

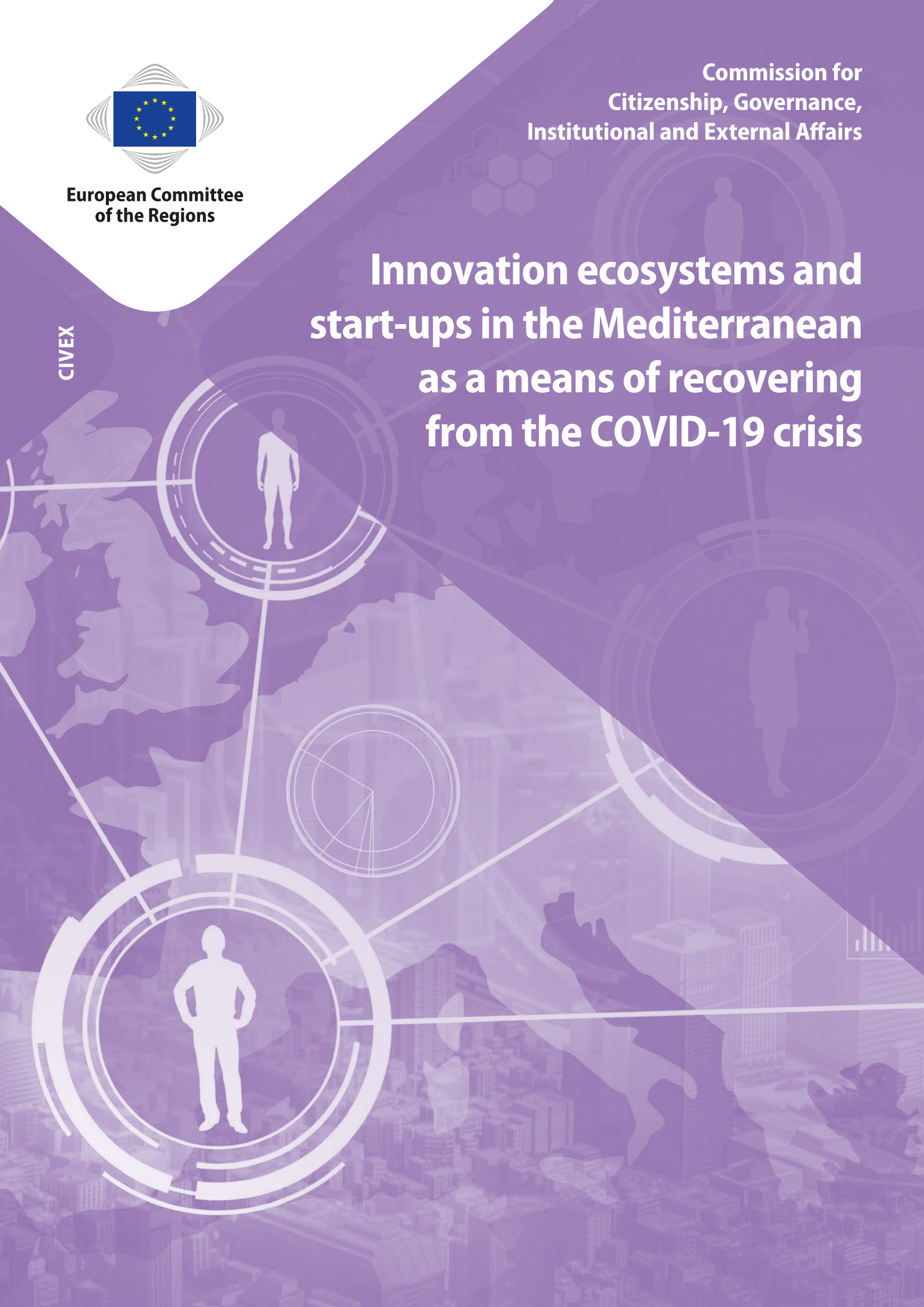


**European Committee
of the Regions**

**Commission for
Citizenship, Governance,
Institutional and External Affairs**

CIVEX

Innovation ecosystems and start-ups in the Mediterranean as a means of recovering from the COVID-19 crisis



© European Union, 2021

Partial reproduction is permitted, provided that the source is explicitly mentioned.

More information on the European Union and the Committee of the Regions is available online at <http://www.europa.eu> and <http://www.cor.europa.eu> respectively.

QG-08-21-253-EN-N; ISBN: 978-92-895-1108-7; doi: 10.2863/518444

This report was written by Katarzyna Sidlo (CASE)

**It does not represent the official views of the
European Committee of the Regions.**

Contents

1	Introduction	1
2	Innovation strategies in the Mediterranean – Morocco case study	3
	History of development	3
	Innovation ecosystem	4
	Innovation amid the Covid-19 pandemic	6
	Cooperation with the EU	7
3	Main challenges	9
	Innovation developments – an overview	9
	Geographic distribution	11
	Access to funding	11
	Entrepreneurial culture	13
	Institutions and legal frameworks	15
	Composition of the innovation ecosystem	16
	Adoption of ICT	17
	Human capital development	19
	Infrastructure	21
4	Possible solutions and recommendations	23
5	Non-funding possibilities from the EU and international donors	31
	The FEMIP Trust Fund	31
	The Urban Projects Finance Initiative (UPFI)	31
	EU4Business – Local Development Strategies – Local Self Government and Economic Development Programme in Bosnia and Herzegovina	32
	Indirect assistance	33
	Municipal Performance Program	33
	Upper Egypt Local Development Program-for-Results Project	33
	Libya Public Financial Management Program (LPFM)	34
6	References	35
	Annex 1 Selected innovation-related indicators	31
	Annex 2 Key innovation strengths and weaknesses	32
	Annex 3 Morocco’s research and innovation ecosystem	36

Abbreviations

AFEM	Association des Femmes Chefs d'Entreprises du Maroc
AMDIE	Moroccan Agency for the Development of Investment and Exports
ARLEM	Euro-Mediterranean Regional and Local Assembly
APR&D2020	Appel à Projets Multithématiques de Recherche et Développement
ASMEX	Association Marocaine des Exportateurs
BiH	Bosnia and Herzegovina
CCG	Caisse Centrale de Garantie
CGEM	General Confederation of Moroccan Enterprises
CNRST	Centre National pour la Recherche Scientifique et Technique
CoR	European Committee of the Regions
CSO	Civil Society Organization
DH	Dirham
EC	European Commission
ESCWA	United Nations Economic and Social Commission for Western Asia
EU	European Union
FabLabs	Digital Fabrication Laboratories
FAO	UN Food and Agriculture Organisation
FEMISE	Forum Euroméditerranéen des Instituts de Sciences Economiques
FII	Fonds Innov Invest
GCC	Gulf Cooperation Countries
GCI	Global Competitiveness Index
GCR	Global Competitiveness Report
GDP	Gross Domestic Product
GERD	Gross Domestic Expenditure on R&D
GEM	Global Entrepreneurship Monitor
GII	Global Innovation Index
HEI	Higher Educational Institution
ICT	Information and Communication Technology
ILO	International Labour Organization
IMF	International Monetary Fund
INSME	International Network for SMEs
IoT	Internet of Things
ITU	International Telecommunication Union
KPI	Key Performance Indicator
LMIC	Lower Middle-Income Countries

LRA	Local and Regional Authorities
MAScIR	Moroccan Foundation for Advanced Science, Innovation, and Research
M&E	Monitoring and Evaluation
MEN	Ministry of National Education, Vocational Training, Higher Education and Scientific Research
MENA	Middle East and North Africa
MHD	Medium Human Development
MICIEN	Ministry of Industry, Trade, Investment and Digital Economy
MIT	Massachusetts Institute of Technology
MS	Member States of the EU
MSMEs	Micro, Small and Medium Enterprises
NGO	Non-Governmental Organisation
NIS	National Innovation Strategy
NRI	Network Readiness Index
OECD	Organisation for Economic Cooperation and Development
PCR	Polymerase Chain Reaction
PISA	Programme for International Student Assessment
PME	Petites et Moyennes Entreprises (SME)
PTR	Portfolio Turnover Rate
R&D	Research and Development
RMIE	Réseau Maroc Incubation et Essaimage
SCIC	Smart City Innovation Center
SNRI	Système National de Recherche et d'Innovation
TTOs	Technology Transfer Offices
UfM	Union for Mediterranean
UMIC	Upper Middle-Income Countries
UN	United Nations
USD	United States Dollar
WEF	World Economic Forum

This report was prepared as a part of a project *Innovation ecosystems and start-ups in the Mediterranean as a means of recovering from the COVID-19 crisis* commissioned by the European Committee of the Regions (CoR) under the specific contract No CDR.11769 implementing multiple framework contract for studies in the field of external relations No CDR/TL1/11/2018/1.

Main author: Katarzyna W. Sidło (CASE)

Non-funding opportunities: Matías Ibáñez Sales (IEMed)

Research assistance: Kateryna Karunska (CASE), Mariam Harutyunyan (CASE)

Quality control: Roger Albinyana (IEMed)

The author would like to thank (in alphabetical order):

- Mr. Mehdi Alaoui, Founder and CEO of LaStartup Factory, Founder & CEO ScreenDy.com, Vice-president of APEBI – Federation Marocaine des Technologies de l'Information des Telecommunications et de l'Offshpring
- Mr. Omar Amrani, Head of Innovation and Development, LaStartup Factory, Morocco
- Representatives of BUSINESSMED – Union for the Mediterranean Confederation for Enterprises
- Mr. Hamed El Etreby, Senior Economic Advisor, Economic Development and Employment Division, Union for the Mediterranean
- Mr. Mathias Fillon, Coordinator of THE NEXT SOCIETY, ANIMA Investment Network
- Dr. Maryse Louis, General Manager, FEMISE Association
- Mr. Bernard Massabo, Secretary General of the EuroMed Cities Network
- Mr. Giuseppe Provenzano, Advisor for Research and Innovation, Union for the Mediterranean
- Ms. Amel Saidane, President of Tunisian Startups, CEO and co-founder of BetaCube
- Ms. Farah Al Shami, Research Fellow, Arab Reform Initiative

as well as interviewees who preferred to remain anonymous for granting their time and sharing their insights.

1 Introduction

The ability to innovate and to make use of new technologies and techniques is indispensable for economic diversification and sustainable development. It is not easy to define innovation, as it is a much broader concept than just capacity to devise new high-tech products and solutions. Indeed, “innovation is as much about culture, leadership, finance, governance and people as it is about technology and data” (OECD, 2019). In particular, in the public sector, innovation is geared towards addressing the needs of citizens by creating value added and making an impact (Hartley, 2005). In the present report, following the Oslo Manual, innovation is defined as “a new or improved product or process (or combination thereof) that differs significantly from the unit’s previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)” (OECD, 2018).

Against this background, the aim of this report is to identify the main obstacles and challenges to the creation and development of innovation strategies, ecosystems and start-ups, and solutions – in particular those to which local and regional authorities (LRAs) can contribute – in the following countries that are ARLEM (the Euro-Mediterranean Regional and Local Assembly) members: Albania, Bosnia and Herzegovina (BiH), Egypt, Turkey, Algeria, Mauritania, Morocco (case study), Tunisia, Israel, Jordan, Lebanon, Palestine¹, and Libya, which has observer status within ARLEM. The final section of the report contains proposed solutions and policy recommendations on how innovation ecosystems and start-ups can be enhanced.

¹ This designation should not be understood as the recognition of a State of Palestine by the European Union or any of its Member States.

2 Innovation strategies in the Mediterranean – Morocco case study

History of development

The first efforts to support innovation-driven economic development were introduced in Morocco in the 1990s (Hamidi & Benabdeljalil, 2013). The actual progress in terms of development of the innovation ecosystem has, however, only happened in the country during the last decade. Presently, Morocco is implementing *l'Initiative Maroc Innovation*, a national innovation strategy (NIS), created in 2009 (and effective as of 2011), centred around four axes: i) governance and regulatory framework; ii) infrastructure; iii) financing and support; and iv) talent mobilisation. Its medium-term objective is “to position Morocco in the club of countries producing technologies, to allow the emergence of a high added value economy but also to strengthen Morocco’s attractiveness for foreign investments, as a result. In the longer term, it is about preparing growth drivers that will become vital for our economy” (Le Ministère de l’Éducation Nationale, de la Formation Professionnelle, de l’Enseignement Supérieur et de la Recherche Scientifique, n/d). The strategy was introduced by the Ministry of Industry, Trade, Investment and Digital Economy (MICIEN), the Ministry of National Education, Vocational Training, Higher Education and Scientific Research (MEN), as well as the main employers’ organisation, the General Confederation of Moroccan Enterprises (CGEM) – some of the key actors in the National Research and Innovation System (*Systeme National de Recherche et d’Innovation*, see also Fontaine, 2018 and Annex 3).

Since the late 2000s, Morocco has also been implementing a **cluster policy**, which, alongside the national strategy for digitalisation and scientific and industrial development, complements the NIS. Accordingly, some of the other key documents for the development of an innovation ecosystem in the country include:

- “National Strategy for the Development of Scientific Research - Horizon 2025” (“Strategie Nationale pour le Developpement de la Recherche Scientifique a l’horizon 2025”) (Direction de la Recherche Scientifique et de l’Innovation, 2018);
- “Morocco Digital 2020” plan adopted in 2016 and preceded by the National Strategy for Information Society and Digital Economy, Digital Morocco 2013;

- “Industrial Recovery Plan 2021-2023” (Plan d’Accélération Industrielle), which was preceded by the “Industrial Acceleration Plan 2014-20” (MAP, 2021).

Innovation ecosystem

An innovation support ecosystem in Morocco is still in its nascent stages, but already consists of a good number of both physical and non-physical structures². Overall, the NEXT Society project maps 87 such “innovative institutions” in the country³.

Among the former are incubators and accelerators (mostly based in Casablanca and Rabat), co-working spaces (mostly in Casablanca and Rabat), FabLabs (digital fabrication laboratories), Technology Transfer Offices (TTOs), as well as technoparks⁴. The latter were created under public-private partnerships (the Moroccan state owns 35% of shares) in Casablanca, Rabat, and Tangier, with one in Agadir commencing operations during the summer of 2021. Since opening, technoparks have in total provided support to over 1,300 start-ups and MSMEs, and currently host 350 innovative companies with almost 2,000 employees⁵.

From the perspective of LRAs, particularly interesting is an initiative developed under the infrastructure axis of the NIS, “**les cités d’innovation**” (innovation cities). The goal was to create networks of research and innovation ecosystem actors – incubators, accelerators, research institutes, and the private sector – centred around higher educational institutions (HEIs) in selected cities in order to promote the development of innovative projects, strengthen university-industry cooperation, promote technology transfer, and develop the high technology and R&D sectors (Universite Hassan 1st, 2020). Thus far, the innovation cities include Marrakech, Fez, Rabat, and Casablanca, and subsequently also Souss-Massa-Agadir (as of 2020), with four more cities under the process of joining the project. The Agadir one is managed by Technopark, a private sector actor – as opposed to public HEIs/other public actors as is the case of the remaining four, which – according to the interviewees – is a key component of its success.

The non-physical support structures include various **funding and support programmes**, such as:

² A report by one consulting company (Accuracy, 2020) puts the number of all working and planned innovation support structures in Morocco at 74.

³ As well as 53 in Alegria, 129 in Tunisia, 86 in Egypt, 40 in Lebanon, 39 in Jordan, and 35 in Palestine and Israel https://www.thenextsociety.co/i-maps?title=&profile%5B6%5D=6&form_build_id=form-ILDNYsERe5G56OhK5F3wOvZaETdzlBft5EbVjiTIGVM&form_id=recherchemap_form&op=Search

⁴ An area created to accommodate companies working in the field of technology and science.

⁵ <https://www.technopark.ma/s/login/?!language=fr&startURL=%2Fs%2F&ec=302>

- Innov Investment Fund (Fonds Innov Invest – FII) operated by the Central Guarantee Fund (Caisse Centrale de Garantie – CCG) with the support of the Moroccan government, the World Bank, and the European Union (EU); it offers pre-seed, seed, and venture capital (current budget of MAD 500 million with a further MAD 700 million expected – approximately EUR 47.1 million and EUR 66 million, respectively) as well as technical assistance with the aim of supporting 300 innovative projects between 2018 and 2023 (CCG, n/d);
- Mohammed VI Investment Fund, established in November 2020; it was created to support private-public partnership national- and sub-national level projects and to provide funding to MSMEs and large private and public companies from priority sectors (MEFAR, 2020);
- APR&D2020 under which funding was made available for multi-thematic research and development projects in order to boost innovation, support cooperation between the research and business worlds, and improve the competitiveness of Moroccan companies (CNRST, 2020).

Some of the other previous and ongoing funding programmes include Réseau Maroc Incubation et Essaimage (RMIE), the INNOV'ACT programme, as well as the Sindibad and Intilak seed funds, the TAWTIR fund, and the PTR instrument⁶. Technical support and assistance is additionally offered by Maroc PME (for MSMEs), the Moroccan Agency for the Development of Investment and Exports (AMDIE), as well as associations such as CGEM, ASMEX (Association Marocaine des Exportateurs), and AFEM (Association des Femmes Chefs d'Entreprises du Maroc) (Augier et al., 2019) – it is, however, directed more at traditional MSMEs than start-ups (interviews).

⁶ A list of past and present funding possibilities (not fully up-to-date) is available at <https://www.casainvest.ma/fr/node/521>

Importantly, since 2015, those filing a patent to the European Patent Office can easily apply for patent protection in Morocco as well (EPO, 2016).

Morocco's innovation rankings

In various innovation and entrepreneurship rankings, Morocco's position has remained unchanged or declined slightly over the past two-to-three years. In the **Global Innovation Index (GII)** 2020, it ranked 75th overall (out of 131 economies) – a drop of one place compared to 2019 but an improvement compared to 2018 when it ranked 76th – and its performance was assessed as “above expectations for its level of development”, in particular in the knowledge and technology outputs sub-index. In the World Economic Forum (WEF's) **Global Competitiveness Index (GCI)** 2019 it ranked 71st (out of 141 economies, unchanged compared to 2018) on the “Innovation ecosystem-business dynamism” sub-index receiving 60 out of 100 points, above the lower middle-income countries (LMIC) average of 53. In the “Innovation ecosystem-innovation capability” sub-index it fared worse, ranking 81st and receiving 36 points (against the LMIC average of 31). According to the **Arab Entrepreneurship Maturity Index** 2020 of the MIT Enterprise Forum, Morocco dropped by two places compared to 2019, ranking 7th out of the 14 MENA economies, behind Gulf Cooperation Countries (GCC) but also Jordan with a score of 2.7 out of 5. Finally, on the majority of the components of the **Global Entrepreneurship Monitor (GEM)** 2020/2021, the country ranked in the bottom 10 out of 45 economies analysed, with its scores predominantly declining, faring worst in the “ease of entry: market burdens and regulations” (45th place) and “entrepreneurial education at school” (42nd) categories, and best under “government policy: support and relevance” (20th) as well as “government entrepreneurship programs” and “commercial and professional infrastructure” (34th in both categories).

Innovation amid the Covid-19 pandemic

While the pandemic adversely affected all sectors of the Moroccan economy, it helped various (particularly the public sector) actors to truly realise the importance of innovativeness (interviews). MEN and the Centre National pour la Recherche Scientifique et Technique (CNRST), for instance, established an MAD 10 million (approximately EUR 942 thousand) fund supporting scientific and technological research related to the Covid-19 pandemic (CNRST, 2020).

Numerous companies in the country proved their capacity to quickly adjust their production, for example, to manufacture protective masks, not only for domestic but also foreign markets, with 18.5 million masks sold abroad by the beginning of June 2020 (Atalayar, 2020). Moroccan researchers developed respirators and thermometers that later were manufactured in the country and distributed locally (OCP, 2020). Another Moroccan company came up with an innovative way of monitoring the temperature of vaccines during transportation. The country is also producing PCR Covid test kits, developed by a local start-up company Moldiag, which enjoyed support from the Moroccan Foundation for Advanced Science, Innovation, and Research (MAScIR) (Aujourd'hui Le Maroc, 2020). Furthermore, one of the solutions developed by Moroccan consumer group Attaisir was voted the best innovative initiative in the MENA region during an event organised by the UN Food and Agriculture Organization (FAO) for helping farmers to control their crops remotely, and therefore maintain social distance and protect themselves from Covid-19 contamination (The North Africa Post, 2020).

Cooperation with the EU

Morocco collaborates with the EU, its member states, and LRAs, within the framework of regional and bilateral cooperation, for example, through participation in the EU-African Union High Level Policy Dialogue on Science, Technology, and Innovation or the UfM Regional Platform for Research and Innovation (European Commission, 2021). As promotion of innovation is one of the best ways of achieving the goals listed in the EC-HRVP Joint Communication “A New Agenda for the Mediterranean”, it can be expected that during the upcoming years more attention – and funds – will be dedicated to this end (see more in Section 5 and the upcoming brochure under preparation by CASE for the COR – *EU financial assistance available to LRAs in Mediterranean partner countries*).

Beyond cooperation with the EU, Morocco is also a member of global innovation initiatives, such as Mission Innovation – “a global initiative to catalyse action and investment in research, development and demonstration to make clean energy affordable, attractive and accessible to all this decade” (Mission Innovation, 2019).

3 Main challenges

Innovation developments – an overview

In developing countries, the traditional approach towards the development and implementation of innovation strategies, whereby governments support and promote interactions between different actors in the innovation ecosystem – such as public bodies, HEIs, research institutions, and industry – and provide incentives and funding in support of innovation activities in the country, has been less effective than in developed economies (Ben Slimane & Zouikri, 2016; Ben Slimane & Ramadan, 2017).

In the 2020 edition of the Global Innovation Index (GII), the analysed countries aside from Israel – which is a regional outlier and so will be mostly excluded from further analysis in this section of the report – ranked on average 81st out of the 131 economies evaluated, faring slightly worse in the five input categories (institutions, human capital & research, infrastructure, market sophistication, and business sophistication) than the two output ones (knowledge & technology output and creative output) (Dutta et al., 2020).

At the same time, it must be noted that **significant disparities exist between the countries of interest to the present report**. In order to underline this fact, the table in Annex 1 presents the performance of each individual country on various indicators related to innovation and the table in Annex 2 presents a summary of the key strengths and weaknesses of each economy based on the GII report. Importantly, Tunisia, Morocco, Lebanon, and Egypt are more efficient when it comes to translating investments made in innovation into high-quality outputs than Turkey, BiH, Algeria, and Albania. The same GII (Dutta et al., 2020) report evaluates the performance of Tunisia and Morocco as “above expectations” for their developmental levels, the performance of Albania, BiH, Jordan, and Lebanon (2019) at their level of development, and that of Turkey, Egypt, and Algeria as “below expectations”. At the same time, out of all the countries under study, the Global Startup Ecosystem Report 2020 includes Istanbul, Turkey (16th) and Cairo, Egypt (51-60) in its top 100 emerging ecosystems.

According to another ranking, the Global Competitiveness Index (GCI) 2019 edition innovation ecosystem ranking⁷, among the lower-middle income countries (LMIC), Egypt, Morocco, and Tunisia performed above their income group average on innovation capability and business dynamism, while Mauritania underperformed on both measures. Out of the upper middle-income countries (UMIC) group, Albania, Algeria⁸, and BiH performed below average and Jordan, Lebanon, and Turkey – above average in terms of innovation capacity. In terms of business dynamism, only Albania and Turkey performed above average for their income group. At the same time, (outside of Israel) none of the analysed countries ranked among the top-quartile of the 141 economies in either of the two categories.

Impact of the Covid-19 pandemic

While the pandemic adversely affected all sectors of the economy, its impact on innovative enterprises has been somehow less dramatic than its impact on more traditional businesses, as by their very nature innovators adjust faster and more efficiently to new circumstances (interviews). Regarding start-ups in particular, “the situation has either been a disaster or the catalyst for growth” (Wamda & Arabnet, 2020) – largely depending on the sector they operate in. Unsurprisingly, the travel and tourism-related start-ups suffered the most; according to a survey conducted by Wamda and Arabnet⁹, one in four ceased to exist and half had to suspend their activities. Among all start-ups (regardless of sector), these figures amounted to 5.8% and 21.9%, respectively. Additionally, more than one in five start-ups suffered significant losses due to lower demand for their products or services, with 21.9% experiencing “relative losses”. At the same time, the e-commerce sector, growing quickly even before the pandemic, experienced a boom (Wamda & MIT Legatum Center, 2021; ASDA’A BCW Arab Youth Survey, 2021). Similarly, edtech and fintech witnessed increased demand and revenues; among the former, nearly half (47%) reported their revenues increased amid the pandemic – as did the same number of e-grocery and food-tech start-ups (Wamda & Arabnet, 2020). Moreover, health-tech start-ups, while struggling with cashflows, noticed a surge in demand for their services (33.3%) as well as an improvement in terms of the funding environment (21.3%) (Wamda & Arabnet, 2020).

⁷ No data for Palestine and Libya were available.

⁸ Algeria was downgraded to an LMIC by the World Bank in 2020, after the report was completed.

⁹ Among start-ups from Morocco, Algeria, Egypt, Palestine, Lebanon, and Jordan (from among those of interest to the study).

Geographic distribution

A significant obstacle for the efficient development of innovation ecosystems in the analysed countries is uneven access to financial and technical support for start-ups depending on their domicile, with those based outside of capitals or other big cities at disadvantage – although admittedly the pandemic helped to remove this barrier to at least some extent with more support being provided online (interviews).

In Morocco, for instance, even before the pandemic, efforts have been made to expand innovation ecosystems beyond Casablanca, with technoparks and innovation cities localised in other major cities in different regions of the country. However, places like Fes – which hosts the Euromed University of Fes which as of 2021 had 2,400 students – are still not receiving sufficient support given their level of potential, and certain regions still remain overlooked (interviews; UEMF, n/d; Accuracy, 2020).

Access to funding

Financing innovation is a global issue, especially in a world that is slowly recovering from the pandemic. Indeed, *Who Will Finance Innovation?* is the title of this year's edition of the Global Innovation Index. Throughout the pandemic, less finance has been available, with investors becoming more hesitant, selective, and risk-averse due to high levels of economic uncertainty (as well as oil price drops). This has had a particularly negatively effect on start-ups – according to one survey, half of start-ups noticed increased difficulties during their recent funding rounds (Wamda & Arabnet, 2020).

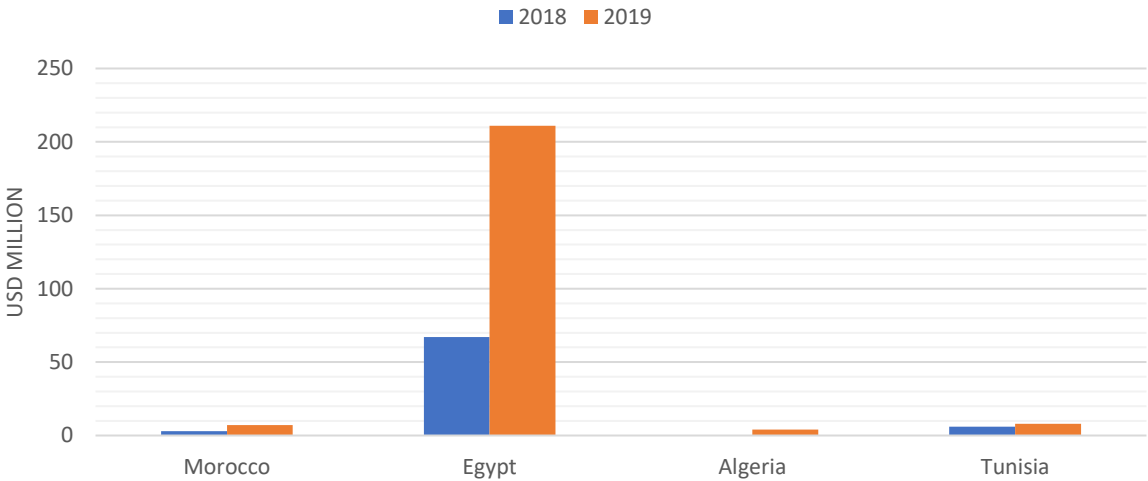
Even before the pandemic, however, access to finance (equity, loans, investment) was one of the top challenges for entrepreneurs in the region (Khanfir, 2016; Skalli, 2018; Majdouline et al., 2020; interviews). Difficulty in obtaining credit is a particular weakness of Morocco, Lebanon, and Algeria; on the other hand, Morocco and Lebanon, as well as Jordan, perform well when it comes to domestic credit to the private sector as a percentage of GDP (Dutta et al., 2020).

Despite attempts to engage the private sector more prominently in funding research and development, for instance through private-public partnerships, governments remain the main source of R&D financing in the region (Radwan, 2018). Indeed, according to one report (Radwan & Sakr, 2017), in North African countries public funds account for over 90% of gross domestic expenditure on R&D (GERD). At the same time, R&D spending (as % of GDP) in countries of interest to this report remains low, if systematically increasing, amounting to between 0.01% in

Mauritania and 0.15% in Albania, through to 0.54% in Algeria and 0.6% in Tunisia, to 0.72% in Egypt and 0.96% in Turkey – compared to the EU average of 2.18% and Israel’s spending of 4.95% of GDP (World Bank, 2021a; for details see Annex 1). In Jordan and Morocco, governments created state-owned venture funds to provide funding to start-ups; Turkey and Morocco possess sovereign wealth funds to boost innovation financing as well (Dutta et al., 2020).

Banks in the region tend to prefer providing financing to “large, well-known, or politically connected firms than to smaller or newer ones”, with only 13% of loans allocated by banks to MSMEs in the broader MENA region – even though smaller companies tend to be more innovative or productive, adversely affecting competitiveness levels and new business formation rates (WEF, 2018). This situation prevails despite attempts on the part of central banks to reverse this trend in countries like Egypt, Morocco, or Jordan. It does not help that, much like the broader population in the region, companies have low financial inclusion rates (World Bank, 2017).

Figure 1 Total amount of Venture Capital funding raised by tech start-ups per country (2018 and 2019; USD million)



Source: Own elaboration based on data from Partech Africa Team, 2020.

Crowdfunding and business angels, two popular ways of securing financing among start-ups globally (outside of venture funds), are less popular in the analysed countries due to a general lack of favourable legislation (Noutary, 2017; Azouzi & Fakhfakh, 2020; interviews). As stressed by one of the interviewees, investing as a business angel in a start-up, for example, in Morocco is virtually impossible for EU investors due to complicated laws and regulations (see also Azouzi & Fakhfakh, 2020). This is despite the introduction or planned introduction of new laws in some countries in the region. In Tunisia, for instance, a new law on crowdfunding was introduced in 2020, with three types of funding allowed: donation-based, equity-based, and debt-based (USAID, 2021).

It must be stressed again that in terms of fundraising for start-ups, the situation varies from country to country (even after accounting for the different sizes of the economies of the countries in question) – for instance, in terms of venture capital, in 2019 in Morocco, USD 7 million was raised as compared to, for example, USD 211 million in Egypt.

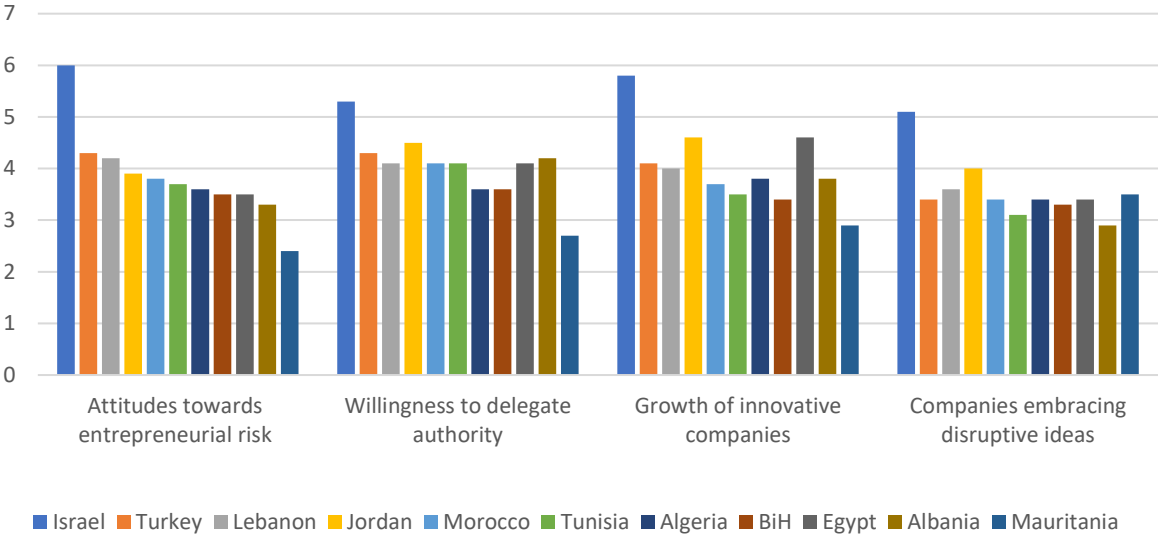
Access to financing is particularly important for start-ups that have been struggling throughout the pandemic. According to one survey, all start-ups would welcome loans as means of support, although in Egypt, for instance, there is a preference for investments of grants (58.1%) compared to loans or salary reimbursements (35.5% each) (Wamda & Arabnet, 2020).

It should be mentioned as well that on the side of LRAs, limited budgets limit their capacity to promote and support innovation among their constituencies (OECD, 2019).

Entrepreneurial culture

Traditionally, the job of preference for an educated person in the countries under analysis, particularly women, has been in public administration – perceived as a safe, stable, and respectable job (Assaad & Barsoum, 2019; interviews). As underlined by the interviewees, starting their own business, especially an innovative start-up, is perceived as risky by prospective entrepreneurs and their family and social circles alike. Outside of Israel, the least entrepreneurial risk-averse are the Turkish, the most – the Mauritians (see Figure 2 below; Schwab, 2019). Indeed, outside of Israel, which is a top performer globally when it comes to entrepreneurial culture, the analysed countries score unsatisfactorily when it comes to acceptance of business failure or the ability to embrace change. According to the Global Competitiveness Report (Schwab, 2019), they all score fairly low on the measures of entrepreneurial risks (3.62 out of 7 on average), management culture (3.93 out of 7 on average), and company agility (3.4 out of 7 on average), with an overall score for the “entrepreneurial culture” indicator varying from 54.0 (out of 100) for Jordan, through to 43.3 for Algeria, and to 31.1 for Mauritania (for details see Figure 2 below).

Figure 2 Entrepreneurial culture indicators



Source: Own elaboration based on data from Schwab, K. (2019). *The Global Competitiveness Report 2019*. World Economic Forum. *No data for Libya and Palestine.

Researchers and academics in particular do not have incentives to create spin-offs and apply the results of their research in the real world, not least due to issues related to intellectual property rights (interviews). Established companies are, in turn, not keen to embrace disruptive ideas (see Figure 2 above).

Cognizant of that, multiple governments in the region have included “spread of the culture of innovation and entrepreneurship” in their national innovation strategies (ESCWA, 2017; Morrar, 2019). Whether their strategies have been successful is under question, since recent data shows that it is government failures and corruption, as well as a lack of suitable job opportunities, that is encouraging young people in the region to become entrepreneurs. Indeed, according to the Arab Youth Survey (2020), of those aged 18-24, 44% in North Africa and 22% in the Levant plan to start their own business in the nearest future (a number still below that of 55% in the GCC).

Another aspect of this issue is the lack of an innovation-friendly culture among the LRAs themselves. Adherence to established patterns, risk-aversion, and “fear of experimentation in the local public sector due to political and social scrutiny, and failure” are some of the more important inherent obstacles to innovation in local government units (OECD, 2019).

Institutions and legal frameworks

The lack of a conducive regulatory environment is one of the main obstacles to the development of innovation in the region (World Bank, 2018; Dutta et al., 2020; interviews). In the Global Investment Index (2020) “institutions” pillar, the countries under study ranked on average 86th out of 131 countries evaluated, with the best performers being Albania (56th) and Jordan (63rd), and the worst – Algeria (104th) and Egypt (115th). In Lebanon, a highly unstable political environment is an additional hurdle.

The regulatory environment governing issues such as fundraising (see section on funding above) or intellectual property rights is particularly weak (see Table 1 below). Moreover, high barriers to entry are an issue, with laws protecting incumbents, in particular in the telecommunications and banking sectors (World Bank, 2018; INSME, 2021). Furthermore, there are a lack of tax incentives that would encourage investment in start-ups and innovation in general as well (INSME, 2021).

When it comes to the business environment, things look somehow better. However, the latest edition of the Doing Business Report shows huge disparities between the countries of interest to the present report. For instance, while in Albania it takes 4.5 days and five procedures on average to start a business, in Algeria, the corresponding numbers are 18 and 12, respectively (World Bank, 2020). At the same time, in BiH, where red tape and resource-consuming administrative procedures were listed at the top of the obstacles for MSMEs (ITU, 2018), it takes a full 80 days to set up a business. In Morocco, there is some variance depending on the region – the eight procedures that must be completed take between nine days in Marrakech-Tansift-El Haouz and Souss-Massa-Draâ and up to 13 days in Tanger-Tetouan. The cost of the procedure varies as well, ranging from 11.5% of income per capita in Grand Casablanca, up to 21.5% in Souss-Massa-Draâ.

Another important indicator for start-ups is ease of resolving insolvency if the business fails. The weakest insolvency frameworks can be found in Lebanon (4 on a scale of 0-16), Algeria (7), and Jordan (8), and the strongest – in Albania (14) and BiH (15). In Morocco, “the legal framework on bankruptcy is rigorous (...), and in the event of company failure, it imposes consequences also for the investor’s capital” (INSME, 2021). As a result, potential entrepreneurs are discouraged from starting a company due to fears of long and costly procedures should the business fail.

Table 1 Selected rankings on institution-related indicators

Country	Institutions (GII, rank out of 131)	Intellectual property protection (GCR, score out of 100)	Burden of government regulation (GCR, score out of 100)	Legal framework's adaptability to digital business models (GCR, score out of 100)
Israel	35	76	42.2	65.3
Turkey	94	47.9	58	49.6
Tunisia	75	45	31.8	36.4
BiH	80	31.8	18.4	22.9
Morocco	77	65.4	52.3	42.3
Jordan	63	64.3	46.4	51.8
Albania	56	35	56.5	45.8
Lebanon	103	38.5	35.5	32.8
Egypt	115	47.5	40.3	41.8
Algeria	104	49.9	42.2	33.9

Source: Own compilation based on GII and GCR. No data for Libya, Mauritania, or Palestine.

Composition of the innovation ecosystem

Another significant obstacle is the lack of efficient and effective coordination between different actors in the innovation ecosystem (Ben Slimane & Ramadan, 2017; ITU, 2018; interviews). On the state level, different ministries and public bodies are involved in the formulation and implementation of innovation policies, which leads to disorganisation and weak coordination, as well as competition between different actors who do not always share priorities (Khanfir, 2016; Morrar, 2019; interviews). This problem prevails even in countries where inter-ministerial committees were established to coordinate work between different stakeholders (like in Morocco). At the same time, the level of multi-stakeholder collaboration within the innovation ecosystems varies clearly between the different countries under study – while BiH, Mauritania, Morocco, and Tunisia are clearly underperforming in this regard, Jordan for instance made significant progress (See Table 2 below).

Table 2 Multi-stakeholder collaboration

Country	Value (0-7[best])	Score (out of 100)	Rank (out of 141)
Albania	3.8	47.1 (up)	57
Algeria	3.6	42.7 (up)	91
BiH	2.9	31.0 (down)	137
Egypt	3.6	44.0 (up)	77
Israel	5.4	74.2 (down)	1
Jordan	4.0	49.3 (up)	50
Lebanon	3.6	44.0 (up)	78
Mauritania	2.8	30.5 (no change)	138
Morocco	3.3	37.8 (up)	109
Tunisia	3.2	36.9 (down)	115
Turkey	3.6	43.1 (up)	86

Source: GCR, 2019.

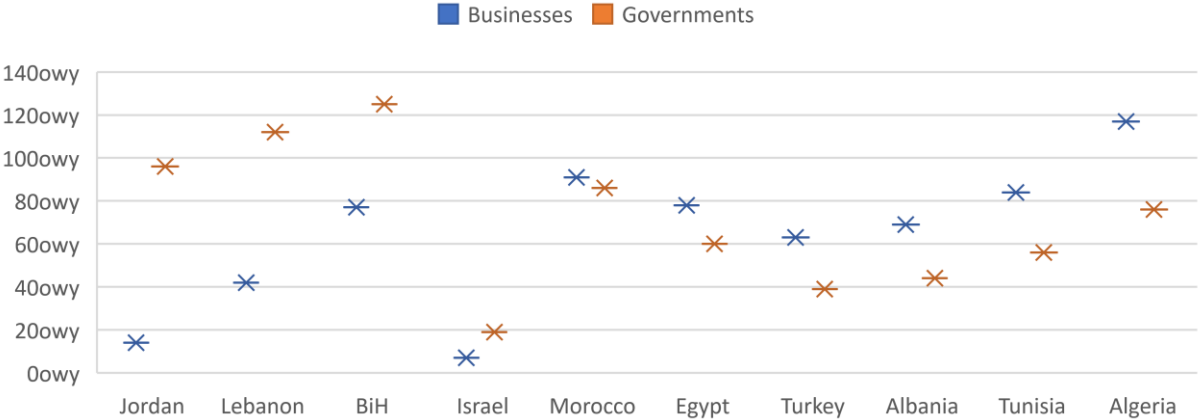
More broadly, fragmentation leads to the repetition of ideas and the less efficient use of resources. Weak connections between different actors, importantly HEIs and research institutions as well as the private sector, curtail innovation (Sidło et al., 2020; OECD, 2021a; interviews). The state of university/industry research collaboration is particularly weak in BiH (score 23.7 out of 100; Dutta et al., 2020) and Morocco (29.2), but even the best performers out of the countries of interest to the present report, Lebanon and Jordan, achieved relatively weak scores of 43.2 and 44.5 respectively – compared to Israel’s score of 78.5 (Dutta et al., 2020).

Adoption of ICT

Significant differences exist between the individual countries under study when it comes to the adoption of ICT as well. According to the GCR (2019), for instance, there is a difference of 44 places and 21.4 points between the region’s best (outside of Israel) performer, Turkey (69th place out of 141 economies; 57.8/100 points), and that of the worst – Mauritania (13th place and 36.4/100 points). The regional average (again, excluding Israel) stood at 48.7 points, placing the region in the lower bottom of the ranking.

The extent of the usage of ICT among businesses and governments is not equal (Network Readiness Index – NRI; Dutta & Lanvin, 2020)¹⁰. Two groups of countries can be differentiated among the states of interest to the present report in this regard: those where businesses fare better than their governments in using ICT and participating in the network economy in terms of use of and investment in ICT, and those where the situation is the opposite (see Figure 3 below). Among the first group, in Jordan and Lebanon, businesses were far ahead of governments in terms of ICT usage (with a difference of 82 and 70 places, respectively); in the other grouping, the smallest difference was noted for Morocco (5 places) and the largest for Algeria (41 places), with the governments having the advantage.

Figure 3 Application of ICT by governments and businesses in the countries under analysis



Source: Own elaboration based on the Network Readiness Index, 2020. *Ranking of 134 economies where 1st place indicates best performer and 134th – the worst.

One of the reasons for such relatively poor performance is the low level of technology in most of the countries under study, including technologies developed internally as well as preparedness for the adoption of technologies of the future, such as the Internet of Things (IoT) (NRI, 2020). Here, Turkey and Lebanon are leaders, ranking 58th and 61st globally, respectively (out of 134 economies), but BiH and Algeria, for instance, are at the bottom of the ranking (92nd and 108th, respectively). Particularly weak results can be found in the “future technologies” subindex, whereby Algeria, Morocco, Tunisia, Albania, and BiH were classified among the 40 worst performers.

¹⁰ No data for Libya, Mauritania, or Palestine.

Another contributing factor is a weak ICT regulatory environment, especially in certain states. Here the gap between the best performer, Morocco, and the worst one, Libya, is significant again and stands at 119 points (on a 0-150 scale; 123.5 and 4.5 points, respectively, compared to the world average of 73.7) (ITU, 2020). Morocco and Albania stand out as the only countries in the region with fifth generation regulations in place and were named one of 5G collaborative regulation champions (ITU, 2020). In the subindex measuring the quality of the ICT legal and regulatory frameworks, in turn, Turkey performed best with an overall score of 94.5 (out of 100) – above Morocco with 88.5 – the worst performer being Libya with 4.5 points followed by Lebanon with 31.7 points and the first generation of rules still in place.

With the absence of Libya (as well as Mauritania and Palestine) in another ranking, the Network Readiness Index (2020), Lebanon is the worst performer again when it comes to how conducive and encouraging the national regulations for participation in the network economy are, ranking 125th out of 134 economies, not far from Algeria (120th place). Underscoring regional disparities, BiH (57th), Morocco (67th), Jordan (69th), and Turkey (74th) performed much better on this measure.

Human capital development

Skills mismatch is one of the major obstacles to entrepreneurship globally – indeed, in 2020, the International Labour Organization announced a Skills Mismatch Challenge in an attempt to address this issue (ILO, 2020). In the countries under study, the problem has many faces; in Jordan and Lebanon, for instance, what is observable are relatively high levels of skills mismatch (in particular the overqualification of educated youth), compared to for example Egypt or Tunisia; in Palestine, in turn, mainly the underqualification of youth appears to be an issue (ILO, 2019). It is challenging for employers to find employees with the right kind of skills and hands-on experience (ITU, 2018; Sidło et al., 2020) and this is by no means a new issue – in 2016, according to one study, more than one in three (35%) entrepreneurs in the MENA region faced problems finding employees, with half complaining about competition for talent from large corporations (Assaf et al., 2016). Part of the problem is the underutilisation of the entrepreneurial potential of women in the region. Indeed, only 14% of MSMEs in the Arab world are female-owned – compared to one in three globally, on average (IMF, 2019).

On average, the analysed countries ranked 70th out of 131 countries evaluated on the “human capital and research” pillar of the GII (Dutta et al., 2020), which is comprised of indicators such as school life expectancy years, graduates in science and engineering, and tertiary inbound mobility (see Annex 2), with the best performers being Tunisia (38th) and Turkey (42nd), and the worst – Egypt (90th) and Albania (95th). In particular, PISA scales in reading, maths, and science have been identified as a major weakness for Algeria, Morocco, Lebanon, and Tunisia (Dutta et al., 2020).

To add to the picture, entrepreneurial education at school and post-school was ranked poorly in the two of the countries under study included in the GEM (Bosma et al., 2021), Egypt and Morocco. Egypt was ranked 36th and 32nd, respectively (out of 45 economies) with scores of 2.3/10 and 4.2/10 and Morocco fared even worse, securing only 42nd and 35th place with scores of 1.9/10 and 4.1/10.

The number of companies investing in their employees and offering formal training is low throughout the region, and a particular weakness in Egypt and Jordan, where only 10% and 16.9%, respectively, do so, compared to the best performers BiH (37.9%) and Albania (46.2%) (Dutta et al., 2020).

At the same time, 56.1% of Egyptians and 63.4% of Moroccans think they “personally have the skills and knowledge” to start a business – interestingly, compared to only 37.7% in Israel (Bosma et al., 2021). However, when it comes to innovation inside organisations, entrepreneurs assess that only 0.2% of employees in Egypt, 0.3% in Morocco, and 0.7% in Jordan exhibit entrepreneurial activity such as setting up a new business unit or creating new goods or services (compared to 5.8% in Israel) (Bosma et al., 2020).

Infrastructure

The countries under analysis ranked on average 82nd out of 131 countries evaluated under the “infrastructure” pillar of the GII (Dutta et al., 2020), with the best performers being Turkey (54th) and Albania (65th) and the worst – Egypt (99th) and Algeria (100th).

Transport infrastructure such as road connectivity or railroad density is insufficiently developed in most of the countries of interest to this report, adversely affecting enterprises in the region. The worst situation, per the GCR (2019), can be observed in Mauritania (awarded 21.4 out of 100 points in this category) and Albania (25.5/100), with Egypt (59.1/100) and Morocco (72.6) assessed as best performers (compared to 67.7/100 for Israel).

The inefficiency of utility infrastructure can be showcased by looking at estimated electric power transmission and distribution losses as a percentage of domestic supply: 9.7% in BiH and 10.3% in Jordan, up to 15.1% in Algeria, 15.2% in Morocco, 15.5% in Tunisia, and 18.2% in Albania. In Mauritania, an additional hurdle is the very access to electricity, with only 30.1% of the population having sufficient access (GCR, 2019). In Lebanon, electricity outages, which have been prevalent for years, became even more widespread as the political and economic situation in the country reached its critical point in 2020/2021 (see, e.g., World Bank, 2021b).

When it comes to ICT infrastructure, internet connections in the majority of the countries under analysis – with the exception of BiH and Turkey – despite improvements remain relatively slow and/or expensive, and are not readily available, especially outside of the capitals and big cities, contributing to the already mentioned above special inequalities (ITU, 2020).

4 Possible solutions and recommendations

As it can be seen, despite progress, numerous obstacles remain and the governments in the analysed countries still have a lot of work ahead of them on the way to turning the innovation ecosystems in their countries into truly thriving ones. Crucially, both the national and local level authorities must be strategic in their approach and plan their actions in both the short- and mid- to long-term horizons (e.g., employing Research and Innovation Strategies for Smart Specialisation [RIS3] method¹¹).

Given the significant disparities between individual countries alongside the different measures that have been underlined throughout the report, the below recommendations should be seen as a menu to choose from rather than a rigid recipe for success that has to be followed diligently step-by-step. An important role for LRAs could be to assist national governments in the selection process, as their in-depth knowledge of their own constituencies is hard to overstate and, consequently, they are crucial for the process of tailoring the policies and initiatives to local needs.

Updating legislative framework

One of the most important things that the national authorities can do is to reform the existing legislative and legal frameworks to create a more innovation-friendly environment. Indeed,

easing regulations and licensing requirements for instance was a preferred choice of governmental pandemic-related support for over one in five (22%) entrepreneurs, according to a study by Wamda and Arabnet (2020).

Useful resource: Cirera, Xavier; Frias, Jaime; Hill, Justin; Li, Yanchao. 2020. *A Practitioner's Guide to Innovation Policy: Instruments to Build Firm Capabilities and Accelerate Technological Catch-Up in Developing Countries*. World Bank, Washington, D.C. Available online: <https://openknowledge.worldbank.org/handle/10986/33269>

¹¹ <https://s3platform.jrc.ec.europa.eu/ris3-guide>

Some of the most pressing issues include:

- simplification of procedures required to create, run, but also close a business; given the high risk of failure associated with the creation of highly innovative companies, such a move is crucial in incentivising potential start-uppers;
- upgrades to intellectual property regimes;
- creation of MSME- and start-up-friendly public procurement policies, such as the creation of e-procurement portals and cutting large tenders into smaller lots or allowing for collective bidding;
- improvement of the framework and incentivisation for the creation of public-private partnerships;
- continued work with partner countries to create a conducive environment for e-commerce (e.g., on taxation);
- development of mechanisms of providing social protection for gig economy workers and individual entrepreneurs working online, without burdening them with excessive taxes;
- facilitation of market access for MSMEs and start-ups for example by the removal of protectionist policies favouring public companies and large incumbents (e.g., in the banking sector, which would help fintech companies);
- design of tailored policies targeting different types of entrepreneurs (e.g., transformational versus subsistence entrepreneurs or start-ups at different levels of development).

Importantly, the state should limit its intervention to places where market failures are present (or, depending on the school of thought, also where inequalities are excessive or redistribution is needed). In general, however, otherwise it should allow private markets to work (Arab Competitiveness Report, 2018).

The role of LRAs outside of providing a consultative role in the development and implementation of new policies could be the establishment of one-stop-shops for MSMEs and start-ups, where entrepreneurs could, for example, obtain information on changes to legislation, get legal advice, or ask for assistance in filling in legal forms.

Interesting new initiative: an online Funding Observatory aimed at gathering all opportunities available for entrepreneurs in Palestine in one place, launched by LEADERS International, partner of the EU-funded MEDSt@rts project.

<https://fundingobservatory.org/>

Improving access to funding

Facilitating access to funding for MSMEs and start-ups is a crucial form of support to entrepreneurship and innovation ecosystems. This is particularly relevant now, when numerous companies – in particular, start-ups at the early stages of development, which are the most dependent on external financing – are struggling to survive amid the still ongoing Covid-19 pandemic. In what follows, it is suggested that the authorities:

- reduce the time it takes to award funds to start-ups from months to weeks at most;
- simplify the procedures required to apply for non-funding support to make them less resource-consuming;
- support the ecosystem with grants, loans, deferments or waivers of payments, or tax relief in order to help entrepreneurs survive the pandemic;
- create tax incentives for companies to invest in R&D;
- adjust legislation and create support policies to facilitate and encourage business angel funding and crowdfunding;
- increase spending on R&D (as a percentage of GDP);
- improve access to information on funding available to entrepreneurs by maintaining up-to-date websites with working links and detailed information on eligibility criteria and application procedures.

Equally important, governments should create environments that would attract foreign investors. To that end, apart from the implementation of investment-friendly rules, legislation predictability, political stability, and safeguarding rule of law are of utmost importance.

LRAs can support these efforts by creating campaigns encouraging investors to come to their regions or municipalities. In the EU, multiple regions have already created this kind of strategy; in Spain, “Invest in Andalusia”¹² underscores not just the economic advantages of the region but also boasts “unbeatable” quality of life, a factor that is oftentimes overlooked but of importance especially for individual entrepreneurs. “Invest in Catalonia”¹³ lists a number of services that the region provides to prospective investors, including advice on taxation, work permits, and help in finding the best business location. In Italy, the “Invest in Tuscany”¹⁴ campaign underlines the region’s strengths, showcases companies successfully operating in the region, and highlights pro-investment activities in the region, including the signing of memoranda of understanding between LRAs and businesses and the creation of a network of assistance for potential investors

¹² <https://www.investinandalucia.es/>

¹³ <http://catalonia.com/invest-in-catalonia/>

¹⁴ <http s://www.investintuscany.com/wp-content/uploads/2021/01/ebook-con-indice-EN-.pdf>

together with local cities, municipalities, and networks of municipalities (admittedly, including more language versions beyond the national language and English could be a good addition to these efforts).

When applying for funding of their own innovative projects, LRAs must focus on delivering high-quality, well thought out proposals (for technical assistance opportunities in creating such project plans, see Section 5 below).

Promote a bottom-up approach

Governments and LRAs, while acting as facilitators in the innovation and entrepreneurship ecosystems, should give the private sector sufficient space to act. As the case study of Morocco showed, the *cit  d'innovation* (city of innovation) coordinated by a private sector actor is more successful than those established by HEIs and the public administration. Private companies are used to having to work in a fast past environment and have a practitioner's perspective and different mindset which is oriented at making a profit and achieving key performance indicators (KPIs). This makes them more efficient than public sector actors.

Investing in entrepreneurial education

Entrepreneurial education should be promoted at all levels – both at school and for adults. LRAs can support this process by cooperating with NGOs, CSOs, and international organisations specialising in designing and delivering entrepreneurship programmes and encouraging them to work among their constituencies. LRAs are best suited to advise what types of programmes are needed for which type of economic issue. Special programmes for youth and women from various backgrounds should be promoted; examples of such efforts are the European Commission-sponsored project Social Innovation in the Agri-food sector for Women's Empowerment in the Mediterranean Sea basin (InnovAgroWoMed)¹⁵ or the Heya Raeda Programme¹⁶ for early-stage female entrepreneurs, funded by the Egyptian Information Technology Industry Development Agency.

Interesting initiative: the SEMED digital platform aims to become a single point of access for the innovation ecosystem in the Mediterranean, helping to connect different ecosystems, for example, by mapping ecosystem actors and providing information on innovation-related legislation in each of the countries covered by the project.

<https://semed.eu/>

¹⁵ <http://www.enicbcmed.eu/projects/innovagrowomed>

¹⁶ <https://www.insme.org/the-egiptian-heya-raeda-programme/>

Building entrepreneurial culture

Authorities at national and sub-national levels must invest more efforts in the promotion of innovation and entrepreneurial spirit and raising awareness of the benefits of becoming an entrepreneur. Special campaigns should be addressed to women in the region to harness their potential but also to broader society to increase the approval of female business ownership in particular and labour market participation in general. Another target audience, especially for LRAs, should be researchers and academic staff working at HEIs and research institutions on their territories. One example of such an initiative is the EC-funded STARTED project, created by MSMEs, HEIs, and non-profit institutions from different EU regions (Border, Midland and Western [Ireland], Bruxelles-Brussels, Cataluña, Languedoc-Roussillon, Lazio, and Liège) to assist researchers in capitalising on their research innovation and becoming entrepreneurs¹⁷.

An interesting way to promote entrepreneurial culture is through television shows like the Moroccan *Qui va investir dans mon projet? Spécial Startup*¹⁸, which connects business angels with entrepreneurs in a televised competition. Threads focusing on entrepreneurs, in particular female entrepreneurs, could also be introduced to popular television series (e.g., Ramadan shows) in cooperation with television production companies. LRAs can take part in boosting female entrepreneurship by promoting positive success stories of female innovators and entrepreneurs, ensuring female representation in their entrepreneurship-gearred activities (including public events) and undertakings (e.g., public-private partnerships) (OECD, 2021b; ESCWA, 2019).

Promoting mobility and exchange of know-how

While brain-drain is a serious issue for the countries under study, the mobility of researchers and innovators, allowing for interaction and exchange of ideas with foreign counterparts, is a crucial element for boosting know-how and technology transfers (OECD, 2021a). Visas should be therefore easily granted for researchers and entrepreneurs to travel both within the region and to the EU as well as for shorter periods for example to attend a conference or training programme or for business visits.

To that end, active participation in programmes such as Erasmus+ or Erasmus Mundus could be of great benefit. Supporting HEIs to take part in international R&D projects, for example, within the new Horizon Europe framework, could be done through providing assistance in finding partners and filling in applications, or

¹⁷ <http://www.startedproject.eu/>

¹⁸ <https://www.quivainvestirdansmonprojet.ma/>

subsidising time spent on proposal preparation (in Poland, for instance, the “granty na granty” programme offers this kind of support). Worth noting are also initiatives such as PRIMA (the Partnership for Research and Innovation in the Mediterranean Area)¹⁹ – a joint programme between EU MS, H2020 Associate Countries, and Med Partner Countries under which funding for R&D projects in the fields of water management, farming systems, and agro-food is granted.

Improving coordination and cooperation between different innovation actors

As it has been underlined by the majority of interviewees, the innovation ecosystem is too fragmented and too many actors are in charge of the different aspects of its development and coordination. On the national government level, the ministry in charge of innovation should ideally be in charge of all innovation policies in the country.

At the local level, a bottom-up approach to developing innovation ecosystems can be supported through the participation of stakeholders such as chambers of commerce and business associations. One EC-funded project, INTECMED, since September 2020 has been aiming to do just that in four Mediterranean countries: Greece, Spain, Tunisia, and Egypt. The key goal of the project, led by the Chamber of Achaia, is to “overcome the obstacle of different actors working with innovation at local level to coordinate their actions and to find synergies”²⁰. Similarly, NEXT Society projects involves various types of stakeholders in order to “mobilis[e], promot[e]and reinforc[e] innovation ecosystems and economic development in the MENA region”²¹.

Boosting university-enterprise partnerships

Strengthening cooperation between education, research, and business – the “knowledge triangle” (OECD, 2021a) – is of utmost importance. One way that LRAs could contribute is by virtue of supporting the creation of local internship programmes, whereby students from local universities could gather hands-on experience in local MSMEs, start-ups, and large companies²². Another idea is for LRAs to work with HEIs and the local private sector to design PhD positions whereby a doctoral candidate’s work would aim at solving commonly identified problems existing in local communities or among local enterprises. An example of such an initiative might be the PhD programme sponsored by Rolls Royce in The

¹⁹ <https://prima-med.org/>

²⁰ <http://www.enicbcmed.eu/projects/intecmed>

²¹ <https://www.thenextsociety.co/about>

²² See, e.g., Volles, N. & Switzer, C. (2020).

University of Nottingham created to “address key challenges in manufacturing engineering”²³. Under the HOMERe project, in turn, chambers of commerce, business associations, HEIs, and LRA associations from the Mediterranean region came together to support high-achieving students in finding employment in their home countries²⁴.

Build smart cities

LRAs should use innovative approaches to solve local problems, for example, those related to rainwater collection, energy distribution, waste management, or traffic congestion. Throughout the world, different versions of city innovation centres exist, whereby smart technologies and data-driven innovative solutions are used to improve the quality of life of citizens. Importantly, a key value of smart city projects is “in how (...) technology is used rather than simply how much technology is available” (TWI, n/d). In order for these projects to become successful, close cooperation between local authorities, HEIs, research institutions, and the private sector (SMEs, large companies, and business associations) is crucial, not least since the latter is an important source of funding for smart city investments (Deloitte, n/d).

The smart city approach, adapted to the local environment, could be implemented in the analysed countries as well. For instance, the creation of a Smart City Innovation Centre (SCIC)²⁵ was planned in Alexandria, Egypt under a project promoted by the Euromed Cities Network, represented by the Nice Côte d’Azur Metropolis where the original SCIC has been successfully operating since 2015²⁶. Unfortunately, despite a secured budget, a ready-made idea, and involvement from international partners, it did not come to fruition – mostly due to the pandemic situation and corresponding priorities choices. The establishment of SCICs is still, however, planned in Fez (Morocco) and Tunis (Tunisia).

²³<https://www.findaphd.com/phds/project/rolls-royce-sponsored-phd-scholarship-laser-beam-processing-of-aerospace-materials-eng-1408/?p123655>

²⁴ <https://ufmsecretariat.org/project/homere/>

²⁵ https://ufmsecretariat.org/wp-content/uploads/2018/08/Snapshot_SmartCityInnovationCentres.pdf

²⁶ <https://ufmsecretariat.org/project/euro-mediterranean-smart-city-innovation-centres/>

Monitor and evaluate

Few countries in the region conduct national innovation surveys as recommended by the OECD and R&D monitoring and evaluation (M&E) systems are not systematically implemented (Radwan, 2018; INSME, 2021; ECSWA, 2017). A rare example of a regularly published indicator system is that developed by the French Science and Technology Observatory (OST) (OECD, 2021a).

Changing this could positively affect the efficiency and effectiveness of innovation strategies. LRAs could help in the selection of appropriate metrics for M&E (including gender-sensitive indicators) and assist in the collection of statistical data relevant for innovation and entrepreneurship-enhancing actions, the lack of which is a significant obstacle to M&E implementation (OECD, 2021a).

Invest in infrastructure

On a local level, LRAs should cooperate with the private and public sectors to ensure the appropriate infrastructure exists to support their functioning: roads, street lighting, public transport, and car parks are all crucial to support the functioning and growth of actors such as technoparks or HEIs. For women entrepreneurs, particularly useful could be affordable childcare facilities run or subsidised by the state.

Promote digitalisation and ICT adoption²⁷

Last but not least, authorities should increase efforts to improve ICT infrastructure and promote digitalisation (also by offering e-government services). Supporting the creation of online marketplaces can help MSMEs and start-ups to reach more potential clients. Particular attention should be given to the ways in which digitalisation can support female entrepreneurship²⁸.

²⁷ See also a report “Digitalisation of small and medium enterprises (SMEs) in the Mediterranean” prepared for the European Committee of the Regions by Sidlo et al. (2020).

²⁸ See, e.g. findings from UfM Business Forum “Gender-Sensitive Innovation and Digital Opportunities for Rural Women: What Role for Innovation Support Organizations?”, Available at: <https://www.ciheam.org/agendas/digital-innovations-and-opportunities-for-women-entrepreneurs-in-rural-areas/>.

5 Non-funding possibilities from the EU and international donors²⁹

The FEMIP Trust Fund

Funded by: European Investment Bank (EIB)

Geographical scope: Algeria, Egypt, Gaza Strip-West Bank, Israel, Jordan, Lebanon, Morocco, Tunisia, and Libya

Description and other relevant info: The FEMIP Trust Fund is an instrument that complements the EIB's activities in the Mediterranean region by financing technical assistance services, regional studies, and capacity-building that help project promoters to acquire sufficient local capacity to prepare and implement project operations. For instance, the FEMIP Trust Fund can help support institutional reforms, specifically aimed at improving the business environment. Moreover, it can provide tailored technical advisory services to project promoters either for the design of projects that it finances (pre-feasibility and feasibility studies, audits and procurement documents, and upstream sector studies, among others) or the completion of them at any time during the project cycle (strengthening project management skills and coaching public authority project implementation units, among others).

Link: For [general information](#) about the FEMIP Trust Fund, for the [application procedure](#), and for an [informative brochure](#).

The Urban Projects Finance Initiative (UPFI)

Funding body: Agence française de développement (AFD), EIB, EC, and UfM

Geographical scope: Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestine, and Tunisia.

Description and other relevant info: The UPFI was developed in order to provide technical assistance to LRAs in their efforts to i) identify; ii) prepare; and iii) secure financing for sustainable urban development projects geared at job creation, poverty reduction, and urban fabric upgrade.

In order to facilitate the process of the preparation of the projects, the UfM enables LRAs to present their emerging project ideas/proposals in the UfM Regional

²⁹ This section of the report presents programmes under which non-financial assistance is available to LRAs from the EU, its Member States, international financial institutions, as well as major donor countries in the region. Separate reports focusing on funding opportunities, *EU financial assistance available to local and regional authorities in Mediterranean partner countries* and *EU financial assistance available to local and regional authorities in the candidate and potential candidate countries for EU enlargement* will be published by the European Committee of the Regions towards the end of 2021.

Platform on Sustainable Urban Development and the UfM-IFIs Urban Development Project Committee for a preliminary assessment of their bankability and sustainability in the context of the identification and early preparation phase. The meetings are envisioned to take place once or twice a year.

Link: For general information, see the [UPFI website](#). For information on upcoming UfM-IFIs Urban Project Committee meetings, see the [UfM website](#). The [online form](#) for submitting project ideas for evaluation (version from the past call for reference).

EU4Business – Local Development Strategies – Local Self Government and Economic Development Programme in Bosnia and Herzegovina

Funding body: Funded by the EU (EUR 15 million) and the Federal Republic of Germany (EUR 1.1 million); jointly implemented by GIZ, ILO, and UNDP.

Geographical scope: Bosnia and Herzegovina

Description and other relevant info: EU4Business project aims at stimulating the competitiveness of MSMEs and the development of entrepreneurship in the key sectors of tourism and agriculture. EU4Business provides technical and financial support to strengthen the competitiveness and innovation of MSMEs and business development. At the same time, LRAs can benefit from capacity-building services and technical assistance to help enhance and develop a more sustainable business and entrepreneurship environment that enables growth and job creation, with a special focus on digitalisation and innovation.

The regions of Banja Luka and Central Bosnia and the municipalities of Sarajevo, Jablanica, Kakanj, Konjic, Petrovac, Travnik, Ribnik, and Bosanski Petrovac are currently designing entrepreneurship development projects and will be able to benefit from non-financial assistance throughout the project's implementation period until the end of 2022.

Link: For [general information](#) and [detailed information](#).

Indirect assistance

Within the projects listed below, LRAs cannot apply for assistance directly to the funding agencies, since national governments are the direct beneficiaries. However, they can benefit from non-financial assistance throughout the projects' implementation period.

Municipal Performance Program

Funding body: The World Bank

Geographical scope: Morocco

Description and other relevant info: The Municipal Performance Program (2019-2023) provides support to 78 municipalities in the selected regions of Tanger-Tétouan-Al Hoceima, l'Oriental, Fès-Meknès, Rabat-Salé-Kénitra, Béni-Mellal-Khénifra, Casablanca-Settat, Marrakech-Safi, Draâ-Tafilalet, and Souss-Massa. The overall objective of the programme is to improve the institutional and managerial performance of participating municipalities while deepening the process of fiscal and administrative decentralisation in Morocco. Capacity building and technical assistance services available to targeted municipalities focus on enhancement of the business environment and investment capacities of LRAs, support for urban infrastructure development, strengthening institutional and service delivery performance, improvement of the legal and regulatory framework, and strengthening of inter-municipal cooperation.

Link: For [general information](#) and for [detailed program description](#)

Upper Egypt Local Development Program-for-Results Project

Funding body: The World Bank (International Bank for Reconstruction and Development)

Geographical scope: Egypt

Description and other relevant info: The programme (running until October 2023) aims at improving the business environment for private sector development and strengthening local infrastructure and service delivery in Upper Egypt, in particular in the governorates of Qena, Sohag, Menya, and Assiut³⁰. The project specifically targets the key constraints to private-sector-led growth in Upper Egypt by reinforcing the effectiveness and accountability of municipalities and empowering them via capacity building reforms that help implement programmes targeting business development activities.

Link: For [general information](#)

³⁰ The governorates of Menya and Assiut were recently incorporated to the targeted activities due to an extension of the programme's scope.

Libya Public Financial Management Program (LPFM)

Funding body: The U.S. Agency for International Development (USAID)

Geographical scope: Libya

Description and other relevant info: USAID's LPFM aims at helping the government of Libya to strengthen macroeconomic and fiscal foundations in order to spur sustainable and inclusive growth in the country, among others, by virtue of improving the business enabling environment to stimulate private sector growth and investment in the country. LRAs can benefit from technical assistance in the form of trainings and advisory services. The period of implementation is 2019-2024 (two base years plus three option years). The total estimated cost is up to USD 55 million over five years.

Link: For [general information](#)

6 References

Accuracy (2020). *Supporting start-ups Episode 3 – How is the Moroccan innovation ecosystem being built?* Available at: <https://www.accuracy.com/perspectives/supporting-start-ups-episode-3-how-is-the-moroccan-innovation-ecosystem-being-built>

Atalayar (2020). *The Moroccan masks that are sweeping the world.* Available at: <https://atalayar.com/en/content/moroccan-masks-are-sweeping-world>

ASDA'A BCW Arab Youth Survey (2020). *Arab Youth Survey. 12th Annual Edition 2020. A Voice for Change.* Available at: https://www.arabyouthsurvey.com/pdf/downloadwhitepaper/AYS%202020-WP_ENG_0510_Single-Final.pdf

Assaad, R., & Barsoum, G. (2019). *Public employment in the Middle East and North Africa.* IZA World of Labor, 2019: 463. Available at: <https://wol.iza.org/articles/public-employment-in-the-middle-east-and-north-africa/long>

Assaf, T., Haddad, H., Wyne, J., & Soueid, K. (2016). *Access to Talent for Mena's Entrepreneurs.* WAMDA Research Lab & Bayt.com. Available at: <https://www.wamda.com/research/a2t-access-talent-menas-entrepreneurs>

Augier, P., Castel, V., El Malki, T., Hanin, M. A., Louis, M., Perera, J., Tsakas, C., & Ventura, J. (2019). *Identification of barriers to the integration of Moroccan SMEs in global value chains.* FEMISE Euromed Report. Available at: http://www.femise.org/wp-content/uploads/2019/09/FEMISE-EuroMED-3-GB_compressed.pdf

Aujourd'hui Le Maroc (2020). *Moldiag : 10.000 tests PCR livrés à fin juin.* Available at: <https://aujourd'hui.ma/societe/moldiag-10-000-tests-pcr-livres-a-fin-juin>

Azouzi, A.A., & Fakhfakh, Z. (2020). *Roadmap Maghreb Business Angel Network.* Konrad Adenauer Stiftung. Available at: <https://www.kas.de/documents/282499/282548/KAS+BUSINESS+ANGEL+WE B.pdf/774ccb82-5711-366b-199b-48b3bedc9fe4?version=1.0&t=1579526639714>

Ben Slimane, S., & Ramadan, M. (2017). Le système national d'innovation dans les pays du Maghreb: entre failles structurelles et besoin de coordination et de gouvernance appropriées. *Innovations* 2(53), 105-127. Available at: <https://www.cairn.info/revue-innovations-2017-2-page-105.htm>

Ben Slimane, S., & Zouikri, Z. (2016). Investissements directs étrangers et capacité d'absorption nationale: les leviers de croissance des économies du Maghreb. *Marché et Organisations* 26, 19-47. Available at: <https://hal.archives-ouvertes.fr/hal-02908632>

Bosma, N., Hill, S., Ionescu-Somers, E., Kelley, D., Levie, J., & Tarnawa, A. (2020). *GEM – Global Entrepreneurship Monitor. 2019/2020 Global Report*. Available at: <https://www.gemconsortium.org/report>

Bosma, N., Hill, S., Ionescu-Somers, E., Kelley, Guerrero, M., & Schott, Th. (2021). *GEM – Global Entrepreneurship Monitor. 2020/2021 Global Report*. Available at: <https://www.gemconsortium.org/report>

CCG (n/d). *Presentation – Le « Fonds Innov Invest » (FII)*. Available at: <https://www.ccg.ma/innovation/presentation.php>

Chambre française de commerce et d'industrie du Maroc (2020). Interview de Aziz Fassouane. Available at: <https://www.cfcim.org/magazine/78062>

Cirera, X., Frias, J., Hill, J., & Li, Y. (2020). *A Practitioner's Guide to Innovation Policy: Instruments to Build Firm Capabilities and Accelerate Technological Catch-Up in Developing Countries*. World Bank, Washington, D.C. Available online: <https://openknowledge.worldbank.org/handle/10986/33269>

CNRST – Centre National de la Recherche Scientifique et Technologique (2020). *AP de R&D Multithématique 2020: Prolongation jusqu'au 27 Novembre 2020 à 12h*. Available at: <https://www.cnrst.ma/index.php/fr/component/k2/item/449-appel-a-projets-de-recherche-et-developpement-multithematique-2020>

CNRST – Centre National de la Recherche Scientifique et Technologique (2021). *Programme de soutien à la recherche scientifique et technologique en lien avec le "covid-19"*. Available at: <https://www.cnrst.ma/index.php/fr/financement-de-la-recherche/programmes-nationaux/financement-des-projets-de-recherche?id=174>

Deloitte (n/d). *Funding and financing strategies for smart cities*. Available at: <https://www2.deloitte.com/us/en/pages/public-sector/articles/smart-cities-funding-and-financing-strategies.html>

Direction de la Recherche Scientifique et de l'Innovation (2018). *Strategie Nationale pour le Developpement de la Recherche Scientifique a l'horizon 2025*.

Dutta, S., & Lanvin, B. (Eds). (2020). *Network Readiness Index 2020. Accelerating Digital Transformation in a post-COVID Global Economy*. Available at: <https://networkreadinessindex.org/>

Dutta, S., Lanvin, B., & Wunsch-Vincent, S. (Eds.) (2020). *The Global Innovation Index (GII) 2020: Who Will Finance Innovation?* Cornell University, INSEAD, World Intellectual Property Organization (WIPO). Available at: <https://www.globalinnovationindex.org/Home>

EPO – European Patent Office (2016). *Validation of European patents in Morocco*. Official Journal January 2016. Available at: <https://www.epo.org/law-practice/legal-texts/official-journal/2016/01/a5.html>

ESCWA – United Nations Economic and Social Commission for Western Asia (2017). *Innovation Policy for Inclusive Sustainable Development in the Arab Region*. Available at: <https://www.unescwa.org/publications/innovation-policy-inclusive-sustainable-development-arab-region>

ESCWA – United Nations Economic and Social Commission for Western Asia (2019). *Innovation and Entrepreneurship: Opportunities and Challenges for Arab Youth and Women*. Available at: <https://www.unescwa.org/publications/innovation-entrepreneurship-opportunities-challenges-arab-youth-women>

European Commission (2021). *The Union for the Mediterranean Regional Platform in R&I kicks off new Consultation Process and launches an online survey*. Available at: https://ec.europa.eu/info/news/union-mediterranean-regional-platform-ri-kicks-new-consultation-process-and-launches-online-survey-2021-mar-25_en

Fontaine, J.A. (2018). *Etat des lieux sur le financement de l'Innovation au Maroc*. Association Marocaine des Investeurs en Capital. Available at: <https://www.amic.org.ma/wp-content/uploads/2018/11/innovation.pdf>

Hamidi, S., & Benabdeljalil, N. (2013). National Innovation Systems: the Moroccan Case. *Procedia - Social and Behavioral Sciences* 75, 119-128. Available at: <https://www.sciencedirect.com/science/article/pii/S1877042813005508>

Hartley, J. (2005), Innovation in governance and public services: Past and present, *Public Money and Management* (25)1, 27-34.

ILO – International Labour Organisation. (2019). *Skills and job mismatches in low- and middle-income countries*. Available at: https://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_726816.pdf

ILO – International Labour Organisation. (2020). *Skills Challenge Innovation Call: Finding solutions to skills mismatch*. Available at: https://www.ilo.org/skills/projects/innovation-facility/WCMS_733982/lang--en/index.htm

IMF – International Monetary Fund (2019). *Enhancing the Role of SMEs in the Arab World – Some Key Considerations*. Available at: <https://www.imf.org/~media/Files/Publications/PP/2019/PPEA2019040.ashx>

INSME – The International Network for Small and Medium Enterprises (2021). *The Innov Invest Fund*. Available at: <https://www.insme.org/the-innov-invest-fund-in-morocco/>

ITU – International Telecommunication Union (2018). *Digital Innovation Profile Bosnia and Herzegovina ICT centric innovation ecosystem snapshot National Expert Assessment*. Available at: https://www.itu.int/en/ITU-D/Innovation/Documents/Publications/eBAT_Brochure%E2%80%93DIP%20BosniaH_431106.pdf

ITU – International Telecommunication Union (2020). *Global ICT Regulatory Outlook 2020. Pointing the way forward to collaborative regulation*. Available at: https://www.itu.int/dms_pub/itu-d/opb/pref/D-PREF-BB.REG_OUT01-2020-PDF-E.pdf

Khanfir, M. (2016). *How to Harness the National Innovation System to enable Technology Transfer and strengthen the Innovation capability in Tunisia*. ESCWA Technology Centre. Available at: <https://www.slideshare.net/MondherKhanfir/report-on-the-tunisian-national-innovation-system>

Le Ministere de l'Education Nationale, de la Formation Professionnelle, de l'Enseignement Supérieur et de la Recherche Scientifique. (n/d). Available at: <https://www.enssup.gov.ma/en/systeme-national-de-recherche-et-d-innovation-snri>

Majdouline, I., El Baz, J., & Jebli, F. (2020). Entrepreneurship orientation and innovation linkage: the case of Moroccan firms. *Projectics / Proyéctica / Projectique 1*(25), 27-45. Available at: <https://www.cairn.info/revue-projectique-2020-1-page-27.htm>

MAP – Agence Marocaine de Press (2021). *Lancement de “Tatwir-Startup” en appui aux projets industriels*. Available at: <https://mapfinance.ma/lancement-de-tatwir-startup-en-appui-aux-projets-industriels/>

MEFAR – Ministry of Economy, Finance and Administrative Reform (2020). *Government Council adopts bill establishing “Mohammed VI Fund for Investment”*. Available at: <https://www.finances.gov.ma/en/Pages/detail-actualite.aspx?fiche=5222>

Mission Innovation (2019). *Morocco joined Mission Innovation*. Available at: <http://mission-innovation.net/2019/10/21/morocco-joined-mission-innovation/>

MIT Enterprise Forum Arab Entrepreneurship Maturity Index 2020. Available at: <https://www.mitefarab.org/en/impactreport/index#download-report>

Morrar, R. (2019). *Innovation in the MENA Region*. IEMed. Mediterranean Yearbook 2019. Available at: https://www.iemed.org/publicacions-en/historic-de-publicacions/anuari-de-la-mediterrania/sumaris/iemed-mediterranean-yearbook-2019?set_language=en

The North Africa Post (2020). *FAO designates Moroccan innovation as MENA’s best COVID-19 protection for farmers*. Available at: <https://northafricapost.com/40808-fao-designates-moroccan-innovation-as-menas-best-covid-19-protection-for-farmers.html>

Noutary, E. (2017). *Recommendations for lifting barriers to private investment in young firms*. ANIMA Investment Network Policy paper. Available at: https://anima.coop/wp-content/uploads/2020/05/sahwa_policy_paper_anima_rev_final.pdf

OCP – Office Chérifien des Phosphates (2020). *UM6P takes part in the production of a 100% Moroccan respirator*. Available at: <https://corpo.ocpgroup.ma/en/um6p-takes-part-production-100-moroccan-respirator>

OECD – Organisation for Economic Co-operation and Development (2018). *Oslo Manual 2018 Guidelines for Collecting, Reporting and Using Data on Innovation, 4th Edition*. Available at: <https://www.oecd.org/science/oslo-manual-2018-9789264304604-en.htm>

OECD – Organisation for Economic Co-operation and Development (2019). *Enhancing Innovation Capacity in City Government*. Available at: <https://www.oecd-ilibrary.org/sites/6593ec90-en/index.html?itemId=/content/component/6593ec90-en#boxsection-d1e1218>

OECD – Organisation for Economic Co-operation and Development (2021a). *Regional Integration in the Union for the Mediterranean. Progress Report*. OECD Publishing, Paris. Available at: https://ufmsecretariat.org/wp-content/uploads/2021/05/Regional-Integration-in-the-UfM_EN.pdf

OECD – Organisation for Economic Co-operation and Development (2021b). *Entrepreneurship Policies through a Gender Lens, OECD Studies on SMEs and Entrepreneurship*. OECD Publishing, Paris. Available at: <https://doi.org/10.1787/71c8f9c9-en>.

Partech Africa Team (2020). *2019 Africa Tech Venture Capital Report*. Available at: https://cdn-website.partechpartners.com/media/documents/2020.01_Partech_Africa_-_2019_Africa_Tech_VC_Report_FINAL.pdf

Radwan, A. (2018). Science and innovation policies in North African Countries: Exploring challenges and opportunities. *Entrepreneurship and Sustainability Issues* (6)1, 268-282. Available at: <https://hal.archives-ouvertes.fr/hal-02121204/document>

Radwan, A., & Sakr, M. M. (2017). Review of Egypt Science and Technology System: SWOT analysis. *Entrepreneurship and Sustainability Issues* 5(2), 204-211. [https://doi.org/10.9770/jesi.2017.5.2\(3\)](https://doi.org/10.9770/jesi.2017.5.2(3))

Schwab, K. (2019). *The Global Competitiveness Report 2019*. World Economic Forum. Available at: http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf

Sidło, K., Albinyana, R., Karunska, K., Salmeri, C., & Bieliei, S. (2020). *Digitalisation of small and medium enterprises (SMEs) in the Mediterranean*. The European Committee of the Regions. Available at: <https://op.europa.eu/en/publication-detail/-/publication/313586b6-fc86-11ea-b44f-01aa75ed71a1>

- Skalli, Kh. (2018). *Les maux des start-ups marocaines*. Maroc Diplomatique. Available at: <https://maroc-diplomatique.net/les-maux-des-start-ups-marocaines/>
- The Next Society Project. (2021). Available at: https://www.thenextsociety.co/i-maps?title=&profile%5B6%5D=6&form_build_id=form-ILDNYsERe5G56OhK5F3wOvZaETdzlBft5EbVjiTIGVM&form_id=recherche_map_form&op=Search
- TWI (n/d). *What is a smart city? – definition and examples*. Available at: <https://www.twi-global.com/technical-knowledge/faqs/what-is-a-smart-city>
- UEMF – Euromed University of Fes (n/d). *UEMF in figures*. Available at: <https://ueuromed.org/en>
- Universite Hassan 1st (2020). *Rencontre nationale. Réseau National des Cités de l’Innovation et des Structures universitaires similaires. Quel mode de gouvernance pour les Cités de l’Innovation?* Available at: [http://www.uh1.ac.ma/system/files/Rencontre%20CIs-2020%20\(1\).pdf](http://www.uh1.ac.ma/system/files/Rencontre%20CIs-2020%20(1).pdf)
- USAID (2021). Tunisia JOBS. Call for Expressions of Interest. Crowdfunding. Available at: <https://www.tunisiajobs.org/crowdfunding>
- Volles, N., & Switzer, C. (2020). *Reinforcing the Innovation-Employability Nexus in the Mediterranean – A Handbook for Academia, Industry and Policymakers*. Union for the Mediterranean, Barcelona. Available at: https://ufmsecretariat.org/wp-content/uploads/2020/12/UFM_Handbook_Innovation-Employability-Nexus_2020_for-online-20201210.pdf
- Wamda & Arabnet (2020). *The impact of the Covid-19 outbreak on the entrepreneurship ecosystem*. Available at: <http://backend.wamda.com/api/v1/downloads/publications/impact-covid-19-outbreak-entrepreneurship-ecosystem-mena>
- Wamda & MIT Legatum Center (2021). *How COVID-19 Unlocked the Adoption of E-commerce in the MENA Region*. Available at: <https://legatum.mit.edu/wp-content/uploads/2021/03/170321-MIT-Wamda-E-Commerce-COVID19-report-EN-01.pdf>
- WEF – World Economic Forum (2018). *Arab Competitiveness Report*. Available at: <https://www.weforum.org/reports/arab-world-competitiveness-report-2018>
- World Bank (2017). *Global Findex Database*. Available at: <https://globalfindex.worldbank.org/>

World Bank (2018). *A New Economy for the Middle East and North Africa*. MENA Economic Monitor, October 2018. World Bank Group. Available at: <https://www.worldbank.org/en/region/mena/publication/mena-economic-monitor-october-2018-a-new-economy-for-mena>

World Bank (2021a). *World Bank Open Data*. Available at: <https://data.worldbank.org/>

World Bank (2021b). *Lebanon Sinking (to the Top 3)*. Lebanon Economic Monitor, Spring 2021. World Bank Group. Available at: <https://www.worldbank.org/en/country/lebanon/publication/lebanon-economic-monitor-spring-2021-lebanon-sinking-to-the-top-3>

Annex 1 Selected innovation-related indicators

Country	R&D spending (% of GDP)*	Company spending on R&D (1-7 scale when 7 = invests heavily)	High-technology exports (% of manufactured exports)	PCT patents (applications/million population)	University-industry collaboration in R&D (1-7 scale where 7=collaborate extensively)	Gov't procurement of advanced technology products (1-7 scale where 7=to a great extent)	Firm-level technology absorption (1-7 scale where 7=to a great extent)	FDI and technology transfer (1-7 scale where 7=to a great extent)
Albania	0.15 (2008)	3.4	0 (2018)	0.8	3.4	3.9	4.4	4.9
Algeria	0.54 (2017)	2.9	1 (2017)	0.2	2.6	3.0	3.8	3.7
BiH	0.2 (2018)	2.6	5 (2019)	1.7	2.8	2.6	4.2	3.8
Egypt	0.72 (2018)	2.9	2 (2019)	0.9	2.8	3.4	4.1	4.3
Israel	4.95 (2018)	5.8	23 (2019)	247.1	5.7	4.4	5.8	5.5
Jordan	0.71 (2016)	3.4	1 (2019)	0.5	3.5	3.5	4.9	4.5
Lebanon	n/d	3.2	2 (2018)	2.4	3.6	2.8	4.3	3.4
Libya	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d
Mauritania	0.01 (2018)	1.9	0 (2019)	0.0	2.7	3.3	2.6	2.1
Morocco	0.71 (2010)	3.0	5 (2019)	1.7	3.0	3.3	4.5	4.6
Palestine	0.49 (2013)	n/d	2 (2019)	n/d	n/d	n/d	n/d	n/d
Tunisia	0.6 (2018)	2.9	7 (2019)	1.0	3.0	2.6	4.0	4.2
Turkey	0.96 (2017)	3.3	3 (2019)	10.9	3.5	3.4	4.8	4.5
LMIC average	0.68 (2017)	n/d	19 (2019)	n/d	n/d	n/d	n/d	n/d
EU average	2.18 (2018)	n/d	16 (2019)	n/d	n/d	n/d	n/d	n/d

Source: World Bank Database, WEF Global Competitiveness Index.

Annex 2 Key innovation strengths and weaknesses

		Albania	Algeria	BiH	Egypt	Jordan	Lebanon	Morocco	Tunisia	Turkey	
INNOVATION INPUTS	INSTITUTIONS	Political environment					X				
		Political and operational stability*					X				
		Government effectiveness*						X			
		Regulatory environment				X					X
		Regulatory quality*		X		X					
		Rule of law*									
		Cost of redundancy dismissal, salary weeks			V	X	V	V			X
		Business environment	V					X			
		Ease of starting a business*	V		X				V	V	
		Ease of resolving insolvency*	V		V			X			X
	HUMAN CAPITAL & RESEARCH	Education						X		V	V
		Expenditure on education, % GDP	X					X	V	V	
		Government funding/pupil, secondary, % GDP/cap	X		V			X	V	V	
		School life expectancy, years					X				V
		PISA scales in reading, maths, & science		X				X	X	X	
		Pupil-teacher ratio, secondary			V			V			
		Tertiary education		V						V	
		Tertiary enrolment, % gross		V							
		Graduates in science & engineering, %		V		X	V			V	
		Tertiary inbound mobility, %			V		V	V			
		Research & development (R&D)	X								
		Researchers, FTE/mn pop		V							
		Gross expenditure on R&D, % GDP		V							
Global R&D companies, avg exp top 3, mn \$US	X	X	X	X	X	X	X	X	X		
QS university ranking, average score top 3*	X	X	X	V				X	X		

	INFRASTRUCTURE	Information & communication technologies (ICTs)									
		ICT access*									
		ICT use*									
		Government's online service*			X						
		E-participation*									
		General infrastructure		V		X				X	
		Electricity output, kWh/mn pop									
		Logistics performance*							X		
		Gross capital formation, % GDP		V		X			V		
		Ecological sustainability	V								
		GDP/unit of energy use	V	V					V		V
		Environmental performance*									
		ISO 14001 environmental certificates/bn PPP\$ GDP	V		V						
	MARKET SOPHISTICATION	Credit		X			V				
		Ease of getting credit		X			V	X	X		
		Domestic credit to private sector, % GDP					V	V	V		
		Microfinance gross loans, % GDP									X
		Investment		X		X				X	
		Ease of protecting minority investors*		X					V		V
		Market capitalization, % GDP		X							
		Venture capital deals/bn PPP\$ GDP				X	V	V	X		
		Trade, competition, and market scale									V
		Applied tariff rate, weighted avg, %	V					V		X	
		Intensity of local competition†					V	V			V
		Domestic market scale, bn PPP\$		V		V					V
		BUSINESS SOPHISTICATION	Knowledge workers								
	Knowledge-intensive employment, %					V			X		
	Firms offering formal training, %		V			X	X				
	GERD performed by business, % GDP										

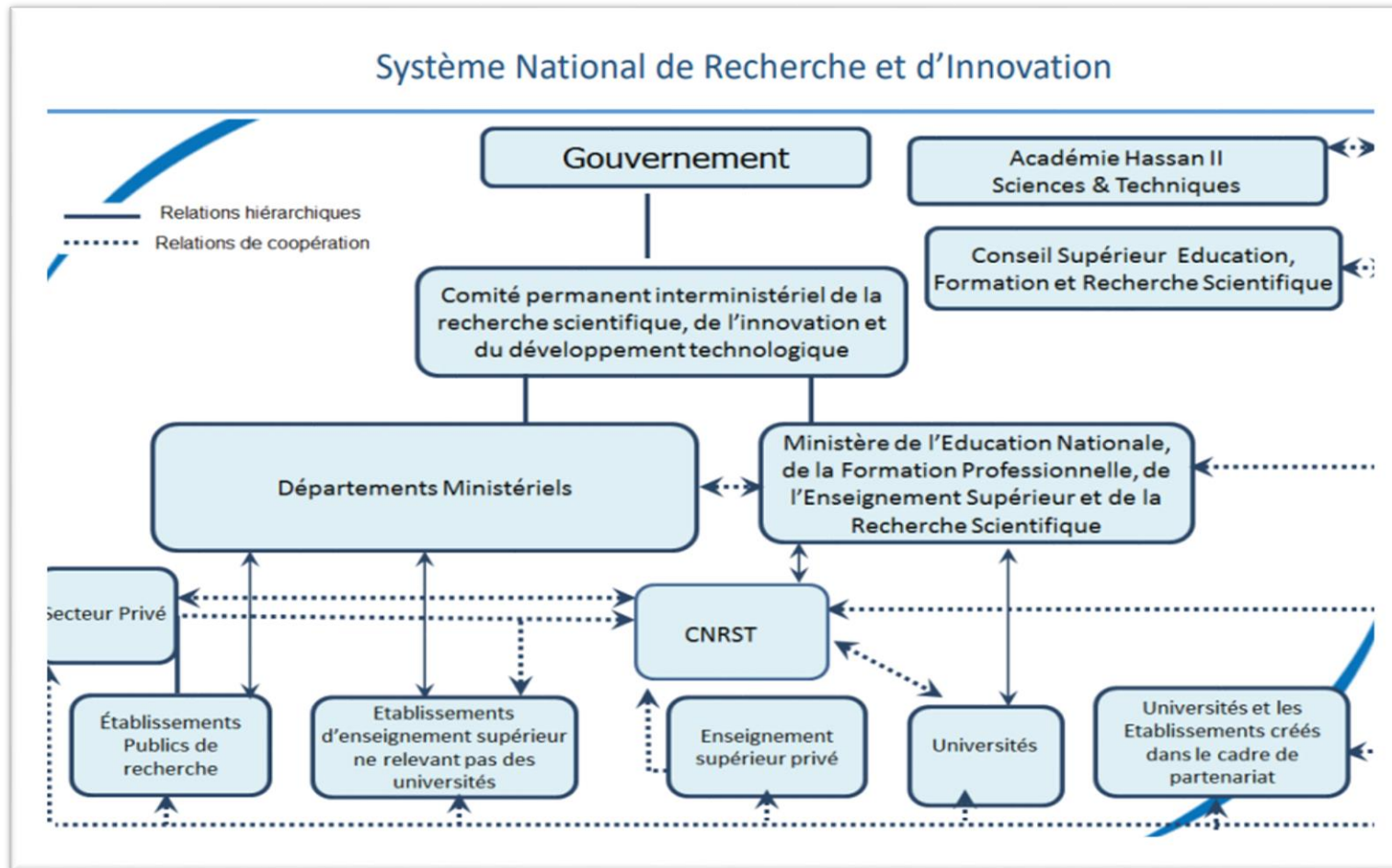
		GERD financed by business, %								
		Females employed w/advanced degrees, %								
		Innovation linkages			X			X	X	
		University/industry research collaboration†			X			X		
		State of cluster development†	X	V	X	V	V		X	
		GERD financed by abroad, % GDP								
		JV-strategic alliance deals/bn PPP\$ GDP						X	X	X
		Patent families 2+ offices/bn PPP\$ GDP								
		Knowledge absorption			X			X	X	
		Intellectual property payments, % total trade			X		X		X	
		High-tech imports, % total trade	X	V		V		X		
		ICT services imports, % total trade					X			X
		FDI net inflows, % GDP	V					V		
		Research talent, % in business enterprise							X	
		Knowledge creation							V	
		Patents by origin/bn PPP\$ GDP			V					
		PCT patents by origin/bn PPP\$ GDP								
		Utility models by origin/bn PPP\$ GDP								
		Scientific & technical articles/bn PPP\$ GDP					V		V	
		Citable documents H-index				V				
		Knowledge impact				V				
		Growth rate of PPP\$ GDP/worker, %			X	V	X	X		
		New businesses/th pop 15-64								
		Computer software spending, % GDP		X		V			V	V
		ISO 9001 quality certificates/bn PPP\$ GDP			V				V	
		High- and medium-high-tech manufacturing, %						V		
		Knowledge diffusion		X			X			
		Intellectual property receipts, % total trade								X
		High-tech net exports, % total trade							V	

		ICT services exports, % total trade					X		V		X	
		FDI net outflows, % GDP					X			V		
CREATIVE OUTPUTS	Intangible assets											
		Trademarks by origin/bn PPP\$ GDP									V	
		Global brand value, top 5,000, % GDP	X	X	X							
		Industrial designs by origin/bn PPP\$ GDP		V					V		V	
		ICTs & organizational model creation			X					X	X	
	Creative goods and services											
		Cultural & creative services exports, % total trade	V				X	V				X
		National feature films/mn pop 15-69			V	X						
		Entertainment & Media market/th pop 15-69				X	X		X	X		
		Printing and other media, % manufacturing	V				V					
		Creative goods exports, % total trade				V				V	V	
	Online creativity		V									
		Generic top-level domains (TLDs)/th pop 15-69	V									
		Country-code TLDs/th pop 15-69				X						
		Wikipedia edits/mn pop 15-69			V							X
		Mobile app creation/bn PPP\$ GDP		X					V			V

X – weakness, V – strength

Source: Own elaboration based on GII, 2020.

Annex 3 Morocco's research and innovation ecosystem



Source: Ministry of National Education, Vocational Training, Higher Education & Scientific Research, <http://www.satelit-project.com/fr/filebrowser/download/749>

EN

ISBN 978-92-895-1108-7
doi:10.2863/518444

QG-08-21-253-EN-N



**European Committee
of the Regions**

Created in 1994, the European Committee of the Regions is the EU's political assembly of 329 regional and local representatives such as regional presidents or city-mayors from all 27 Member States, representing over 446 million Europeans.

Rue Belliard/Belliardstraat 101 | 1040 Bruxelles/Brussel | BELGIQUE/BELGIË | Tel. +32 22822211
www.cor.europa.eu | [@EU_CoR](https://twitter.com/EU_CoR) | [/european.committee.of.the.regions](https://www.facebook.com/european.committee.of.the.regions)
[/european-committee-of-the-regions](https://www.linkedin.com/company/european-committee-of-the-regions)