Promotion of Industry and Innovation.

Morocco has 15 incubators. Most of them were set up by the RMIE (Moroccan Incubation and Spin-off Network), a joint initiative involving the Ministry of Higher Education and Scientific Research and the Ministry of Industry.

Algeria has only 4 incubators, including the Technobridge located in the Sidi Abdallah Cyberpark. A regionalisation programme has been set up to establish approximately twenty incubators across the entire country.

Roughly fifteen incubators have been identified in **Egypt**, and some of these were launched in 1995 via the "Egyptian incubator programme" of the Social Fund for Development, a fund financed by several international donors, and others developed more recently by the governmental agency ITIDA³⁶.

³⁶ Information Technology Industry Development Agency www.itida.gov.eg

12 incubators were identified in **Jordan**, where private initiatives exist alongside public ones. Since 2009, a new stakeholder, Al Urdonia Lil Ebda (AULE)³⁷, has been responsible for developing several incubators across the country.

In focus: the example of Al Urdonia Lil Ebda (AULE), Jordan

Owned at 51% by the State and 49% by private players, AULE has a private company status and works in collaboration with JEDCO (Jordan Enterprise Development Corporation), the leading public institution engaged in the promotion of entrepreneurship. With 3 incubators under its management, AULE will develop two more incubators in 2012 in Jerash and Mabada.

AULE's budget is partly covered by the State, besides international programmes and companies' membership fees. In addition to office space, it offers a range of services focused on business plan training and intellectual property protection. AULE is a member of the Asian Science Park Association (whose regional office is located in AULE's premises) and the infoDev programme of the World Bank. Partnerships have also been signed with international organisations such as the Birmingham Science Park and the India Accelerator. AULE was awarded the EC-BIC label by the European network EBN.

The incubators in **Lebanon** (6) and in **Palestine** (6) are slightly different, in that they more often stem from private initiatives, universities themselves or business federations, than from a particular authority.

Nevertheless, the large number of MED incubators needs to be put into perspective. The action and dynamism of the majority of these structures are yet to be proved. The questionnaires and interviews carried out reveal that a **third of these structures are not active** and they either do not house start-ups or very few of them. This is notably the case for certain university incubators or small business centres in Morocco, Tunisia and Egypt.

The low level of incubator maturity is a dominant trend in the region: 60% of the structures were created after 2005 or are in the launch phase, and are therefore twice as young as the European average (more than half of the incubators in the EBN network were established between 1985 and 1994³⁸). This could partly explain difficulties in getting a certain number of Mediterranean incubators off the ground.

³⁷ www.bic.jo

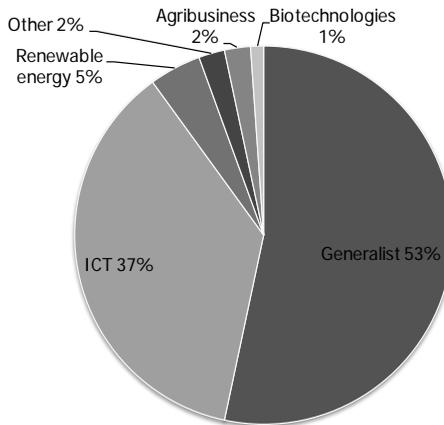
³⁸ EuroMed Innovation and Technology Programme Medibtikar. (2009). *Incubators' manual for innovative projects*

On the other hand, **a number of incubators may be considered as a model for other structures on both sides of the Mediterranean**, such as Berytech (Lebanon), PICTI (Palestine), Technopark (Morocco) and TIEC (Egypt). Firstly, they stand out from the rest because of the dynamic activities they undertake, the originality of their governance methods and the extent of their networks (partners and VC networks etc.). Proactive communication on the start-ups they support and a strong awareness of the international market are among other factors that determine their success.

Sector positioning

A large majority of incubators (53%) in the MED countries are multi-sector in nature (see Figure 7). More than a third (37%) focus mainly on ICT. Among them, **only the most dynamic structures highlight their specialisation in mobile applications, e-commerce and Web 2.0**, whilst at the same time remaining open to other sectors. Finally, very few incubators position themselves solely within other sectors.

Figure 7: Sector positioning for incubators in the MED countries



Source: ANIMA - Innovation players database 2012

Governance, budgetary autonomy and human resources

Incubators in the MED countries function for the most part thanks to public sector capital. Their principle shareholders are the State and state-owned banks and occasionally they receive international funding (notably via the World Bank's infoDev programme). Few incubators finance their activities,

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even partially, by invoicing the value added services they provide. However, new models are emerging, for example **seven incubators that could be described as "start-up accelerators" have been created since 2010 and each one of them is a private sector initiative**. Berytech is a pioneer in this area and was established in the early 2000s (case study 3).

Case study 3: Berytech (Lebanon)	
Date	Established in 2001
Financing	Self-financing (billing of services)
Shareholders	100% private: University of Saint Joseph, 8 banks, 7 companies.
Sector and niches	Health, ICT → niches: 2D/3D animation, e-commerce, security, software and games.
Key figures	Annual operating budget 1 M\$ (770 K€) 150 start-ups hosted during the last 10 years Number of employees: 15 Total area 5,000 m ² / net usable space: 3,000 m ²
Services and activities	<p><i>Office space/space sharing/multimedia:</i> equipped turnkey offices, conference rooms, training facilities, auditorium, videoconference rooms, Internet Exchange Points.</p> <p><i>Access to financing:</i> creation of the Berytech fund. Subsidised incubator services for start-ups</p> <p><i>Business support:</i> selection process, consulting, with incubation price (10 K\$/7 K€) offered to the best projects.</p> <p><i>Event organisation/networking:</i> "Forum for Entrepreneurs", "Start-up Weekend", regional training programmes "Regional Academy for Young Entrepreneurs (RAYE)", Microsoft BizSpark.</p> <p><i>International:</i> soft landing agreements with EBN, partnerships with: Global Social Venture Competition (GSVC), Sophia Antipolis (France), Haas School of Business (Berkeley-USA).</p> <p><i>Other:</i> mentoring programmes in partnership with the Mowgli Foundation (United Kingdom).</p>

<p>Good practices</p>	<p>Self-financing via the billing of services.</p> <p>Seed funding programme initiated by the incubator.</p> <p>Involvement in co-incubation (soft landing) activities.</p> <p>Involvement of major groups (Intel Capital, Cisco Systems) in the Berytech fund (6 M\$/4.3 M€).</p> <p>Internationally focused mentorship schemes.</p> <p>Proactive and targeted communication strategy (newsletter, website, social networks, events organisation etc.).</p> <p>Openness to projects coming from outside the university.</p>
<p>Contact</p>	<p>www.berlytech.org Nicolas Rouhana, Director</p>

University incubators also suffer not only from a lack of budgetary autonomy, but also from a lack of human resources and skills. The facilitating teams in university incubators are quite limited and generally consist of between 1 and 3 people. **Only 9% of the incubators identified have 7 or more members of staff.** In terms of steering strategy, these structures lack clear managerial vision and do not have a long-term action plan. This view was confirmed by the MedIbtikar project ³⁹.

Finally, as far as the ecosystem is concerned, incubators are trying to involve different types of investors by including them in project selection committees for "accelerator" incubators, as well as involving them in steering committees. **Business Angels** play a very limited role in support projects for MED start-ups. **Only 10% of the incubators identified are engaged in actions involving these networks of investors, such as iPark and PICTI**⁴⁰.

Services

All of the incubators offer a broad range of services, including:

- hosting;
- consulting/coaching with regards business plans;
- help in the search for new customers;
- support in finding financial solutions;
- marketing assistance via networking (events), online communication tools

³⁹ See. <http://library.medibtikar.eu/>

⁴⁰ See case study 2 and 13

In reality, the interviews reveal that the assistance provided is quite limited, often consisting of basic hosting services and help with administrative procedures (company registration etc.).

Communication and project promotion still remain insufficient: few incubator websites provide details about their member companies (skills proposed, targeted niches, success stories).

Without the necessary resources, strategic services such as **business model advice and mentorship are only provided in a tiny number of incubators**. Sometimes such services are provided by a network of expert mentors.

As far as **access to financing** is concerned, such services very often come in the form of information about financing schemes provided by banks, and rarely involve connecting entrepreneurs with business angels or venture capital investors. Finally, training and preparation to pitch ideas to investors seem to be provided by only 10% of the incubators.

However, a large number of MED incubators are actively developing their networking activities. The need to broaden their networks is mentioned by all players interviewed, all of whom seek to offer their start-ups a greater visibility and broader access to the outside world. It is no coincidence that the most dynamic incubators in the MED countries are also the ones that have developed close links with a variety of stakeholders, at national and international level. The Egyptian incubator TIEC (Technology Innovation & Entrepreneurship Centre – case study 44) illustrates the effort made by these incubators to provide their start-ups with a broad network of experts.

Case study 4: T.I.E.C (Egypt)	
Date	2006. Launched in 2010
Financing	100% public financing
Governance	ITIDA (under the auspices of the Ministry of Communications and Information Technology)
Sector	ICT → niches: web 2.0. and electronic content, mobile applications, cloud technology.
Key figures	30 start-ups hosted in 2011 Number of employees: 12 Surface area: 5,000 m ²

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<p>Services and activities</p>	<p>Hosting/space sharing/multimedia: free hosting for start-ups, workspaces (equipped offices and multimedia services).</p> <p>Access to financing: start-ups are connected with investors via private meetings (presentation of each start-up lasting for 5 minutes) and custom pavilions (at trade events).</p> <p>Business support: business plan training, legal advice, financial assistance, human resources support.</p> <p>Events/networking: organisation of the annual "Global Entrepreneurship Week" and competitions to develop innovative ideas "NexGen IT Entrepreneurs Boot Camp Master Class" in presence of international experts, with free incubation fees at stake. Joint organisation of the "Second Start-up Weekend Cairo" aimed at promoting innovative entrepreneurship.</p> <p>International: member of the infoDev programme of the World Bank Partnerships with Microsoft, Intel. TIEC/Nokia Mobile Lab project (part of TIEC): Nokia supplies technological equipment, marketing tools and mentorship services → 4 start-ups specialising in mobile applications hosted in the Nokia Lab.</p> <p>Other: creation of skill centres (involvement in joint projects with engineers and R&D centres). Organisation of the "US Patenting Workshop" led by an Egyptian expatriate and patent expert → result: 8 Egyptian patents registered with the United States Patent and Trademark Office (USPTO).</p>
<p>Good practices</p>	<p>Opening up to the international market and involvement of major international groups.</p> <p>Development of networking services.</p> <p>Organisation of competitions designed to showcase innovative entrepreneurship.</p> <p>Involvement of talented members of the diaspora.</p> <p>Participation in projects with universities and research organisations.</p>
<p>Contact</p>	<p>www.tiec.gov.eg Ahmed Laiali, Director</p>

Promoting research results: Technology transfer offices within universities and R&D centres

Technology transfer process

The commercialisation of research results consists of creating economic and social value based on knowledge and scientific capabilities. It can be performed in very different ways, for instance:

- contract or joint research projects;
- patent applications and licensing;
- new business creations (spin-offs);
- dissemination of scientific and technical information (publications, conferences);
- advice, technical support, technical studies (engineering or manufacturing);
- trials and tests.

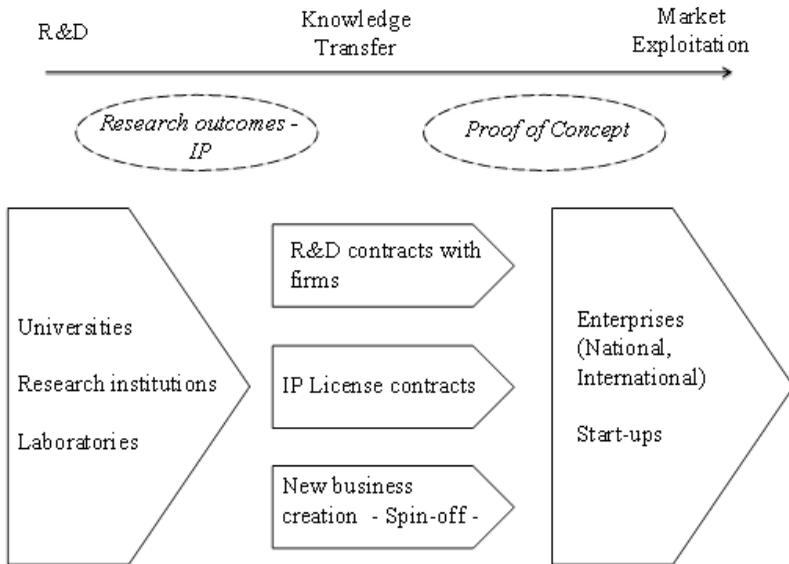
The process of research commercialisation is most often **supply⁴¹ oriented**. (technology push approach), featuring 3 key phases (see Figure 8):

1. identification and assessment of research results with market potential;
2. designing of innovation products using protection of intellectual property rights and market maturation activities (proof of concept);
3. technology commercialisation in various forms (patents, new businesses or services).

⁴¹ A demand-side approach to research commercialisation does exist (for example, a certain number of R&D projects that are developed closely alongside technical centres in Tunisia) but they are not included in the study.

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Figure 8: The process of research commercialisation



Source: MIRA Project. (2012)

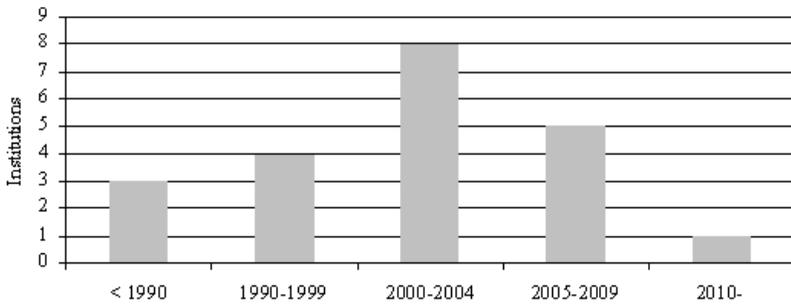
Research transfer thus requires a combination of complex skills to be able to work alongside industry. These include the scientific expertise to audit inventions, the ability to analyse markets and assess and exploit their potential, marketing skills in order to build technology portfolios, legal knowledge to organise intellectual property protection and finally, relational skills. To bring all of these skills together, **research transfer units** (also known as technology transfer offices - TTO) **need to be created** in universities and research centres.

In the Mediterranean, research commercialisation is still under developed.

It began to develop in a quite informal manner at the beginning of the 2000s and was often carried out by the researchers themselves. This is confirmed by the ERAWIDE field survey carried out in 2011 by MIRA that involved 27 Mediterranean research centres engaged in technology transfer activities (see Figure 9).

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Figure 9: Beginning of technology transfer activities



Source: MIRA. (2011). ERAWIDE survey

The **technology transfer units** that emerged in Europe by the end of 1980 are still **very unstructured in the Mediterranean**. They are presented below.

Overview

More than 50 technology transfer offices were identified in the 7 MED countries targeted by the study (Figure 10). These structures lack maturity: **80% of them were created less than 4 years ago (after 2008)** and **30% of them are in the launch phase**. They are mainly concentrated in Egypt (14 centres identified, including 6 under development) and in Algeria (13 centres identified, including 9 under development).

Figure 10: Map of technology transfer offices in the MED countries



Source: ANIMA, screenshot supplied by the MedMaps geographical information system www.medmaps.eu/en

In **Algeria**, the decision to create research transfer services in universities and research centres was made in 2003, but it was only implemented from 2011 onwards. The major universities can now benefit from a new law

authorising the creation of technology transfer subsidiaries and this provides them with greater flexibility with regards researcher-entrepreneurs' salaries and the management of public-private sector partnerships. This led to the creation of the research transfer unit within the University of Science and Technology - Houari Boumediene (USTHB) in 2011. Its mission is to help the research teams sell their services or projects (even before the sale of patents or the creation of start-ups). The universities of Blida, Tlemcen, Constantine, Bejaia, Jijel and the University of Science and Technology in Oran (USTO) are also following this example.

Several of the 13 public science and technology institutes (STI) in Algeria are even starting to create transfer units in the form of subsidiaries. The pioneer in this domain is the Centre for the Development of Advanced Technologies (CDTA), which created the Saticom subsidiary dedicated to ICT in 1998. The Centre for Development of Renewable Energies (CDER) also set up a subsidiary in 2007, known as ER2, specialised in business services. The Silicon Technology Development Unit - UDTS (see case study 5) is also in the process of creating its own transfer units (PITT). In practice, these units essentially sell studies and consulting services before providing access to a portfolio of patents held by their institutes.

Case study 5: Silicon Technology Development Unit - UDTS (Algeria)	
Date	1998
Financing	Public programme: National Research Fund (NRF) Service billing to clients
Governance	R&D entity under the direction of the Ministry of Higher Education and Scientific Research
Sectors	New Information Technologies/Environment
Key figures	Number of researchers: 61 Number of technology patents registered: 6
Services and activities	Technology transfer to industry through its subsidiary (PITT) led by engineers and equipped with technical facilities. Technological improvements to meet the demands of an extremely competitive market.

<p>Good practices</p>	<p>Close relations with industry although the partnerships are limited to companies in the public sector.</p> <p>Creation (underway) of a subsidiary dedicated to the transfer and commercialisation of research results.</p> <p>Medium-term project: creation of a structure composed of young researchers, and dedicated to international cooperation.</p> <p>Currently considering the future creation of a federation for internal and university research.</p>
<p>Contact</p>	<p>www.udts.dz Messaoud Boumaour, Director</p>

In **Egypt**, the main technology transfer office, Grants Innovation & Technology Transfer Centre, was created in 2009 in Alexandria (see case study 6). The European programme Tempus (2007-2013) also supported the creation of technology transfer offices in four universities (Helwan, Cairo, Assiut and the American University in Cairo - AUC). Four other universities (Kafrelsheikh, Ain Shams, Beni-Souef and the Egypt-Japan University of Science and Technology) are in the process of creating their own technology transfer offices. Egyptian universities collaborate on technology transfer within the national ENIT network (Egyptian Network for Innovative Technology), financed in part by the American support programme USAID and the Tempus programme. This network is an exchange platform enabling members to share expertise and discuss financing models.

The National Research Centre (NRC), the principal Egyptian research player in the public sector, which has been working since 2002 in conjunction with the Egyptian Industry Federation, is trying to set up a business liaison office (Business and Investors Office - BISO). It created its research transfer and patent unit in 2011. The last major stakeholder in technology transfer is the Centre for Metallurgical Research and Development Institute (CMRDI), which has had a technology transfer liaison office since 2011.

Case study 6: Grants, Innovation & Technology Transfer Centre – GITTC (University of Alexandria, Egypt)	
Date	2009
Financing	RDI programme, financed by the EU (creation and launch) Self-financing (services, membership fees) International programmes (FP7, Tempus etc.)
Governance	Public-private partnership
Sector	Generalist
Key figures	Number of employees: 20
Services and activities	<p><i>Financing support</i> Advice on business opportunities. Support in building partnerships.</p> <p><i>Intellectual Property services (IP)</i> Technical & legal advice on patents registration and IP right management. Support & follow-up throughout the administrative process. Promotion & awareness campaigns about IP problem areas.</p> <p><i>Technology transfer</i> Organisation of contacts with industrialists. Development of technology transfer strategies. Negotiation of technology transfer agreements. Support for entrepreneurs and advice on business plan (creation of an incubator planned for the medium term).</p>
Good practices	<p>Creation of a technology portfolio with the help of the University of Oklahoma.</p> <p>Designing of an online knowledge map, listing research groups (underway).</p> <p>Creation in 2011 of the ENIT network, with the backing of USAID and including the TTOs (Technology Transfer Offices) of the universities of Alexandria, Helwan, AUC, UEJ, Assiut, Beni Suef, Ain Shams and Kafr El Sheikh.</p>
Contact	<p>www.gitc-alexu.org Khaled Elsaadany, Executive Manager</p>

In **Jordan**, the national programme for technology transfer SRTD (Support to Research & Technological Development), launched with the backing of the European SRTD project, provided the opportunity to create a structure dedicated to research commercialisation, the Intellectual Property Commercialisation Office – IPCO (see case study 7). It also allowed the creation of 11 technology transfer centres in universities, research centres and business organisations between 2009 and 2011.

The mission of the IPCO, linked to the El Hassan Business Park, is to coordinate the network of TTOs in Jordan, to participate in training personnel and to commercialise patent portfolios. This task is proving to be difficult, given the large size of a certain number of participating entities, for instance the University of Jordan (Amman), the Jordan University of Science and Technology (Irbid) and Yarmouk University (Irbid).

Case study 7: Intellectual Property Commercialisation Office - IPCO (Jordan)	
Date	2008
Financing	SRTD programme (Support to Research & Technological Development) Public programmes and new donor projects
Governance	Part of the El Hassan Business Park ⁴² under the auspices of the Higher Council for Science and Technology and the Royal Science Society
Sector	Generalist
Key figures	Number of employees: 4 60 technologies assessed, 38 patent applications, (20 registered, including 4 with the USPTO, United States Patent and Trademark Office) 6 technology transfer projects carried out with local companies.

⁴² See case study 2

<p>Services and activities</p>	<p><i>Patents:</i> monitoring, assessment, local or international representation, patent writing, illustration and translation.</p> <p><i>Licences and commercialisation of intellectual property (IP):</i> assessment of market value, analysis of potential, licence proposal, representation at licensing agreement negotiations.</p> <p><i>Consulting/training</i> on IP management & commercialisation of research results (occasional resort to external experts).</p> <p><i>Organisation of contacts</i> between researchers and industry.</p> <p><i>Support for TTOs</i> (Technology Transfer Offices) within professional organisations in order to define strategic sectors to be targeted.</p> <p><i>Other:</i> creation of a database of 100 technology offers, collaboration with funding agencies for project assessment, publication of guides about IP and technology transfer.</p>
<p>Good practices</p>	<p>Development of a network of 11 TTOs.</p> <p>Inventory of researcher skills.</p> <p>Protection and commercialisation of innovation at international level via partnership networks with strategic players: ESCWA, WIPO, Qatar Foundation, King Abdulaziz University, King Fadh University.</p>
<p>Contact</p>	<p>www.ipco-jo.org Khaleel Al Najjar, Director</p>

In **Lebanon**, research transfer activities are not structured, but the National Centre for Scientific Research (CNRS) is in close contact with its Jordanian counterparts, including IPCO, with plans to develop technology transfer and commercialisation models in the country.

In **Morocco**, 25 very formal structures serving as industry/university interfaces were created in 2004, but resources are generally very limited and the activity rate is quite low. The transfer unit at the University Mohammed V-Agdal⁴³ created steering committees responsible for the management of consulting services as well as support for entrepreneurs and technology watch activities. More recently, market-driven models of innovation have appeared: the [MAScIR](#) Foundation (Moroccan Science, Innovation and Research Foundation),

⁴³ See www.um5a.ac.ma/recherche/valorisation.php

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founded in 2011, provides platforms for collaborative research in the field of biotechnologies, microelectronics, materials and nanotechnology, and will create its own technology transfer unit in 2012.

Finally, in **Tunisia**, the creation of technology transfer offices is on the agenda in 15 universities within the framework of the PASRI innovation support programme. 6 universities (Carthage, Gabes, Gafsa, Jendouba, Sousse and the University of Tunis - El Manar) started to create industry liaison offices in 2010, via the Tempus programme. The research centres at the Biotechnology Centre in Sfax, the Pasteur Institute and the Water Technologies and Research Centre (CERTE) (see case study 8) are the most recognised, thanks to the knowledge of their members and their participation in several international cooperation projects (notably EraWide), with the aim of introducing technology transfer structures.

CERTE is an interesting example due to its novel approach to creating expert networks (public or private) on research commercialisation, or "brokers", who can provide practical services and assistance with patent applications.

Case study 8: Water Technologies and Research Centre - CERTE (Tunisia)	
Date	2005. Research transfer unit created in 2011
Financing	Ministry of Higher Education and Scientific Research (contract of objectives), and national programmes (Ministry of Industry and Technology) Public and private sector research projects Agreements with private stakeholders and public agencies International programmes (research and commercialisation)
Governance	Part of the Borj-Cedria Technology Park, the CERTE is a public administrative body.
Sector	Environment (water)
Key figures	Research promotion unit: 2 (part-time) 13 European projects, 4 patent applications Number of researchers and engineers: 89

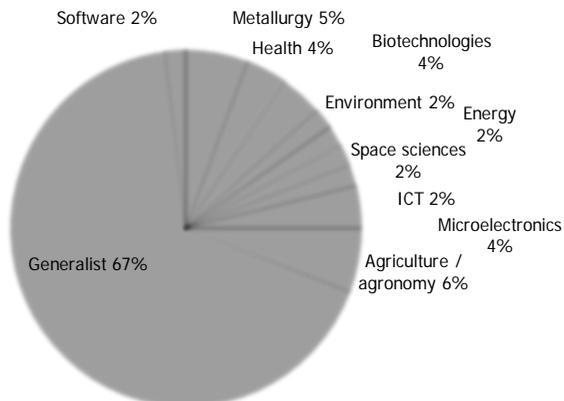
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Services and work methods	Assessment of industry needs: textile, tanning, leachate, oil etc. Assessment of applications for research results. Training for future users (Ministries, companies). <i>Other:</i> agreements with the National Office of Thermal Waters, National Water Supply and Distribution Company (SONEDE), General Directorate for Water Resources (DGRE) and the Regional Commission for Agricultural Development (CRDA).
Good practices	Identification and study of the key factors concerning technology transfer: the importance of demand, role and motivation of researchers, legal framework, needs of national institutes (patents, promotion). Creation of a network of technology brokers: expertise and building of project portfolios, patent assistance.
Contact	<p style="text-align: center;">www.certe.rnrt.tn Latifa Bousselmi, Senior lecturer</p>

Sector positioning

Over half of the technology transfer offices are generalists (see Figure 11). **Only a quarter of them target a particular domain such as agronomy, biotechnologies or health.** Globally speaking, none of the sectors stand out from the rest and the development of any particular form of specialisation within these structures is still in the very early stages.

Figure 11: Sector positioning of technology transfer offices



Source: ANIMA - Innovation players database 2012

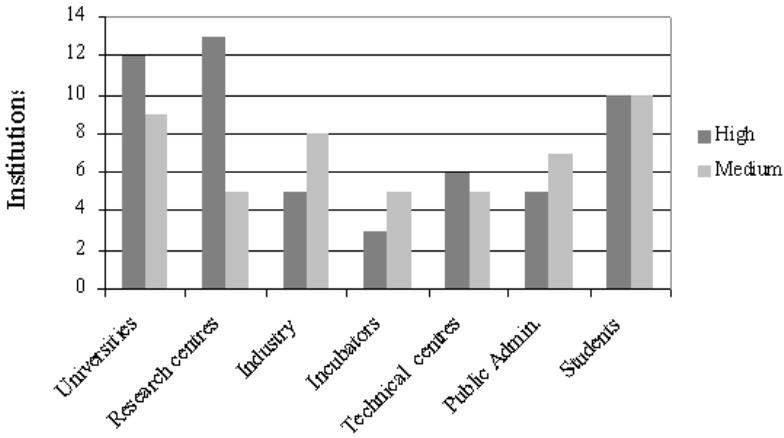
Governance and services

Promotional activities are most often managed by a person within the organisation, working **part-time** and also responsible for a number of other tasks. Usually, this work is done by directors of the research or marketing department, international relations, and sometimes it is even the part of the general management team's work.

The **services provided mainly focus on coordination and monitoring**, with briefings, training sessions and organisation of meetings with external experts as well as participation in conferences, etc. Operational activities that require broader expertise, such as **patent management, mentoring on research projects or the creation of spin-offs**, are a lot less common.

The survey by MIRA as mentioned earlier in this document identifies the different services provided by research transfer units, providing information about users and how frequently the services are required⁴⁴ (see Figure 12). **These services** therefore target mainly internal teams (students, researchers) and **are rarely offered to clients or potential partners**. Indeed hardly any of the technology transfer offices identified offer an **official range of services** (proposed added value, targeted stakeholders) on their websites.

Figure 12: Users of technology transfer services



Source: MIRA. (2011). ERAWIDE survey

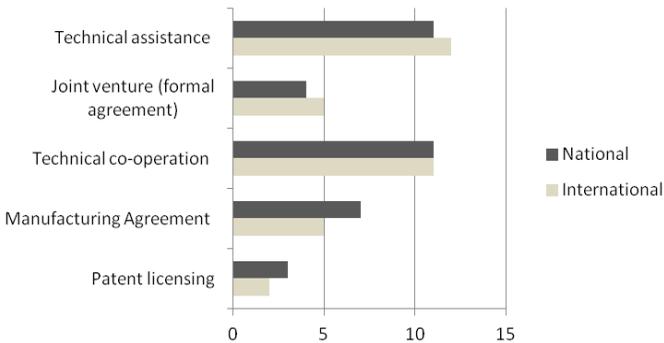
⁴⁴ Frequency of use of research promotion services (High/Medium)

Ecosystem: Cooperation with the private sector

Even though they have contacts with researchers, small businesses and major companies have relatively little trust in MED research centres and research promotion structures. In the majority of the countries studied, the government authorities are therefore considering the creation of tools and the involvement of intermediary bodies to support these research promotion structures, with for example **pre-seed** funds. Business angels, in particular, can also play an essential role in helping technology transfer offices adopt a "market oriented" approach. Some are already beginning to get involved in the development of new technology transfer models, for instance the Carthage Business Angels network, whose founder Mondher Khanfir points out that Tunisia is "sitting on a gold mine", with 30,000 publications and only a handful of patents.

The ERAWIDE survey provides a preview of the different types of possible cooperation between universities and private stakeholders in the area of technology transfer and commercialisation (Figure 13), listing also the possible ways to promote contacts between researchers and industrial stakeholders (Figure 14). In short, cooperation mainly involves technical assistance and selling expertise with regards the designing of products, whereas the selling of patents and **collaborative research agreements between universities and businesses are much less frequent**. In addition, links between research and industry are above all based on the establishment of personal contacts (notably with former employees): intermediary innovation organisations such as technology transfer offices still play a minor role.

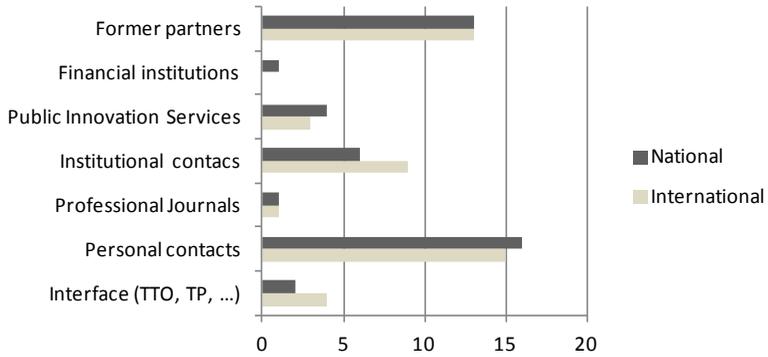
Figure 13: Types of research-industry collaboration in the area of technology transfer



Source: MIRA. (2011). ERAWIDE survey

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Figure 14: Key factors behind the establishment of university-industry links



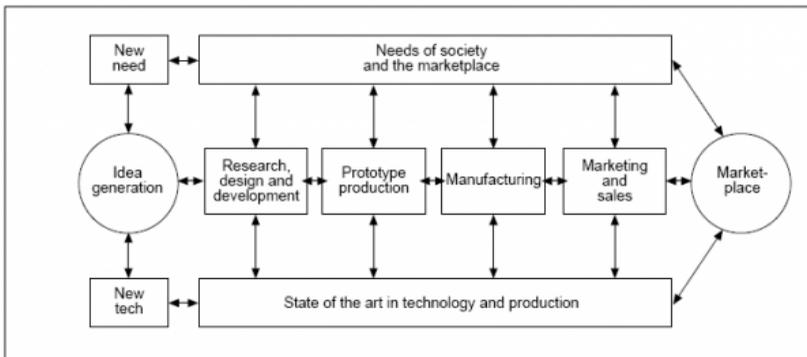
Source: MIRA. (2011). ERAWIDE survey

Innovation dynamics and partnerships in the Mediterranean: What are the difficulties and opportunities?

More and more often, innovation is built around international networks that function openly and are complex in nature. There is also a trend towards "open innovation" within companies, clusters and innovation parks at regional level in the Mediterranean.

Innovation processes that were traditionally carried out in a linear fashion, often based on the promotion of public research (technology push approach), are being replaced by **the desire to introduce innovation ecosystems built around a network involving a variety of players**. These players are able to interact and make collective decisions throughout the entire technology transfer process, from the initial idea to commercialisation of the innovation products. The figure below illustrates this new form of network based innovation dynamics.

Figure 15: Network based innovation dynamics



Source: Rothwell (1992)

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Once the major stakeholders and players involved in innovation promotion have been identified, their links and the **new dynamics** in place need to be determined, notably with the development of entrepreneur spirit and new forms of public-private partnerships. **Barriers to cooperation** and the "weak links" are also underlined below. **The performances of MED countries in terms of university research - industry collaboration are, in practice, rather disappointing** (see Table 11) and the majority of them are ranked right at the bottom of the world table⁴⁵. What are the reasons for their poor performances?

Table 11: MED ranking for R&D collaboration between universities and industry

Country	Jordan	Lebanon	Tunisia	Egypt	Morocco	Algeria
Rank (142)	114	111	58	128	102	136

Source: World Economic Forum, *Global Competitiveness Report 2011-2012*

These difficulties and opportunities, notably those mentioned by innovation stakeholders, are presented and analysed bearing in mind the four factors below:

1. **the cultural and human aspects:** innovation culture, entrepreneurial spirit, training for innovation managers;
2. **the administrative, regulatory and financial framework:** intellectual property, researcher-entrepreneur status, funding instruments;
3. **operational considerations:** search for sponsors, team building, development of prototypes, communications tools, partnership development;
4. **governance:** at the public policy level, main difficulties and opportunities in terms of coordination at national or international level.

⁴⁵ Tunisia, however, is an exception, despite the fact that relations between universities and companies were hardly described as optimal by those interviewed during field surveys.

Cultural and human aspects: Obstacles and opportunities

Cultural barriers to cooperation

Culture of secrecy, lack of trust and poor assessment of results

The culture of secrecy pervades among the different innovation stakeholders in the MED countries, hence the lack of information on websites, at public events or during interviews. Few details are provided about innovation projects or offers and requests for partnerships and many of those interviewed highlighted "**a cultural tendency to hide information about one's activities**". Karim Hammoud, director of the South BIC incubator (Lebanon), declares that his team prefers "direct face to face communication when promoting start-ups and presenting them to investors. Companies have no desire to reveal their projects on the Internet".

Several directors of technology parks or technology transfer offices also believe that **the question of trust severely hampers collaboration between research and industry**. MED companies are wary of intermediaries whose task is supposedly to promote innovation. The source of their concerns about project confidentiality lies in "a total lack of confidence in public structures".

As opposed to this, researchers and academic institutions are often wary of the market and fear that companies are more interested in making profits than developing the idea. This lack of agreement between the parties discourages them from getting involved in technology transfer activities. According to Khaleel Alnajjar, director of the technology transfer office IPCO (Intellectual Property Commercialisation Office) in Jordan⁴⁶, "the question of trust between researchers and businesses is a real problem. Several researchers who have already tried to work on technology transfer projects are frustrated because it turned out to be very difficult and they were unsuccessful".

Finally, some innovation intermediaries pointed out the **poor culture of evaluation in the MED countries**. Yet at the same time, the research results that can potentially be used by industrialists "are not very significant in terms of quality and quantity". Only the number of publications by researchers is assessed and not the "output" that could potentially be commercialised. Researchers are not encouraged to commercialise their results.

⁴⁶ See Case study 7: Intellectual Property Commercialisation Office - IPCO (Jordan)

Players do not realise the entire nature and importance of innovation

Bringing players together to work on innovative projects requires their full commitment to an idea or project that is often virtual and thus demands a forward-looking approach. Thus is particularly the case for technological innovation, for example in software or biotechnologies. However, **some of those involved in the innovation chain in the MED countries sometimes have difficulties handling this non-tangible aspect of a project and this seriously prevents them from supporting innovative projects.** The poor innovation culture within administrative bodies is often pointed out, as are the difficulties with banks and other financial bodies in general when financing innovation projects and guaranteeing loans for projects that are sometimes intangible (patents and software...). Mohammad Obaidat, Programme Manager at the Queen Rania Centre for Entrepreneurship (QRCE, Jordan), believes that "innovation financing is not sufficiently developed in Jordan. From a cultural point of view, it is easier to invest in something concrete such as gold for example, than it is to invest in ideas". The example of a Tunisian company specialising in the development of mobile applications provides an illustration of such difficulties. When filing a request for seed funding (SICAR), the company was incapable of reaching agreement with its investors with regards the value of its innovation project. The main reason is that the investors place less importance on the design phase. These difficulties in estimating the value of innovation highlight the importance of developing "innovation demonstrators", **proof of concept mechanisms** (models, prototypes) to provide a "real" demonstration of the innovation.

For businesses too, the development of R&D projects also takes second place, whether it be for in-house projects or with local partners (universities, research centres). The management of research projects and the sharing of information are often described as being too complex and risky. According to Abdeslam Yahyaoui, Head of cooperation at the Technology Park ElGazala, "the attitude of major companies that purchase foreign products foreign does not encourage innovation. They choose not to turn to research centres (locally) when they need to find solutions to their problems". **Systematically, they import the expertise they need instead of turning to local sources of innovation.**

Insufficiently trained innovation managers

Interviews showed that the question of skills is considered by all as one of the main obstacles to innovation in the 7 MED countries. At all levels (decision-making, operations) and for the different profiles (entrepreneurs, promotion and support teams, administrators and researchers), **the level of training of innovation stakeholders is not adapted to their tasks**. The main sticking points concern management and communication.

As far as project management is concerned, the success of innovation projects requires three types of skills:

- technical: project expertise;
- commercial: marketing, analysis of an innovation project's potential, relational skills;
- management: financial aspects of the project and team management.

These three types of skills are seldom offered by support and promotion teams in charge of technology transfer operations. The points of view and comments that we registered on this subject are quite harsh; those interviewed declare that **"managers in charge of commercialising projects are either members of the administrative team or researchers. The managers are not sufficiently trained for marketing and risk management.**

As far as communication is concerned, those interviewed highlighted examples of joint projects where there were **communication problems that sometimes led to the failure or breakup of partnerships:**

- difficulties in **providing an overview and presenting a project** clearly;
- difficulties in positioning a **project according to a target and adopting the customer language** (for example, at business plan competitions, several technology based projects fail when it comes to presenting their added value);
- the **lack of fluency in English** in the Maghreb countries penalises innovation stakeholders who wish to develop partnerships with English speaking countries. An example of such a case is provided by a Head of International Relations in a Tunisian business park: "Following the signature of an agreement with a partner in India, we were incapable of continuing our relationship because of our problems speaking English.

Revolutions and entrepreneurial spirit

Fear of failure and criticism of risk taking

When an entrepreneur creates a company with high growth potential, it often involves taking risks in the early stages. In Southern Europe and Latin cultures, **the fear of failure** is often described as an obstacle in the MED countries. Risk taking is not widely accepted by society or the family circle, and there are few means of protecting investors in innovative projects. There are strong legal repercussions for entrepreneurs in the event of bankruptcy, for example in Egypt, where bankruptcy may lead to a prison sentence..

New dynamics for entrepreneurs

Entrepreneurship is increasingly attractive in Southern Mediterranean countries. A Gallup survey in 2011 showed that 62% of young Mediterraneans would like to become entrepreneurs, compared to barely 45% in Europe.

Several business plan and model competitions, which have been created in the MED countries over the past few years are proving to be increasingly successful (see Table 12). The major regional competition, the MIT Enterprise Forum Arab Business Plan Competition (2011-2012), received 4,500 projects from the MENA region, an increase of 25% compared to the previous year. Generally speaking, the number of innovation projects presented by universities, incubators and competitions, is witnessing an upward trend since the Arab revolutions of 2011.

Table 12: List of business plan competitions in the MED countries

Name/Business plan competition organiser	Geographical scope	Projects supported
MIT Enterprise Forum Arab Business Plan Competition (US)	Regional	4,500
Start-up Weekend	Local (MED countries)	30-60/session (200 in 2011)
Algerian Start-up initiative (US)	Algeria	120
Arab Technology Business Plan competition (ASTF, UNIDO, INTEL)	MENA	155
Maghreb Start-up Initiative (Education For Employment –EFE US)	Maghreb	150 planned in 2012
The Business Plan Contest (INTEL-US)	Palestine	50

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Name/Business plan competition organiser	Geographical scope	Projects supported
Microsoft Innovation programme Tunisia (US)	Tunisia	40
ATVentures	Tunisia	N/A
MENA 100 (OECD MENA & Islamic Development Bank)	Regional (MENA)	100
MedVentures (Invest in Med/ANIMA – Europe)	Regional	120 in 2010/2011
Start with Google (US)	International	N/A
Queen Rania National Entrepreneurship Competition (QRNEC)	Jordan	N/A
CJD Business Awards	Maghreb	N/A
Africa SMME Awards (infoDev/ World Bank)	Africa (Maghreb)	N/A

Source: ANIMA 2012

Mentorship programmes (or sponsorship) are developing alongside these competitions and are attracting investors, senior executives or successful entrepreneurs interested in the best innovation projects.

Online tools (notably Facebook and Twitter) are mentioned by many people interviewed as being a precious means for developing new forms of partnership.

Potential talent resources in the diaspora

A direct result of the brain drain that is having an impact on the southern and eastern shores of the Mediterranean, **many talented individuals (researchers, engineers, executives, teachers and top-level entrepreneurs etc.) are part of the MED countries diaspora**, estimated at approximately 30 million migrants.

The surveys and monitoring of the main business plan competitions or fund raising activities in the region illustrate the **very strong potential for the creation of innovative businesses** or more broadly speaking, the creation of value based on the activities of these players who have built a strong entrepreneurial culture and international identity. For instance, the start-up Maktoob is the perfect illustration of a Mediterranean success story. Acquired by Yahoo for over 500 million dollars in 2009, it was created by Usama Fayyad, a Jordanian who had built up his career in the United States.

Another example of talents from the diaspora: Belgacem Habba, a man with approximately 500 patents to his name, is the creator of the algerianinventors.org website, and chief technology officer at Tessler, an American start-up quoted on the NASDAQ stock market.

These talented individuals, who are very often highly qualified and occupy important positions in the host countries, can also play **a key role in helping to boost innovation in their country of origin**. By transferring technical and scientific know-how, the expertise gained by expatriates provides a different perspective on how to access new markets and improves the level of **training** available to young entrepreneurs via the establishment of partnerships between universities and collaborative projects with laboratories.

Several surveys⁴⁷ confirm that many talents would like to conserve a link with their country of origin (but not necessarily to go back), **and are interested in the implementation of projects, between their country of origin and host country**. One illustration is provided by Elias Zerounhi, who was Director of the National Institute for Health in the United States (29 billion dollar budget for research into health) and Vice-President of Sanofi Aventis and who would like to get involved in the development of innovation in his country, Algeria.

India, Hong Kong and even China have built their innovation systems with the help of their talents in the diaspora, settled in the United States for the main part. At the end of the 1990s, almost a third of technology companies established in Silicon Valley and representing almost 73,000 jobs, were managed or co-managed by Indian or Chinese entrepreneurs. Professional networks offering mutual aid, investment networks (all of the major business angel networks in Hong Kong for example were set up by talents from the United States) and entrepreneur networks like "Indus Entrepreneurs" provide connections between countries of origin and host countries. Champions in their field, such as the search engine BAIDU in China, were thus able to emerge thanks to a transfer of know-how, mentoring programmes, outsourcing of production to the country of origin and promotion of the country of origin to attract investors from host countries, etc.

⁴⁷ See also the work of the Kauffman Foundation, the Brooking Institute as well as ANIMA (MedDiaspora study)

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What about the Mediterranean region? First of all, there is the example of Israel, which developed its innovation system by attracting highly qualified engineers from the Eastern European diaspora, and thanks to strong connections with leaders and influential financial and innovation networks within the diaspora in the United States.

As for other MED countries, the success of IndUS Entrepreneurs in particular has directly inspired a number of executives in the Arab diaspora established in Silicon Valley. An illustration is provided by the **TechWadi** network, launched in the spring of 2010 and whose aim is to inform and mobilise the Arab-American diaspora in Silicon Valley in order to further technological development in the MENA region.

The **Algerian Start up Initiative** created in 2010 (see case study 9), groups together ICT professionals based in Silicon Valley and Europe. Each year, in Algeria, it organises a business plan competition as well as personalised coaching programmes to help innovative young Algerian entrepreneurs.

Case study 9: Algerian Start-up Initiative – ASI (Algeria)	
Date	Launched in October 2009
Financing	2011-2012 financing ⁴⁸ , approximately 45,000 € granted by the US State Department
Governance	A steering committee, which groups together members of the Algerian diaspora settled in the USA, entrepreneurs, senior officials and Algerian journalists, professionals of Silicon Valley.
Sector	ICT
Key figures	3 start-ups supported since the competition in 2009 and 15 start-ups assisted in 2011 via coaching programmes and assistance of business angels in Silicon Valley. Number of employees: 13

⁴⁸ The Algerian government and private companies participated partially in financing the business plan competition prize in 2010. However, part of the amounts promised by the Algerian government (approximately 15,000 €) could not be awarded to the winners.

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<p>Services and activities</p>	<p><i>Support:</i> sourcing for local start-ups and coaching (follow-up, advice on business plans, entrepreneurship, business and technical related issues) up to the launching of the start-up.</p> <p><i>Funding assistance:</i> contacts organised between Algerian start-ups and US investors, creation at the end of 2012 of the first Business Angels network in Algeria (Casbah Business Angels) whose aim is to ensure financing of the best entrepreneurial projects by Algerian and US Business Angels.</p> <p><i>Events/networking:</i> ICT business plan competition organised in May 2010. Promotion of the winning start-ups at the two US-Maghreb Annual Conferences (2010 edition: Algiers, 2011 edition: Marrakech).</p> <p><i>International:</i> support for access to US and foreign markets. Partnership with major groups: Google (resource centre, videocasts, business plan tutorials, etc.), Intel (1 entry to participate in the international business plan competition organised by the university of Berkeley offered to the best ASI start-up).</p> <p><i>Other:</i> promotion of start-ups at regional and US business events (MedVentures, US Maghreb Entrepreneurship Conference etc.). Launch of the Maghreb Start-up Initiative (2011-2012), targeting Moroccan, Algerian and Tunisian start-ups.</p>
<p>Good practices</p>	<p>Gateway between Algerian start-ups and Silicon Valley (providing professional expertise).</p> <p>Creation of a website with an FAQ section focused on Entrepreneurship providing information to project leaders.</p> <p>Alignment with Google's guidelines and best practices to ensure optimal use of the entrepreneurship database</p> <p>Experimentation with the national based Algerian Start-up Initiative across the Maghreb.</p>
<p>Contact</p>	<p>www.algerianstartupinitiative.com Coordinators: Yacine Rahmoun & Brahim Embouazza</p>

Another underlying trend concerns the growth of women entrepreneur networks both at country level and also at regional level over the last few years, thanks to the help of international organisations. In most cases, women entrepreneurs propose **innovative projects in the service sector** (tourism, luxury goods and cosmetics), marketing and also in the ICT sector. **Their demand for regional cooperation is strong.** Among these initiatives:

- Association of Women Entrepreneurs in Morocco AFEM⁴⁹ which organises initiatives at regional level, in coordination with networks of women entrepreneurs in Lebanon, Egypt, Tunisia and Algeria, with the help of the European Commission and, more recently, the Union for the Mediterranean⁵⁰ ;
- the National Chamber of Women Entrepreneurs (CNFCE, Tunisia) develops projects to set up platforms for coaching and mentoring for women in the luxury and fashion sectors in particular, throughout the Maghreb and at regional level, with the support of the European Commission and the US State Department ([Vital Voices](#) programme);
- the innovation centre set up by the Jordan Forum for Business and Professional Women⁵¹ which functions across the Mashreq region;
- the Association of Mediterranean Business Women's Organisations, AFAEMME⁵² (Spain), organises the Women Entrepreneurs Forum each year and helps with the development of new international projects led by women entrepreneurs since the revolutions in the Arab countries.

An administrative, regulatory and financial framework providing little incentive, but things are changing

The regulatory framework governing innovation in the MED countries is rather unanimously considered to be unclear, rigid and quite inefficient. The three most frequently mentioned points involve the status of researcher-entrepreneurs, intellectual property and funding instruments.

⁴⁹ www.afem.ma

⁵⁰ For more information about the "Maghreb Crossroads" programme developed within the framework of the Invest in Med project www.invest-in-med.eu

⁵¹ www.bpwa-amman.org

⁵² www.afaemme.org

Towards a better support for researcher-entrepreneurs?

The change of status of researcher to that of leader of a technology transfer project (bringing innovative projects to maturity and patenting, start-up creation, development of a shared research contracts), is hampered in research centres and universities due to a number of factors:

- less motivation as **no substantial gain in income is expected**: patent applications are rare (see page 29) and we were unable to provide any examples of **success stories concerning start-up creations from the world of research** in the MED countries targeted by the study;
- **the regulations on the status of researchers and their income**, with regards to patents or the creation of start-ups, **is relatively unclear**. Although in theory, quite high salary levels are offered in some countries (between 20 and 50% of revenue generated), in reality, the way in which income is distributed is often decided by each university or research centre. The directors of the research centres interviewed have no clear visibility regarding the income they would be offered if the results of their work were to commercialised;
- **cooperation contracts involving external stakeholders are complex**. High potential innovation projects often have an international dimension to them. The processes involved in developing agreements of this type are often described as difficult, lengthy and costly. Directors of research units have little room to manoeuvre and must obtain prior authorisations from various stakeholders before they can engage in a technology transfer project;
- **researcher mobility is often hindered** by financial barriers, visa problems or red tape, not only for short travel periods (to conferences) but also for longer stays (exchange programmes).

To avoid the difficulties involved with salaries for university researchers who offer their expertise to businesses, researchers frequently resort to informal means or direct cooperation to work with businesses, as is illustrated by the Tunisian example of "a researcher who resigns from the university to offer his services to a company. Once the project is over, he tries to return to the university". This situation is nevertheless changing in some of the countries such as Egypt, Morocco and Tunisia, which have adopted **new legislation on researcher-entrepreneur status** ever since 2010. The Morocco Innovation strategy includes a legal scheme covering such aspects as:

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- university-business mobility;
- modernisation of the statutory framework for research stakeholders (researchers, engineers, technicians, etc.);
- a splitting of revenue: researchers/universities/investors;
- academic acknowledgement of acquired experience;
- implementation of standard contract provisions for collaborative projects.

An intellectual property policy under construction

The question of intellectual property is another obstacle that was frequently mentioned by those interviewed. Firstly, the **intellectual property culture is generally weak among researchers themselves**. Very few structures or positions in universities and research centres are dedicated to developing intellectual property strategies and protecting innovation potential with patenting policies or alternative strategies⁵³ (management of information confidentiality levels for example). According to several people interviewed, **many commercialisation opportunities are lost in the early stages**: many of the works are published on an international scale and therefore lose their potential to be patented.

Other obstacles then appear in the project implementation phase:

- **the lengthy** patent application procedure (up to four years in Egypt for example according to those interviewed);
- the **lack of specialists** with regards "writing of patents and defining intellectual property commercialisation strategies, whether it be in the form of patents or not", as underlines Rajeh Khemiri from the European Commission Delegation in Tunisia. The **cost of such services is also** prohibitive for players within the field: between 10,000 and 25,000 Euros for International protection requiring the services of an international law firm for example;
- as pointed out by several players, **application of sanctions** in the event of violation of intellectual property rights is somewhat random and the system thus loses credibility.

Some MED countries are currently making efforts to build an improved intellectual property framework. Morocco is trying hard to improve patent

⁵³ In fact many innovations (in the software world for example) cannot be directly patented

credibility by introducing an analysis phase (similar to the action taken by European Patent Office), by strengthening legislation on intellectual property rights and establishing a patent trading office. Tunisia (via the PASRI programme) and Egypt (with its RDI and STDF programmes) is also taking measures to improve their intellectual property policies.

Poor performance of seed-funding instruments

Financing instruments dedicated to seed funding and in particular to the development of start-ups, remain limited and are difficult to access in the MED countries.

Firstly, **access to bank loans is limited for start-ups**: such loans generally require heavy guarantees (essentially real estate assets) that they do not possess. Several studies⁵⁴ appeal therefore for operations at regional level to provide guarantees via financial intermediaries for entrepreneurs and innovative small businesses.

The few **national networks of business angels (BA)** created recently in Morocco, Jordan and Tunisia in particular, **invest in only a small number of companies**: the players interviewed mention the figure of no more than 5 companies per year and per network. Several reasons may explain this low level of investment. Firstly, the activity of BAs and venture capital funds in general is less profitable in the MED countries, as is the case in Europe. Secondly, the legal and fiscal framework in several countries offers little incentive (**absence of tax exemption for investments in BA networks or tax relief in the event of project failure**). In Jordan, although there are no real incentives, the non-taxation of capital gains could stimulate the activities of business angels. Several players nevertheless underline the need to improve the legal framework, like for example the Jordan Engineers Association (JEA), which suggests allowing business federations to invest in start-ups.

Tax incentives are barely used by Mediterranean countries. Free zones exist as part of policies to attract investment in targeted areas such as services or industry, but no specific taxation policy dedicated to innovation, like the research tax credit (CIR) in France for example, has for the moment, been introduced.

⁵⁴ Read works by the [CEPS-IEMED working group for SME funding in the Mediterranean](#)

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As for **public funding instruments**, they are generally considered inefficient in view of the modest sums of money requested in the early stages of development and due to the fact that there are **many administrative formalities involved**. Securing aid is also subject to the validation of the innovation by validation committees with few players involved in the field and the process is sometimes lengthy and questionable.

Efforts have been undertaken by certain public players in the MED region in order **to set up a seed fund for innovation purposes**: participation of up to 50,000 Euros to support a start-up in the launch stage or to finance the development of proof of concept tools. For instance, Tunisia called on the expertise of the French organisation dedicated to supporting businesses, OSEO, to help two corporate financing bodies, the Bank of Financing of Small and Medium-sized companies (BFPME) and the Tunisian Guarantee Company (SOTUGAR), introduce their tools. Egypt is studying the implementation of a new seed fund. Peer-to-peer exchange of experience and support at regional level could help structure and reinforce such initiatives.

Certain MED incubators are also working on creating investment and seed funds, as is illustrated by the Technopark incubator (see case study 10). It participates in the "Morocco Numeric Fund" seed fund and is the sole shareholder in the Moroccan Centre for Innovation, created in July 2011 in order to become the one-stop shop for innovation funding in Morocco.

Case study 10: Technopark (Casablanca, Morocco)	
Date	Established in 2001
Financing	Self-financing (billing of services)
Shareholders	State 35%, 4 Banks (2 private 30%, 2 public 35%)
Sectors and niches	ICT and environment (green tech) → niches: Web 2.0, mobile applications, e-commerce and software
Key figures	Annual operating budget: 2.5 M€ 550 start-ups hosted since 2001, including 50 in 2011 Number of employees: 24 Total area 30,000 m ² / net usable space: 16,000 m ²

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<p>Services and activities</p>	<p>Office space/space sharing/multimedia: equipped turnkey offices, conference rooms, meetings and training.</p> <p>Access to financing: shareholder in the Morocco Numeric Fund seed fund with 20% (100 M dirhams/9 M€)</p> <p>Business support: marketing assistance, communication (via the Technopark WebTV on YouTube)</p> <p>Events/networking: organisation of networking events. Sponsorship of the "Start-up Weekend"</p> <p>International: creation of a training and certification centre in partnership with Microsoft. Introduction of the Biz Spark programme, (software development)</p> <p>Other: duplication of the Technopark model in other cities, in partnership with local authorities. Opening of a Technopark in Rabat in 2012. MITC is a shareholder in the Moroccan Centre for Innovation: selection of projects for the Public Innovation Fund (450 M dirhams/40 M€).</p>
<p>Good practices</p>	<p>Self-financing via the billing of services.</p> <p>Creation of synergies between small and large companies (special tariffs for start-ups for a period of 18 months → partial absorption of start-up accommodation costs by major companies.</p> <p>Contacts between start-ups and the investment fund, Morocco Numeric Fund.</p> <p>Public-private partnership: the State supplies the lease.</p> <p>Initiative to bring the ICT sector and culture closer together: rehabilitation of basements in the Technopark to set up studios www.lboulevard.ma</p>
<p>Contact</p>	<p>www.technopark.ma Omar Balafrej, Director and Chief Executive Officer</p>

Operational aspects: Innovation projects, from launch to sale

Whether it is an agreement about a partnership, patenting or the creation of a start-up, the development of an innovation project involves making choices on the means that need to be employed and the permanent interaction with the

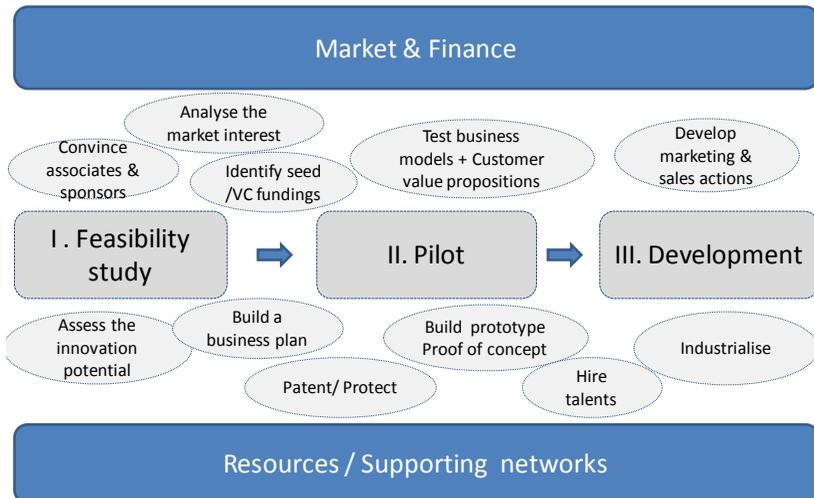
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environment. The project passes through three main stages from the moment the initial idea is identified, up until the point it reaches the market (see Figure 16):

1. the feasibility phase consists of proposing an idea, then convincing others and making choices: how do we assess the potential of a project and mobilise the necessary efforts to develop it?
2. the construction and implementation phase of the project consists of organising the means and demonstrating its value: how do we train a team, present a business plan and find partners?
3. the final phase involves production and commercialisation of a product or licence: how do we organise the promotion of our innovation?

The main sticking points and dynamics for these three steps are analysed below.

Figure 16: Stages involved in an innovation project



Source: ANIMA 2012

Designing an innovation project

In the project's initial design stage, project leaders, whether they are university researchers or entrepreneurs, need to determine which direction they want their project to take and what resources will be required in the future: where are the market opportunities? What needs to be developed? How can intellectual property be protected? To answer these questions, the

project leader needs the support of consultants and key players (pilot customers and sponsors etc.). In practice, **project leaders tend to feel quite isolated** in the MED countries for several reasons.

Pre-incubation stage: a low ability to explain the project's potential

Project leaders often perform dismally when asked to defend their project ideas. The business plan competition organised by [MedVentures](#) in 2010, involving 100 start-up projects in 10 MED countries, highlighted the following weaknesses in the majority of projects presented:

- difficulties in providing a project summary in a couple of pages or in only a few minutes. This kind of exercise is required by several partners and by financial bodies in particular;
- the technical language employed is often difficult to understand;
- lack of project preparation based on user needs (where is the market? what need is addressed by the project? what innovation does it offer?).

These weaknesses illustrate the insufficient levels of support in the project **pre-incubation phase**, particularly in university incubators where students have only limited resources, time and expertise when they first start out.

Insufficient resources for economic watch activities in light of the challenges faced

Gathering information about target customers, competition and market trends is another essential aspect of the project design phase. The international dimension is all the more crucial if the domestic market is limited, like for example in Jordan, Lebanon, Palestine or Tunisia.

Yet few players interviewed have access to monitoring tools, expertise and statistics to be able to monitor international activity. As Kamel Belkahlia, Director of the Bizerte Technology Park, comments: "**One of the major difficulties consists of keeping up to date with information and monitoring strategy.** It is an extremely important issue; access to this information is crucial for us to be able to adapt our services to fit the needs of industry. It is also all about skills".

Committees in charge of reviewing, selecting and supporting projects need to be strengthened

In the early stages of **project selection in technology parks, incubators and small business centres**, qualified experts need to be on hand to select the

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best projects and support the project managers. Such selection and support committees exist but not all of them fulfil their role entirely. Often they include a majority of representatives of the State and universities, but only a few players closely involved in the market: investors, representatives of major groups and entrepreneurs etc. Indeed, when they are associated members, the role of the latter is generally limited to a form of representation (this is the case of the representatives of professional federations in many Tunisian incubators). As a result, many of the companies present are less innovative or have little to do with the sectors targeted in the Mediterranean technology parks, incubators and small business centres.

Apart from the fact that opinions may be less relevant, there are differences in periodicity and timing that also pose problems. One small business in Tunisia had to wait 9 months for validation of its technology by public committees before it could benefit from financing from innovative partnership programmes and launch its research project with a university.

In universities and research centres, **they function using a process of "self-assessment"** led by heads of department or directors and rarely by stakeholders (entrepreneurs, investors). A number of exemplary initiatives were nevertheless introduced, bringing together private and public stakeholders to select the best projects. One example of such an initiative is provided by the Morocco Numeric Cluster, with its Soft Centre (see case study 11), where a label of quality is awarded by entrepreneurs and academics to the best innovation projects.

Case study 11: Soft Centre (Rabat, Morocco)	
Date	Established in 2010, first contract obtained in 2011
Financing	Self-financing: business services (70% electronic banking operators, 30% SME). Subsidies from the Telecommunications Fund. International programmes: research grants, Tempus programme etc.

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Governance	Association → 1- Board of Directors: decision-making body made up of private and public sector members (including 3 ministries). 2- Project Committee: scientific and technological scope, validation of R&D project proposals. 3- Strategic Steering Committee: financial appraisal of R&D projects, agreements.
Sector	Software
Key figures	8 projects developed by the end of 2011 Project size: 25,000 €
Services and activities	Applied research and development: creation of R&D projects on demand. Self-financed research on key topics: Mobility, E-Banking, Software packages, Multimedia Transfer of technology towards the IT industry. Other: partnerships with the Morocco Numeric ICT Cluster, APEBI, ASTEC and the Moroccan Centre for Innovation, with the aim of creating a federation of research stakeholders.
Working methods	- Identification and preparation of R&D files. - Syndication of research skills offered by engineering schools and universities (researchers, doctoral students) to provide complementary services to project managers and external experts. - Hosting of integrated research teams and provision of necessary technology infrastructures. - R&D project management services.
Good practices	Collaborative actions involving industry and universities: partnerships with INSEA-Rabat, Polytechnic Institute of New Technologies and the Université Libre Technologia. Creation of a specific documentary database and contact database for university researchers. The Best Arabic Content Project Award (Arab Golden Chip Award) received in 2011 from the Arab Federation of IT Associations for the "e-Parliament" project.
Contact	Soft-Centre LinkedIn page Jamal Benhamou, Director

Implementing an innovation project: Teams seem too technical and isolated

When reviewing the business plans of 200 start-ups presented as part of regional competitions across the Mediterranean⁵⁵ it is clear that **the majority of projects presented are led by engineers or researchers** (between half and two thirds depending on the competition), whereas managers or business developers have only limited access.

In the same way, in the area of public research, we rarely see mixed research teams working on applied research projects. There are of course exceptions, for instance the National Research Centre (NRC) in Egypt, which sets the creation of mixed teams and co-funding involving private stakeholders as conditions when launching new applied research projects. Some major public sector groups, in the areas of agronomy and health in particular (Cevital in Algeria for example), have a long tradition of cooperation with universities and research centres; it is an integral part of the commercialisation policy.

In addition, interaction between these teams and their environment is hampered by the **lack of informal meeting places** and too few intermediaries **responsible for bringing the different players together** to work on shared research application platforms or collaborative projects for example.

Promoting and selling an innovation project

Lack of clear information on partnership opportunities

Few support structures (technology parks, incubators and technology transfer offices) present their members in full, with details about their skills or market, and they provide even less information about their services or partnerships. Yet, such presentations (patents to license or innovative solutions proposed by start-ups or small businesses established in technology parks, by sector and more specifically by niches) are the first essential elements of information required by potential customers, investors or project leaders in order to identify potential partnership opportunities. Nouredine Bouzouia, director of the Sidi Thabet Biotechnology Park, illustrates the problem: "We found it very difficult to identify and find the right partners working in the same field as us". **Even though the importance of providing information is understood by**

⁵⁵ See Table 12:

all, when it comes to communicating clearly and towards a targeted audience, they are faced with a lack of human and financial resources, in particular as far as innovation-related communication and marketing are concerned.

Online tools need to be developed

Not enough use is made of online tools by the intermediary bodies in charge of promoting innovation projects. Only a few of them send newsletters and use social networks or other collaborative tools to promote their start-ups and provide information about their projects. The Monastir Textile and Fashion Technopark (see case study 12) provides an illustration of good practice: in addition to its strategic positioning policy, it has created the virtual network In'Tex, which brings together the business community and its associated research centres.

Case study 12: Monastir-El Fejja Competitiveness Cluster - Mfcpole (Tunisia)	
Date	Established in 2006. Operational since 2010
Shareholders	70% private banks and 30% state-owned banks.
Sector	Textile → niches: testing, technical textile, finishing, environment, energy, water, fashion
Key figures	Annual operating budget: 6 ME Management structure: 14 employees Companies hosted: 4 (in progress). 12 university facilities (Monastir), 20,000 students 8 professional training centres (textile, hosiery, electronics, electrical) Area: 50 ha (technology park only)
Services and activities	<i>Hosting/IT Services:</i> turnkey office space, congress halls and meeting rooms, exhibition halls, basic IT services and front and back office information systems. <i>Access to funding:</i> financial engineering, project creation. <i>Business support:</i> feasibility studies, search for suppliers and subcontractors, staffing support, help in the choice of design consultants, architects and contractors etc. <i>Events/networking:</i> promoting and marketing services, participation in national and international trade fairs, business development operations.

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	<p>International: partnerships with 80 structures, including 12 international establishments via the In'Tex network.</p> <p>Services supplied within In'Tex network: contacts organised between industrialists (BtoB), researchers (RtoB), institutions and financial bodies. Technology and "market" watch: support to identify, create and manage collaborative R&D projects, business intelligence platform, technology transfer workshops, international networking.</p>
Good practices	<p>Creation of synergies within the In'Tex network (national and international partners: companies, research structures, training organisations etc).</p> <p>Positioning within a strategic sector, built on regional expertise (700 industrial units, including 550 textile companies) and identification of high growth activities.</p> <p>Proactive advertising campaign: multichannel communication (written press, Internet, TV, advertising etc.) and targeted lobbying activities.</p>
Contact	<p>www.mfcpole.com.tn</p> <p>Nidhal Hedfi, Director of Innovation and Cooperation.</p>

Difficulties arising when negotiating value

Players claimed that when it comes to assessing the value of an innovation project, difficulties are experienced between entrepreneurs and investors and between industrialists and public sector research centres and universities in particular. Apart from the recurring lack of trust mentioned earlier, these problems arise from the conflicting interests of the different players. Whereas the "suppliers" (research centres or universities wishing to commercialise a patent for example) tend to judge the value of their innovation based on the work carried out, the aim of the "users" (industrialists, investors) is to find a solution for specific market needs - the licensed technology is only part of the solution, they are also interested in potential future revenue. These difficulties are worsened by the lack of objective data (market data for example) and the lack of consensus on commercialisation policy. **These problem areas highlight the lack of training, common vision and intermediary bodies** capable of facilitating innovation partnerships.

Lack of follow-up over time

The innovation intermediaries interviewed also underline the fact that **their relationship with international players** in particular **often suffer from the limited amounts of human and financial resources. This prevents them from ensuring a follow-up with established partnerships:** "we cannot dedicate enough time and human resources to a partnership. We do not have the organisation we need to respect the partnership agreements that we signed with international partners". Others claim that they do not have "the budget to cover the costs of international operations". This is why, many agreements signed by Mediterranean technology parks with international networks (for example Berytech (Lebanon) with EBN on a Soft Landing programme, Monastir Textile and Fashion Technopark with IASP, Sidi Thabet Biotechnology Park with the Pass cluster, Smart Village with the Sophia Antipolis Foundation, El Ghazala with a number of French and international technology parks) merely represent framework agreements with relatively little operational content.

In addition, projects tend to be cyclical in nature (for example 2 or 3 years for European projects), making partnerships less stable and difficult to maintain in the long term.

Issues regarding coordination and governance

National policies

Towards an integrated innovation strategy?

The majority of stakeholders interviewed mention a lack of synergies **between public innovation stakeholders:** ministries dedicated to research and industry, as well as ministries in charge of supervising sector-specific research centres (agriculture and health etc.). The comments by Nidhal Hedfi, director of the Monastir Technopark, illustrate this reality: "the national innovation system in Tunisia is made up of several active structures and financing programmes, but the diversification of these structures and financing units results in duplication, causing interference between the various funding solutions. This multitude of players prevents the precise targeting of actions".

However, **work is under way on the subject of governance in some of the MED countries.** In 2010, Tunisia initially launched several technology transfer offices with two competing initiatives: the INNORPI initiative (National Institute for Standardisation and Industrial Property) in partnership with the World Intellectual Property Organisation (WIPO) on the one hand, and the ANPR initiative (National Agency for the Promotion of Scientific Research) on the other. According to some reports, the two Tunisian institutions are now trying to collaborate for greater coherence, and there is better coordination between the ministries involved. Similarly, Egypt has launched substantive work to develop an innovation system⁵⁶ and ensure greater coherence of its research policy, which for the moment lacks a coordinated approach to commercialisation.

Public contracts, potential springboards for innovation

Public authorities play a crucial role when it comes to stimulating innovation in their countries. They do so via calls for proposals, concessions and investment programmes that are just as much **test markets as they are springboards for local companies with innovative projects.** The gigantic housing construction projects⁵⁷ in the Mediterranean countries are an illustration of this. They act as vectors of innovation for new building materials, insulation techniques, technical textile, ICT applications and innovative services. By establishing a public procurement policy based on innovation, the State acts as an example for other national groups, supports university research in the country and helps create new markets for local technologies. The fact that MED governments are the greatest national consumers, often with a purchase volume of around 20% of GDP, will make it an even more efficient solution. This is why, with their process of modernisation, **public authorities can become the first customers for the region's technologies and innovative services** (e-administration, modernisation of health facilities, education, energy, construction, transport etc.), and thus do much to influence the attitude of industry with regard to innovation. According to the World Economic Forum ranking of 142 countries, (see Table 13), huge efforts are still required in this domain, in particular in Algeria, Lebanon and Egypt. On the other hand, **Tunisia and Morocco are better ranked and seem to be ahead of other MED countries in terms of absorption of local technologies via public procurement.**

⁵⁶ For more information, see the STDF study. (2012). *Egypt's Innovation Ecosystem*

⁵⁷ For more information, read about the Batimed, Building Insulation, So-eco and EuroMed Green building projects at www.invest-in-med.eu

Access to these markets, calls for proposals and public resources (subsidies, tax benefits etc.) remains nevertheless difficult for new and small businesses, and would seem to be reserved more for major traditional companies. As such, the report by the World Bank (2009) notes that in the MED countries "crony capitalism excludes millions of entrepreneurs, who could prosper in a fairer environment [...]. The domination of a few older companies proves that having the right contacts is more important than the innovation itself when it comes to success. In short, development is held back and young entrepreneurs are excluded". In this respect, the recent revolutions in the Mediterranean have a positive effect as they offer opportunities to new innovative companies.

Table 13: Ranking of MED countries in the public procurement and advanced technology category

Country	Algeria	Egypt	Jordan	Lebanon	Morocco	Tunisia
Ranking (142)	137	104	70	141	59	42

Source: World Economic Forum. (2011). The Global Competitiveness Report 2011–2012

Disconnection between attractiveness policies and innovation

Several "BRIC" countries such as India, China and Brazil, and more intermediary countries such as Malaysia and Mexico have found a way of combining major investment projects with technology transfer, training programmes and support programmes for building innovation value chains. In the Mediterranean, **the link between attractiveness policies, innovation policy and industrial policy still remains weak**. Foreign investment projects in highly innovative fields such as telecommunications or construction represent significant potential, still under exploited, in order to encourage skills transfer and stimulate innovation in the MED countries.

Towards public-private partnerships?

Innovation stakeholders on the lookout for cooperation possibilities

Several **public stakeholders** interviewed, in particular innovation programmes directors, would like to see **the private sector getting involved** in order to provide new financial leverage tools and improve the relevance and credibility of innovation policies. Hamid El Zoheiry, coordinator of the RDI Egypt programme pointed out for example the need to involve

professional associations before deciding on which sectors to work with. **Major international groups are receiving more requests from innovation support structures** (notably incubators). The example of the PICTI Incubator illustrates such closer ties, observed particularly in the ICT sector.

Case study 13: PICTI (Palestine)	
Date	Established in 2004. Opening of a branch in Gaza in 2009.
Financing	Donors & international organisations: 50% Palestinian Authority: 40% Subsidies from private international groups 10%
Governance	Non-governmental, non-profit organisation
Sectors and niches	ICT → niches: web, mobile applications, security, electronics, e-services
Key figures	Annual budget: 400 K\$ (approx. 290 K€) 20 start-ups hosted since 2004, including 7 in 2011 Number of employees: 7 in Ramallah and 3 in Gaza Total area: 600 m ² in Ramallah and 200 m ² in Gaza
Services and activities	<i>Hosting/space sharing/multimedia:</i> turnkey office space, IT equipment, laboratories with videoconferencing facilities. <i>Access to financing:</i> arrangement of seed funding for start-ups, contact planning with investors, venture capital funds and Business Angels. <i>Business support:</i> business plan and model training, marketing, legal advice, preparation of presentations (pitching) to investors, technology transfer. <i>Events/networking:</i> organisation and participation in several competitions, notably: the National Tech Business Plan Competition, sponsored by Intel, the Mobile Innovation Contest and the Microsoft Imagine Cup Competition. <i>International:</i> partnership with several ICT giants: Cisco, Intel and Microsoft (creation of an innovation lab). Creation of a network of young "laptopreneurs" ⁵⁸ . Member of the infoDev programme of the World Bank. Member of the EBN programme (pending certification).

⁵⁸ Mobile workers who have the flexibility to work from a PC laptop using the Wi-Fi network

	<i>Other:</i> creation of 10 new start-ups as a follow-up to training workshops, seminars and information sessions organised with the help of OXFAM GB and DANIDA.
Good practices	<p>Creation of a seed fund for incubated start-ups, in partnership with Cisco Group.</p> <p>Development of a new communication strategy (in line with trends in the ecosystem: strategic partnerships, support programmes, measures in favour of innovation etc.).</p> <p>Free hosting and mentoring for start-ups in return for a minimum share acquisition → no need for start-ups to request loans that are often difficult to obtain.</p> <p>Flexible financing solutions: decisions on a case-by-case basis in light of the business model.</p>
Contact	<p>www.picti.ps</p> <p>Hassan Omar, Director</p>

Rallying innovation players in the private sector

The current trend observed by foreign private stakeholders indicates a strong mobilisation around innovation in the Mediterranean region. This is the case in Israel of course, with three incubator projects announced by Google, Microsoft and Telefónica for 2012 alone. This notion also holds true in several Arab countries: interviews revealed that STMicroElectronics is primarily involved in the Morocco Microelectronics Cluster (MMC) project. Other major groups such as Microsoft and Google are closely following the new innovation measures in Algeria and Egypt and are showing interest in supporting university programmes. Intel is working with the US State Department on ways to encourage innovation and entrepreneurship in the region. The German company BASF is reviewing opportunities in the Mediterranean with regards innovative projects for the environment.

The involvement of **small businesses and major Mediterranean groups** is also on the increase, in particular in the ICT sector. For instance, Telnet, the Tunisian specialist innovation and hi-tech consultants are working in collaboration with Tunisian and foreign universities and technology parks as part of a scientific innovation council made up of renowned Tunisian and international researchers and innovation networks (IEE, Systematic, Arab ICT Organisation). Telnet is also associated with a shared R&D platform project, LinkLab, with the French Atomic Energy and Alternative Energy Commission.

This platform provides the means to carry out and commercialise R&D projects in the area of ICT and new energy technologies.

Emergence of Innovation clusters?

The table below lists the main clusters with a strong involvement in innovation ⁵⁹in the MED countries. It shows that groups of businesses were virtually nonexistent until 2000 onwards and then there was a strong increase from 2009 onwards. These **clusters are still young and lack critical mass**: for example Monastir-El Fejja Technopark created in 2006, has 80 partners within its In'Tex network, and only 4 companies currently located there.

The cluster is nevertheless an essential tool used to bring the public and private sectors closer and provide private stakeholders with a say in a new form of governance. It also enables an alignment of innovation infrastructure development programmes and sector priorities. Indeed, the majority of new clusters rely on the technology parks looked at previously.

Table 14: "Innovative" clusters in the MED countries

Cluster Name	Country	Year of Creation	Sector
Lebanon Creative Cluster	Lebanon	2009	Creative industries
The Lebanon SoftShore Cluster	Lebanon	2007	ICT
M.A.D Cluster (Media Arts & Design)	Lebanon	2009	Multimedia & Digital tech.
Tan Tan Ocean Technology Park	Morocco	2010	Marine resources
Morocco Microelectronics Cluster MMC	Morocco	2011	Microelectronics
CE3M	Morocco	2011	Electronics
Morocco Numeric Cluster	Morocco	2011	ICT
Mecatronic Cluster	Tunisia	2012	Mechatronics
Monastir - El Fejja Competitiveness Cluster	Tunisia	2006	Textile
Bizerte Competitiveness Cluster	Tunisia	2007	Agribusiness

⁵⁹ Many traditional companies are grouped together in the form of professional associations or consortiums, but are not recorded here as innovation clusters.

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Cluster Name	Country	Year of Creation	Sector
Gafsa Competitiveness Cluster	Tunisia	2008	Multisector
Béja Competitiveness Cluster	Tunisia	Under development	Multisector
Gabès Competitiveness Cluster	Tunisia	2010	Multisector
Borj Cédria Ecopark Competitiveness Cluster	Tunisia	Under development	Energy

Source: ANIMA 2012

At Euro-Mediterranean and international level

Why do we need to work at regional level?

There are several arguments in favour of action at regional level:

- international forms of innovation are growing rapidly. For example, 65% of R&D projects in France are developed in collaboration with international partners⁶⁰;
- new networking tools (Skype, Groupware etc.) currently enable entrepreneurs to create international start-ups;
- common areas of concern and fields of expertise (such as water management) currently exist in the Mediterranean region;
- the Euro-Med region has low R&D budgets both in the north and in the south and needs to develop a critical mass to be able to compete at international level;
- the importance of the Mediterranean dimension is underlined by many players and notably Mediterranean talents⁶¹ living in the United States and Canada as well as in the Gulf countries. They often highlight their desire for more involvement in the Mediterranean and not only in their countries of origin.

⁶⁰ AFII-Invest in France, annual report, March 2012

⁶¹ ANIMA, Diasporas: gateways for investment, entrepreneurship and innovation in the Mediterranean, December 2010

Weak international cooperation

On a political level, we are seeing a number of Euro-Mediterranean recommendations for a better coordination of efforts, issued in particular by the Euro-Med working group on industry and the "MoCo", the monitoring committee for innovation composed of representatives of the region's research ministries. Despite these recommendations, there is **no shared vision** as regards innovation (which priorities need to be targeted?) and there are **no common measures and plans of action** shared by countries across the Mediterranean region.

In practice, players involved in promoting innovation are contacted regularly, and sometimes even inundated with requests from several international innovation promotion programmes. At the present time, there are no detailed maps indicating the support programmes in progress, and there is **still the problem of overlapping and a lack of follow-up between different programmes**.

What about a South-South form of coordination?

Due to weak economic integration in the MED countries, **research teams are developing very few regional collaboration projects and tend to be more interested in Europe or the United States**. However, sub-regional partnerships seem to be more frequent. In the Mashreq region, collaboration between the different Jordanian, Lebanese and Egyptian innovation stakeholders was often referred to in interviews. In the Maghreb region, collaboration is less common **even though several players would like to build partnerships with other MED countries. This was the case recently with the creation of the Maghreb association of technology parks and agribusiness technology parks** launched by Kamel Belkahia, CEO of the Bizerte Technology Park. The aim of this association is to pool the necessary resources to further develop the agribusiness industry in Tunisia, Algeria and Morocco. It also aims to promote the exchange of experience in the fields of training and research and development.

Our interviews revealed the desire of several innovation stakeholders to start by developing their actions on a **South-South basis (including operations with Gulf countries), before turning north**. Wissam Rabadi, director of the El Hassan Business Park, is very much in favour of this South-South approach as it would seem to be less restrictive for innovation stakeholders in the MED countries. He believes that "developing a soft

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landing programme between incubators in the Southern Mediterranean would appear more useful for our start-ups as it would help them prepare themselves for the regional market first of all, before taking on the global market".

Other players underlined **the inadequacy of some foreign business models or structures (technology parks, incubators etc.), which are sometimes directly applied to MED countries**, without taking into account national specificities. Khaleel Al Najjar, director of IPCO, comments on the need to develop solutions adapted to each situation: "We tried to copy foreign models and we failed. It enabled us to gain more experience and we adapted out strategies to suit local specificities".

Conclusion, SWOT analysis (strengths, weaknesses, threats and opportunities)

This table provides a summary of the main strengths, weaknesses, threats and opportunities of the system and the stakeholders involved in the promotion of innovation in the Mediterranean.

Figure 17: Innovation in the Mediterranean, SWOT analysis

<p><u>Strengths</u></p> <ul style="list-style-type: none"> ▪ Innovative high-growth sectors (ICT, tourism and services, agribusiness and health) ▪ Diaspora talent in Europe, the USA and Gulf countries ▪ Success stories and models to follow 	<p><u>Weaknesses</u></p> <ul style="list-style-type: none"> ▪ Poorly developed innovative culture ▪ Lack of trust and proximity between private and public stakeholders ▪ Poor understanding and visibility regarding international issues ▪ Rigid regulatory framework ▪ Lack of seed funding
<p><u>Threats</u></p> <ul style="list-style-type: none"> ▪ Falling behind the rest of the world in terms of global knowledge and investment flows ▪ Under-investment and dispersion of available resources ▪ Crisis situation and reduced direct foreign investment 	<p><u>Opportunities</u></p> <ul style="list-style-type: none"> ▪ Entrepreneurial spirit ▪ Leverage of public procurement ▪ New key players, keen to get involved (major groups and business angels) ▪ New innovation policies ▪ South-South partnerships?

Source: ANIMA 2012



Recommendations

This chapter lists recommended measures to promote innovation on a Euro-Mediterranean scale. They are based on the assessment of key players and principle innovation support policies, bearing in mind current sticking points and exploitable dynamics. These recommendations also take into account comments by players in the field⁶²: managers of technology parks, technology transfer offices or incubators, but also entrepreneurs, investors and institutional decision-makers in over 10 countries.

Specific proposals are **highlighted for three types of stakeholders: entrepreneurs and innovators**, the main interested parties, **support networks** (incubators, technology parks and technology transfer offices in particular) as well as the **strategic players** responsible for building a framework and innovation policy. **They are presented and divided into 4 phases and action types:**

1. in the short term, **an action plan at the regional level** (priorities, players, implementation and leverage);
2. in the medium term, **proposals regarding the pooling of tools** in order to create a critical mass effect and synergies between innovation stakeholders in the Mediterranean;
3. in the longer term, the coordination of national measures aimed at offering innovators **in the Euro-Mediterranean region a continuity of service;**
4. in parallel, **support for innovation governance** is proposed at different levels to guarantee long term involvement of key players in innovation policy.

⁶² More than 100 proposals were put forward by "players involved in change", innovation leaders willing to get involved in collective actions.

Mobilising the efforts of innovation communities (2012-2013)

There is a need to identify and mobilise key players (public contracting authorities, major groups, investors, talents in the diaspora, entrepreneur networks, clusters, etc.) in order to pool the resources, talents and finances necessary for the promotion of innovation in the Mediterranean.

In fact, communities and resource sharing dynamics exist at the local and regional levels, notably with the innovation support structures (incubators, technology parks and technology transfer offices) that are at the heart of this study. These dynamics were created by the leading players and support programmes (infoDev, Medibtikar, Maghreb Start-up initiative, MIRA and Invest in Med via its MedVentures initiative) that now need to be included in coordinated action plans on a Euro-Mediterranean scale.

There will be greater mobilisation if there is a set definition of priorities and if the parties have a shared vision. Stakeholders need to be involved in action plans designed to suit specific sectors or activities with strong potential for innovation and job creation in all countries within a region. As such, it is the role of institutional stakeholders (international financing organisations and government agencies etc.) to define the priorities and lead action taken by innovation communities on a Euro-Mediterranean scale. They are at the heart of proposals detailed in this chapter.

MedIn 2.0: A platform for online collaboration and promotion

Why?

- a lack of visibility with regards Mediterranean innovation stakeholders positioning (fields of excellence, success stories) and offers/request for partnerships, is the first obstacle to the development of collective projects between Mediterranean players and associated investors, sponsors and international partners;
- implementation of a simple online tool sharing system (databases, maps, forum etc.) is a necessary precondition (although insufficient) for the development of mutual operations over the long term;
- more than 80% of technology parks and incubators interviewed agree with the idea of introducing online services and resources to boost promotion and networking and additionally facilitate experience sharing.

What?

An internet platform used to promote existing skills in the Mediterranean region (technologies, players, projects), providing a list of innovation communities and enabling interaction between their players. This Web platform could notably provide access to a **shared resource base**⁶³ by businesses searching for partnerships, R&D or innovation opportunities as well as for innovation support structures that need:

- general information about economic benefits and issues at stake, becoming part of the global value chain, the top 100 technologies and key fields of innovation in the Mediterranean (for example building insulation techniques, irrigation, packaging and mining etc.);
- a directory of major players (universities, innovation parks, companies, clusters) by sector, technology or business with a presentation of their infrastructures;
- an inventory of innovation projects (start-ups, collaborative research projects etc.);
- a "business opportunities exchange" providing information on calls for project proposals, financing opportunities at national and international level and offers of collaboration both within and outside the network.

In addition to offering direct services to its members, this resource base would also have promotional objectives, providing maps, interactive search tools, videos, testimonies and success stories. The interviews demonstrated the need to take **simple forms of action and hand over the promotion and supply of data to this platform to network partners (by sector or service), to ensure its full adoption.**

How?

Several surveys previously carried out at different levels to identify players and their positioning need to be used. They include:

- the IT1 programme, in partnership with the Invest in Med project of the European Commission. This survey about innovation stakeholders led to the creation of an online directory (available at www.medmaps.eu) presented in the form of a map, identifying the location of all players involved in innovation promotion in the Southern Mediterranean;

⁶³ The creation of a "resource base" was requested by the majority of players interviewed

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- work by governments and institutional stakeholders in the MED countries at national level to study sector positioning when defining their innovation policy (for example RDI in Egypt, PASRI in Tunisia etc.). A practical workshop to fully assess these sector positions is recommended;
- international cooperation projects (within the framework of the 7th RDFP in particular) which carried out several surveys and mappings of the key players, areas of expertise and partnership opportunities and which need to be listed;
- within the field, business plan competitions, monitoring of venture capital investments, or direct foreign investments providing precise data on the key areas of innovation in the Mediterranean.

4 regional sector-specific task forces

Why?

- the region needs to adopt a position on a certain number of themes of common interest (sectors of activity, businesses) that represent its areas of excellence;
- the need to obtain a form of legitimacy and build up strength in these areas by sharing expertise and reflection;
- the shared will to create a physical centre responsible for coordinating operations and run by players in the Mediterranean innovation community;
- the vertical approach (by sector, areas of application and market niches) is the most appropriate and efficient way of building value and establishing contact with the market.

What?

- the creation of theme-based workgroups (task forces) within the areas of common interest for the different countries of the region;
- the task forces will be made up of groups of about 20 people (see Table 15 Table 15), featuring leading players who are spurred on by the desire to get involved in promotional campaigns and joint operations to boost innovation in the MED countries.

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These workgroups will have the following objectives:

- to establish an action plan and decide on the development of a list of common and standardised services;
- to manage the implementation of these operations and services;
- to mobilise the efforts of companies and innovation stakeholders, encouraging them to take part in operations in their countries;
- to promote community operations, notably with sponsors and supporters.

The high-priority sectors identified by different surveys carried out by ANIMA and MIRA over the last few years⁶⁴ include:

- the green economy and environment (building insulation, innovative urban services, water management);
- the agro-food industry (traceability, packaging, organic products, crop management, regional products);
- ICT (mobile applications, e-commerce, multimedia, Arabic language software). This sector was the one mentioned most often by innovation stakeholders in the Mediterranean and could be the theme for the first pilot group;
- health (medical devices, teleservices, nutraceuticals, cosmetics etc.);
- sustainable tourism and innovative services.

How?

Bearing in mind the objectives of these workgroups, they need to have an international dimension and ensure that they represent:

- the agents of change responsible for implementing services and leading cooperation programmes (technology parks, incubators, technology transfer offices and public sector agencies);
- the users and beneficiaries of the proposed actions (companies, investors and laboratories);

⁶⁴ In particular the study entitled "Mediterranean Investment Map" (2010), the initiatives launched by the private sector within the framework of the European project Invest in Med (between 2008 and 2011), and the surveys carried out as part of the IT1 programme (2012).

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- the institutions in charge of support programmes in the activity area, or major groups in the sector that are interested in participating;
- the opinion leaders and project promoters and in particular, networks of expatriates and members of the diasporas in the MED countries, located in Europe, the United States or in the Persian Gulf.

Table 15 : Main players to include in the working groups

Innovation task forces : 5 types of innovation players need to be involved in planned operations, by sector
Institutional bodies and innovation programme organisers (for example: PASRI, RDI)
Managers of clusters and innovation parks (technology parks, incubators, technology transfer offices) and members of the IT1 group
Business angels and investors
Major groups and small businesses that are leaders in their sector
Talents from the diaspora (investors, entrepreneurs, researchers in the United States, Europe and the Gulf countries)

Source: ANIMA 2012

Joint transnational operations (2013-2015)

Mediterranean countries are lagging far behind in terms of innovation and pooling tools and services is the first solution to this problem. It should provide the means that innovation support structures are lacking and enable them to provide more professional services and develop sustainable actions on an international level.

Value added services based on the priorities listed by players within the field (training, monitoring and promotion) are proposed for deployment **at the regional level.**

The strategic international players (European Commission, EIB, bilateral development agencies etc.) need to be involved **to ensure complementarities between local promotion services** (technical support, training programmes etc.) **and regional operations** proposed in this study. As far as operations are concerned, they may be supported by the sector-specific task forces proposed in the previous chapter.

To finance these services, a contribution may be requested from the innovation promotion players and final beneficiaries (entrepreneurs, researchers etc.). In the same way, regional players who wish to get involved in innovation (major groups, banks etc.) could be invited to participate in a **public-private co-financing operation.**

Pro-active training courses (FormActions)

Why?

- to train innovation managers: the lack of expertise and global vision was pointed out as being one of the major difficulties faced by innovation promoters;
- to ensure harmonisation of various practises in the different MED countries and make it easier for entrepreneurs to develop their international business;
- to reap the benefits and sustain actions aimed at strengthening skills at the local level: several support programmes require stronger regional coordination to improve their impact (the Commission's ERAWIDE programme in particular).

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What?

Training involving institutional bodies, innovation support structures and final beneficiaries are proposed. The idea is to train all players in the innovation chain together in sub-groups of roughly 15 people. The training will be based on a theme (marketing problem issues, funding management or intellectual property may be presented differently according to the sector). The following themes were mentioned frequently during interviews:

- **intellectual property management;**
 - protection methods and intellectual property strategy,
- **promotion and transfer of technology;**
 - how to negotiate with partners,
 - technology assessment,
 - business development and marketing,
- **communication;**
 - designing a business plan,
 - knowing how to present this plan in 3 minutes (pitching technique),
- **financing;**
 - expertise and project selection,
 - negotiation and assessment of a project's value (process implementation and performance indicators).

How?

The term FormAction is used to refer to a method that produces results in the short term (using one of the selected case studies for example) and which encourages decision-makers and innovation promoters to include in their reflection concrete issues encountered by stakeholders.

The idea is to **work on case studies (start-up, innovation project) with the project leader, and to bring together the different players who potentially have a role to play in supporting the project** (entrepreneurs, mentors, institutional bodies, investors etc.).

It is important to capitalise on local training programmes that already exist, notably those organised by the German organisation GIZ and the French innovation agency AFD, as well as the support programmes offered by ONUDI and the World Bank (infoDev).

Business-watch services

Why?

- this service is seldom provided by support structures;
- innovators have very little knowledge of their markets, in particular when they are exporting;
- business-watch activities are costly, but these costs may be shared at a sector level for example.

What?

A **news alert service** focusing on sector-related themes selected by the communities and dealing with the following topics:

- **market opportunities;**
 - market information, regulatory context (intellectual property etc.),
 - calls for tender,
 - news about companies and current projects,
- **technology round-up;**
 - patent publications,
 - new product launches/solutions,
- **cooperation opportunities;**
 - European calls for proposals, information about standards.

How?

The task forces mentioned previously are, without a doubt, essential to the correct development and management of the monitoring system and ensure that the most relevant themes are selected.

Services and initiatives that should be capitalised upon or incorporated:

- specialist media (Zawya, Econostrum, Ansamed etc.) that edit sector-specific documents;
- the monitoring of institutions or state-run laboratories. For example, ADIT, the Pasteur Institute, IRD, ANIMA and AFII in France have developed tools and could participate in joint monitoring activities;
- the monitoring of major groups who intend to take part in supporting innovation in the region (for example INTEL, which already supports the Lebanese incubator Berytech);
- the sharing of existing sector-related services with regional players. For example, the "Tech Fruits and Vegetables" project, led by the French and

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Italian Chambers of Commerce and Industry as well as the CRITT Agro Centre in Avignon (Innovation and Technology Transfer Centre dedicated to the food processing industry) brought about the creation of a business-watch system shared by the technology parks of Bizerte, Parma and Avignon.

Promotion and prospecting campaigns

Why?

- to ensure the positioning of the Euromed region in a certain number of innovative fields and sectors and to promote its R&D capabilities;
- to reduce expenses when attending international trade fairs and meetings with partners;
- to improve visibility at trade fairs by organising delegations;
- to encourage the development of new intra-MED partnerships (as a result of joint international missions).

What?

First of all, **Mediterranean Pavilions** at sector-specific international trade fairs and in targeted regions such as the Gulf countries, Europe and the United States (for example the GSM Congress in Barcelona, Pollutec in Lyon etc.):

- a "Mediterranean" stand involving delegations of several countries and offering visibility for each one of them, with promotional activities such as pitching workshops where participants can present and learn about opportunities;
- promotional campaigns focusing on business excellence in the Mediterranean;
- a delegation of the best players (approximately twenty);
 - clusters and technology parks,
 - start-ups,
 - research centres,
 - investors and mentors,
- prospecting for intermediaries, investors or partners (distributors, customers, co-innovators, technological building blocks, etc.).

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How?

- the **sector-specific task forces** will play a role in selecting events and organising delegations;
- by possibly relying on major sponsors and benefiting from the brand recognition and stand space when setting up the pavilion;
- organisational and technical support is required beforehand (preparing prospecting operations) and at later stages (to follow up leads and sign agreements) in order to offset the lack of time that company managers can devote to export activities.
- the pavilion may be renewed over a period of several years at sector-specific events, as a constant reminder of the region's position.

Ensuring the continuity of Euro-Mediterranean innovation support services (2013-2020)

The promotion of innovation in the Mediterranean needs to be considered from an international perspective during all stages of the innovation process. Whether it is for technological products, new business plan concepts, services or innovative techniques, the design phase requires a full understanding of the realities of the market and competition, to be able to build high-potential projects. At the development and commercialisation stages of innovation projects, talents, in addition to resources and partnerships with several countries and innovation clusters are required if the excellence of a project is to be recognised.

To facilitate the implementation of this open, international strategy, innovators and entrepreneurs in the Southern Mediterranean need to be able to rely on a range of support services provided by innovation clusters close to where they are located. The development and **networking of support services** on a Euro-Mediterranean scale are therefore proposed, with priority given to the following:

- mentoring and managerial support;
- seed funding for projects;
- innovation project prototyping.

The implementation and financing of these services has already been partially carried out at individual country level, under the impetus of national innovation policies. A survey of existing best practises and identification of the requirements to ensure support at international level represent the first step for action on an institutional scale⁶⁵.

From an operational point of view, a step-by-step coordination is proposed, involving a number of innovation clusters and leading pioneers as identified by this study⁶⁶.

⁶⁵ The American State Department pursues an active Mediterranean policy, supporting mentoring and coaching services at the regional level

⁶⁶ See the set of good practices detailed in the case studies highlighted

International business development

Why?

- to overcome **the limitations of local markets in the majority of MED countries;**
- to better anticipate international project development and thus reduce the risk of failure;
- to reduce the costs of international operations;
- to provide business support on an international level and help innovative entrepreneurs get a foothold in these markets, identify the opportunities and deal with the obstacles (certification, tender procedures etc.).

What?

The creation of support centres is proposed, or "**support desks**" in **targeted regions** (United States, Gulf countries, European economic capitals such as Paris, London, Barcelona or Berlin). The organisation of these agencies would include the following:

- "**reception areas**", support offices (co-working spaces) alongside innovation clusters will be proposed by incubators and small business centres, networking together across Europe, the Southern Mediterranean and third countries;
- **network** leaders who could coordinate the support strategy within target markets. These network leaders need to be identified among diaspora talent employed abroad (senior management in major groups, investors, etc.), who have "connections" with major customers and can thus identify short-cuts and trusted networks;
- **low-cost market research services** to observe selected technologies and priority uses targeted at the Mediterranean.

How?

Several initiatives currently underway in the region may be combined with this proposal, they include:

- the Soft Landing programme (co-incubation) developed by EBN and already tested at the Mediterranean level within the framework of the MedVentures initiative;
- the "50 Junior Enterprises" project in association with the Euro-Mediterranean Network of Management Schools (RMEM) and the Euro-

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Mediterranean Network of Engineering Schools (RMEI), developed in partnership with the Office for Economic Cooperation of the Mediterranean and the Middle East (OCEMO). The aim of this project is to deploy the services of Junior enterprises in the different Mediterranean countries, offering services in the areas of market research, prospect identification and service testing at competitive, affordable prices for innovators in the South.

Mentoring and managerial support

Why?

- to ensure close monitoring of projects and anticipate failures, in addition to administrative support;
- to encourage the exchange of good practices and the building of Euro-Mediterranean teams;
- to ensure that teams develop stronger business development and managerial skills.

What?

The development of sector-specific regional mentoring groups (covering four priority sectors listed in the recommendations: ICT, Food industry, Environment, Services and Tourism).

How?

- by coordinating work with existing workgroups on the definition of priorities for the Horizon 2020 programme. The implementation of sector-specific groups is indeed one of the planned focus areas;
- by using Diaspora networks (for example the Algerian Start-up Initiative or the MedVentures initiative, contributing to improved project presentation);
- by coordinating existing mentoring programmes (Maghreb Start-up Initiative, MIT Arab Business Plan Competition, Endeavor, Mowgli, the network "Réseau Entreprendre International", Oasis 500 etc.);
- by associating major groups that can play a simultaneous role as trainers, sponsors and customers (for example the Belgian initiative Plato that is flourishing in Egypt).

Seed funding

Why?

- due to the high costs of project management and the limited budget available;
- in response to demands by project leaders for more information and mediation;
- the need for larger portfolios for investors to limit the financial risks involved in each project;
- to meet requests for seed funding for amounts of less than 100 K€.

What?

Creation of a **seed funding facility for the Mediterranean**, designed to offer international financial stakeholders the following services:

- **project sourcing;**
 - to identify projects with the help of innovation promoters and networks of young entrepreneurs who are outside the reach of financial stakeholders,
 - to organise physical meetings between innovators and financing bodies,
- **co-financing and co-investment between financing bodies to share the risks;**
 - to "export" the successful projects from one market to another,
 - to present projects to different members of the financing chain (public funds, business angels, venture capital funds, banks),
- **support for the development of seed funding of international projects;**
 - to support co-innovation funds that finance partnerships between businesses in several countries,
 - to coordinate these funds (co-financing, shared management tools, common database),
 - to create a regional co-investment or co-financing fund, or a fund used to secure seed financing for innovative activities and ensure leverage of national funding.

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How?

- this facility would be for use by investor networks (business angels, public fund managers, banking networks, venture capital funds) already mobilised by different players and initiatives (FEMIP, ANIMA);
- a steering committee of experts in charge of selecting projects for the backing of financing bodies;
- an approval committee made up of co-investment fund shareholders who would be in charge of financial decision-making;
- a marketing team in charge of promoting the facility and recruiting projects within networks and innovation communities.

Innovation project prototyping

Why?

- to attract international sponsors (investors, major groups) to the innovation platforms;
- to raise the profile of innovation and provide examples;
- to share the costs of investment and access to innovation platforms;
- to attract innovators by proposing state of the art equipment;
- to encourage co-innovation projects between clusters;
- to develop standards in cooperation with several countries.

What?

The creation of shared prototyping and proof of concept platforms (living labs), involving several innovation clusters could be proposed for a number of target sectors in the Mediterranean. They would provide the opportunity to present, test (via interaction with users) and improve the design, added-value and impact of the best innovations in the Mediterranean. A **specific ICT topic** (or 3D design, traceability for example) could be targeted as a pilot experiment. These platforms could even become part of a Euro-Mediterranean network via:

- an activity programme;
- visibility on the proposed online platform;
- participation in Euro-Mediterranean projects (living labs in particular).

How?

- work would initially consist of identifying international shared platforms and notably those under development in competitive clusters across

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Europe. A call for expressions of interest could then be organised. For the ICT sector, the European networks of **Living Labs**⁶⁷ could be possibly used, Mediterranean innovation clusters could also be included;

- the Mediterranean metrology and testing laboratories were highlighted by the activities of MIRA and could be included in these proposals;
- a number of major groups in the ICT sector are already involved in initiatives of this kind locally (Cisco and Microsoft for example) and could be invited to participate in such measures.

⁶⁷ For more information on this subject, read about the [ENOLL project](#)

Bringing about governance changes to support long-term innovation dynamics (2013-2020)

To help develop long-term innovation dynamics in Southern Mediterranean countries, work is required to improve **governance**. To rally efforts and develop closer ties and trust between private and public stakeholders, researchers and industrialists, entrepreneurs and financial bodies, international investors and local innovation clusters etc.

Below are listed recommendations at different levels:

- within existing innovation clusters: technology parks, incubators, technology transfer offices;
- at national level;
- at international level.

Developing a strong entrepreneurial culture within technology parks, incubators and technology transfer offices

Why?

- there is a lack of entrepreneurial and business spirit within universities and technology transfer offices;
- there is a gap between the requirements expressed by entrepreneurs and the services provided by support structures (incubators, small business centres), often considered to be too administrative in nature;
- a cultural environment driven by results and performance is rarely observed within innovation promotion structures.

What?

Provide a selection of support tools that favour the emergence of projects (seed funds, and interest free loans) **and involve incubators/small business centres and technology transfer offices:**

- select and showcase the best innovation projects;
- finance proof of concept operations (modelling, prototyping) that are needed if innovations are to mature;
- involve private stakeholders (business angels, entrepreneurs) in selection and support committees associated with these funds.

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How?

- by using existing models and tools provided by support structures in the Mediterranean (for example OASIS 500, Flat 6 Labs or the Casablanca Technopark) and in Europe (EBN network experience, Réseau Entreprendre International or the EBAN network of business angels);
- by organising business plan competitions and involving investment funds;
- by measuring the impact of these funds and providing incentives to the innovation managers.

At the country level: Coordinating policies to attract investment with industrial and innovation policies, in conjunction with the private sector

Why?

- innovation programme leaders (PASRI, RDI for example) require support in order to exchange experience and best governance practices;
- private stakeholders (expatriate talents, investors, major groups, international institutions) lack clear information on the players and partnership opportunities that would enable them to become part of innovation ecosystems;
- there are barriers between innovation policy leaders (Ministries of Research and Industry, Agriculture, Energy etc.) in the Mediterranean countries;
- operations organised by international innovation support programmes are sometimes duplicated and lack follow-up.

What?

- at the strategy and policy levels, create **policy committees to provide business support** in each Southern Mediterranean country. Their mission would include:
 - targeting and developing transversal innovation programmes in priority theme areas, such as eco-friendly innovation, sustainable construction and water management,
 - mobilising efforts by talents and leading organisations to participate in action plans,
 - associating funding bodies, representatives of the business world (professional associations) and innovation (research centres) as well as major international buyers,

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- at the operational level, build a network of specialist centres or **one-stop shops for innovation** that would assume the following role:
 - map innovation chains and support ecosystems in the Mediterranean and ensure improved access to resources,
 - showcase the best tools (tools for rewarding and motivating researchers, business plan competitions, tax incentives),
 - simplify procedures and shorten the channels between innovators and resources,

How?

- by using the National Contact Points (NCP) featured in the 7th EU R&D Framework Programme;
- a number of countries have already launched governance actions and worked on creating a High Committee on Science and Technology (Egypt for example), and one-stop shops for innovation (one feature of the PASRI development programme in Tunisia for example);
- several funding bodies and international agencies involved could be called on to assess the technical and financial feasibility of these committees;
- an annual conference on the subject could provide the opportunity to highlight best practices, best innovation clusters and attract potential partners/sponsors.

At the transnational level: Improving the mobility of innovators

Why?

- at the regional level, the mobility of researchers, entrepreneurs and innovation support players is hampered by administrative (visas) and financial problems (travel expenses and hosting on site);
- many diaspora talents (researchers, senior management etc.) express their desire to contribute to the development of their country of origin. Creating a company is one way of doing so.

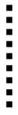
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What?

- **Mediterranean Innovation Mobility grants** for the best 100 innovation projects in the Southern Mediterranean (and by expatriate talents) aimed at favouring the creation of international teams;
 - each recipient will benefit from one-on-one coaching in Europe (by mentors selected via the sector-specific task forces or online platform) to identify the resources required and the players to contact,
 - pilot work would be carried out with the European authorities to facilitate access to visas for the best 100 projects,
 - co-financing would be arranged for part of the logistical costs of long-term missions (accommodation, travel) for the best innovation projects.

How?

- by using existing successful European programmes such as the European Commission's Erasmus programme for young entrepreneurs, and proposing operations on this theme, involving Mediterranean partner countries (a wish already expressed by the DG Enterprise at the end of 2011);
- a link could also be established with the Euraxess mobility support programme for researchers in Europe (which indeed has plans to expand operations to the Mediterranean);
- by promoting the selection of best transnational projects (videos, brochure), which would help bring Mediterranean innovators and entrepreneurs into the limelight.



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Annexes

Annex 1: List of people interviewed

Forename	Surname	Organisation	Country/ region
Youcef	Aklouf	ANPT - Cyberparc de Sidi Abdallah	Algeria
Zaïa	Alimazighi	Electronics and IT Faculty - U.S.T.H.B	Algeria
Rachaa	Bedjaoui-Chaouche	ANPT - Cyberparc de Sidi Abdallah	Algeria
Mohammed	Boudour	U.S.T.H.B	Algeria
Messaoud	Boumaour	UDTS	Algeria
Djamel	Chehboub	CDTA - Saticom	Algeria
Nour Eddine	Gabouze	UDTS	Algeria
Zahia	Houmani	Blida University	Algeria
Siffedine	Labed	Renewable Energies Centre	Algeria
Lyes	Lamri	Microsoft Algeria	Algeria
Aziza Amina	Majda	Directorate-General for Scientific Research and Technological Development - MESRS	Algeria
Abderrahman	Mezian	Directorate-General for Scientific Research and Technological Development - MESRS	Algeria
Samir	Mohammedi	Technobridge	Algeria
Yacine	Rahmoun	Algerian Start-up Initiative	Algeria
El Hadi	Zouaoui	Centre de Développement des Technologies Avancées	Algeria
Marita	Riedel	GIZ Algeria	Germany / Algeria

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Forename	Surname	Organisation	Country/ region
Sherif F. M.	Abd El-Nabi	STDF	Egypt
Mokhtar M.	Bakr	Helwan University	Egypt
Sanaa	Butros	Theodor Bilharz Research Institute	Egypt
Hussein M. A.	Eissa	Ain Shams University	Egypt
Hamid	El Zoheiry	RDI Programme Egypt	Egypt
Farouk Kamel	El-Baz	National Research Centre	Egypt
Ahmed	El-Laithy	American University in Cairo	Egypt
Khaled	ElSaadany	Grants Innovation & Technology Transfer Center	Egypt
Mohamed E.A.	El-Tochey	Ain Shams University	Egypt
Noha	Fathi	The-Marketer	Egypt
Abd-Alla	Gad	National Authority for Remote Sensing and Space Sciences	Egypt
Alaa Fayez	Hamza	Ain Shams University	Egypt
Mohammed	Hazem Abdellatif	Ain Shams University	Egypt
Suzan	Kholeif	National Institute of Oceanography and Fisheries	Egypt
Ahmed	Laiali	Technology Innovation & Entrepreneurship Center	Egypt
Hossam	Osman	Information and Communication Technology Outsourcing	Egypt
Ahmed	Saleh	RDI Programme Egypt	Egypt
Yasmine	Samir Labib	Ministry of Scientific Research and Technology	Egypt
Amr	Shaarawi	American University in Cairo	Egypt
Marie	Corman	European Commission/DG Enterprise and Industry	Europe

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Forename	Surname	Organisation	Country/ region
Aurelie	Pancera	European Commission/DG RTD	Europe
Christophe	Guichard	European Commission/DG Enterprise and Industry	Europe
Stephane	Raud	Institute for Research and Development (IRD)	France
Abeer	Al bawab	University of Jordan Amman	Jordan
Khaleel	Al Najjar	The Intellectual Property Commercialization Office (IPCO)	Jordan
Mohamed	Brake	Jerash Private University	Jordan
Reham	Gharbiyeh	Al Urdonia Lil Ebda	Jordan
Mohammed	Obaidat	Queen Rania Center for Entrepreneurship	Jordan
Sharaf	Obaidat	Al Urdonia Lil Ebda	Jordan
Wissam	Rabadi	El Hassan Business Park	Jordan
Raghda	Zaid	The Higher Council for Science and Technology	Jordan
Abdel Rahman	Ghaleb	BIAT - Business Incubator Center Tripoli	Lebanon
Karim	Hammoud	SouthBic	Lebanon
Walid	Hanna	Middle East Ventures Partners	Lebanon
Nicolas	Rouhana	Berytech	Lebanon
Driss	Aboutajdine	University Mohamed V – Agdal	Morocco
Samir	Agnaou	Al Akhawayn Incubator	Morocco
Moha	Arouch	Marobtikar	Morocco
Ilyas	Azzioui	CNRST	Morocco
Omar	Balafrej	Casablanca Technopark	Morocco
Ali	Bassit	MITC Capital (Maroc Numeric Fund)	Morocco
Jamal	Benhamou	Softcentre	Morocco

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Forename	Surname	Organisation	Country/ region
Hicham	Bouzekri	Morocco Microelectronics Cluster	Morocco
Rachid	El Amrani	Original Invest	Morocco
Mohamed	El Amrani	MASciR	Morocco
Imad	El Aouni	Maroc Numeric Cluster	Morocco
Abdessalam	El khanchoufi	National Institute for Medicinal and Aromatic Plants (INPMA Taounate)	Morocco
Zoubida	Mouflou	Electronics, Mechatronics and Mechanics Cluster	Morocco
Mounir	Ouahib	Tan Tan Oceanopole	Morocco
Mustafa	Jarrar	Birzeit University	Palestine
Hassan	Omar	Palestine Information and Communications Technology Incubator	Palestine
Hilmi S.	Salem	Technical and Applied Research Center	Palestine
Hammadi	Ayadi	Sfax Biotechnologies Centre (CBS)	Tunisia
Kamel	Belkahia	Bizerte Technology Park	Tunisia
Noureddine	Bouzouia	Biotech pole Sidi Thabet	Tunisia
Nidhal	Hedfi	Monastir-El Fejja Competitiveness Cluster	Tunisia
Elyes	Jeribi	Linkao	Tunisia
Eloumi	Khaled	INSAT Innovation and Development Centre	Tunisia
Abdelhak	Sonia	Pasteur Institute of Tunis	Tunisia
Hichem	Turki	Sousse Technology Park	Tunisia
Abdeslam	Yahyaoui	El Ghazala Technology Park	Tunisia
Sonia	Abdalhak	Pasteur Institute of Tunis	Tunisia
Hichem	Ben Hassine	Pasteur Institute of Tunis	Tunisia

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Forename	Surname	Organisation	Country/ region
Zied	Ben Salem	Alpha Engineering	Tunisia
Aniss	Ben Rayana	IRESA - Ministry of Agriculture	Tunisia
Latifa	Bousselmi	CERTE	Tunisia
Nejiba	Bouzaïane Khalfallah	El Ghazala Technology Park	Tunisia
Radhoune	Chtourou	CERTE	Tunisia
Aman Allah	Guizani	CERTE	Tunisia
Moez	Jebara	Borj Cedria Biotechnology Park	Tunisia
Mohamed	Jemni	El Manouba University - UTIC	Tunisia
Majed	Khalfallah	SONEDE	Tunisia
Rajeh	Khemiri	EU Delegation to Tunisia	Tunisia
Chérif	Sammari	National Institute of Sciences and Marine Technologies	Tunisia

Annex 2: Survey distributed to the innovation players

We would like you to complete your profile and provide practical details about your structure:

1. * Please fill in your contact details and the address of your structure

Surname:

Forename:

Your position:

Email address:

Tel no (office):

Name of the structure:

Year the structure was created:

Area in m²/ha (if appropriate)

Website:

Address:

City:

Postal/ZIP code:

Country:

2. * What kind of structure do you represent?

- Technopole/Technology Park/Science Park
- Incubator/Small Business Centre
- Technology transfer office (in an R&D centre or university)
- Other, please provide details:

3. **Please indicate:**

The number of employees in your structure:

The number of employees when your structure was created:

4. **How do you finance your activities? (several replies may be given)**

- Public financing
- Self-financing (membership fees, services etc.)
- Private financing
- International financing (World Bank, EC etc.)
- Other, please provide details

Please provide a description of your activities

5. *** Which activity sectors do you target? (several replies may be given)**

- Health - Biotechnologies
- Information and Communications Technologies (ICT)/Media
- Energy
- Environment
- Food processing
- Other, please provide details:

6. **What do you specialise in? Please list the market niches you position yourselves in** (for example: Web 2.0, mobile technologies, traceability, water management, eco-tourism, eco-friendly construction etc.):

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7. How many innovation projects/start-ups do you support each year (on average)?
8. Overall, how many innovation projects/start-ups have you supported since your creation?
9. How would you present your organisation? (promotional description of your structure and international activities)
10. What services do you offer to companies/innovators?

- Hosting (laboratory, shared space, works areas)
- Mentoring (training, IT expertise)
- Access to financing (business plan assistance, first customer acquisition)
- Promotion/networking (organisation of events, marketing strategy)
- Other, please provide details:

Finally, please define your international profile

11. What kind of relationships do you currently have with international players? (several replies may be given)

- Membership of an international network (for example a network of incubators or technology parks etc.). Please provide details:
- Partnership in an international cooperation project
- Direct relationships with international companies or innovation stakeholders
- Other, please provide details

12. Do you organise international events?

- No
- Yes, please provide details:

13. From the following list of international cooperation activities, please indicate if you participate in any of them? (several replies may be given)

- Co-incubation (shared facilities and services for start-ups between several countries)
- Mentoring (international support networks, involving international or diaspora talent maybe)
- Co-financing (investment in a multi-country projects)
- Co-innovation (contribution to the designing of products with several countries)
- Other, please provide details:

14. What would be your main demands with regards support in developing your activities on international markets?

Thank you for your participation

The *Promoting Innovation in the Mediterranean* study was carried out within the framework of the IT1 programme, an initiative of the Marseille Centre for Mediterranean Integration (CMI) and coordinated by the European Investment Bank (EIB). The aim of the IT1 programme is to increase the number of innovation projects in the region and further strengthen the innovation chain. The study was conducted by ANIMA Investment Network in coordination with the Madri+ foundation and the MIRA project of the European Commission Research DG.

Promoting Innovation in the Mediterranean

Profiles and expectations of business incubators, technology parks and technology transfer offices

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Developing innovation economies is even more important during a crisis and this is why virtually every country in the world is **striving to remain competitive**. Their aim is to generate added value and create sustainable jobs.

Yet in response to these challenges, **several countries in the Mediterranean region are falling behind** for various reasons. They find it difficult to acquire sufficient **critical mass** for investments and installations. They also lack **global visibility** and perform poorly when commercialising research results and **public-private partnerships are difficult to establish**.

The study entitled *Promoting Innovation in the Mediterranean* is the result of field work, a survey of existing programmes and various workshops conducted alongside the "agents of change in the Mediterranean". It takes stock of current innovative ecosystems that are being developed in the Southern Mediterranean region. Three types of innovation support structures are targeted: **technology parks, business incubators and technology transfer offices**.

The study is not simply an analysis of macro-economic issues, it identifies the key elements required to **drive new innovation dynamics across the Mediterranean**. They include the promotion of best practises, the need to identify and involve industry leaders as well as networking between communities and innovation clusters at regional level.



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