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List of Abbreviations

ENP	European Neighbourhood Policy
ENI	European Neighbourhood Instrument
EU	European Union
FP	Framework Programme
GCI	Global Competitiveness Index
GSO	Group of Senior Officials
INCO	International Cooperation Programme
InP	Information Point
IPR	Intellectual Property Rights
MIRA	Mediterranean Research and Innovation Coordination Action
MPC	Mediterranean Partner Country
NCP	National Contact Point
STI	Science, Technology and Innovation
WIPO	World Intellectual Property Organization

Executive Summary

This report focuses on four main obstacles to STI cooperation between the EU and the MPCs: 1) the scientific visas for researchers and other relevant personnel travelling from the MPCs to Europe, 2) National Contact Points (NCP) 3) Intellectual Property Rights (IPR) and, most significantly, 4) the asymmetry in capabilities between the two regions. Appropriate recommendations will be outlined. The aim of these recommendations is not simply to increase the possibility of doing even more collaborative research. Rather, they are guided by the need to go beyond the “performance” of research into ameliorating the asymmetry between the two regions and the “utilisation” of knowledge as an engine for economic growth and social development.

This is not an easy task in a region characterised by a significant knowledge deficit (UNDP 2003). The EU is not responsible for the myriads of failures in the region: they are mostly self-inflicted by decades of bad political management at all levels, from the state all the way down to firms and households. But the EU could do more for its next-door neighbours.

In the wake of the “Arab Spring”, the European Neighbourhood Policy (ENP) has been revised to cope with the new realities in the region. But this revision has been disappointing: it has simply removed the central commitment to promoting democracy, rule of law, and human rights, which was mainly rhetorical in the first place, and is now focusing instead on promoting free trade and ensuring the political stability of the region. But this is old wine in new bottles, and the focus on economic liberalisation and security cooperation, mistakenly thought to be the sources of political stability, is precisely what has not worked in the past and there is no reason to believe that it will fare any better in the future.

The European Neighbourhood Policy is the framework in which STI cooperation between the EU and the MPCs takes place, and one of the key recommendations of this report is that it must be rethought, and that STI cooperation, as a vehicle for transforming the economies and societies in MPCs, must occupy a more prominent place in any future Euro-Mediterranean cooperation. The reason for this is that no economy could hope to survive in an increasingly globalised and competitive world without an increase in its stock of knowledge, both tacit and explicit. And without knowledge-based economic development, political stability cannot be sustained. Another popular explosion in the region, driven by autocratic regimes supported by the main European and Western powers, and loss of economic opportunities especially for youth and women partly caused by free trade agreements under unequal terms of exchange, would be catastrophic for Europe. It is therefore in Europe’s own best interest to revise yet again its ENP, and to transform STI cooperation with the region from simple research collaboration into an effective vehicle for utilising knowledge in building more resilient and stable societies in the southern Mediterranean.

Obstacles to STI Cooperation between the EU and the MPCs

Cooperation in the field of Science, Technology and Innovation (STI) between the European Union (EU) and its Mediterranean Partner Countries (MPC) has been gradually evolving since the signing of the Barcelona Declaration in 1995. Thousands of southern Mediterranean researchers and students have benefitted from participating in joint research programmes with European counterparts and academic training in European universities. In addition, bilateral and regional capacity building projects benefitting research and academic organisations in the MPCs have been initiated (for an overview, see El-Zoheiry 2015).

However, despite many achievements in STI cooperation between the EU and the MPCs, this cooperation has so far failed “to have a real impact on the economic development of the MPCs.” (Rossano et. al. 2013: 52) Many obstacles have been identified. They range from deep structural constraints that could only be overcome over the long run, as part of the overall political, economic and socio-cultural development of the region, to lesser problems that could be easily overcome by slight policy and regulatory modifications.

This report focuses on four main obstacles, namely: 1) the mobility of researchers and students from the MPCs into Europe, 2) the role of the National Contact Points (NCPs), 3) the development and management of intellectual property rights (IPRs) and, finally, 4) the asymmetry of institutional and financial capabilities between the EU and its MPCs. By providing concrete recommendations on how to overcome these obstacles, the report hopes to contribute towards enhancing the enabling factors for STI cooperation between the EU and the MPCs.

I. Scientific Visas

One of the most demotivating experiences faced by many researchers from the MPCs who wish to travel to Europe in the framework of collaborative research programmes is obtaining an entry visa to an EU member state. This is an important hurdle to cooperation, and “we cannot talk of a Euro-Mediterranean Research and Innovation Space, with the actual system of visa delivery to the scientific partners from the MPCs” (Arvanitis et. al. 2013: 33). On the most basic subjective level, this is perhaps the most compelling aspects of the asymmetry that exists between the EU and the MPC partner countries in STI cooperation.

Unlike the three other obstacles discussed in this report, this is not a structural problem. In fact, as far as the EU itself is concerned, considerable effort has been made to solve it at the EU level. In 2005, the Council of the European Union issued Council Directive 2005/71/EC (12

October, 2005),¹ to regulate the procedures for admitting third-country nationals for the purposes of scientific research. In 2011, a comprehensive assessment was carried out of the implementation of the Directive by the member states (ICPMD 2011). One of the key findings of this assessment was that the member states chose to implement it in a highly selective and non-standardised manner, which created some confusion and uncertainty in the minds of many of the third-country nationals that were surveyed in the course of this assessment. More significantly, member states have mostly failed in creating a special visa category for researchers, and procedures for granting permits to stay in the EU for more than 90 days varied depending on the discretion and levels of skills of the staff at the visa issuing authorities of the member states. Additional administrative obstacles were identified for applications for short-term stays of less than 90 days.

The EC then, in 2012, launched a public consultation about the future rules on the entry and residence of non-EU national researchers, students, school pupils, unremunerated trainees and volunteers in the EU. This has culminated in a new directive, issued in May 2016: DIRECTIVE (EU) 2016/801 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 May 2016 on the conditions of entry and residence of third-country nationals for the purposes of research, studies, training, voluntary service, pupil exchange schemes or educational projects and au pairing.² Member states are expected to bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 23 May 2018 at the latest. Until then, the older directive of 2005 shall remain in force.

Recommendations

1. Both the European Commission and the Group of Senior Officials (GSO) must coordinate their efforts to lobby the EU member states to quickly transpose the most recent directive on scientific visas to their national legislation, and to give preferential treatment in consular sections to researchers, especially those requiring short-term visas (less than 90 days).
2. Until this lobbying bears fruit, project coordinators need to include the times required to obtain a visa (which could be up to 3-4 months) in their planning. Conferences and other meetings need to be planned well in advance. A month notice is certainly not sufficient, even for those working in some European universities who must obtain permissions to access travel funding many weeks in advance.

¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005:289:0015:0022:EN:PDF>

² <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016L0801&from=EN>

II. National Contact Points

The impetus for creating Information Points (InPs) in the Mediterranean Partnership Countries was given by the EU as part of the projects Euro-MEDANet and Euro-MEDANet 2 (2004-2006), both funded under the International Cooperation (INCO) measures of the 6th Framework Programme (FP6). The objective of Euro-MEDANet was to create a network of InPs in Morocco, Jordan and Tunisia, while the objective of Euro-MEDANet 2 was to do the same for Algeria, Egypt, Lebanon and Syria.³

The creation of these InPs, later called National Contact Points (NCPs), came as a response to three key problems that were identified at the time and which hindered cooperation between the EU and the MPCs: language barriers, lack of readily accessible information on opportunities for cooperation, and the difficulty of finding partners.⁴

Between one and three persons from each MPC were selected to fulfil the role of NCP. Over the next few years, the structure of the NCPs in the MPCs has evolved differently in different countries with respect to 1) the type of national organisation hosting the NCP and 2) the organisational model adopted. In some MPCs, the position of the NCP is located inside the relevant ministry, for example the Ministry of Education and Scientific Research in Egypt. This gives the NCP a reasonably good overview of the field, and a semblance of authority. In other countries, for example Lebanon and Algeria, the NCP is based in a higher education organisation or a research centre. On the other hand, in a country like Egypt, thematic and institutional contact points have formed, whereas in other countries, for example Algeria and Syria, only a National Contact Point has existed. Because of the establishment of the network of the NCPs, the rate of participation of MPCs in FP6 and FP7 has markedly increased. (Rossano et. al. 2013a: 150)

Despite the achievements, there is now a sense that the system of NCPs in the MPCs is not as effective as it should be due to several factors.

First, the skills and level of enthusiasm of the person fulfilling the role of NCP makes a difference. Often, the NCP position is either not remunerated at all or only partly remunerated, and the person occupying it usually carries out his or her tasks in addition to the tasks of their formal position. Almost all NCPs complain from budgetary constraints that do not allow them to reach out to their target scientific community through dedicated information days, for example.

³ See the project's website for more information:

<http://www.euromedanet.gr/content/display?prnbr=14661>

⁴ Sanaa Zebakh, interview, March 13, 2017. Ms. Zebakh served as the NCP for Morocco, 2005-2010.

Another key factor could be described as the political environment in which the NCP operates. Because the NCP position does not formally exist on the payroll of the civil service in MPCs, the capacity of the person fulfilling it is largely based on the good will and support of principals, whether the directors of the educational or research organisation in which the position is based or the minister in charge. A new leadership with new priorities has led in some countries to a more restrictive work environment for the NCPs, or even to a personnel reshuffle.⁵ As a recent internal evaluation report argues, the NCPs is a hub for knowledge and information sharing and a platform for coordination and communication. The person holding it profits from a continuous learning process and the accumulated experience is only the fruit of the period passed in the post. Changing the point of contact by another one with little experience in the field can only have a negative outcome, mainly due to the loss of valuable investment in terms of training and knowledge.

At the moment, there are no systematic EU funded projects for training new NCPs from the MPCs. The required level of intimate knowledge of the current EU framework programme, i.e. Horizon 2020, is inadequate, which greatly reduces the ability of the NCP to fulfil his or her main role, namely dissemination of information about possibilities for cooperation between members of the local research community in the MPCs and their European counterparts.

Recommendations

How to proceed with the system of NCPs in the MPCs depends on the aim. If the aim is to continue with the focus of performing research, then there is no need to do anything: the system will be as good or as bad as the institutional environment in which it is embedded, and the capacity of the EU to micro-manage it is very limited. The NCPs will simply continue to muddle through and provide as much service as they could, given the constraints. Besides, given the low level of involvement in H2020 by the MPCs, and the existence of networks of Euro-Mediterranean researchers that have been cooperating for the last few years, then there is no need to invest more in the NCPs, apart from the odd training here and there.

However, if the aim is to move beyond the performance of research into closing the gap of capabilities between the EU and the MPCs, and strive to utilise knowledge more effectively and profitably, mainly through forging stronger linkages between research and industry, then the system of the NCPs needs to be overhauled: as it exists now, it has little capacity to provide the type of service that fulfils the minimum standards of a robust NCP system (see European Commission 2013).

⁵ In Tunisia, for example, in the five years between 2004-2010, the National Contact Point changed four times. Earlier this year (2017), there was another change and it is not clear exactly what has been the criteria for nominating the new person who is now occupying the role of NCP. Similar problems related to the transparency by which the process of nominating a NCP takes place have happened over the last years in almost all MPCs.

The following steps could be suggested:

1. Make better use of the EU Twinning Instrument,⁶ which could be made available for STI cooperation if it becomes better mainstreamed within the European Neighbourhood Policy. One or more European experts, funded by the European Neighbourhood Instrument from bilateral allocations to each MPCs, could provide valuable support to the NCPs. Matching funds from the MPC government need to be secured to provide the NCP with a decent salary, an office, and communication equipment. A clear job description must be created according to best known practice and appropriate to the needs of each MPC.
2. Over the last few years, a structure of thematic NCPs has evolved. These thematic NCPs are based in universities and national research management organisations all over the MPCs. It would be useful to bring all national and thematic NCPs under one organisational roof in order to enhance consistency, and to acquire a good overview of the full breadth of STI cooperation between the EU and the MPCs.
3. Adequate financial resources must be made available to the NCPs. These financial resources should be used to hire NCPs on full-time rather than part-time or voluntary basis, to provide them with specialised training and to increase their mobility, either to the EU or to other MPCs.
4. Finally, it is recommended that NCPs, especially the thematic NCPs, should not be subject-matter experts as this may lead to a conflict of interest, whereby these subject-matter experts use their role as NCPs to act as gatekeepers. It is advisable that NCPs are hired from a pool of professional administrators who could then be provided with the required training that would allow them to fulfil their new specialised roles.

III. Intellectual Property Rights

There are three interrelated dimensions to the problem of IPRs in the MPCs. First, the division and protection of IPRs in the context of collaborative research projects. Second, the valorisation of research and research-industry collaboration. And, third, the enforcement of legal protection for IPRs.

The first dimension of the issue of IPRs is well regulated. There are adequate guidelines issued by the European Commission on the exploitation and dissemination of research project outputs and their protection as the intellectual property of the participating researchers and research organisations (see European IPR Helpdesk 2014, European Commission n.d.). In

⁶ https://ec.europa.eu/neighbourhood-enlargement/tenders/twinning_en

Horizon 2020, these guidelines are reflected in the official “rules of participation” in research actions and additional specifications concerning the management of intellectual property are found in grant agreements and other supporting documents included in specific calls for proposals. So far there have been no significant problems in this regard.

The second dimension is considerably more problematic and is a major weakness in the MPCs. The use of research outputs to foster economic and social development in the MPCs is a major challenge. It involves a transition from collaboration between the EU and the MPCs in performing joint research activities into cooperation for enhancing the utilisation of knowledge and developing the capacity of firms in the MPCs to innovate. For this to happen, closer linkages must be forged between researchers and industrialists. This can take various forms such as technology transfer units based in academic organisations, technology parks, and business incubators.

The MPCs have begun to forge such linkages in a systematic manner only in the last 10-15 years, mainly through the establishment of units in universities and research centres to encourage cooperation with industry (Menéndez 2013). But, so far, the results have been modest. A good indicator of how research is being utilised and commercialised is the number of registered patents.⁷ As can be seen in Table 1, the numbers of granted patents to residents, non-residents and those patents obtained abroad for the MPCs are embarrassingly low compared to two regional neighbours, Israel and Iran.

Table 1: Patents granted in 2014 in MPCs, Israel and Iran

Country	Residents	Non-residents	Abroad
Egypt	66	349	64
Tunisia (2013)	98	437	18
Morocco (2013)	145	792	13
Jordan	15	100	53
Lebanon	55	261	12
Algeria (2015)	74	279	5
Israel	690	3294	5257
Iran	2880	180	43

(Source: Country Profiles of the World Intellectual Property Organization <http://www.wipo.int/directory/en/>)

Many obstacles facing innovation in the MPCs have been identified. A recent study conducted in the context of the MIRA project (Mediterranean Research and Innovation Action) (Degault

⁷ As Kinga Konya rightly remarks (private communication, 19.01.2018), different forms of commercializing property rights ought to be taken into account here, such as franchising, spin-offs and license agreements. However, the number of registered patents serves as a concise proxy for research-industry linkages, and the objective here is to highlight a general trend rather than discuss in detail the wider problem of knowledge utilization as such.

et. al. 2013: 253) has listed 41 technology parks projects, 50 incubators and more than 50 technology transfer units in the MPCs. But the technology parks, about 75% of them created after 2005, are suffering from inadequate interest from researchers and firms. The incubators are either traditional university incubators with little activity or small businesses providing mainly administrative services. And the technology transfer units, 80% of them created after 2008, are poorly staffed and have little capacity to provide an adequate service.

Problems exist on both the supply and demand sides of the technological innovation process. On the supply side, universities in the MPCs have traditionally focused on teaching as their main function. Later, in the 1990s, research has gradually been added as a second function, but usually without due consideration to its practical, business-side applications: most research topics are selected according to the random interests of the researchers and not according to any strategic market-oriented priorities. Moreover, cumbersome regulations, especially with regards to financial compensation for the researchers, do not provide a sufficient incentive for researchers to explore opportunities for cooperation with industry. Finally, the number of publications in scientific journals has been the main indicator for evaluating quality. As a result, the region has seen a considerable increase in the number of scientific publications: Tunisia and Jordan, for example, outperform the world's average of 147 publications per 1 million inhabitants. However, if the number of patents granted to individual researchers or academic organisations is used instead as an indicator, and as Table 1 shows, then the MPCs must be seen as performing rather modestly relative to their peers, a fact which reflects the low orientation in universities to the needs of industry (Menéndez 2013: 239-240).

On the side of demand, most industrial entrepreneurs do not have long-term strategic visions to make best use of available, locally produced technologies. The risks involved, in operating investment climates that are far from being optimal, make them choose to import ready-made technologies rather than building their own research and development capacity. Moreover, most industries in the MPCs are small or medium-size, and they lack the financial and human resources to start meaningful and long-term cooperation with academia. In addition, they lack the information about possibilities for international cooperation such as those provided by the EU's Framework Programmes. Consequently, their participation has been remarkably low – until 2011, in the 168 FP7 projects involving MPCs, mainly from Morocco, Tunisia and Egypt, the participation of firms did not exceed 10% (Rodríguez-Clemente et. al. 2013: 137, Menéndez 2013: 241).

The weak demand for knowledge by firms has implications for the third dimension of IPRs discussed in this report – their protection by the state. All MPCs score badly. Jordan is the best performer, occupying rank 35 out of 140 countries with regards to intellectual property

protection in the 2015-2016 edition of the Global Competitiveness Index (GCI). Behind Jordan is Morocco (61), Tunisia (90), Algeria (105), Egypt (108) and Lebanon (122).⁸

The problem is not about legislation. In all MPCs, IPRs enjoy sufficient legal protection. The Country Profiles section on the website of the World Intellectual Property Organization (WIPO) provides detailed information of relevant legislation in the MPCs, their participation in multilateral and bilateral IPRs treaties, bodies and agreements, and information on efforts that are made in each country to increase awareness about the importance of IPRs and why they must be protected.⁹ In fact, as a recent OECD report on protection of investment in Egypt, Jordan, Morocco and Tunisia remarks (OECD 2014: 20-21), the regulatory framework is largely in line with intentional standards of protection. Rather, the problem is located “in the institutional setup for enforcing these regulations.” The report then goes on to add: “Governments therefore may wish to focus their reform efforts on streamlining government bodies in charge of enforcing IPRs regulations, as they often appear to be scattered over various ministerial agencies.”

This assumption, that MPCs have the will to enforce IPR but somehow lack the means, or the technical capacity, or the intelligence to do so is false, and is sadly shared by Western researchers indoctrinated in a specific paradigm of economic thinking. The causal link between the protection of IPRs and economic growth, through its function as an incentive for innovation, is far from being straight-forward, a discussion that is not within the scope of this report. Suffice it to say that what is perceived, wrongly, as inadequate enforcement of IPRs not only in the MPCs but in many other parts of the developing world is driven by complex cultural, economic and political considerations. These make policy makers and their law enforcement agents realise that in many cases, enforcement of IPRs is neither politically feasible nor economically desirable. The challenge of course remains, where exactly to strike the balance between these pragmatic and rational considerations, on the one hand, and the need to provide meaningful incentives for industrial entrepreneurs to reach out to the research community and increase their demand for the type of intellectual products that they could offer.

Recommendations

The number of patent applications is only an indicator of the level of innovation in an economy, and the protection of IPRs will be more effective when there is a critical mass of property rights holders who demand such protection. The challenge here, now, facing MPCs is how to forge closer linkages between research and industry to support innovation. One of

⁸ <http://reports.weforum.org/global-competitiveness-report-2015-2016/competitiveness-rankings/>

⁹ See <http://www.wipo.int/directory/en/>

the outcomes of the MIRA project are the following 12 recommendations that seem to be comprehensive enough to require further elaboration.

Table 2: 12 Proposals for Promoting Innovation in the Mediterranean (Degault et. al. 2013: 254-256)

Proposal	What?	How?
An online platform for collaboration and promotion	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 those 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
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	With the organisation of business plan competitions and by encouraging emulation with financial incentives. By measuring the impact of financing and raising interest towards results among the staff of the innovation support structures
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 7th 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

IV. Asymmetry

In terms of financial allocations, STI cooperation between the EU and the MPCs occupies a marginal place in the European Neighbourhood Policy (ENP). For example, in the new European Neighbourhood Instrument (ENI), up to €1,1 billion of EU assistance has been earmarked for Egypt in the period 2014-2020.¹⁰ But only €20 million (1.8% of the total) are dedicated to STI, through the second phase of the Research, Development and Innovation

¹⁰ <http://ec.europa.eu/research/iscp/index.cfm?lg=en&pg=egypt>

programme.¹¹ In addition, over a period of six years, 2007-2013, 129 Egyptian researchers participated in projects funded under the 7th EU's Framework Programme (FP7), receiving €15 million for their contribution, out of a total budget of €226 million.¹²

To put this figure in a comparative context, Egypt's neighbour, Israel, has been the first non-European associate to the EU's Framework Programme. Since 1996, it has paid an overall contribution of €1,375 billion. In return, Israel received about €1,7 billion in research grants that allowed 4,435 Israeli researchers to participate in more than 3000 projects.¹³ This figure dwarfs the €60 million overall value of EU STI grants to all the Mediterranean Partner Countries (MPCs) participating in FP7 (Morocco, Algeria, Tunisia, Libya, Egypt, Jordan, Palestine and Syria). (European Commission 2014: 80)

These are meagre figures that do not reflect the importance that must be attached to knowledge as a driver of economic growth and structural transformation. (Veblen 2003 [1915], Gerschenkron 1962, Romer 1986, Amsden 1989). And they raise the question why, after 20 years of STI cooperation between the EU and the MPCs, not much more could be achieved.

Observers suggest that the main obstacle is the asymmetry which exists between STI systems in the member states of the EU and the MPCs. (El-Zoheiry 2015, Semararo et. al. 2013: 208-209, Arvanitis et. al. 2013: 31-32) This is not surprising, given the huge disparity between Europe and the southern Mediterranean countries in their governance structures, number of researchers, research budgets, and the variance in the demand for knowledge by governments and the private sector (see Arvanitis 2007).

There are two dimensions to this asymmetry: institutional and financial. Regarding the institutional asymmetry, the EU and the MPCs have largely "non-compatible" STI national systems leading to the outcome that most researchers from the MPCs find it difficult to handle the administrative aspects of participating in EU funded projects. (El-Zoheiry 2015: 72, Rodríguez-Clemente 2013: 203)

As for financial asymmetry, reflecting on the Barcelona Process 10 years after its inception, Shoefthaler has observed that the Euro-Mediterranean Partnership has "turned into an instrument of 'external action', cared for by the European Commission and chaired by the rotating EU Presidency. Almost all its budgets are decided upon within the EU's structures, and follow its administrative and financial rules. Everything is a 'project', leaving little space

¹¹ <http://www.rdi.eg.net/Pages/Default.aspx>

¹² <http://ec.europa.eu/research/iscp/index.cfm?lg=en&pg=egypt>

¹³ <http://ec.europa.eu/research/iscp/index.cfm?pg=israel>

for synergies and strategies, and not much room for joint decision-making. The language of development assistance divides partners into ‘donors’ and ‘beneficiaries’.”

Consequently, most of what has happened in terms of STI cooperation over the last 20 years, since the signing of the Barcelona Declaration in 1995, has mostly focused on the “performance” of research: accessing Framework Programmes, finding partners, and conducting research at universities or research centres. But making the shift from doing research into “utilising” knowledge in a way that could transform the economies of the MPCs and enhance their long-term stability has been elusive. Without creating effective demand for locally-produced knowledge, there would simply be neither incentive nor potential for narrowing the gap of capabilities that currently exists between the two neighbouring regions.

This points to a deeper dimension of the structural asymmetry between the EU and the MPCs. In almost all MPCs, the state continues to be the main sponsor for scientific research, which is usually done through archaic national systems that are artificially separated from the wider society. This reflects the fact that science is only on the agenda if it is applied. As such, “technology is disconnected from the making of science: knowledge is only valued if useful, and learning is not a value per se.” (Arvanitis 2007: 42-43)

Here it might be useful to note that this specific instance of asymmetry in STI cooperation, due mainly to the weak public and private demand for scientific learning in the MPCs, reflects and is partly caused by the wider asymmetry which characterises the overall framework of cooperation between Europe and its southern neighbours, namely the Euro-Mediterranean Partnership.

The core of the Euro-Mediterranean Partnership lies in economic liberalisation and the removal of the barriers to trade between the EU and the MPCs. The Association Agreements signed between the EU and separate MPCs (except for Syria and Libya) have led to an increase in the volume of trade in manufactured goods and raw materials between the two regions (but not in agricultural products, where the MPCs have a comparative advantage - a key reflection of the asymmetrical bargaining power between the two regions). Consequently, the trade imbalance between the two regions has been consistently growing in favour of Europe, increasing almost fivefold between 2006 – 2016, from €11,491 billion in 2006 to €60,341 in 2016. (European Commission 2017: 3)

Free trade when introduced to countries with a weak institutional environment, as it is the case with the MPCs, can have negative outcomes. In a seminal study on the 19th century development experience of several countries including Burma, Egypt, India and China, the authors (Morris and Adelman 1989: 1428) argue that the rapid expansion of markets and integration in the global economy “can have consequences unfavourable to the majority of the population if pursued in countries where institutions cause a very narrow distribution of

the proceeds from economic growth. [...] Where only a small proportion of the population has the capacity to compete internationally, free trade will produce, at best, rapid, narrowly based, and highly inequitable growth.”

What was true then, during the colonialist era, is still true today. In a recent contribution, Rodrik (2015) notes the worrying trend of “premature industrialisation” in the developing world brought about by free trade under unequal terms of exchange and labour-saving technological progress. He warns that deindustrialisation has significant economic and political ramifications including lower economic growth and democratic failure. (See also Shafaeddin 2005) The degradation of textile manufacturing in Egypt is a case in point. Until the 1990s, the sector, building on Egypt’s comparative advantage as one of the most important cotton producers in the world, has grown to employ 360,000 workers. The industry, concentrated in the Delta region, has been a locomotive of local development. By 2013, and after a series of privatisations, downsizing and the introduction of labour-saving technology by private investors, the sector now employs not more than 60,000 workers. Estimates of its losses could be as high as 6 billion Egyptian pounds annually (Charbel 2013). Equally significant, the agitation by the workers of the Egyptian textile factories, against reduced benefits and job losses, and their incessant industrial action since 2006, has been one of the key factors precipitating the 2011 revolution and the institutional meltdown that followed it. Lack of employment leads to political instability, which squanders any benefits from growth.

Deindustrialisation, an outcome of competing exports of manufactured goods from the more developed to the less developed regions of the world, also has a subtle and negative impact on the demand for commodified knowledge: as the experience of the early industrialised countries in Western Europe (Chang 2002) and the late industrialised countries in East and South East Asia (Amsden 1989, Oyelaran-Oyeyinka and Sampath 2010) shows, industry is the vehicle of learning, innovation and knowledge creation. This is clearly reflected in the share of private expenditure on research and development. In 2009, average business expenditure for the EU 28 was 54.1% of total public and private expenditure on research and development. In China and South Korea, it was more than 71%.¹⁴ In Egypt, it was 10%, Jordan (3%), Tunisia (14%) and Morocco, the best performer, it was 22%. (Menéndez 2013: 238)

Other statistics, whether the number of patents registered by residents, or the share of high-technology components in manufactured exports, or the number of researchers employed by industry, when correlated with good governance indicators, all point to the intimate causal link between industrial development, knowledge production and utilisation, national systems of innovation, socio-economic development, social welfare and political stability. (Oyelaran-Oyeyinka and Sampath 2010)

¹⁴ Eurostat Table <http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

Europe should not be seen as solely responsible for the asymmetry that exists between it and the MPCs, in STI cooperation and more generally: the ultimate responsibility lies with the MPCs themselves. But the huge accumulated deficit in the trade of goods and raw materials in favour of Europe, €437,285 million between 2006 – 2016, is not helping in developing robust industrial potential in the MPCs. And without industrialisation, demand for knowledge would remain weak, and the asymmetry in the research and development capacity between the EU and the MPCs will probably widen. Europe could do more to balance its trade interests with the wider interest of enhancing the capacity of the MPCs to transition into more knowledge-based economies, which is perhaps the best guarantee for sustaining political stability on the southern shores of the Mediterranean.

Recommendations

The asymmetry between the EU and the MPCs is complex and affects all aspects of cooperation. Focusing on cooperation in the field of STI cooperation, and keeping in mind that it does not exist in a vacuum: other policy domains affect it and is affected by it, and pursuing a vision that goes beyond the performance of research into a more optimal utilisation of knowledge in the process of economic development, the following steps could be taken:

1. Research needs to be commissioned to explore the factors preventing the MPCs from transitioning into full-fledged knowledge-based economies. In particular, the research should focus on the causal mechanism linking the free trade agreements between the EU and its southern neighbours, the impact of these agreements on the loss of manufacturing and industrial capacity, the negative implications of this for the growth of knowledge, and how the loss of economic competitiveness, as a result, will impact the prospects for political stability in Europe's southern neighbourhood.
2. Parallel to this research, and eventually building on its outputs, internal dialogue inside the European Union must take place to explore the obstacles, and internal contradictions (particularly between Europe's trade and security interests, on the one hand, and the long-term dynamics of economic development and political stability in the southern Mediterranean region, on the other hand). One of the main objective of this inter-departmental dialogue in the EU is to explore ways of mainstreaming STI cooperation in the European Neighbourhood Policy (ENP). It is interesting to note that, as a policy area, ENP is part of the EU's priority of being a Stronger Global Actor.¹⁵ In addition to the High Representative for Foreign Affairs and Security Policy, four other EC departments contribute to this priority: European Neighbourhood Policy and Enlargement Negotiations, Trade, International Cooperation and Development and,

¹⁵ For a list of the 10 priorities policy areas of the EU, see https://ec.europa.eu/commission/priorities_en

finally, Humanitarian Aid and Crisis Management.¹⁶ Conspicuous by its absence in this priority is the Directorate-General of Research and Innovation, which perhaps explains the marginal role that STI cooperation occupies in the wider framework of the European Neighbourhood Policy.

3. On a more programmatic level, one way to reduce asymmetry, as has been suggested recently (Semararo et. al. 2013), is to increase the amounts of co-financing by the MPCs in collaborative research projects. One possibility, already enjoyed by Tunisia, is to become associated with the EU's Framework Programme. But this option is costly for other MPCs, and it is not clear whether this option is favoured by the EU's scientific research officials. A better option would be initiatives similar to the new PRIMA initiative.¹⁷ Such peer-to-peer cooperation can be a good basis for recasting the "partnership" between the northern and southern shores of the Mediterranean as a more symmetrical, mutually beneficial arrangement.

Conclusion

Despite the various obstacles, STI cooperation between the EU and the MPCs has brought many benefits to participating researchers from the MPCs. But its potential is far greater than what already exists. It is not conceivable that any economy could survive nowadays without investments in knowledge acquisition, either through learning, invention or innovation. The EU is uniquely positioned to provide valuable assistance and forge a genuine partnership with its southern neighbours. For this to happen, the problems discussed in this report, and other problems and contradictions that are adversely preventing Euro-Mediterranean cooperation, could be overcome with the type of good will and spirit of cooperation that has prevailed until now.

The key challenge is to make the transition from cooperation for the sake of performing research into collaboration for establishing peace, security and prosperity in the Mediterranean through effective utilisation of knowledge. All the ingredients for doing this are already in place.

¹⁶ See https://ec.europa.eu/commission/priorities/stronger-global-actor_en

¹⁷ <https://ec.europa.eu/research/environment/index.cfm?pg=prima>

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