Innovation ecosystems for youth agrifood entrepreneurship in the Mediterranean region

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Abstract

This paper is the outcome of a reflection on the MIP report 2020, a collection of information and data used to describe the scenario on youth innovation and entrepreneurship in agrifood sector in Mediterranean countries. In particular, it highlights the need to study innovation in Mediterranean regions under the lens of social and institutional innovation. It is argued that social and institutional innovation are key drivers of the development of Innovation Ecosystems. The paper discusses the main findings – and relevant case studies – of the MIP report, with a specific attention to the role of the Innovation Support Organizations. It is noted that while in the field of institutional innovation there are signs of official activity, in the field of social innovation there is no or very limited attempt to embody social innovation into national policy frameworks. However, the article identifies interesting bottom-up initiatives that may constitute the basis for new policy initiatives.

***Keywords**: Innovation, Agrifood sector, Youth entrepreneurship, MENA region.*

1. Background and objectives

The Agenda 2030 has indicated a clear direction for development efforts of MENA region.[1] Hardly Sustainable Development Goals (SDG) will be achieved with "business as usual" policies: they will require radical innovation at all levels. Unfortunately, the Innovation goal (Goal 9) is one of the worst performing in the MENA region (SDG report, United Nations, 2019).

The agrifood sector in all the Mediterranean region can be the significant strategic lever for local socio-economic development through innovative and sustainable businesses capable of increasing the number of people in employment, especially young people and women (Seyfettinoglu, 2016). Identifying and designing "innovation ecosystems" can support the processes of business creation in the agrifood sector and enhance growth opportunities and youth entrepreneurship development.

In the last 10 years, CIHEAM Bari has actively provided significant assistance to support the Mediterranean Innovation Ecosystem, enhancing different tools for agrifood entrepreneurship.

[1] In this paper the analysis is focused on Mediterranean countries of MENA (Middle East and North Africa) region. In particular on Algeria, Morocco, Tunisia, Egypt, Jordan, Lebanon, Palestine, Albania.

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It has developed the "MEDAB model" (Mediterranean Incubator for Business creation and change in the agrifood sector) to assist young entrepreneurs in the agrifood sector. It is expanding by sharing this experience with other Mediterranean countries through establishing an international network, namely, the *Mediterranean Innovation Partnership (MIP) for youth entrepreneurship and technology transfer in the agrifood sector*, which was established in February 2016 among public authorities (Ministries and research organizations) from 9 different countries. CIHEAM Bari is the promoter and coordinator of the MIP initiative (mip.iamb.it).

The MIP network's main objective is to develop activities related to capacity building, knowledge sharing and cooperation to promote an entrepreneurship culture, entrepreneurship creation, and innovation among young people "*to build up the Mediterranean Innovation Ecosystem*". One of the priorities of the MIP Action Plan 2018-2020, is to encourage new innovation stakeholders (both public and private) to join the MIP Network.

The more we strengthen the networking at local and international levels, the more effective is our action in supporting young people in the creation of business and in finding job opportunities. The MIP thus intends to extend the existing partnership to new countries and organizations from the Euro-Mediterranean region, including the Innovation Support Organizations (ISOs)[2] and Small and Medium Enterprises (SMEs) Clusters.

Within the framework of MIP objectives there is the engagement of all members to contribute to a regular survey on Mediterranean Innovation Ecosystem in order to describe the scenario on youth innovation and entrepreneurship in agrifood sector in MENA countries, to update and evaluate the situation of ISOs in the different MENA countries, together with the degree of their specialisation, partnership, governance, target and year of establishment, the innovation-oriented policies, youth entrepreneurship, the access to funding and the services they offer.

1.1. *State of art*

The MIP report moves from the principles that innovation is not just based on technology. On the contrary, often institutional innovation and social innovation are the necessary conditions for an effective diffusion of technological innovation (Woodhill, 2010) and, in any way, the success of technological innovation depends on the capacity to promote social and institutional innovation.

In fact, technological innovation can provide important opportunities but, depending on the context to which technology is applied, the outcomes could be very different, and far from those expected (Bartoli *et al.*, 2015; Schot and Steinmueller, 2016). An approach that focuses exclusively on technological innovation may contribute to create new inequalities, bringing countries far from social goals, or may create environmental spillovers, retarding the achievement of environmental goals. An appropriate innovation policy coherent with SDG should then be able to start from the problems and identify the areas of innovation that can contribute to solve them (UN independent group, 2019). Innovation, in this approach, is a driver for systemic change (Schot and Steinmuller, 2016).

In this paper we focus on institutional and social innovation as conditions for systemic change and necessary complement to technological innovation.

Institutional innovation is necessary to adapt administration to a goal-based policy: "*without robust capacity – strong institutions, systems, and local expertise – developing countries cannot fully own and manage their development processes*" (OECD, 2018 quoted by Woodhill, 2010). The recent SDG report, Mediterranean Countries Edition (2020), identifies three pillars of this adaptation: 1) high-level public state-

[2] Innovations Support Organizations (ISOs) are structures (namely, clusters, technology parks, business incubators, technology transfer offices, seed accelerators, business angels and early-stage investors, etc.) where young aspiring entrepreneurs, innovators, public institutions, private investors, research and training centers, meet to share knowledge, experiences and best practices aimed at building up an "enterprise culture".

ments by governments in support of sustainable development, such as a Voluntary National Reviews and public speeches in support of the SDGs; 2) strategic use of public practices and procedures for the goals, such as dedicated Centres of Governments, budgeting practices for financing SDG activities, national monitoring mechanisms, stakeholder engagement mechanisms; and 3) alignment of content of government strategies and policy actions with SDG goals. A specific aspect of institutional innovation is related to policy innovations. As it is now clear that innovation is rarely the outcome of individual firms' activities, but it occurs when firms interact intensively with their environment, the issue is to develop innovation ecosystems (Adner and Kapoor, 2010) the finality of which are consistent with SDGs.

Social innovation regards how people and enterprises change their behaviours to address societal goals: it affects both the way activities are organized and their outcomes (Cajaiba-Santana, 2014; Pol and Ville, 2009). Achieving SDG implies understanding of the nexus between biophysical and social spheres into daily practices, to make systemic links visible, to identify the barriers and bottlenecks to change. Barriers and bottlenecks are often embodied into daily practices and affect even those who are already convinced of the need to change (Anderson and Ronteau, 2017).

This paper aims at identifying good institutional and social innovation practices in the agricultural and food sector, and at proposing a policy framework to boost innovation in MENA region.

2. Methodology

The research was carried out through desk and field analyses at country and Mediterranean levels based on the MIP report 2017 data and best practices with respect to the critical issues that emerged in the collection of information from stakeholders.

The research was co-designed and carried out by CIHEAM Bari in 2018-2019 in collaboration with the MIP Network country focal points (Albania, Algeria, Egypt, Jordan, Lebanon, Morocco, Palestine Authority and Tunisia).

The desk analysis consisted in the collection of information and data from international sources and in the single countries mainly to collect the main descriptive indicators of the situation at country level and of the policies to support the sector and to compare and evaluate the positioning of the MENA countries in the global scenario. The field analysis consisted in the definition of a questionnaire, administered to about 300 ISOs of the eight MENA target countries. It is important to underline that there are no official sources to be adopted as reference regarding the ISOs.

The questionnaire was articulated in 3 main sessions: a) ISO information mainly on specialization, services offered, governance model, collaborations with regional and international networks (networking); b) the national policies regarding innovation and youth entrepreneurship, and c) social innovation.

In addition, case studies were collected for each target country, identified by MIP focal points, which enabled the analysis to be integrated in relation to the country scenario and the role of the ISO.

The case studies are mainly successful initiatives at national level, supporting innovation and entrepreneurship.

In this paper, some of them will be listed.

In the end, an analysis of all the data collected by MIP focal points was elaborated by the MIP coordination unit of CIHEAM Bari to have a regional overview of data, policies, positive signs, and future prospects in addition to the country's scenario.

3. Results

3.1. *Role of the institutions in fostering innovation ecosystem*

Innovation ecosystem is the term used to describe the large number and diverse nature of participants and resources that are necessary for innovation. The capacity to achieve and sustain any development outcome depends on the ability and joint work of multiple and interconnected actors: governments, civil society, private sector, universities, individual entrepreneurs and others.

The *key innovation stakeholders* in the Mediterranean are:

- *entrepreneurs*, innovation managers of small businesses or major groups, researchers working on innovative projects, all of whom are interested in finding the adequate interface, partners and anchor institutions;
- *ISOs* that promote innovation in the Mediterranean (technology parks, incubators, business centres, entrepreneur networks), interested in exchanging on good practices and joint initiatives;
- *governmental organizations* (Ministries, innovation agencies) and non-governmental organizations offering support in the area of technology transfer and innovative entrepreneurship, interested in improving synergy with existing programmes;
- *financial institutions* from the public sector (funding bodies) and the private sector (investment funds, banks, venture capitalists) (Dagault *et al.*, 2012).

For this purpose, the MIP Network aims to create the Mediterranean Innovation Ecosystem, putting together the key innovation stakeholders, to support the youth entrepreneurship in the agrifood sector following 3 main axes of action:

- knowledge sharing and transfer of (model and system);
- capacity building (the new role of innovation actors);
- cooperation and enhancement of collaboration among public institutions and ISO's and other actors of the innovation chain/ecosystem.

To achieve this goal and to give concrete responses to youth in particular, support and implementation of interventions that affect some components, such as incentives for startups or incubators, are not sufficient. It is needed to have an overall vision and supporting plans that affect the entire ecosystem by strengthening single components and mainly the relationships among them. This is a priority objective for the MIP.

Entrepreneurs improve economy and people's lives by creating jobs, developing new solutions to problems, creating technology and non-technology innovation that improve efficiency and exchanging ideas globally, taking into consideration social aspects (social innovation). Many of the conditions that help entrepreneurs also help the economy as a whole, providing even broader gains from supporting entrepreneurship through policies, strategies, access to funds and networking.

3.1.1. *Analysis of Innovation and entrepreneurship in MENA region*

A socio-economic background description of MENA region

In the dynamics of total population, it is interesting to note that, in the decade 2008-2017, in MENA Region the growth rate is quite 2% (FAO, World Bank) with an average life expectancy of 73 years (World Bank, 2018) and a percentage of undernourished people of 4% and 8% for MENA (World Bank, 2018). The last two indicators are worst if just compared with EU Mediterranean countries; in the rural areas the rural population increased in the last decade of about 1%. As regards wealth production (FAOSTAT, 2017), the *pro capita* GDP is around 3,000 US$ but the increasing rate, in the 2008-2017 decade, showed a positive trend for African countries, due to the Morocco performances, and negative for Middle East, due to the Syrian war situation. The situation of unemployment is worse specially if gender and age are taken in consideration (World Bank, 2018). Moreover, in MENA region the contribution of agricultural sector in defining the GDP is very relevant and predominant (World Bank, 2017) and, although the employment level is under the 50% of the labour force (World Bank, 2018), agricultural sector takes quite 1/3 of workers. Unfortunately, agricultural sector does not succeed to reduce the import amount of food: for example, the cereal import dependence is of 40% for North Africa and 80% for Middle East (FAOSTAT, 2017). In this context, the role of innovation becomes particularly strategic, both in terms of the introduction of technological know-how and of cultural construction of new forms of enterprise. Above all, it is necessary to create an environment suitable for autonomously generating innovation starting from research and training.

Analysis of the principal indicators regarding entrepreneurship and innovation

To describe and analyse the situation of entrepreneurship and innovation in MENA region, two indicators were taken into consideration: Global Entrepreneurship Index (GEI 2019) and Global Innovation Index (GII 2019).

With reference to the Global Entrepreneurship Index (GEI 2019),[3] MENA region has a strength in Product Innovation and Risk Capital. The region is bringing new products to market and integrating new technology, while also providing the capital to help businesses grow. The region's lowest average scores are in the areas of Competition and Risk Acceptance, as large firms dominate many economies in the region and businesses face higher risks in many MENA countries than in other areas. While Europe shows stable high scores in Technology Absorption and Internationalization, and the region's average score on Startup Skills has recently climbed into the same league.

In GEI 2019, USA is in pole position among the 137 countries scored, with Chad at the last position (137); the first ten classified countries are the same in 2017, 2018 and 2019 with a small declassification except for the Netherlands that leaves its place to France then comes back in 2019. France ranks 14th in 2019 at world level and it ranks 1st among the Mediterranean countries, while Turkey ranks 1st among MENA countries but 44th at world level (Table 1).

Another indicator is the Global Innovation Index (GII)[4] that ranks the world's countries and economies through innovative measures, environments, and outputs. The MED countries rank between 70th and 129th in terms of innovation performance and they are also losing their positions despite the introduction of proactive policies and infrastructures in the majority of countries (Table 2).

Table 1 - The Global Entrepreneurship Index ranking of MED countries (GEI 2019).

	Rank		
Country	*2017*	*2018*	*2019*
Albania	80	83	87
Algeria	73	80	88
Egypt	81	76	81
France	13	10	14
Greece	49	48	50
Italy	46	42	36
Jordan	56	49	63
Lebanon	63	59	66
Morocco	70	65	68
Palestine	ND	ND	ND
Portugal	29	31	32
Spain	33	34	31
Tunisia	42	40	53
Turkey	36	37	44

Table 2 - Performance of MED countries in the area of innovation over the years (GII 2019).

	Rank			
Country	*2011*	*2017*	*2018*	*2019*
Morocco	80	72	76	74
Tunisia	37	74	66	70
Lebanon	115	81	90	88
Jordan	77	83	79	86
Egypt	103	105	95	92
Algeria	132	108	110	113
Albania	-	93	83	83
Palestine	-	> 127	> 126	>129
Italy	-	29	31	30

Youth entrepreneurship and innovation policies in MENA region

Besides the GEI and GII indexes, a possible indicator on how policies affect the creation of youth entrepreneurship is the number of students who create startups. Students represent the en-

[3] The GEI is an annual index that measures the health of the entrepreneurship ecosystems in each of 137 countries. It then ranks the performance of these against each other. This provides a picture of how each country performs in both the domestic and international context.

[4] The GII is a source of insight into the multidimensional facets of innovation-driven growth. Providing 80 detailed metrics for 129 economies in 2019, the GII has become one of the leading references for measuring the economy's innovation performance.

trepreneurs of tomorrow; their entrepreneurial plans and activities will shape tomorrow's societies and the overall economic well-being. Recent data from the international survey research project GUESSS (Global University Entrepreneurial Spirit Students' Survey) shows that less than 5% of all students worldwide aim to start up their own business directly after studies. Most prefer paid employment directly after studies: more than two-thirds intend to start as an employee in a large firm, public service or academia – many fewer choose an SME as their first intended workplace. However, five years after completion of studies, more than 20% think of founding their own business (OECD, 2012). In the Mediterranean region, new types of highly innovative small businesses and startups created by managers with international training are spreading (Dagault *et al.*, 2012). They include industrial companies with a new generation of managers at the helm, spin-offs of major public groups and startups. These businesses essentially need assistance on issues including market access, mentoring and sponsorship, international team building and seed funding.

Young people, especially young women, lack knowledge about business startups, they lack support in the form of information and advisory services, they lack collateral assets making access to finance difficult, and there is a lack of supported premises where they can launch and nurture their new business startups (European Union, 2018). Though, for example, entrepreneurs in Morocco have relatively easy access to bank finance compared to other countries in the region; over one fifth of working capital and investment is financed through the banks (EBRD, 2016).

Nevertheless, numerous measures and initiatives have been introduced to overcome these difficulties and gaps in support. Most of these measures have been put in place by central governments, civil society or the private sector with some international donor assistance, although relatively few measures have been adopted and implemented by Local and Regional Authorities (European Union, 2018).

Young entrepreneurs lack access to loan finance due to the lack of collaterals and unwillingness of the banking system to lend funds to young people without a track record of experience. Governments have therefore introduced measures to provide subsidised financial support to young entrepreneurs in Egypt, Lebanon, and Morocco. Private sector venture capital funds also actively invest in business startups by young entrepreneurs in the region with examples found in Egypt, Jordan, and Lebanon (OECD, 2018).

The private sector has also stepped in to provide incubator capacity in Egypt, Jordan and Lebanon. International donors have supported the development of business incubators in Lebanon (OECD, 2018).

Since the mid-1990s, many governments have promoted an entrepreneurial culture as one means to create awareness for entrepreneurship as professional career option, including specific programmes to foster graduate entrepreneurship (European Union, 2018).

Programmes for entrepreneurial learning are adopted in formal education systems in Egypt, Jordan and Lebanon. Initiatives for informal entrepreneurial learning are developed in Egypt, Jordan, and Lebanon. Informal training is provided by NGOs. One of these, called Injaz (which in Arabic means "achievement"), is an international NGO, which operates in Egypt, Jordan and Lebanon (Zgheib, 2017).

MIP Survey: evaluation of ISOs' state-of-art in the different MENA countries

The MIP overview on ISOs is the result of a survey carried out by CIHEAM Bari in 2018-2019 in collaboration with the MIP Network country focal points. However, it does not represent the official statistics of each country. In this survey, a 45% increase is evident in the number of registered ISOs, going from 207 in 2017 (MIP report 2017) to 295 in 2019 (Table 3). It is important to underline that the survey didn't include in 2019 Turkey and Balkan countries as in 2017. Actually, Albania, Lebanon, Tunisia and Palestine registered in 2019 the highest number of ISOs identified, with Lebanon and Tunisia in pole position.

Tunisia was leading the classification in 2017 and still in 2019, with an increase of 20% in the number of ISOs versus 2017. However, Pales-

tine has registered the highest increase of 86% compared to 2017.

This could be explained by a greater involvement of the MIP members in the survey based on the created network of contacts but also by the observed evolution in the country due to a greater political attention and a cultural change of stakeholders. There is a higher entrepreneurship demand by youth who are trying to improve their social status. Thus, entrepreneurial activities have been lately an active field, through the establishment of several ISOs supporting creative entrepreneurs by facilitating the realization of their dream.

Table 3 - Number of ISOs identified per country (MIP survey 2017; 2019).

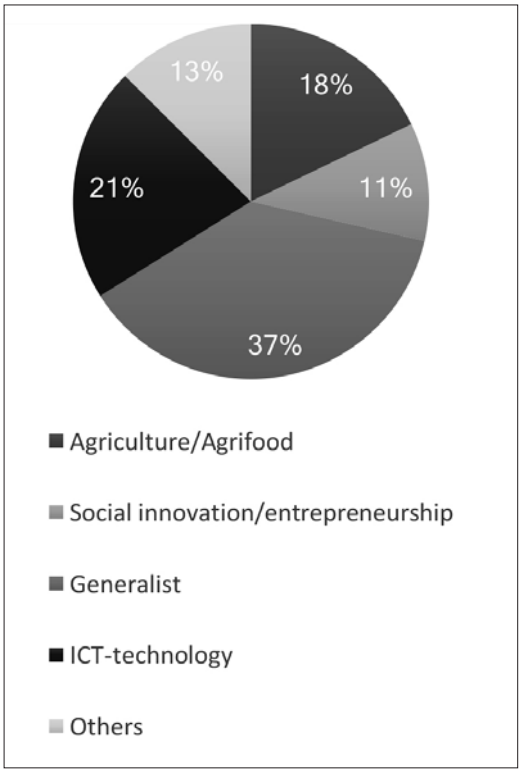
Country	*No. ISO/country 2017*	*No. ISO/country 2019*
Albania	13	40
Algeria	11	20
Egypt	19	38
Jordan	12	17
Lebanon	14	54
Morocco	23	23
Palestine	6	44
Tunisia	43	54
Turkey	32	-
Balkan countries[5]	34	-
TOTAL	207	295

More than 40% of the ISOs in the MENA region have been established in the last decade. 5% existed from before the period 1990-1999. It is a quite fresh environment and it varies between countries. For example, in Albania the first accelerator was established in 1993 and hosted by an institute. It is specialized in agriculture and targets farmers; the most recent one – the Metropolitan incubator – was established in 2018; it is a private entity not specialized in a single sector. In Jordan, the most recent ISOs date back to 2015, in Lebanon to 2016.

Out of the total number of ISOs, 37% cover the general category; it means they can cover different sectors without being specialized in a defined one while 21% of ISOs are specialized in ICT and 18% in the agrifood sector.

Out of the 295 ISOs, 10% are specialized in social entrepreneurship and 14% were grouped under the category entitled "other" that includes industry, economy and finance, health, metallurgy) (Figure 1).

Figure 1 - Specialization of the ISO (MIP survey 2018-2019).



However, within the general category, some ISOs cover the agrifood sector without being specialized only in agrifood. It is a kind of protective way to ensure continuity to the ISO without taking the risk of being mono sectorial.

In addition to the fact that youth is attracted by technology and to fast results, these data could be due to the incentives and funds more easily oriented towards the ICT sectors and the expec-

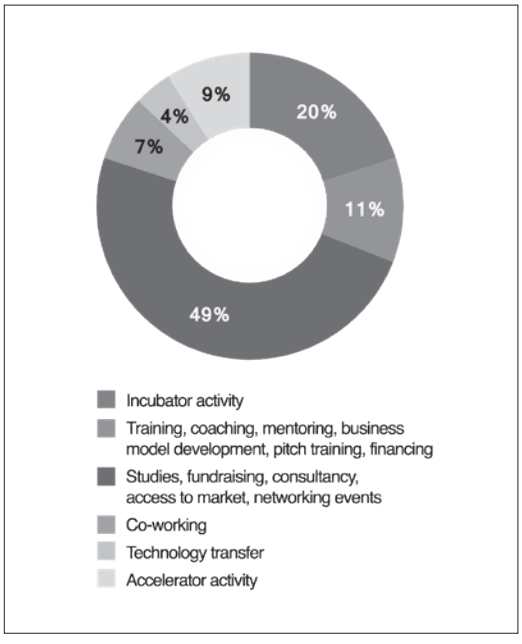
[5] Balkan Countries included in 2017 Bosnia and Herzegovina, Croatia, Macedonia, Montenegro and Serbia.

tations of more immediate success results. The survey registered 2 cases of agrifood incubators that closed after few years in business due to the difficulty in going on with the activities.

The percentage of ISOs specialized in the agrifood sector varies form 4% in Egypt to 22% in Tunisia. The highest presence of agrifood ISOs was noted in Tunisia with 22% of the total Tunisian ISOs and 21% of the total agrifood ISOs. This could be explained by the support given by the government and the funding agencies to encourage the graduated students to take initiatives and innovate in the frame of newly established incubators in the research institutions. The lowest percentage, 4%, was noted in Egypt, although the country is very well classified in the business creation mainly in the ICT sector and agriculture is of high importance.

Another important feature of ISOs is the type of services they offer (Figure 2): studies, fundraising, consultancy, access to market, networking events (49%), followed by incubator activity (20%), training, coaching, mentoring, business model development, pitch training, financing (11%), technology transfer (4%), co-working (7%) and accelerator activity (9%).

Figure 2 - Type of services offered by ISOs (MIP survey 2018-2019).



However, these data represent the sample of 295 ISOs registered during this survey and they may be subject to changes. They cover a wide range of ISOs and continuous updates may modify or confirm the abovesaid percentages.

Governance and funding of ISOs

The governance model varies from country to country. If we consider the total number of ISOs, we notice that public percentage is as high as 40%, followed closely by the private sector with 36%, and NGOs with 25%. Looking at each country, in Algeria, Palestine and Jordan most providers are public, in Lebanon and Tunisia there is a large presence of NGOs and private organizations, and a presence of private and public sector in Morocco.

It seems that in Algeria, the government continues to be the main actor that provides support through the National Upgrading Programme managed by the SME agency ANDPME. In Egypt, the governmental bodies remain the main actors, as the new Micro Small Medium Enterprises Agency (MMSMEA). In Tunisia, the main player is the Agency for the Promotion of Industry and Innovation (APIA). The Lebanese Investment & Development Authority (IDAL) established a Business Support Unit (BSU) in its premises to provide startups with information, advice and licensing support in early 2018. In Jordan, entrepreneurs receive support through the Jordan Enterprise Development Company (JEDCO).

In Algeria, the market is mainly dominated by public institutions, including two credit guarantee funds – the credit guarantee fund for SMES /FGAR and the fund for credit investment – and the Wilaya Investment Fund.

An interesting point is that, in many cases, ISOs were previously working according to a defined agenda on training courses, workshops and business plan support by using limited fund projects. Once these funds were consumed, the project stopped, and the ISOs closed. In other words, there is great concern about the number of active ISOs for the time being at the national level, as the sustainability of their activities is not ensured permanently.

Networking

The survey also focuses on the degree of openness of these organizations, gathering information on their involvement in international networks. The identified ISOs answered the simple question whether they have stable collaborations with regional and international networks and with which ones.

We noticed a lack of networking at country level. It means that within the same country there is no interaction among the different innovation stakeholders, universities, incubators, research institutions, technology transfer offices (national network). Equally, there is a low percentage of international networking that leads to the loss of effectiveness and knowledge. This entails reduced visibility of ISOs and interactions with other entities for the exchange of knowledge and experiences, and less opportunities for collaboration and new initiatives. A preliminary and not exhaustive analysis revealed that out of the 295 registered ISOs, 32% are members of an international network but this percentage varies from one country to another.

In Palestine we noticed the highest number of ISOs connected to international networks (38%). This may be explained by the necessity of PA to be connected abroad to overcome the internal obstacles, so indeed there is very little to choose. Albania showed to have the lowest level of networking (15% of ISOs are linked to networks).

More than 10 international networks and some national networks are active in the MENA region, such as *Entrepreneurs and Startups Networking in Palestine*. The networks registered in the last survey of 2017 are reported in the MIP report 2017. The new networks registered in 2018 are given below:

- *SPICE group* (Science Park and Innovation Centre Experts);
- *ARTECNET*, the Arab Technology incubators and Techno parks Network established in November 2013, with the support of the International Telecommunication Unit (ITU) as the main sponsor, aiming at providing a structured platform for cooperation between Techno parks and technology incubators to its members and to the region;
- *EFE,* a network for training and connecting youth to the world of work and it operates in Egypt, Jordan, Morocco, Palestine, Saudi Arabia, Tunisia, Yemen, and the United Arab Emirates (UAE);
- *The Anna Lindh Foundation*, an international organization working from the Mediterranean to promote intercultural and civil society dialogue in the face of growing mistrust and polarization;
- *DARPE*, *DAI*, *Slowfood*, *Vi Campesina* and *JA Worldwide*, which is one of the world's largest youth-serving NGOs that prepares young people for employment and entrepreneurship;
- *EBN* and *ANIMA*, the most involved networks in MENA region;
- Euro Lavalle Mayenne Technopole and Euraxess in Albania.

3.1.2. *Good practices*

Hereby are listed some of the good practices identified in the survey.

AIDA (Albanian Investment Development Agency)

AIDA is a government body with the main objective of attracting foreign investment, increasing the competitiveness of the Albanian economy through the support for SMEs, as well as through innovation. It has different funds for young companies like: Innovation Fund and startup Fund. They collaborated with different organizations (Startup Live, Startup Albania, Giz IDEA project, Risi Albania) to allocate these funds, but companies can apply directly to AIDA to request grants.

Tathmine programme (Algeria)

As part of the enhancement of the results of research and the promotion of entrepreneurship, a programme called "Tathmine" literally "valorization" in Arabic language, was launched in March 2017 by the Ministry of Higher Education and Scientific Research (MESRS). It is implemented by the National Agency in charge of the Valorization of Scientific Research and Technological Development (ANVREDET). "Tathmine" is a national programme of assistance and

support for the creation of innovative companies that allows project owners to benefit from three types of services: co-incubation, co-accompaniment, co-financing.

Qoot, Lebanese agrifood innovation cluster

Qoot is the first Lebanese agrifood consortium that brings together Lebanese enterprises, rising SMEs, multinational companies, knowledge providers, support institutions, and investment entities to collaboratively catalyze and innovate the agrifood sector in Lebanon.

Initiated by Berytech and the Kingdom of the Netherlands with the active guidance of FoodValley, Netherland's leading agrifood cluster, Qoot was born out to equip Lebanon with the resources and processes that have made the Netherlands one of the leading agricultural innovators and food exporters worldwide.

The vision is to lead the agrifood innovation scene in the region and put Lebanon back on the global agrifood innovation map. Launched in February 2019, the cluster has already brought on board 26 innovative Lebanese agrifood companies of all sizes, all committed in joining forces and accelerating the sustainable growth of Lebanon's agricultural sector.

3.2. *The social dimension of innovation ecosystem*

3.2.1. *The concept of social innovation*

Development means change, and innovation can activate change. Innovation studies have developed within economic studies and, to a great extent, in the past, they focused on economic actors in market contexts. As a consequence, innovation studies have mainly been based on approaches focused on enterprises competing with each other in markets and having the profit as their goal. These approaches tended not to consider that economic actors are embedded into social relations and that their choices depend on the values and on the social constraints provided by the context where they operate (Jack and Anderson, 2002). Moreover, economic policies have not gone much beyond purely economic outcomes (productivity, employment, incomes) when considering innovation.

The SDG framework encourages all to develop a different approach that, being centred on people, addresses all determinants of people's lives in an integrated way (Nilsson *et al.*, 2016). It looks at economic processes as the necessary means to achieve social and environmental goals, and at the reciprocal influences between economic, social, ecological spheres. In other words, it requires an in-depth revision of economic paradigms and policy frameworks.

When considering SDG 2 (No hunger), for example, the question is: how to develop food systems that provide sufficient, nutritionally appropriate, and culturally acceptable food to all without depleting natural resources and without generating social inequalities and gender unbalances? How to do it when market forces pull in different directions?

The concept of social innovation meets the abovesaid requirement. It departs from the assumption that economic and social processes are not separated from each other, and that change can be measured in terms of the capacity of socio-technical and socio-ecological systems to increase the production of social value, i.e. a value beneficial to society as a whole. It is not impossible to do so: there is increasing evidence of successful enterprises that make profits and grow at the same time contributing to the improvement of health, environment, work conditions, gender relations, community welfare. Approaches in the past, conceived of enterprises' activity as a 'race to the bottom', forced to reduce production costs by growing competitive pressure and the demand for standardized products. On the other hand, the current emergence of 'concerned consumers' who are willing to pay for the public goods embodied in the commodities they buy has created a 'win-win' space for the conciliation of public and private objectives (Porter and Kramer, 2019).

Moreover, the concept of social innovation stresses another essential point. Whereas innovation studies have focused for a long time on technology, social innovation looks at social resources as an alternative – or additional – driver for innovation, especially in contexts where economic conditions don't allow to afford investments in technology (Moulaert, 2016). Social in-

novation can thus create new social resources or mobilize existing social resources into new economic activities. Social innovation occurs, for example, when new routines are established, as in the case of new consumption patterns or new organization of family life. For example, when a family develops the capacity to nourish itself better with the same amount of money, or when it can reduce the environmental impact of consumption by reducing waste and improving the capacity to recycle it (Jaeger-Erben *et al*., 2015).

Social innovation also occurs when new social capital is created. Social capital is a relational pattern that improves mutual understanding, trust, and capacity to collaborate (Portes, 1998). When, in a group, communication is easy and trust is high, it is possible to mobilize the group for tasks outside the original scope. It is proved that communities with high levels of social capital are more resilient to external shocks and stresses, such as wildfires or drought (Woolcock and Narayan, 2000). Social capital consists of:

- bonding relations (relations between peers, characterized by frequent interaction);
- linking relations (with peers belonging to different networks, which expose the community to information about different solutions to similar problems or about the same solutions to different problems);
- bridging relations (giving local communities access to sources of power, such as when a high-level government officer maintains the links with his/her community of origin) (Woolcock, 2001).

Without social innovation, these practices are being eroded because traditional approaches have often considered social practices as obstacles rather than resources to development or because they don't evolve fast enough to catch up with the evolution of the social organization.

Sustainability also implies that the production of goods and services with high social value can cover the costs of production and remunerate labour adequately (Schandl, Walker, 2017). It is related to two main factors: a) the capacity of the enterprise to attract consumers' attention to the social value embodied in goods and services. When this is the case, consumers are willing to pay higher prices or, for equal prices, they prefer the product with higher social value; b) the capacity of social resources to reduce the costs of production. For example, voluntary work is not remunerated by the market, and it produces benefits for business competitiveness.

Enterprises that adopt the principle of social innovation can be of three types:

- conventional enterprises that invest in social innovation because they find it potentially profitable;
- enterprises that adopt social responsibility as part of their long-term strategy, and in this regard, they develop systems of internal auditing and reporting that demonstrate the progress in the creation of social value;
- 'For-benefit' enterprises, the social purposes of which are stated in the enterprise statute. More than in long-term strategies, social values constitute the foundational identity of an enterprise;
- social enterprises, which predominantly pursue social goals, and see the creation of private value as the necessary condition to achieve these goals (Hiller, 2013).

In the agrifood sector, for a long time, policies have privileged some social goals (availability of food) and have overlooked others, first of all, biodiversity, quality of soils, conservation of natural resources (McIntyre *et al.*, 2009). The achievement of SDG imposes a transition of production and distribution systems towards a new regime centered upon environmental, nutrition, and ethical goals. Social innovation is key to this transition.

The 2018-2019 MIP survey tried to investigate the concept of social innovation in each country.

In Albania, social innovation and innovators are hard to be understood and considered as part of the culture yet. In most cases, the perception is that they relate only to research and not to broad productivity in general. Mentality and political culture are some of the biggest challenges, as well. Social innovation requires a change in how policies should be formulated, proposed, tested and implemented and emphasizing the role of citizens, stakeholders, users and target groups.

Social innovation in Palestine can be summarized as an action that can help toward more sustainable development and better local economy and social life. Major challenges are freedom of movement between regions; unemployment; lack of water resources; lack of health and education services and infrastructures; corruption; marketing; bureaucracy and democracy; lack of enforcement of laws and regulations.

In Lebanon social innovation is defined as new strategies, concepts, ideas and organizations that aim to meet social needs resulting from working conditions, education, community development, and health.

The definition reported by the country reports emphasized that, even if there are common elements inside the proposed definitions, no unique and clear definition exists of social innovation and, like in any other part of the world, it is adapted to the context and the experience of a specific country.

3.2.2. *Conditions for social innovation*

Interventions addressed to rural social innovation should first of all be characterized by some identity elements that contribute to creating social value, social resources and new organizations in local communities. These identity elements of the social innovation processes disregard the type of organization and initiatives implemented on the territory. Be it a public or a private organization, an initiative established within the firm or the development cooperative, some elements cannot be missing.

Innovation can achieve social results strictly related to the achievement of the output (for instance, the supply of local health services) that, on one hand, meets needs and, on the other hand, generates wellbeing for the community (direct creation of social value) but also results that are inherent in the process, in the new relationships, in the new governance arrangements, in the triggered social capital (indirect creation of social value). The indirect creation of social value also consists of the increased capacity for action of society (empowerment), thanks to a collective learning process, peer-to-peer learning, and activation. The two dimensions of the created value contribute to the outcome of innovation, namely, what is defined as a social improvement.

Identity elements contributing to the creation of social value, deriving from a previous research conducted by the authors in the framework of Rural Hub project (Petruzzella et al., 2017) are reported in Table 4.

Table 4 - Identity elements contributing to the creation of social value.

Better environment	Improvement of health
Use of resources	Prevention
Biodiversity	Access to health care
Waste reduction	Better nutrition
Pollution reduction	Food safety
Climate change mitigation	Improvement of animal welfare
Social conditions improvement	Social responsibility of enterprises
Equity and social justice	Strategies for sustainability
Work conditions	Availability of information
Social integration	Transparency in decision-making
Gender equality	
Children's rights	
Access to education	

Source: authors' elaboration.

Concerning *social resources*, it is possible to create and identify large toolboxes based on experience. We believe that all tools are based on three principles: selective openness, diversity and participation.

Openness is the capacity to connect to elements of the external environment. Connection to external entities is a key element of social capital improvement ('linking' and 'bridging'). The connection allows access to ideas, know-how, and resources. However, openness should be selective, as it should be related to local needs and expectations. In the recent past, innovation has been considered a good in itself: now it is more apparent that innovation can be disruptive and can generate unintended consequences. A sound appraisal of the needs, expectations, and potential impact of main drivers can help identify the hierarchy of problems, reveal the sensitiveness of local people to drivers of change, and identify criteria for selection of external forces to which it is desirable to connect. Foresight exercises encourage communities to anticipate future adversities and to reflect on present vulnerabilities.

Diversity is the source of innovation, as it creates synergies between resources. The capacity to recognize diversity is the key to understand what can be useful for development and what may be disruptive or harmful. Diversity is also a way to generate an identity in a sea of differences, and identity can help select external connections based on affinity or complementarity.

Participation is the third pillar of social innovation. It is the condition for diversity (of knowledge, of needs, of interests) to be appraised. Participation is based on procedures that encourage inclusion and collaboration. Through participatory methods, cooperation bodies can stimulate reflection and knowledge creation and generate social capital. The outcome of participatory appraisal is a shared representation of the context and the problems, and the emergence of collaborative networks that can be involved in further initiatives.

The same research identified a repertoire of initiatives and support schemes that can encourage the creation of social resources (Table 5). It ranges from support to integration of non-conventional labour force (voluntary work, people with disabilities) into economic activities, sharing of instrumental goods or information, creation of study groups, crowdfunding, microcredit based on collective responsibility for the loans.

Table 5 - Initiatives aimed at creating social resources.

Integration of volunteering in economic activities	Activation or strengthening of participatory processes
Sharing of instrumental resources	Stakeholders' involvement
Sharing of information	Multi-actor projects
Crowdfunding	Extension and training activities
Learning groups among enterprises	Mobility and cultural exchange
Collaboration among enterprises for common interest initiatives	Foresight and scenario building
Public-private-civil Partnership	Active policies for gender equality
Citizens' science	Involvement of schools
Open access to information and scientific results	

Source: authors' elaboration.

A third identity element is the capacity of the initiatives to generate new, economically sustainable organizations with a long-lasting approach. The new organizations can widely vary in their composition: startups created by young people or women, community cooperatives (among citizens), structured collaborations between public and private entities, or between enterprises of the same economic sector or belonging to different sectors.

These new organizations are generated from the relations among the stakeholders involved in the social innovation processes, and they take shape through the co-design and development of the innovative solutions proposed to meet social needs.

Whether these new organizations have to be necessarily formalized is open to discussion.

Table 6 - A list of possible social innovation-oriented organizations.

Enterprises	Hybrid organizations
Startups	Public-private consortium (former LAGs)
Innovative enterprises	No-profit associations
Social enterprises	NGOs
Farmers' and consumers' cooperatives	Foundations
Community cooperatives	Informal organizations

Source: authors' elaboration.

In all MIP countries, regulatory frameworks for social innovation are non-existent. Social enterprises often start operations informally, exposing them to the same regulatory requirements as commercial enterprises or NGOs, without any privileges. No specific funds are allocated to these initiatives, and often they start thanks to international cooperation projects or donors to NGOs or national organizations.

3.2.3. *Good practices*

Research activity implemented in MENA region emphasized some organizational models and initiatives adopting innovative approaches that try to give an answer to social problems in rural areas, even if they are not recognized as social innovation initiatives and are not familiar with the concepts on which social entrepre-

neurship is based. We are convinced that many of them present exciting elements that can be adopted in other contexts or, in any case, be a positive example for all the Mediterranean communities. In many Mediterranean countries even the creation of ISO specialized in supporting social innovation initiatives is more and more widespread. The experience of some of them, together with a selection of innovative entrepreneurial ideas put in place in different countries can be of inspiration for all future social entrepreneurs and for policy decision makers.

CISE (Moroccan Centre for social innovation entrepreneurship) experience (Morocco)

The Moroccan Centre for Innovation and Social Entrepreneurship is a not-for-profit organization dedicated to finding entrepreneurial and innovative solutions to every social challenge in Morocco. It was founded in 2012 by a group of 17 people enthusiastic about social change in Morocco, being convinced that supporting social entrepreneurs with system-changing ideas can provide benefits for Morocco and the wider global community.

Their vision is: a world where innovative ideas and opportunities are at the service of the common good. Their mission is to find innovative and entrepreneurial solutions for every social challenge in Morocco. Their approach of theory of change is based on a three-level integrated approach: inspire, learn and develop.

Training and knowledge transfer activities are crucial for this organization, like the Tamkeen initiative. It is an awareness programme launched in 2013, with the objective of promoting social entrepreneurship and social innovation in public schools (high schools). The initiative involved more than 500 people among students, teachers and local authorities in 36 schools of the country. An assessment in 2015 concluded that the programme effectively achieves its goals of increasing skills and awareness for students and the community.

"Acacias for all": when a small project succeeds in fighting desertification, improving women's conditions, and alleviating poverty (Tunisia)

"Acacias for all" is the social enterprise founded in 2012 by Sarah Toumi, a young Tunisian entrepreneur born and grown up in France who never stopped her relationship with her family village in Tunisia. This social enterprise is changing the agricultural sector in the Arab Maghreb sub-region by introducing a new holistic farming approach to fight desertification. It shifts its focus towards alternative, natural, plant-based irrigation complemented by crops that fit the local context; in addition, it creates a change movement through which farmers adopt new and sustainable farming techniques and organize themselves into cooperatives, in order to manage the entire new farming cycle.

Initially, Sarah' idea was to plant acacia trees in desert areas in order to create a green belt to protect rural lands from sand and wind. The acacia tree is characterized by very long roots that extend up to 100 meters underground, providing the soil with nitrogen and bringing fresh water to the surface. Thus, the roots keep the soil salt free while also re-fertilizing it. Additionally, acacias are adaptable to desert conditions and when planted around a farm they create a green belt, preventing the invasion of sand and wind, allowing the growth of fruits and vegetables inside the farm. Moreover, after 3 years, acacia trees produce Arabic gum and moringa oil, which have an economic value.

In 2011 Sarah began also working with female rural farmers in the village of Bir-Salah in Tunisia, recognizing that women represent a strong entry point into the agricultural sector, as they are more receptive to change. Additionally, most women own small pieces of land and have no adequate access to education or markets. She supported them in establishing a cooperative and providing them with training on entrepreneurship and business skills.

Long-term plans include spreading the initiative to Morocco and Algeria, as both countries are facing the same environmental problems. Recently, Sarah Toumi has been selected by Forbes among the best 30 young social entrepreneurs in the world.

Beyond Research & Development (Lebanon)

It is a private firm having the mission to promote social entrepreneurship mindset and tools through formal and informal education and in

partnership with universities, schools and development agencies; thus, the activities oriented to enhance the social entrepreneurship in Lebanon are focusing on:

- building the capacity of actors within the ecosystems such as incubators, accelerators, business development support structures, and financing institutions;
- conducting specific research and studies to assist networks in advocating for enabling policy and regulatory environment. Social Enterprise (SE) formal and informal programme design, entrepreneurial and experiential teaching training (training of university instructors, SE practitioners, mentors, coaches, etc.), research and mapping of SE context (skills, stakeholders…), capacity development for SE actors (Organizational Development Journeys Design and Development of SE Strategies, Approaches and Indicatives Technical Support for SE Programmes Implementation), network building within SE Ecosystem.

Green Ideas: the competition supporting small-scale green economic development ideas (Albania)

Partners Albania aims to serve as an incubator for small-scale green economic development ideas in Albania, utilizing local resources and revitalizing traditions of production and community-based markets in an environmentally friendly way. The novelty lies in the cooperation and creation of a joint seed fund from national companies and international donor institutions with the institutional support of Rockefeller Brothers Fund. Since 2012, it has been organizing an annual competition that, through clear criteria and a transparent and fair competition process, supports individuals, social enterprises, non-for-profit organizations and small business ventures to improve and contribute to a better life for society in Albania. The shortlisted finalists present their proposal during the two days of competition, before an Evaluation Panel consisting of experts in the field of education, environment, economy and finance. At the end of the competition, three winners are selected and awarded a financial support up to around 8,000 Euros.

4. Concluding remarks

This article has emphasized the importance of addressing institutional and social innovation as drivers of broader innovation for development.

The wind of change is blowing in MENA countries, as it appears from the previously described scenario. A greater attention from policy makers is paid to youth employment and specifically to: i) youth entrepreneurship and innovation in businesses; ii) a private sector that is taking the initiatives in the creation of incubators and business accelerators; iii) a greater investment of the universities in entrepreneurial culture; iv) and a greater attention to networking and collaboration at local and international levels. Positive signals were perceived from each of the surveyed countries. They highlight a system that is continuously evolving but still needs more attention and support at both local and international levels.

While in the field of institutional innovation there are signs of official activity in MED countries, in the field of social innovation there are interesting bottom-up initiatives, but no or very limited attempts to embody social innovation into national policy frameworks. Further research should be able to highlight the potential of the connection between the establishment of innovation ecosystems and their capacity to generate new entrepreneurship models that align private objectives with sustainable development goals. On this regard, the social innovation practices identified in this article should be further analysed to look at the support measures and the bottlenecks that may facilitate or limit the transformative capacity of these initiatives.

The main critical points that have emerged from this survey and analysis are:

Firstly, the need for policies and funds dedicated to youth entrepreneurship. The region needs to encourage education programmes, to train new entrepreneurs and to promote the spread of an entrepreneurial culture among students. It is also important to introduce new teaching methods on the entrepreneurial culture, as for example open innovation and design thinking approaches to help students advance towards entrepreneurship and their needs for innovation.

As a result, young people do not have the skills needed to start a business or to innovate or to grow their own business.

Secondly, youth entrepreneurship should be mainly supported by a public authority capable of providing information and services in a swift and effective manner. There is a need to invest more in the creation of technology transfer centres that enhance and valorize the results of research, and in incubators and business accelerators that support the youth specifically in fragile territories.

Thirdly, the difficulty to access to credit remains highly problematic given that young entrepreneurs often do not have the opportunity to finance their own entrepreneurial projects. For this reason, it is important for the public authorities to implement financial support mechanisms and/or guarantees for access to credit. Moreover, it is necessary to increase the private investments in enterprise innovation and creation.

The fourth issue is the need to foster the cooperation for innovation at all levels: between researchers and enterprises (innovation supply chain), between ISOs at the local level, by fostering contamination processes and multi-sectorial partnerships (cross-innovation), between ISOs at international level, by promoting the development of an environment that can improve the performance of ISOs and increase the number of startups on the market by reducing their failure (Mediterranean ecosystem).

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