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SCIENCE, TECHNOLOGY AND INNOVATION AS DRIVERS FOR ECONOMIC DEVELOPMENT IN THE SOUTHERN AND EASTERN MEDITERRANEAN COUNTRIES: WHAT ROLE FOR THE EU?

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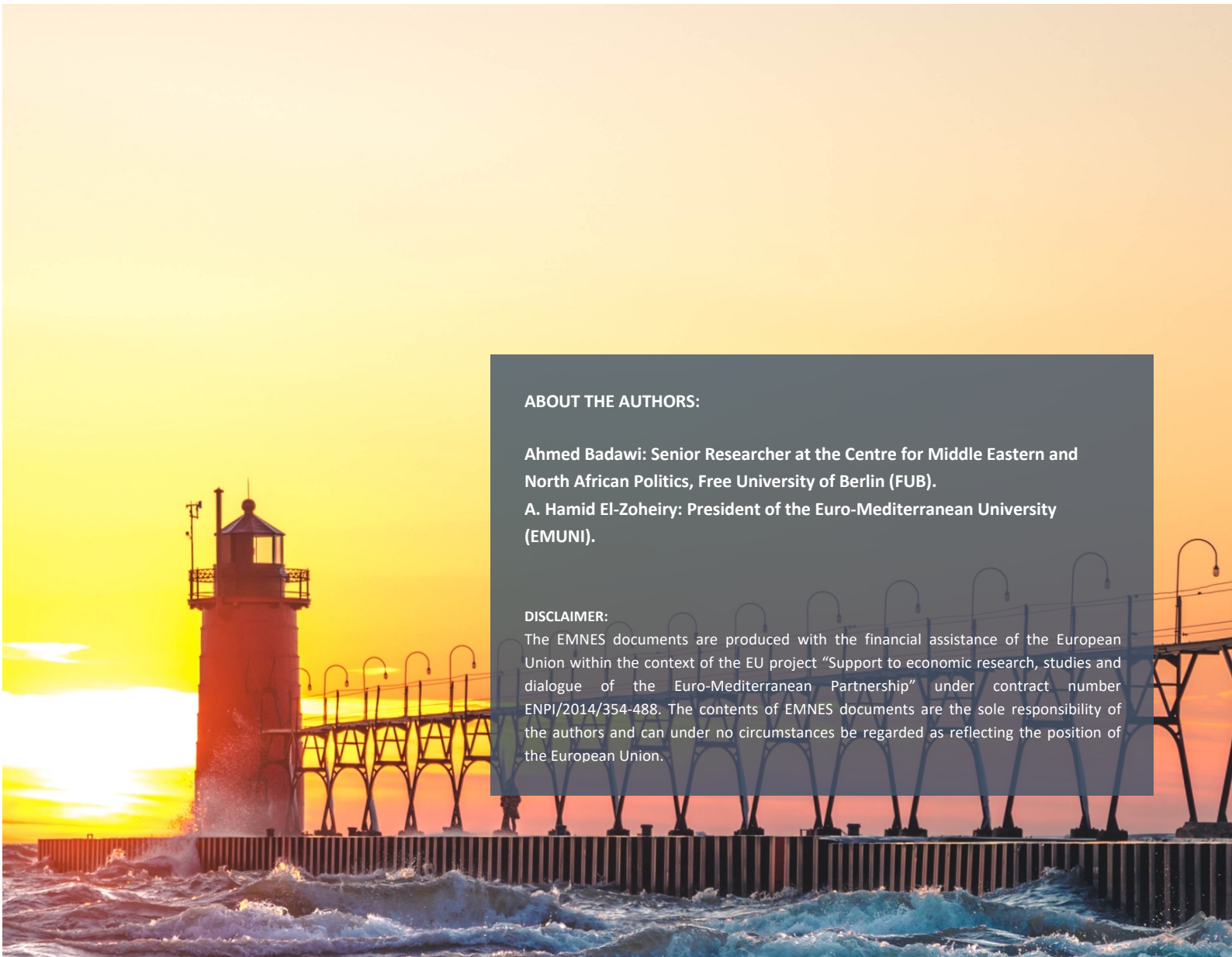

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ABSTRACT

This paper provides a critical examination of the cooperation in the field of Science, Technology and Innovation between the European Union and the Southern and Eastern Mediterranean Countries. It provides an overview of the main features of this cooperation and then focuses on two of the main problems facing it, namely the gap between the supply and demand for knowledge in the Southern and Eastern Mediterranean Countries, and the asymmetry between the systems of knowledge production and utilisation in the EU and its southern neighbours.

It draws attention to the need for spurring industrialisation in the southern Mediterranean, as the engine for enhancing demand for economically useful knowledge. The paper concludes with a set of policy recommendations.

INTRODUCTION

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

However, despite some considerable achievements benefitting mostly individual researchers and students, this cooperation has so far failed "to have a real impact on the economic development of the Mediterranean Partner Countries (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.

One of the main problems is that STI cooperation between the EU and the Mediterranean partner countries occupies a marginal place in terms of financial allocations. 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.[1] But only €20 million (1.8% of the total) is dedicated to STI, through the second phase of the Research, Development and Innovation programme.[2] Prior to that, over a period of six years, 2007-2013, only 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 projects budget of €226 million.[3]

To put this figure into 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 3,000 projects.[4] This figure dwarfs the

[1] http://ec.europa.eu/research/iscp/index.cfm?lg=en&pg=egypt
[2] http://www.rdi.eg.net/Pages/Default.aspx
[3] http://ec.europa.eu/research/iscp/index.cfm?lg=en&pg=egypt
[4] http://ec.europa.eu/research/iscp/index.cfm?pg=israel

€60 million overall value of EU STI grants to all the Mediterranean partner countries 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, and they raise the question why, after more than 20 years of STI cooperation between the EU and SEMCs, has not much more been achieved?

This policy paper [5] takes a sober view of the cooperation in the field of STI between the EU and SEMCs. It focuses, in particular, on the problem of asymmetry between the supply and demand for knowledge in SEMCs and between the research and innovation systems in the two regions and argues that more is needed to overcome these imbalances that are hampering the transfer and utilisation of knowledge in the Euro-Mediterranean space. It concludes with policy recommendations, aimed at enhancing the role that the EU could play in spurring knowledge-based economies in its southern neighbourhood.

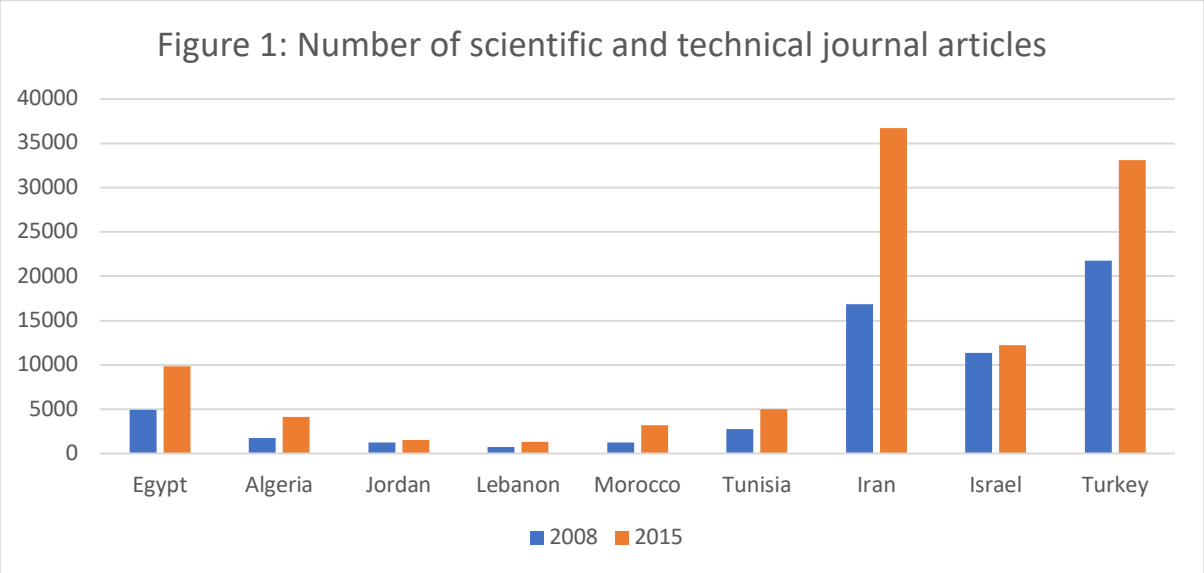
STI IN THE SEMCS: SALIENT FEATURES

Most of what has happened in terms of STI cooperation between the EU and SEMCs 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 Mediterranean partner countries and enhance their long-term stability, has been elusive.

In terms of scientific output, the annual number of publications in scientific and technical journals in SEMCs has significantly increased in recent decades. Although they still fall far behind their neighbours Iran, Israel and Turkey, as Figure 1 shows, such publications have increased by almost 23% per cent in Jordan between 2008-2015, from 1224 to 1509. In Lebanon, the increase during the

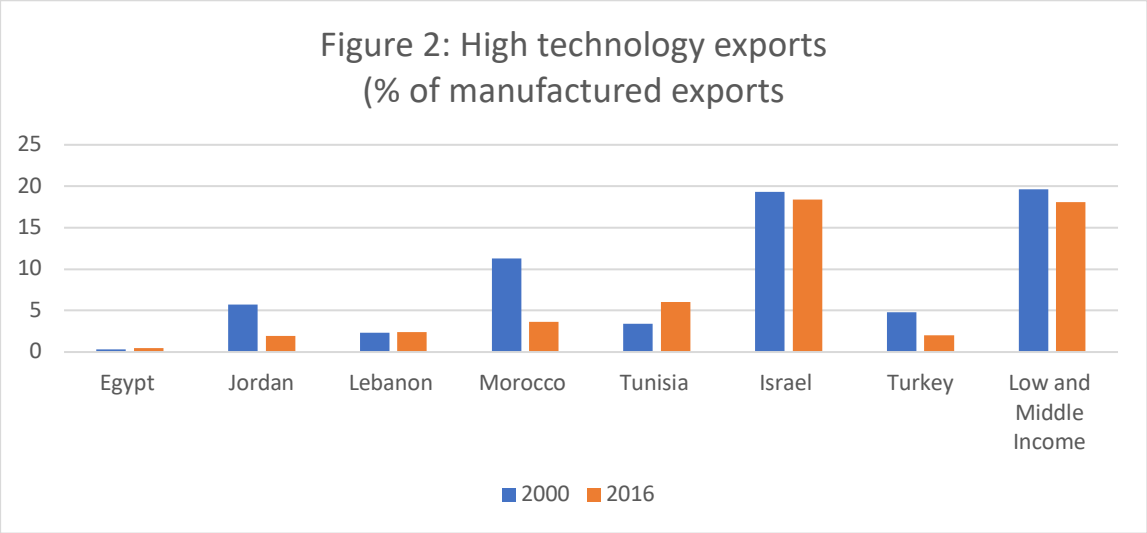
[5] This paper is a result of a participatory process in which EMNES researchers worked together in groups at two policy workshops held in Brussels in July 2018 and in Piran in October 2018 to combine the findings of research that has been formulated into policy options and recommendations. The group included Cinzia Alcidi, Rim Ben Ayed Mouelhi, Mohamed Goaied, Wajdi Kthiri, Carlo Sessa and Heba Zaki. This paper has been reviewed by Rym Ayadi (EMNES).

same period has almost been 78%, close to the 80% increase in Tunisia. In Egypt, the increase was almost 100%, in Algeria 135% and in Morocco 160%.



Source: World Bank World Development Indicators (https://data.worldbank.org/indicator?tab=all)

This increase in the "performance in research", however, has not been matched by any significant increase in the "utilisation" of research for economic development. Looking, for example, at high technology exports as a percentage of all manufactured exports in SEMCs (Figure 2), a deterioration, most notably in the case of Morocco, is notable: in 2000, almost 11% of its manufactured exports consisted of high technology goods. But by 2016, this percentage has fallen to just over 3%. On the other hand, three countries have seen an improvement in their high technology exports. Egypt and Lebanon, with a very modest increase, and Tunisia with a significant increase. But even in the case of a good performer like Tunisia, the percentage of its high technology exports, relative to its total volume of manufactured exports, is dwarfed by Israel and by the average figure for low and middle-income countries.



Source: World Bank World Development Indicators (https://data.worldbank.org/indicator?tab=all)

Another indicator of how research is being utilised and commercialised is the number of registered patents. As can be seen in Table 1, the numbers of granted patents to residents, non-residents and those patents obtained abroad for the SEMCs are embarrassingly low compared to two regional neighbours, Israel and Iran.

Table 1: Patents granted in 2014 in SEMCs, 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 Organisation http://www.wipo.int/directory/en/

THE PROBLEM OF THE SUPPLY AND DEMAND OF KNOWLEDGE

The use of research outputs to foster economic and social development in SEMCs is a major challenge. It involves a transition from collaboration between the EU and SEMCs in performing joint research activities into cooperation for enhancing the utilisation of knowledge and developing the capacity of firms in SEMCs 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 SEMCs 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 study conducted in the context of the Med-SPRING project (Mediterranean Science Policy, Research and Innovation Gateway) (Degault et. al. 2013: 253) has listed 41 technology park projects, 50 incubators and more than 50 technology transfer units in SEMCs. But the technology parks, about 75% of which have been created since 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 which have been created since 2008, are poorly staffed and have little capacity to provide an adequate service.

This points to deep problems that exist on both the supply and demand sides of the technological innovation process. On the supply side, universities in SEMCs 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 nor its societal impacts: 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. In addition to the information in Figure 1 above, it might be useful to add here that 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 SEMCs 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 demand side, most industrial entrepreneurs do not have long-term strategic visions to make best use of available, or invest in new, locally produced technologies. The lack of entrepreneurial culture to invest in innovation and the risks involved, in operating investment climates that are far from being optimal, makes them choose to import ready-made technologies rather than building their own research and development capacity. Moreover, most industries in SEMCs 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 SEMCs, 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, and their reluctance to invest in innovation, reflects another problem related to intellectual property, namely their protection by the state. All SEMCs 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).[6]

The problem is not about legislation. In all SEMCs, IPRs enjoy sufficient legal protection. The Country Profiles section on the website of the World Intellectual Property Organisation (WIPO) provides detailed information of relevant legislation in SEMCs, their participation in multilateral and bilateral IPR 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.[7] 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 international standards of protection. Rather, the problem is located "in the institutional set-up 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 IPR regulations, as they often appear to be scattered over various ministerial agencies."

[6] http://reports.weforum.org/global-competitiveness-report-2015-2016/competitiveness-rankings/
[7] See http://www.wipo.int/directory/en/

This assumption, that SEMCs 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 to say, that what is perceived, wrongly, as inadequate enforcement of IPRs not only in SEMCs 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 remains: on one hand, where exactly to strike the balance between these pragmatic and rational considerations and, on the other hand, 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. Without creating effective demand, especially but not only 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 problem affecting both the supply and demand of knowledge in SEMCs, namely the absence of an enabling environment for research and innovation, starting with poor educational systems, absence of dedicated research law and legislation organising the relationship inside academia and between academia industry, and inadequate instruments, structures and programmes to support the valorisation of research results and the commodification of knowledge.

THE PROBLEM OF ASYMMETRY

Observers suggest that the main obstacle to a more effective EU-SEMCs cooperation is the asymmetry which exists between STI systems in the member states of the EU and SEMCs. (El-Zoheiry 2015, Semararo et. al. 2013: 208-209, Arvantitis et. al. 2013: 31-32) This is not surprising, given the huge disparity between Europe and southern Mediterranean countries in their governance structures, number of researchers, research budgets, research infrastructure 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 SEMCs have largely “non-compatible” STI national systems, leading to the

outcome that most researchers from SEMCs 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 (2006) 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 for synergies and strategies, and not much room for joint decision-making. The language of development assistance divides partners into 'donors' and 'beneficiaries' ".

Here it might be useful to note that, this specific instance of asymmetry in STI cooperation 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 SEMCs. The Association Agreements signed between the EU and separate SEMCs (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 SEMCs 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 five-fold 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 is the case with SEMCs, 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, had 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 employed no 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 from the Egyptian textile factories, protesting 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. The huge cumulative deficit in the balance of 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 SEMCs. And without industrialisation, demand for knowledge would remain weak and the asymmetry in the research and development capacity between the EU and SEMCs will probably widen. Europe could do more to balance its trade interests with the wider interest of enhancing the capacity of SEMCs to transition into more knowledge-based economies, which is perhaps the best guarantee for sustaining political stability on the southern shores of the Mediterranean.

KNOWLEDGE PRODUCTION, UTILISATION AND CONVERGENCE: POLICY OPTIONS

The policy challenge facing SEMCs is twofold: 1. How could they enhance their own capacity to generate and apply appropriate knowledge needed to solve societal problems, increase the national income and contribute to employment creation and social welfare (*the challenge of knowledge*

production and utilisation)? and, 2. How could they overcome the technological divide between them, the EU and the rest of the world (*the challenge of knowledge convergence*)?

To deal with the first challenge, SEMCs with the support of the EU, could adopt several structural policy measures. In this context, the EU could provide much needed capacity building on the required structural measures, in addition to sharing valuable relevant experiences and good practices for scaling up.

- Overhaul the STI ecosystem to create an enabling environment that can establish and reinforce linkages between the research and business sectors. This ecosystem should encourage the private sector, providing incentives to entrepreneurs with a view to investing in research and development.

- Develop and implement a robust industrial policy, focusing on carefully selected strategic sectors, providing comparative and competitive advantages for the economy, with credible sanctions against non-performing private sector actors. This adopted policy would serve to attract R&D functions of multinationals through tax and other incentives. The focus should be first placed on developing the capacity for learning and then, later, the capacity for innovation.

- It is recommended that SEMCs should follow the suit of EU member states in adopting *Smart Specialisation Strategies* (S3). This is a location-based and context-based approach, which builds on the assets, resources and peculiarities of the different regions and on their specific socio-economic challenges, in order to identify unique opportunities for development and growth. In this regard, the European Commission's Joint Research Centre (JRC) has an efficient platform, the S3Platform, which could provide much needed technical assistance to the different SEMC regions.

- Improve educational systems on all levels, encouraging and fostering STEM (Science Technology Engineering and Mathematics) education and linking education to the job market. In this context, creativity and reasoning skills should be introduced in reformed curricula in schools, as well as higher education. Special attention should be dedicated to inter-disciplinary education and, in particular, in disciplines promising future employability and economic growth. Life-long learning and on-the-job training should be nurtured.

- SEMCs should embrace a broader view of innovation, supporting technological, as well as practice-based and social innovation. Encourage the development of frugal and inclusive innovation, especially appropriate and locally based technologies, to address pressing societal challenges and capitalise on opportunities offered by these technologies in both rural and urban areas.

As for the second challenge, the need to bridge the knowledge divide between SEMCs, the EU and the rest of the world, the EU could support SEMC governments to adopt the following policy measures:

- The EU needs to encourage regional cooperation in the Mediterranean. In many sectors, for example, energy, environment, food and water, there is a need for regional action and not bilateral fragmented efforts. Think of pollution in the Mediterranean. Energy security requires the integration of the Mediterranean into a common grid. Financial tools could encourage the creation of a regional political organisation in the southern Mediterranean, for example a Southern Mediterranean Commission, with more political integration of SEMCs.

- Building on current bi-regional EU-supported initiatives, example PRIMA (Partnership for Research and Innovation in the Mediterranean Area) initiative. Expanding and scaling up the PRIMA's Strategic Research and Innovation Agenda (SRIA) and related collaborative research programme in the decades ahead. In particular - as currently the PRIMA SRIA is focused on the management of water, farming systems and agro-food value chains – expanding the scheme to a PRIMA-URBAN scope. Such expansion should focus on urban planning (transport, energy, waste, etc.), urban governance (urban policy coordination and coherence) and urban value chains (infrastructure, standards and skills to support SME development in urban environments). Expanding PRIMA-URBAN would mean including not only collaborative research funding (research and innovation actions, like those financed by H2020), but also leverage funding of investments to implement sustainable solutions (as, again in Europe, this is done for example with the Covenant of Mayor Investment Forum, to promote innovation and investments for sustainable energy across European cities and territories, see https://ec.europa.eu/energy/en/events/covenant-mayors-investment-forum-energy-efficiency-finance-market-place). The aim is to deliver impacts in terms of knowledge-based job creation, strengthening cooperation and business development across Mediterranean cities and the implementation of Sustainable Development Goals in the cities.

- Creating a **Transdisciplinary Academy for the Future of the Mediterranean**. Inspired by the Blue Transition vision, this is not a new infrastructure, but rather a network of labs for co-creating knowledge and prototyping solutions for the implementation of Sustainable Development Goals (SDGs) in the Mediterranean. It could be regarded as a hub, linking existing teams of researchers and other stakeholders and providing training on-line and off-line (e, g. summer schools) for a range of methods to be applied in local labs. The labs could range from fab-labs (e.g. 3D printing labs) to civic policy labs for devising and prototyping solutions for complex challenges in the cities. The Academy should not "reinvent the wheel" but coordinate and federate existing networks and platforms (e.g. the network of fab-labs, the 3H University and others) for the purpose of strengthening sustainable and inclusive development in the Mediterranean (the Blue Transition goal).

- Capacity building, technical assistance and financial support, provided by the EU for creating a dedicated group of science and innovation managers in the SEMCs relevant institutions.

- Modify the free trade agreements with SEMCs, to allow for some protection to strategic industrial sectors until they could be integrated into global value chains on better terms.

- To create better synergies among different directorates inside the EU, for example by including the directorate general for science into the Euro-Mediterranean Partnership, and increase the financial resources dedicated to bi-regional STI cooperation beyond the current truncated resources.

CONCLUSION

Youths comprise about half the population in the southern Mediterranean and play a hugely important role as catalysts for development and change. Their empowerment and integration in the job market and economy is key to the EU's strategic interest, not only to safeguard against violent extremism and limit illegal immigration, but also to encourage the value-added brain circulation.

STI has long been recognised as a driver of economic growth and prosperity and, as such, should be at the heart of any EU-Mediterranean cooperation strategy. For reasons that are portrayed above, this cooperation has not yet yielded significant impact on the economic growth and development of SEMCs. At a time of crisis, when the EU's southern neighbourhood is suffering from grave political and economic challenges, it is time to rethink this partnership, steering it to an impact-driven course.

This work has demonstrated that what SEMCs need are coherent structural and policy measures, rather than more project funding or involvement in collaborative actions that fail to yield impact, mostly due to asymmetrical cooperation systems and lack of absorptive capacity by SEMCs. In this context, SEMCs could benefit from EU support for creating a comprehensive STI ecosystem, the elements of which are described above. Such an ecosystem would enable knowledge generation and utilisation by SEMC institutions.

The Europe 2020 Strategy highlights the EU's Innovation Union flagship initiative with its aim of smart, sustainable and inclusive growth. Cooperation with the neighbourhood countries on societal challenges is regarded as central to Europe's efforts to better help its own development policy. Many of these challenges could be effectively addressed through joint Euro-Mediterranean bi-regional initiatives and actions utilising Science, Technology and Innovation, to drive the economy of SEMCs and bring about inclusive and sustainable growth in the region.

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ABOUT EMNES

The Euro-Mediterranean Network for Economic Studies - EMNES is a network of partners and associates research institutions and think tanks working on the Mediterranean region. EMNES aims to provide a renewed vision for socio-economic development in the Mediterranean region, mainly focusing on employment creation, social inclusion, and sustainable development.

EMNES areas of research include the role of institutions and institutional reforms, macro-economic policies, private sector and micro, small and medium sized enterprises and employment creation, role of education, innovation, skill mismatch and migration, finance, regulation and the real economy and regional integration.

EMNES will produce books, studies, scientific and policy papers and will disseminate through the organization of annual conferences, and workshop meetings in the region bringing together leading senior and junior researchers, academics, policy makers and representatives of the civil society to discuss and debate optimal policies for the future of the region.

EMNES is built on four core principles: independence, excellence, policy relevance and deep knowledge on Euro-Mediterranean affairs.

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