

ICT Development in Palestine: Challenges and Opportunities

4th ICT Day

Al-Quds Open University

29th June 2010

Ramallah, PALESTINE

Assessing Science Technology and Innovation (STI) in Palestine



Research Status, obstacles and opportunities (2001 – 2002)



Assessment of The Bilateral Scientific Cooperation between European Union Member States and Mediterranean Partner Countries (2005 – 2006)



Evaluation of Science, Technology & Innovation in the Mediterranean Partner Countries (2006 – 2008)



Assessment of Innovation in Industrial Sectors of the Mediterranean Partner Countries (2008 – 2009)



Main findings – What is Lacking?



- Information (=>Knowledge)
- Cooperation
- Coordination, Consorted Team work, Clusters, etc.
- Policies and Coordinated Strategies
- Awareness regarding Available Opportunities
- Measures of Sustainability
- National Funding
-
-

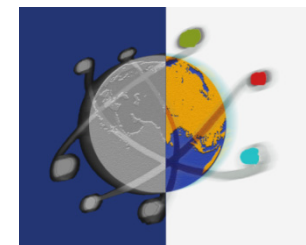
Improving Competitiveness of SMEs through IT based Environmental Planning –SMITE (2002 – 2004)



SMITE is an EUMEDIS funded project with 10 partners focusing on the **Mediterranean Partner Countries (MPC)**, funded under FP5.

Its main aims are:

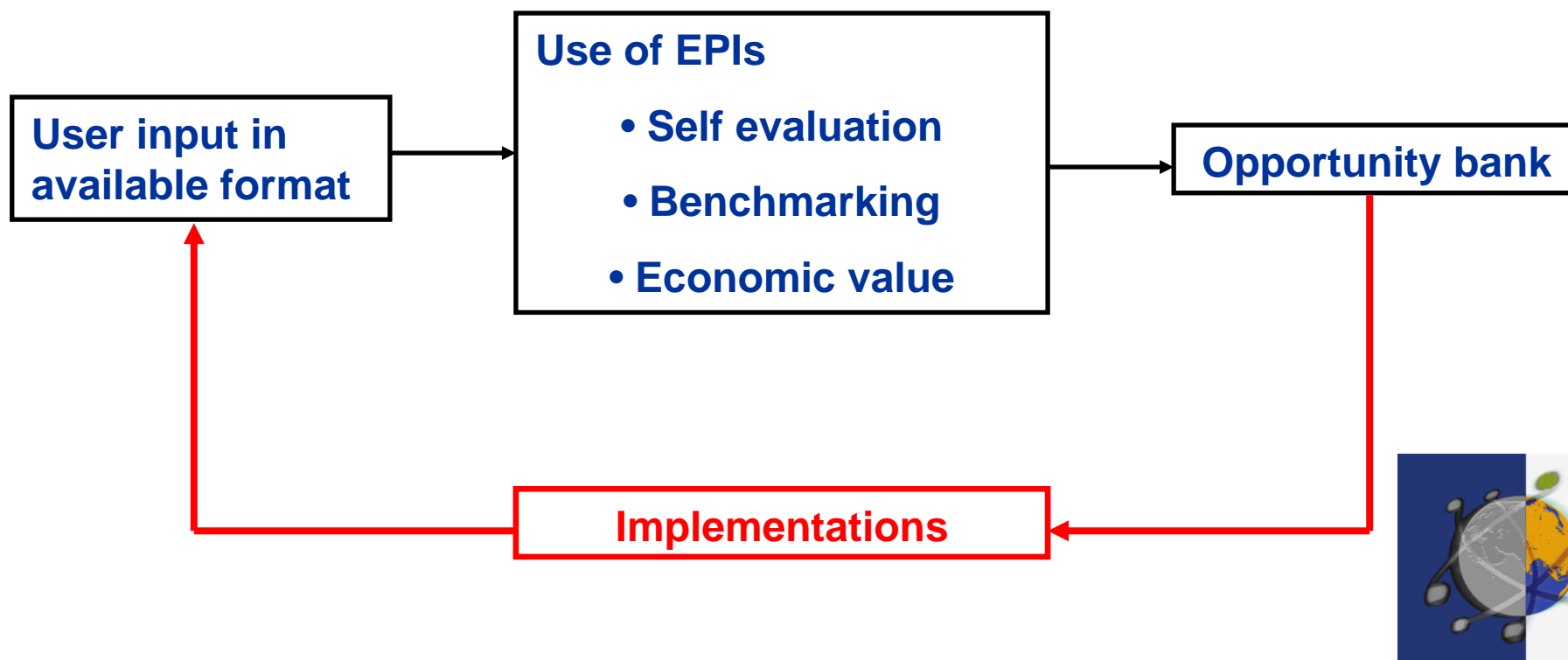
- Supporting SMEs in improving their Competitiveness by adoption the prevailing Environmental Policies and Practices.
- Supporting SMEs by developing an Internet Information System “EMS Diagnostic Benchmarking”.
- Creating a Market through online Networking of Services (SMEs) with service providers (local consultants).



Interactive Diagnostic Tool – Benchmarking

Three main SMEs sectors:

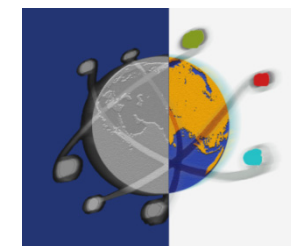
- Textile Industry
- Food Industry
- Hotels



Diagnostic Tool: User Input – Example: Textile sector

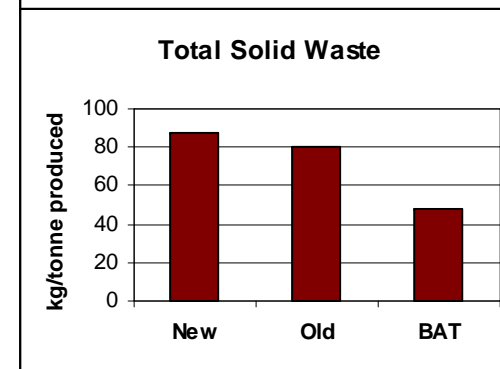
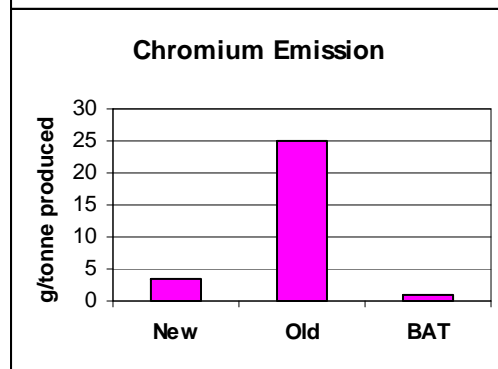
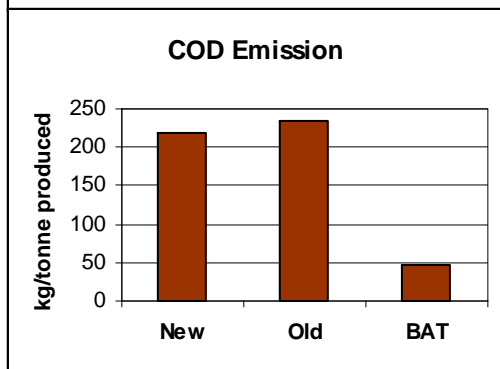
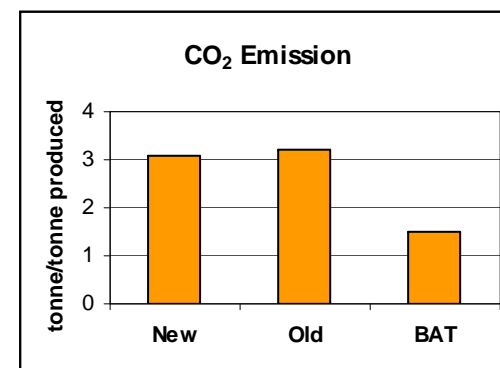
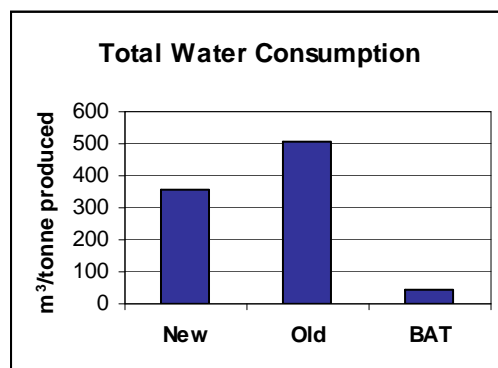
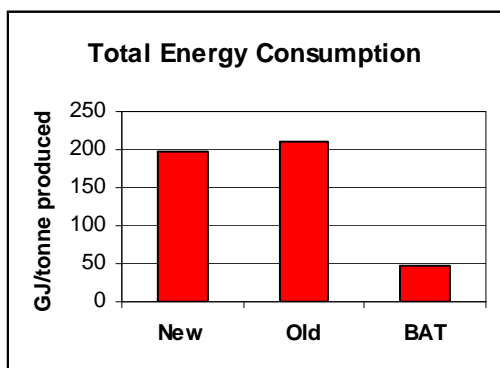
Input	Quantity	Units	Price	Units
Energy Consumption				
Energy coal		Tonnes/year		€/tonne
Propane gas		m ³ /year		€/ m ³
Natural gas		Nm ³ /year		€/ m ³
Fuel Oil		m ³ /year		€/ m ³
Fuel renewable and others		Tonnes/year		€/tonne
Electricity on-site		kWh/year		€/kWh
Electricity external		kWh/year		€/kWh
Water Consumption				
Water direct extraction		m ³ /year		€/ m ³
Water Public supply		m ³ /year		€/ m ³
Raw Materials				
Raw material wool		Tonnes/year		€/tonne
Raw material cotton		Tonnes/year		€/tonne
Raw material synthetic fibres		Tonnes/year		€/tonne
Bleaching chemical		Tonnes/year		€/tonne
Dye stuff		Tonnes/year		€/tonne
Dye stuff containing heavy metals		Tonnes/year		€/tonne

Input	Quantity	Units	Price	Units
Production size				
Product /type/ 1		Tonnes/year		€/tonne
Product /type/ 2		Tonnes/year		€/tonne
Product /type/ 3		Tonnes/year		€/tonne
Product /type/ 4		Tonnes/year		€/tonne
Product /type/ 5		Tonnes/year		€/tonne
Waste water				
Waste water volume		m ³ /year		€/ m ³
COD		mg/l		
BOD		mg/l		
Chromium		µg/l		
Solid Waste				
Solid waste Hazardous		Tonnes/year		€/tonne
Solid waste for landfill		Tonnes/year		€/tonne
Solid waste recycling		Tonnes/year		€/tonne



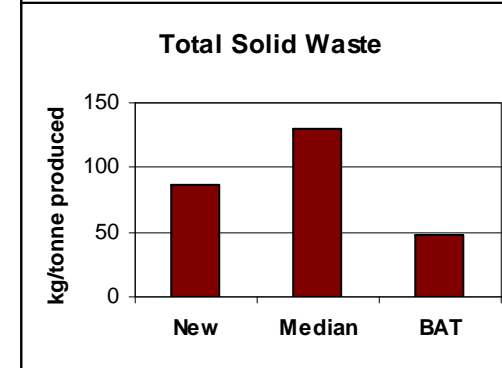
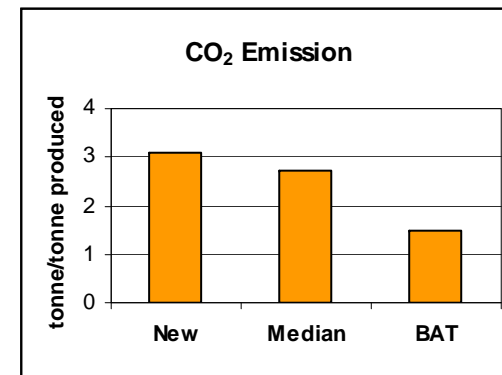
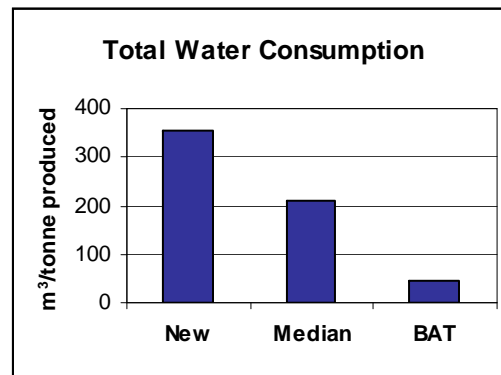
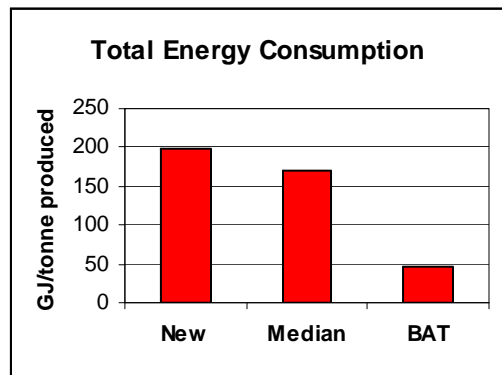
Diagnostic Tool: Self evaluation – Example: Textile sector

Environmental Performance Indicator	EPI Unit	New	Old	BAT	Opportunity Bank
Total energy consumption/produced weight	GJ/tonne	198	210	46,4	Textile - energy savings
Total water consumption/produced weight	m ³ /tonne	356	507	44,7	Textile - water savings
CO ₂ emission/produced weight	tonne/tonne	3,1	3,2	1,49	Textile - CO ₂ reduction
COD emission/produced weight	kg/tonne	220	235	46,5	Textile - COD-emission
Chromium emission/produced weight	g/tonne	3,5	25	1,06	Textile - Dye substitution
Total solid waste/produced weight	kg/tonne	87	80	48,1	Textile - waste minimisation



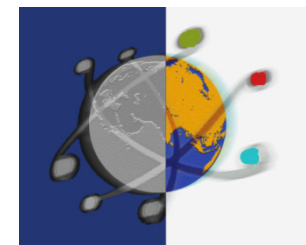
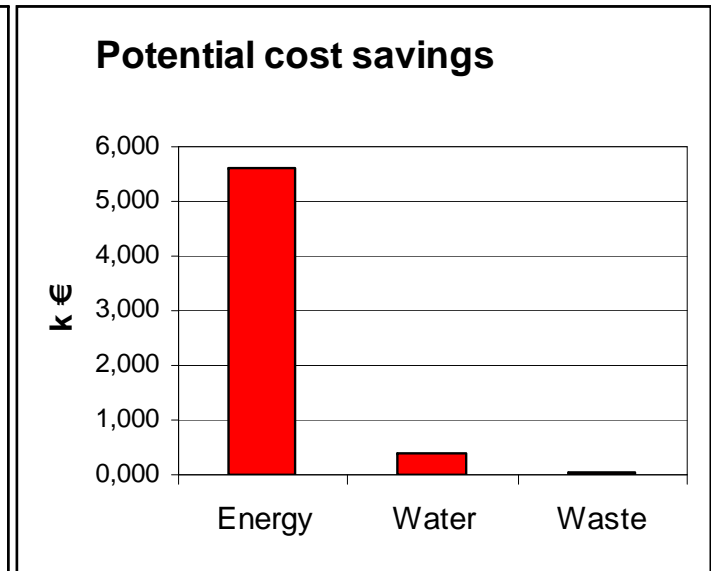
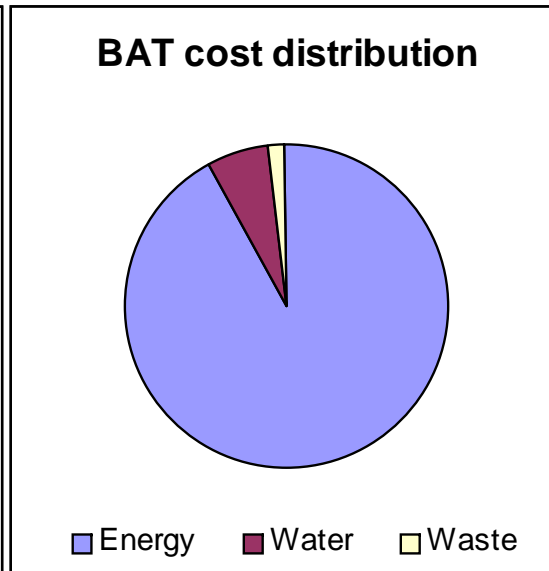
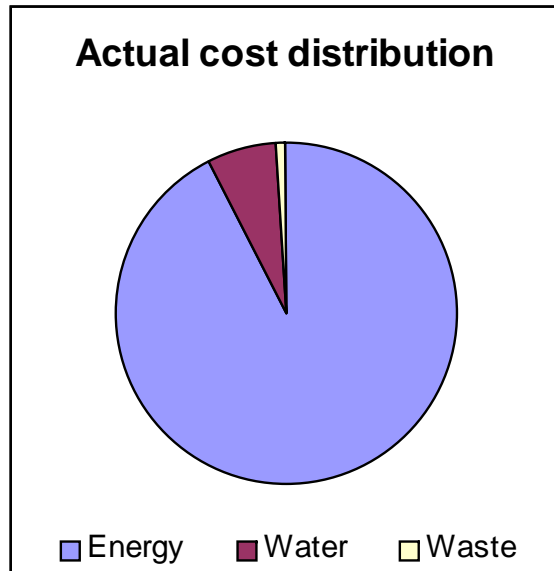
Diagnostic Tool: Benchmarking – Example: Textile sector

Environmental Performance Indicator	EPI Unit	New	Median	BAT	Opportunity Bank
Total energy consumption/produced weight	GJ/tonne	198	170	46,4	Textile - energy savings
Total water consumption/produced weight	m ³ /tonne	356	209	44,7	Textile - water savings
CO ₂ emission/produced weight	tonne/tonne	3,1	2,74	1,49	Textile - CO ₂ reduction
Total solid waste/produced weight	kg/tonne	87	130	48,1	Textile - waste minimisation



Diagnostic Tool: Economic Value – Example: Textile sector

Environmental Performance Indicator	EPI Value	Actual	BAT	Potential	Opportunity Bank
Total energy consumption/produced weight	k €	7,333	1,719	5,615	Textile - energy savings
Total water consumption/produced weight	k €	0,528	0,119	0,409	Textile - water savings
Total solid waste/produced weight	k €	0,058	0,032	0,026	Textile - waste minimisation



Mediterranean Information Society* Technology – MED-IST (2007 – 2009)



MED-IST is a Specific Support Action (SSA) with 11 partners focusing on the **Mediterranean Partner Countries (MPC)**, funded under FP6.

Its main aims are:

- Mapping Research Actors in MPC.**
- Networking MPC and EU Research Communities.**
- Developing National ICT Strategic Research Agenda (SRA) in MPC that correspond to EU-ICT Agenda.**
- Mentoring/Training on FP7 – ICT opportunities/Procedures.**

An **information society is a society in which the creation, distribution, diffusion, use, integration and manipulation of information is a significant economic, political, and cultural activity.*

<http://www.med-ist.eu>

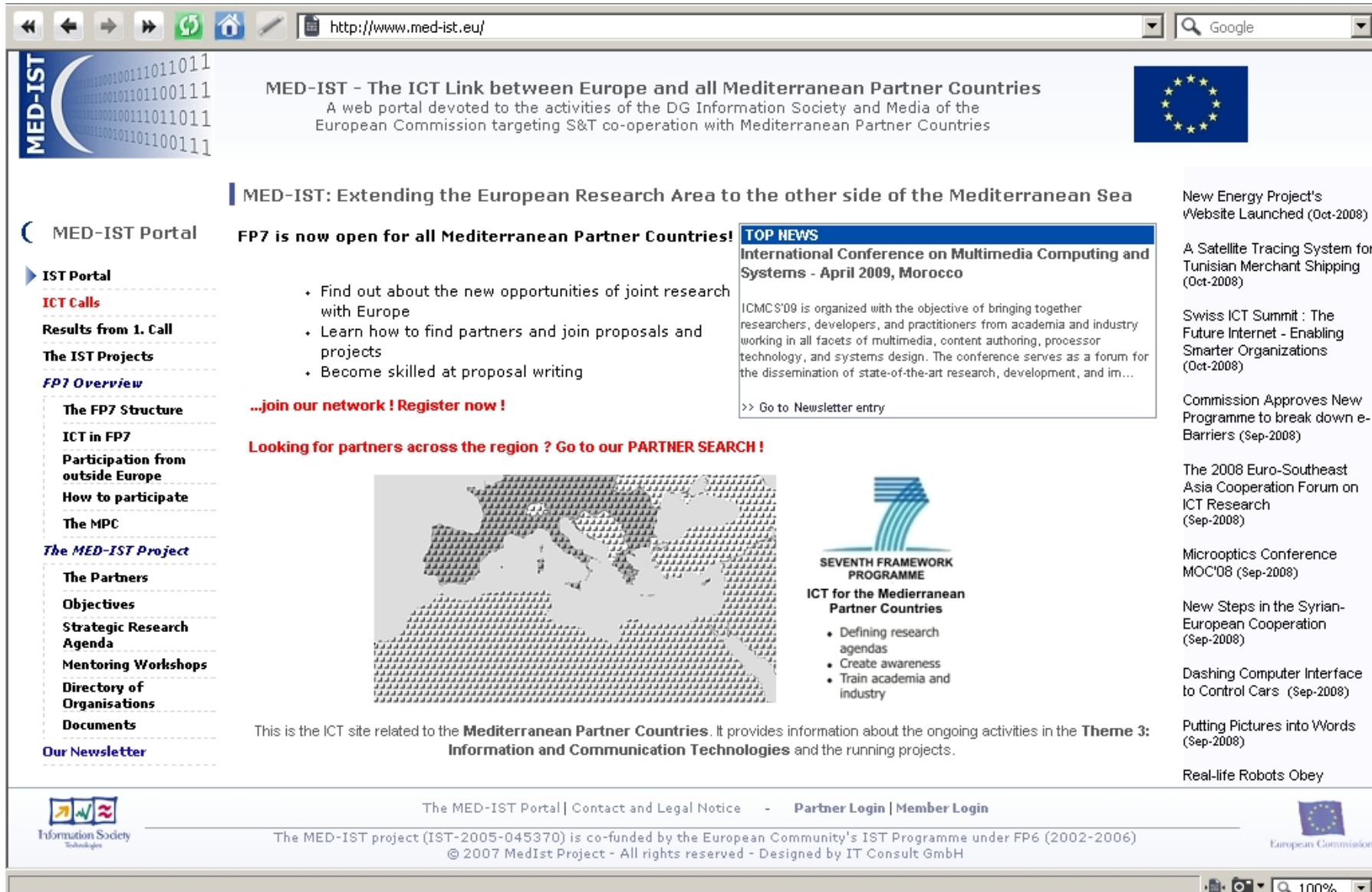


The rationale behind mapping of research organisations and capabilities



- ❑ Identify suitable research organisations who would qualify as partners for collaborative projects with European Partners under FP7 – ICT Thematic Priority.
- ❑ Record capabilities and needs of the identified organisations in the challenges of ICT Thematic Priority of FP7.
- ❑ Offer mentoring workshops and networking events to the identified organisations.

The MPC directory




Browser address bar: <http://www.med-ist.eu/>

Search: Google

MED-IST - The ICT Link between Europe and all Mediterranean Partner Countries

A web portal devoted to the activities of the DG Information Society and Media of the European Commission targeting S&T co-operation with Mediterranean Partner Countries



MED-IST: Extending the European Research Area to the other side of the Mediterranean Sea

MED-IST Portal


- IST Portal
 - ICT Calls
 - Results from 1. Call
 - The IST Projects
 - FP7 Overview
 - The FP7 Structure
 - ICT in FP7
 - Participation from outside Europe
 - How to participate
 - The MPC
 - The MED-IST Project
 - The Partners
 - Objectives
 - Strategic Research Agenda
 - Mentoring Workshops
 - Directory of Organisations
 - Documents
 - Our Newsletter

FP7 is now open for all Mediterranean Partner Countries!

- Find out about the new opportunities of joint research with Europe
- Learn how to find partners and join proposals and projects
- Become skilled at proposal writing

...join our network ! Register now !

Looking for partners across the region ? Go to our PARTNER SEARCH !



TOP NEWS

International Conference on Multimedia Computing and Systems - April 2009, Morocco

ICMCS'09 is organized with the objective of bringing together researchers, developers, and practitioners from academia and industry working in all facets of multimedia, content authoring, processor technology, and systems design. The conference serves as a forum for the dissemination of state-of-the-art research, development, and im...

>> Go to Newsletter entry

New Energy Project's Website Launched (Oct-2008)

A Satellite Tracing System for Tunisian Merchant Shipping (Oct-2008)

Swiss ICT Summit : The Future Internet - Enabling Smarter Organizations (Oct-2008)

Commission Approves New Programme to break down e-Barriers (Sep-2008)

The 2008 Euro-Southeast Asia Cooperation Forum on ICT Research (Sep-2008)

Microoptics Conference MOC'08 (Sep-2008)

New Steps in the Syrian-European Cooperation (Sep-2008)



Dashing Computer Interface to Control Cars (Sep-2008)

Putting Pictures into Words (Sep-2008)

Real-life Robots Obey

The MED-IST Portal | Contact and Legal Notice - Partner Login | Member Login

The MED-IST project (IST-2005-045370) is co-funded by the European Community's IST Programme under FP6 (2002-2006)
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The MPC directory

Select a Challenge

- Ch1: Pervasive and
- Ch2: Cognitive Sys
- Ch3: Components
- Ch4: Digital Librari**
- Ch5: Towards sus

Search results for: **Chal**
Click on the name to see

No	Name
1	Ahmed Abdel-Gha
2	Mahmoud Abdel-S:
3	Shady aly
4	Maha El Tantawi
5	Ayman Fathy
6	Abd-Alla GAD

Please note that contact data are only provided to registered members.

Ayman Fathy
CMRDI
Steel Technology Dept.
Elfelzat , Eltbieen
Cairo / Egypt

<http://www.cmrdi.sci.eg>

Ayman Fathy is interested in:

- 4.1 Digital libraries and technology-enhanced learning
- 9.1 International cooperation
- 9.3 Trans-national co-operation among National Contact Points

Select a Country

Select an Org. Type

NONPROFIT
PRIVATE
PUBLIC
RESEARCH
Any

type	Interest in Ch4
RCH	high
RCH	high
RCH	high
RCH	high
RCH	high
RCH	high

<http://www.med-ist.eu>

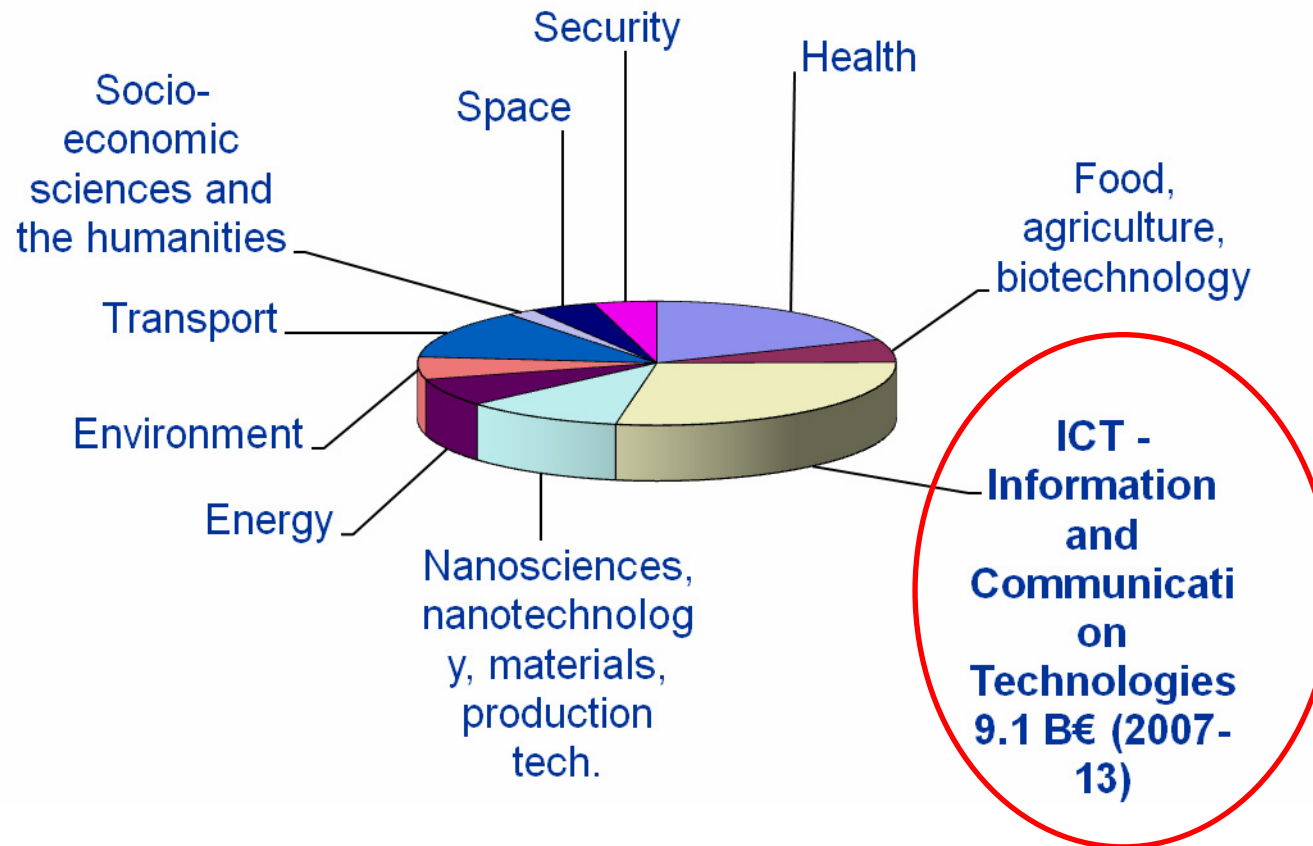
MPC Directory (May 2010)

COUNTRY	Grand Total	Researchers	SMEs and Private	Public	RTD Topics described by researchers	Company Descriptions provided	CVs given	FP7 Focus declared	Rank*
Algeria	24	19	1	4	84.2%	100.0%	83.3%	83.3%	0.86
Syria	32	18	6	8	77.8%	66.7%	21.9%	78.1%	0.70
Morocco	133	97	21	15	56.7%	4.8%	4.5%	64.7%	0.48
Tunisia	72	46	8	18	32.6%	0.0%	8.3%	59.7%	0.35
Lebanon	52	26	16	10	23.1%	25.0%	11.5%	71.2%	0.38
Jordan	71	36	16	19	22.2%	18.8%	14.1%	74.6%	0.38
Egypt	165	63	76	26	15.9%	11.8%	6.7%	55.8%	0.28
Palestine	74	30	12	32	13.3%	16.7%	21.6%	77.0%	0.36
TOTALS:	623	335	156	132					

*The 'Rank' is calculated by the weighted results: RTD Topics: weight=4, FP7 Focus: weight=3, Company Descriptions: weight=1, CVs: weight=1

FP7 – Cooperation Program 2007 – 2013

Cooperation specific programme (32.4 B€)



The 7 Identified ICT Challenges



Driven by industry and technology objectives:

1. The **converged communication and service Infrastructure** that will gradually replace the current Internet, mobile, fixed and audiovisual networks.
2. The engineering of **more robust, context-aware and easy-to-use ICT systems** that self improve and self-adapt within their respective environments.
3. The **increasingly smaller, cheaper, more reliable and low consumption electronic components and systems** that constitute the basis for innovation in all major products and service.



The 7 Identified ICT Challenges



Driven by socio-economic goals:

4. **Digital libraries, knowledge and content development tools and applications** that will help us preserve, develop and disseminate our cultural assets, improve our learning and education systems and strengthen the creativity of our society.
5. ICT tools for **sustainable Health systems** enhancing our ability to monitor our health and well-being and to treat major illnesses and diseases.
6. **Intelligent and safe vehicles and technologies for environmental sustainability and energy efficiency** that are key requirements of our citizens.
7. ICT systems and applications for better **inclusion and independent living** of all citizens.

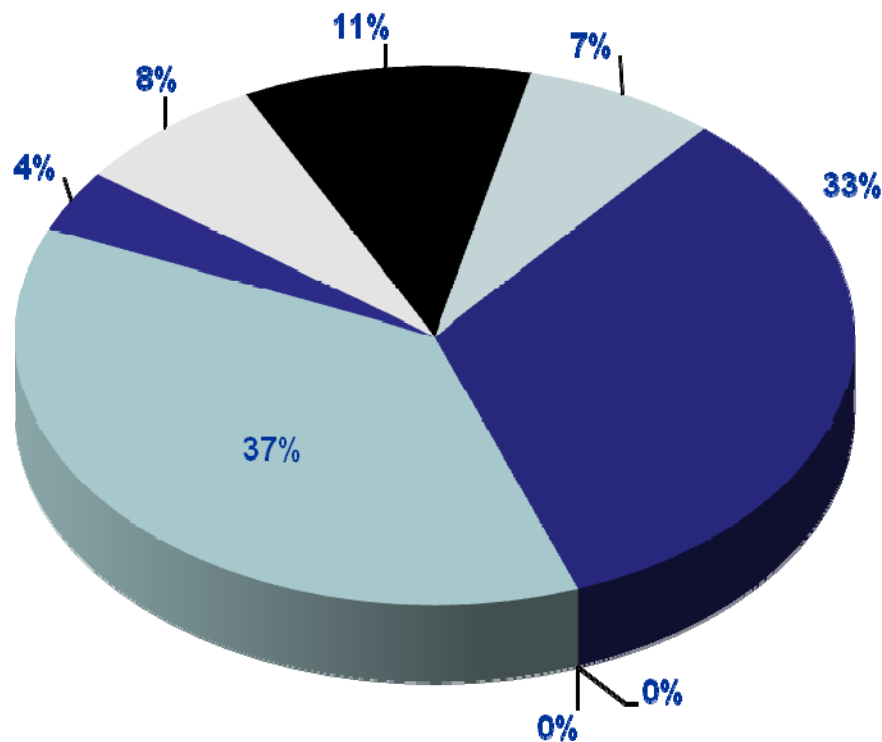


Strategic Research Agenda (SRA): Methodology

- Consultation of Key Stakeholders & Expert Meetings
- Identify Strengths
- Identify Country Future Challenges
- Propose Research Priorities in Line with Country challenges and EU Framework Program for Research (FP7)
- Elaborate MPC common **Priorities**
- Measure **Importance** vs **Feasibility** using the following criteria for each challenge:
 - Research & Technological Opportunities
 - Economic Impact
 - Social Impact
 - Research and Technological Potential
 - Application Potential

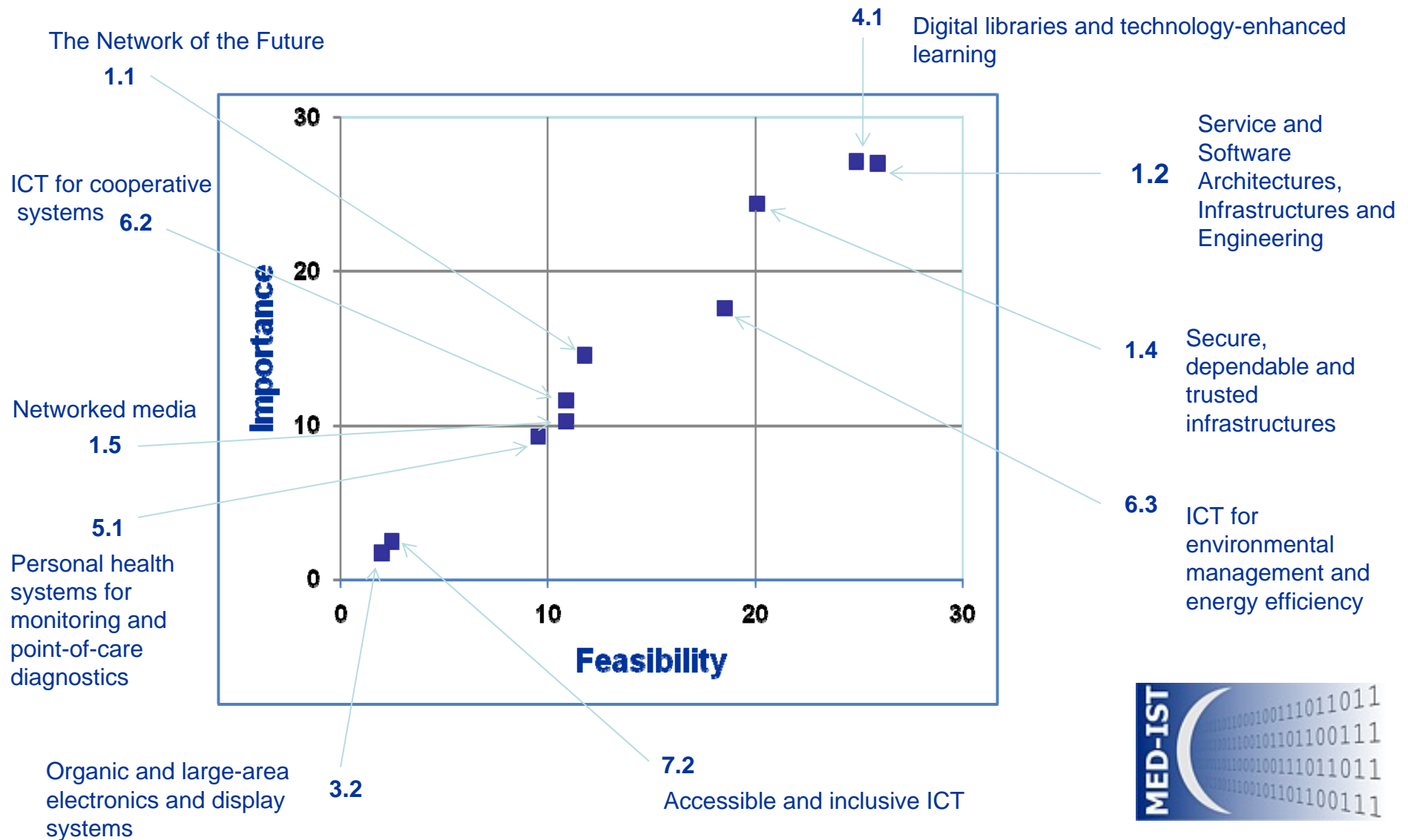
Consultation approach

Distribution of Participants

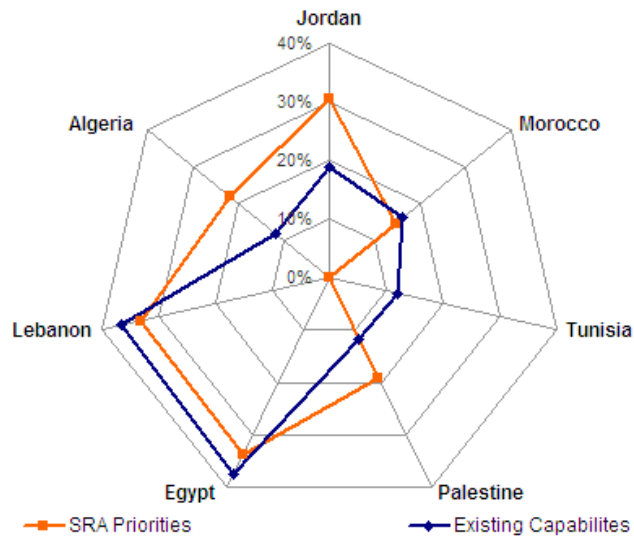


- Academic/Higher Education
- Industrial Research Organizations
- ICT Research Policy Advisory Groups
- GOVT, Others
- GOVT,Involved In ICT Research
- Other Business/Industry
- Citizen and Society Groups
- Others

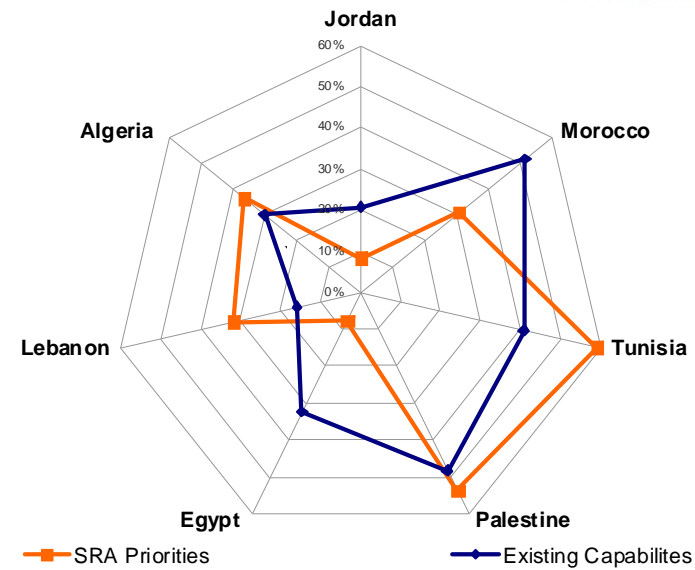
The Importance / Feasibility chart mapped on FP7



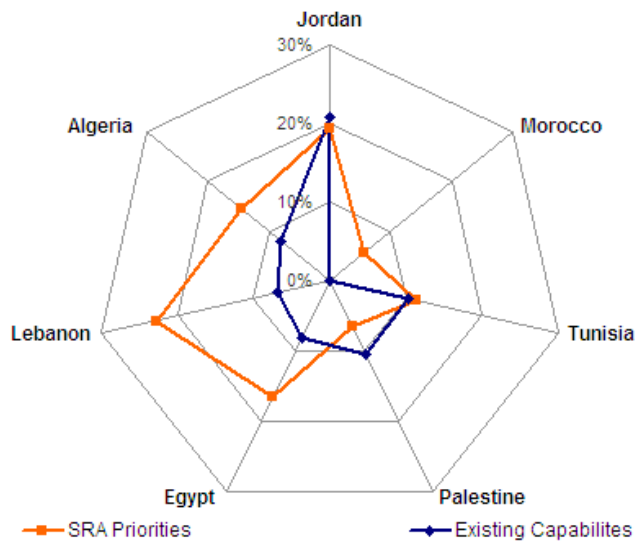
MPC identified challenges



Challenge 4: Digital Libraries and Content



Challenge 1: Pervasive and Trusted Network and Service Infrastructures

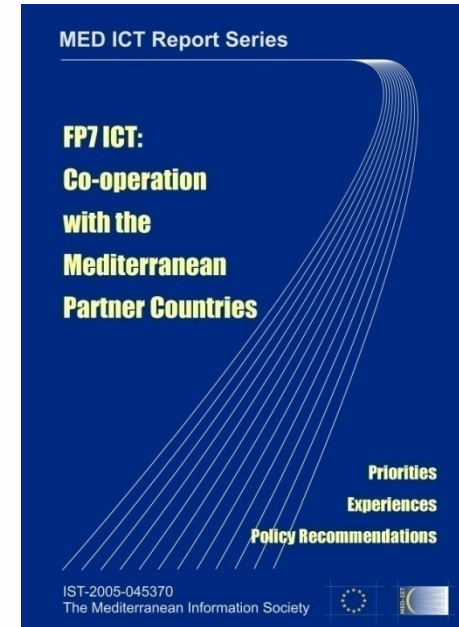
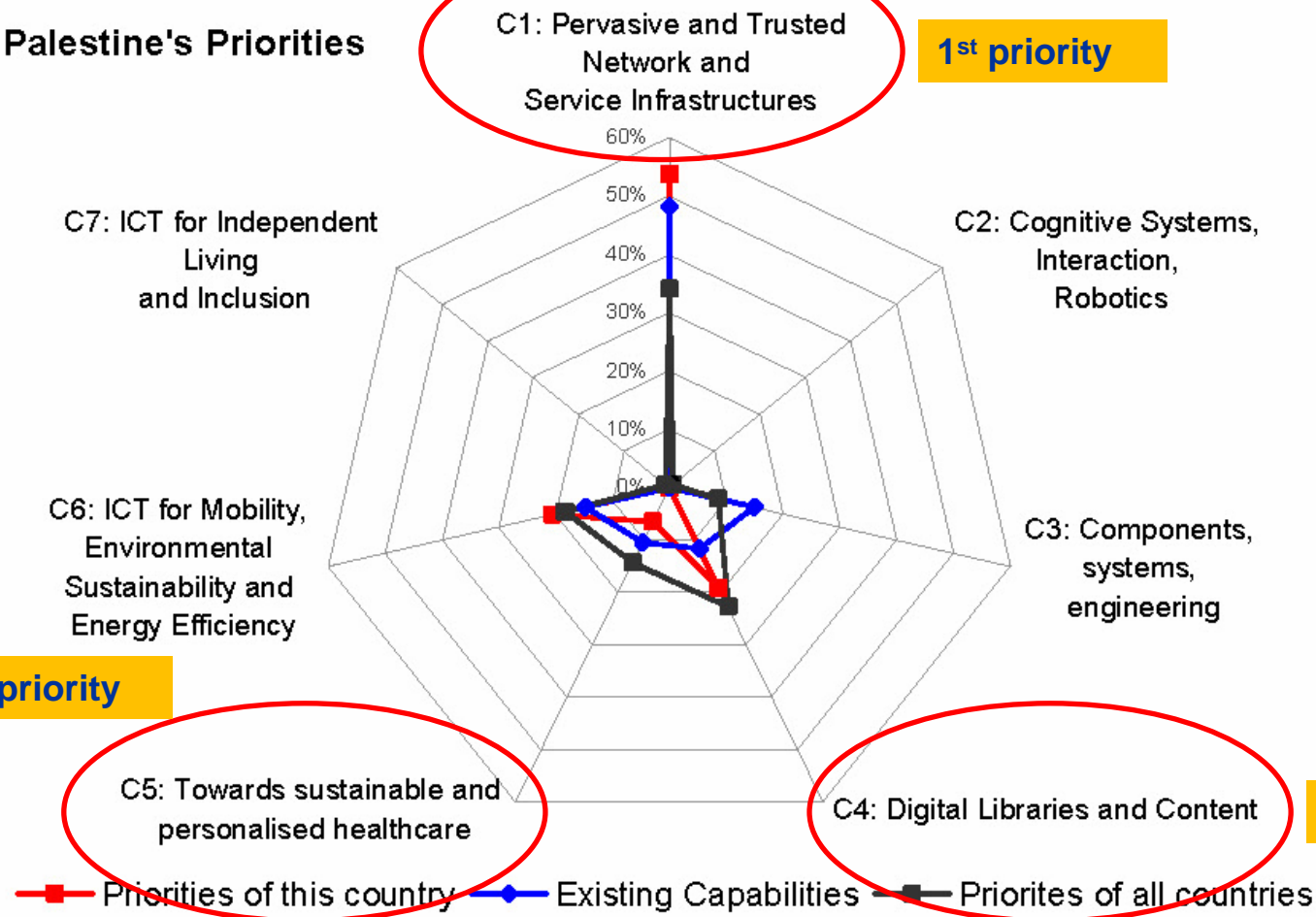


Challenge 5: Towards sustainable and personalised healthcare



Palestine priorities with regards to MPC

Palestine's Priorities



Common problems identified

- ❑ Understanding the **FP7 ICT** Objectives
- ❑ Defining current research capabilities of the country
- ❑ The basis for the future Priorities
- ❑ Understanding the difference between Research and Application
- ❑ Identifying research topics currently not covered by FP7

Recommendations: What MPC should tackle “internally”

Rank	Category
1	Human resources, education, training
2	Lack of RTD Funding
3	ICT Policies
4	Academia - Industry Co-operation
5	Infrastructure
6	Cooperation
7	Access to data and information

Mentoring/Training workshop held in Palestine

Training Course: **Proposal Writing**

Aims: In-depth understanding of proposal writing and acquisition of 'soft skills'

- Creativity (from a vague idea to a concrete objective)
- Communication (conveying own ideas and objectives to others)
- Team-work (projects only work as a team)
- Empathy (understanding and respecting the objectives of team members)
- Negotiation (understanding the other side)

Develop proposal ideas

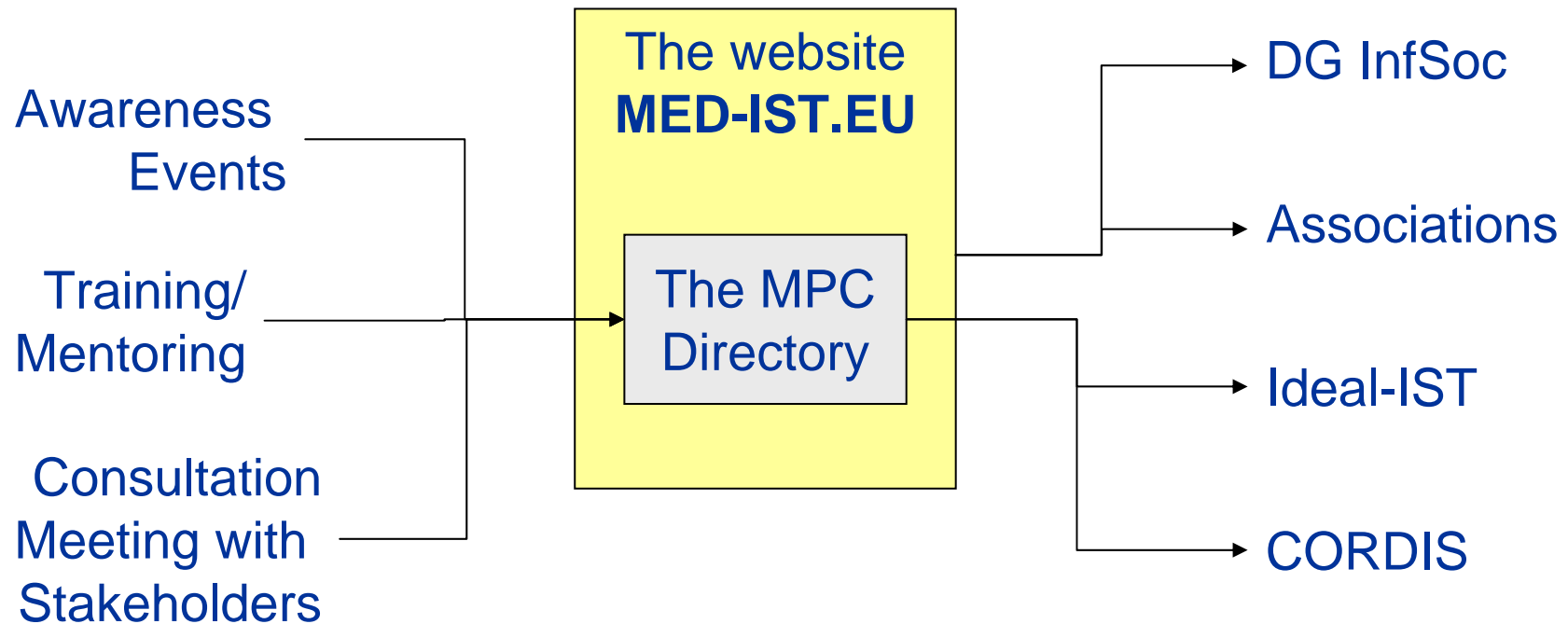
Ready for partner

P7

MPC – IST and Networking

On the MPC side:

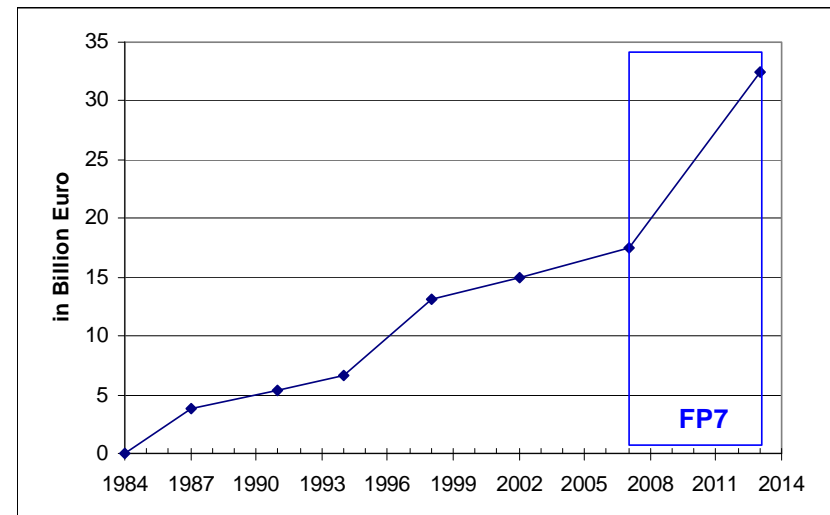
On the EU side:



Opportunities: Cooperation & Clusters

- ❑ Move forward
 - MPC-EU
 - MPC-MPC
 - **Intra MPC** (IT Centers of Excellences, PITA, etc)
- ❑ Emergence of Clusters of Countries for 3 Common Priorities:
 - Fairly Large Clusters for Common priorities C1, C4
 - Medium Size Cluster for C5
- ❑ May Also Consider C3 as a priority but with a Small Cluster for C3
- ❑ C6: Some strong priorities but Weak Potentials!

*European Funding Framework Programs:
EU-MPC partnership opportunities*



JOIN – MED (2008 – 2011)



JOIN-MED is a Specific Support Action (SSA) with 11 partners focusing on the **M**editerranean **P**artner **C**ountries (**MPC**), funded under FP7 (ICT).

Its main aims are:

- Creating an independent ICT Research Network – Building of MED-IST.**
- Facilitate the development of Networks.**
- Supporting Policy Dialogue Exchange.**

<http://www.join-med.eu>



MPC policies/ strategies identified and analyzed

Country	Title of official document	Primary scope of document
Algeria	“e-Algeria 2013”, (2008)	ICT sector development
Egypt	“Egypt’s ICT Strategy 2007-2010”	ICT sector development
Jordan	“Research & Development Strategy for Information and Communication Technology” (2007)	Promotion of scientific research & development in the field of ICT
Lebanon	“Science, Technology & Innovation Policy for Lebanon”, (2006)	Promotion of scientific research in various fields including ICT
Morocco	“eMorocco 2010 Strategy” (2007)	ICT sector development
	Morocco 2025 Research Strategies	Research perspectives for 2025 for various fields (not only ICT)
Palestine	“Palestinian National Strategy of Telecommunications and Information Technology 2005-2008”, 2005	ICT sector development
	“A Word from the Ministry of Education and Higher Education” (2009) Draft White Paper	Overview of the Science, Engineering, Technology, and Innovations (SETI) system and recommendations of policies for SETI
Syria	“National ICT Strategy for Socio-Economic Development in Syria” (2004)	ICT sector development
	“Tenth Syrian Five-Year Plan” (2006-2010)	Planning for various sectors. Includes a plan for Sciences, Technology, Research and Development that contains qualitative and quantitative objectives of R&D in Syria.
	“National Profile of the Information Society in the Syrian Arab Republic” (2007)	Current status of information society
Tunisia	“Scientific Research and Technology Innovation in Tunisia” (2006)	Promotion of scientific research across fields
	“Tunisia ICT Strategy” (2009)	ICT sector development

National ICT priorities identified in policies/strategies

ICT Priorities	ALGERIA	EGYPT	JORDAN	LEBAN-ON	MOROCCO	PALESTINE	SYRIA	TUNI-SIA
Digital Content (Arabic content)	✓	✓		✓	✓	✓	✓	✓
Internet, Broadband & Mobile Technologies	✓	✓	✓		✓	✓	✓	✓
ICTs for Learning / Education	✓	✓			✓	✓	✓	✓
ICTs for Government	✓	✓			✓	✓	✓	✓
ICTs for Enterprises	✓		✓	✓	✓			✓
ICTs for All	✓	✓			✓		✓	✓
ICTs for Health	✓	✓				✓		✓
ICTs for social and economic sustainable development		✓				✓		
Arabized Software Technologies		✓		✓		✓	✓	
Infrastructure development	✓				✓		✓	
Security	✓				✓			✓

ICT priorities in identified regional policy documents

<p>EUROMED Ministerial Conference on the Information Society Cairo, Egypt 26-27/February 2008</p>	<p>“Building an Enabling Environment for the EUROMED Information Society”</p>	<ul style="list-style-type: none"> • Multilingual e-content • E-learning • E-science • E-health • E-inclusion • E-government
<p>First Euro-Mediterranean Ministerial Conference on Higher Education and Scientific Research Cairo 18th June 2007</p>	<p>“Towards the Creation of a Euro-Mediterranean Higher Education and Research Area”</p>	<p><i>Not identified (as this document deals with Research across sectors, not specific to ICT)</i></p>
<p>The Euro Mediterranean Ministerial Conference on the Information Society “ Building and enabling Environment for the Euro Mediterranean Information Society”</p>	<p>“Investing in our Future: Building Together our Information Society”</p>	<ul style="list-style-type: none"> • Multilingual e-content (Arabic content) • Media convergence • E-learning • E-Government
<p>Cairo Declaration. Pan-Arab Document. Towards an Arab Information Society. “Common Action Plan for Collaborative Work”. Cairo, June 18, 2007</p>	<p>“Towards an Arab Information Society : Common Action plan for Collaborative Work”</p>	<ul style="list-style-type: none"> • E-Content (Arabic content) • E-Health (e.g. bioinformatics) • E-learning • Security of information networks

Preliminary findings of national policy review : differences among countries

	AL	EG	JO	LB	MO	PS	SY	TU
Types of strategies/ policies available								
Availability of a <u>dedicated strategy</u> for R&D in ICT	n/a	n/a	✓	n/a	n/a	n/a	n/a	n/a
Availability of a generic R&D / Science and Technology strategy addressing various fields including ICT	n/a		n/a	✓	✓	n/a	✓ ^[1]	✓
Availability of a national strategy for ICT development with provisions for R&D in ICT	✓	✓	n/a	n/a	✓	✓	✓	✓
Types of funding mechanisms available								
Existence of <u>dedicated</u> national funding for R&D activities in ICT	n/a	✓	n/a	n/a	✓	n/a	✓	✓
Existence of national funding for R&D activities across various fields including ICT	n/a	✓	✓	✓	✓	n/a	✓	✓
Type and availability of R&D programmes								
Existence of a <u>dedicated</u> national R&D programme for ICT (only)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Existence of a generic R&D programme funding activities across various fields including ICT	n/a	✓	n/a	✓	✓	n/a	✓	✓
If a dedicated or generic R&D programme is available, <u>definition of future medium to long-term R&D priorities</u> in the field of ICT	n/a		n/a	✓	n/a	n/a	n/a	n/a
Existence of periodic open calls for proposals for R&D in ICT within <u>defined (top-down) priorities</u>	n/a		n/a	✓ ^[2]	n/a	n/a	n/a	n/a
Existence of periodic open calls for proposals for R&D in ICT inviting <u>bottom-up proposals/ideas</u>	n/a		✓ [☉] ☉ ☉	✓ ^[4]	n/a	n/a	✓	✓

Further Future Actions

- Harmonized Policy
- EU-MPC Network
- National Science Fund
- STI Observatory

أكاديمية فلسطين للعلوم والتكنولوجيا

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