



**U-SOLVE**

# **WORK-PACKAGE 3 ROADMAP FOR THE DEVELOPMENT OF URBAN ENTREPRENEURIAL ECOSYSTEMS**

## **Urban Entrepreneurial Ecosystem Analysis Report**

**Egypt, Cyprus, Greece, Italy, Jordan, and  
Palestine**

## EXECUTIVE SUMMARY

This report presents the main results of analysing the Urban Entrepreneurial Ecosystem (EE) across project partners, relying on a unique U-SOLVE approach. The analysis relied on secondary data from prior studies and reports investigating the same issue in each country and primary data collected from ecosystem actors representing academia, business actors, business support organisations, and NGOs. Preliminary data was collected using a survey purposively designed to understand the entrepreneurial ecosystem in all USOLVE-partnering countries. The survey was created in consultation with all partners and the project's coordinator to ensure a level of standardization and preserve a degree of freedom for contextual adjustments. The outputs identify the main Urban Development Sustainability Challenges and the structural and functional characteristics of the EE in in each country, focusing on actors' needs to perform better in solving the urban development sustainable challenges.

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## INTRODUCTION

Business development and socio-economic enhancement in the MENA countries have failed to create decent jobs and match the improvement of the local labor. In 2018, the International Monetary Fund estimated that 5+ million MENA workers join the labor market every year. Such estimation is aligned with a previous report - Arab Human Development Report (2016), which indicated that 60 million jobs have to be initiated to be able to attract newcomers/new graduates to the local workforce in the upcoming decade. Additionally, there are other structural challenges and obstacles within the job/work ecosystem in those States, which is overwhelmed by informal employment patterns reaching 65-80% of overall employment in the Arab States (ILO report, 2018). Moreover, available data show that the female labor force in various MENA states, under the private sector, is more likely to evident higher rates of vulnerable employment, namely in countries such as Egypt, Morocco, and Palestine. Female workers are more concentrated in the agriculture sector (i.e., 37% in Egypt), which object to more vulnerable employment conditions than their male counterparts (World Development Indicators, WDI, 2018). ILO in 2018 estimated that 69 % of females in the MENA States (for instance, 23% in Palestine) are engaged in informal work relations as the primary source of their families' income. It is also essential to highlight the weak and fragmented social protection coverage schemes in the MENA States and the restrictive financial services.

While all groups were affected, youth and women were the most vulnerable groups due to years of socio-economic marginalization and political exclusion (Abdou and El Ebrashi, 2015: 38). Generating employment opportunities for MENA youth is considered one of the main challenges for the economy and policymakers. The problem is exacerbated by the size of Egypt's population and the number of annual newcomers into the labor market, which indicates matters will worsen if nothing is done.

These challenges mentioned above also encourage MSME in MENA, primarily if provided with the right financial, technical, and managerial skills and support. Recent local efforts at the various MENA States to restructure their economies. These efforts have also promised a new logic of economic inclusiveness and business development, which carves out a more prominent role for the private sector. In this environment, first-mover medium-sized enterprises could set repeatable precedents for others. Similarly, dialogue between Civil Society Organizations, non-Governmental organizations, the government and the private sector could result in favorable legal changes regarding MSMEs registration, tax reduction/ exemption, and support mechanisms. Furthermore, financially sustainable business models with solid focuses (social, technological, organization) can negotiate income inequality in MENA -> inclusive growth.

Since 2000, the term 'ENTREPRENEURSHIP' has been recognized as one of the fastest flourishing sectors globally, with a significant rise in small- size enterprises but with limited survival rates, especially in developing countries, such as the MENA States. While most successful start-ups and funds are localized to the ICT sector, sustainable 'WEFE' entrepreneurship suffers from significant neglect. MSMEs, particularly those led by youth and women, need to continue financial and technical support, robust business models, and reliable support organizations to survive and grow.

The practice of entrepreneurship in the Middle East and North Africa (MENA) predates the term's modern conceptualization. Entrepreneurial initiatives to find solutions to group problems have existed, but with multiple needs and constraints, varying from access to finance (a main problem across the board in MENA) to issues of legislation, structure, rights, organization, and informal economy. Post-ruprising policy concerning youth unemployment has included a significant focus on ENTREPRENEURSHIP as a source of gainful employment for youth. Entrepreneurship remains a new solution in several MENA states to the problems of youth and women unemployment and should be encouraged alongside conventional entrepreneurship.

To fight high rates of unemployment, Studies (AECOM, 2016: 30) stated that MENA Countries would need innovative solutions and various forms of entrepreneurship (business, social, technological...). Entrepreneurship can generate direct and indirect employment and new jobs. This is the case in all MENA, a common factor being youth's dominant involvement in solving socio-economic problems through innovation and technology. The clear majority of Entrepreneurship is founded and led by youth (Abdou and El Ebrashi, 2015).

ENTREPRENEURSHIP Emerged as the most adaptable organizational form to address shortfalls in socioeconomic development and empowerment of underprivileged social groups, youth, and women, ENTREPRENEURSHIP is remarkably gaining ground in the MENA territory. Following the Arab Spring in 2011, young people were

encouraged to address socioeconomic challenges in their countries and “take matters into their own hands” (Brueggemann, 2018).

Entrepreneurship is also a crucial pathway to achieving sustainable development goals SDGs stated by the United Nations for creating better social, economic, and ecological living conditions. Goal 11 of the SDGs speaks of “Sustainable Cities and Communities” and motivates cities to find innovative solutions for Urbanism Development Sustainability Challenges (UDSCHs) through supporting entrepreneurs and startups. However, entrepreneurship and entrepreneurial activities cannot evolve in a vacuum. It needs a healthy ecosystem to help entrepreneurs and startups put their innovative solutions into implementation. In this context, **Living Labs** emerged as a practical approach to bind citizens with the official governmental apparatus and all ecosystem stakeholders in a creative co-creation space to define UDSCHs and offer collective solutions to those challenges considering the Doughnut economic model; SOLVE project engages directly with this issue. The following sections shed light on basic conceptual backgrounds such as the **national innovation system, innovation ecosystem, and ecosystem services**. In addition, we introduce the global context of USOLVE- meaning SDGs, UDSCHs and the **Living Labs** as an approach to solving the problem. Then, the methodology of this research will be briefly explained before we outline the results by highlighting the results that will provide an overall evaluation of the entrepreneurial ecosystem in each country.

## CONCEPTUAL BACKGROUND

A burgeoning body of innovation management literature underscored the growing influence of the National Innovation System approach (NIS). The concept harkens back to the mid-1980s and is historically perceived as a subsystem of the national economy in which various organizations and institutions interact with and influence one another by conducting innovative activities and generating innovative performance (Lundvall et al., 2002). According to the NIS approach, the innovation activity involves research and development inputs from private and public sectors and the influential determinants of a nation's technological capabilities, such as learning processes, incentive mechanisms, and skilled labor (Nelson, 1993). Nowadays, the NIS concept is widely adopted by international organizations such as the OECD as an integrated analytical framework that focuses on analyzing nationwide structures of innovation activities, their institutional determinants, and their economic effects (Balzat and Pyka 2006).

Another important concept that emerged in the early 2000s and became popular during the last 20 years is the **innovation ecosystem**. This concept has remarkably enriched the idea of the NIS (Smorodinskaya et al., 2017). While the NIS was seen as static structures regulated by government bodies and depending on involved actors and intentional infrastructure (Lundvall, 2010), innovation ecosystems promoted the production of innovations and the associated development processes as non-linear and networked activity [World Economic Forum, 2015]. Such a network-based innovation perspective requires more self-governed, dynamic, and agile collaborative structures as a necessary prerequisite for interactive innovation (Townsend and Weddle, 2009). According to Granstrand & Holgersson (2020), an innovation ecosystem is defined as *“the evolving set of actors, activities, and artefacts, and the institutions and relations, including complementary and substitute relations, that are important for the innovative performance of an actor or a population of actors”*. Currently, the innovation ecosystem approach is widely used to analyze and understand innovation policies of both developed and developing nations. Related to this, innovation ecosystem services have become popular amongst academics, policymakers, and practitioners (La Notte et al., 2017). The increasing use of ecosystem services requires assessing the innovation ecosystem's goods and services, such as financing, infrastructure, networking, etc. Moreover, understands who provides those services and which instruments are used to make such goods and services available for small and medium-sized enterprises (SMEs).

**The ENTREPRENEURIAL ECOSYSTEM (EE)** approach has become well-known due to the continuous shift from the managerial economy to the entrepreneurial economy. In such entrepreneurial economies, entrepreneurship is considered an important engine of economic growth (Schumpeter, 1934). The entrepreneurial ecosystem is defined as *“a set of interconnected entrepreneurial actors, entrepreneurial organizations, institutions and entrepreneurial processes that work together formally and informally to connect, mediate and direct performance within the local entrepreneurial environment.”* Mason and Brown (2014). Some authors have criticized this definition as “too geographical” because it limits the definition of ecosystems to spatial distance between the ecosystem's elements. From a non-geographical perspective, EEs are defined as “orchestrators and mediators of innovation and entrepreneurial activities, in which the actors produce, create and work together to create value together” (Theodorakis et al., 2018).

Practically, the entrepreneurial ecosystem approach incorporates and integrates a large variety and amount of data to measure the (changing) nature, output, and results of (local) economies. The approach offers an instrument to empirically understand the systemic nature of entrepreneurial economies and how economic systems produce entrepreneurship as an emergent property of the system (Stam, 2015). Thus, the entrepreneurial ecosystem approach has the potential to provide an operational framework for political decision-making and business facilitation

**THE GLOBAL NARRATIVE OF SUSTAINABILITY**

The 2030 Agenda for Sustainable Development, considered to be a common framework for people and the planet's peace and prosperity for the present and the future, includes 17 Goals for Sustainable Development. The 17 SDGs are a rallying cry for all developed and developing countries to work together in a global partnership to achieve them (Figure 1). They understand that eradicating poverty and other forms of deprivation must be combined with efforts to enhance health and education, decrease inequality, and boost economic growth while combating climate change and protecting our environment. To put the 2030 Agenda into practice, widespread ownership of the SDGs must be translated into a solid commitment to executing the global goals by all stakeholders.

Goal 11 of the Sustainable Development goals speaks of “Sustainable Cities and Communities” and its sub-goal 11.3 seeks “by 2030 to enhance inclusive and sustainable urbanization and capacity for participatory, integrated, and sustainable human settlement planning and management in all countries”

Under its Horizon 2021-27 innovation program, the European Commission estimates that an additional EUR 96 billion would be required to make 100 climate-neutral smart cities. The Digital Europe Programme envisions large-scale deployment of solutions for cities and communities that tested satisfactorily under Horizon 2020. The mission further sets a condition that 1% of EU funding should be earmarked for citizen platforms to develop and implement climate actions.

Figure 1 United Nations’ 17 Sustainable Developments



**URBAN DEVELOPMENT SUSTAINABILITY CHALLENGES**

In 2018, 4.2 billion people – amounting to 55% of the world’s population lived in cities. The urban population is expected to reach 6.5 billion by 2050. 1 Cities are resource intensive, occupying only 3% of the Earth’s land but consuming 60 to 80 percent of the energy output, and are also responsible for 70% of the global carbon emissions. Further, Cities have great economic significance, generating about 80% of the global GDP. While the environmental and economic importance of cities is recognised globally, urban governance receives fairly

<sup>1</sup> <https://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-11-sustainable-cities-and-communities.html>

different levels of prioritisation by countries globally. Cities are facing a bundle of sustainability challenges that are related to each other, such as:

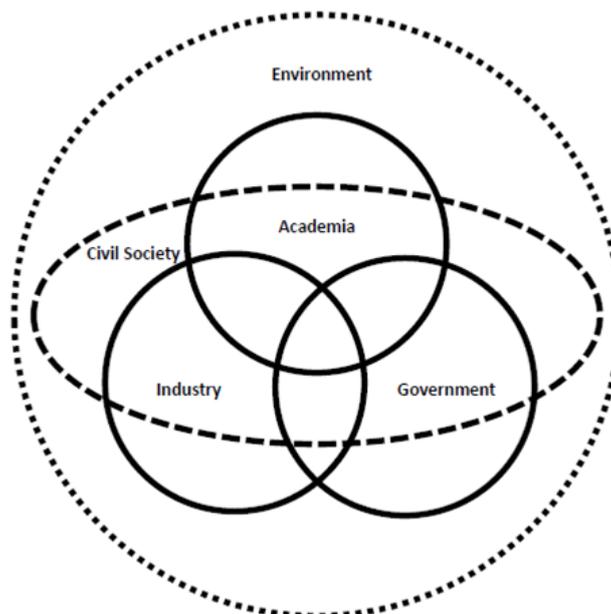
- 1- **Sustainable Energy:** renewable Energy.
- 2- **Urban Food Systems:** healthy diets, food safety and security.
- 3- **Blue Infrastructure:** water elements, wastewater management, water treatment, and accessibility.
- 4- **Waste Management:** recycling.
- 5- **Urban and Transport Planning:** traffic-related issues, noise, gas emissions.
- 6- **Urban Health Equity:** threats related to environmental injustice to access health facilities and services.
- 7- **Green Infrastructure:** protection of natural resources
- 8- **Built and Indoor Environment:** internal environmental quality, inadequate ventilation, indoor pollution.

## SMART CITIES AND CITIZENS' ENGAGEMENT

A vital instrument adopted by nations to navigate urbanization is the creation of “Smart Cities,” which in its mainstream form attempts to retrofit often and sometimes redevelop cities with technology-driven governance forms, envisioning better governance. With the belief in this ability of digitalization to help cities better adapt to urban challenges, countries around the globe have embarked on the creation of smart cities on a massive scale, with significant investments. In Germany, 32 Smart city model projects were funded for around EUR 350 million in 2020. Since 2014, the Indian Government has committed to investing \$ 30.76 billion in creating 100 Smart Cities. The global market for smart city technologies and services has been estimated to have touched \$408 billion in 2020.<sup>2</sup>

Increasing urbanization yields substantial potential for enhanced sustainability through careful urban development management and optimized resource use efficiency. Building smart cities is now a global trend for successfully managing growing urbanism. As the challenges are enormous, smart cities always adopt an open innovation Quadrable Helix Approach (Figure 2) or innovation living lab approach where all sectors of a city - openly and transparently shape its future together: politics and administration, business and startups, education and research, art and culture, and civic engagement.

Figure 2 Open Innovation Quadrable Helix Approach for Urban Living Labs



<sup>2</sup> “Rethinking Smart Cities from the Ground Up”, NESTA June 2015.

Open Innovation City assumes that innovations can not only occur in the economy but also everywhere and through all segments of society. When innovative ideas and motivated actors come together, things can be moved in a city that would otherwise never happen. While coping with the localized challenges of providing urban services, cities are commonly affected by climate change and rising economic inequality. Rapid technological change in society is a potential enabler for cities to effectively involve citizens in this open, networked innovation process. As Mazzucato (2019) recommends in "Governing missions in the European Union," *"Citizen scientists and innovators can have clear added value and complement the implementation of missions. Their participation should be actively encouraged."*

Citizen participation in public sector innovation is becoming a strategic priority at the policy level. Thus, there is a clear need to use living labs as a mechanism for citizen participation. This is due to what is recognized in policy discourse as imparting a 'directionality' to the innovation process to better connect innovation to "grand societal challenges" (Pfothenauer & Winickoff, 2018).

## URBAN LIVING LABS (ULLS)

The construct of "Urban living labs" is interchangeably used with "citizen innovation labs," "GovLab," "Policy Sandbox," and "Urban Innovation Labs" in both mainstream and academic discourse. Urban Living Labs (ULLs) are widely believed to provide a safe environment for experimentation, co-creation, and evaluation of innovations in real-life settings. The construct of a "Living Lab" is taken from the systematic review paper by (Hossain, Leminen, & Westerland, 2018), which discusses the treatment of living labs across literature variously as an approach, method, context, environment, experimentation, network, business model, and intermediary. They highlight key characteristics of living labs as i) real-life environments; (ii) stakeholders; (iii) activities; (iv) business models and networks; (v) methods, tools, and approaches; (vi) innovation outcomes; (vii) challenges; and (viii) sustainability.

A growing number of cities have been adopting ULLs to co-create and test innovative solutions for USCHS. Living labs constitute an essential instrument in operationalizing pre-commercial procurement (PCP), public procurement of innovation (PPI), and Strategic Procurement. Thus, the notion of "Living Labs" finds increasing adoption by Smart City Governments as an institutional instrument that achieves the following goals.

1. Space for participation and co-creation by citizens in cities
2. Lowered risk for trials of innovative urban solutions not possible in traditional channels of procurement
3. Discovery of regulation and social responses to solutions that may involve significant technological, social, economic, and cultural transitions

## U-SOLVE

### GENERAL APPROACH

Urban sustainable development challenges and their solutions always involve the perspectives of different stakeholders, including academics, government officials, industry representatives, and civil society. Therefore,, the U-SOLVE project adopts a collective bottom-up approach to define the community's main challenges in a specific geographic area (i.e., a city, governorate, or country) and proposes possible solutions for the defined challenges. In this regard, the project allocates a generous fund for establishing "**Physical Urban Living Labs (ULLs)**". This unit will adopt the Living Lab approach to operate as a space and a driver for mobilizing ecosystem actors to define the main urban development challenges in the designated area and suggest innovative solutions for those challenges. The project will also support SMEs and entrepreneurs in bringing innovative solutions into reality by granting specific funds to the selected projects.

### OBJECTIVES

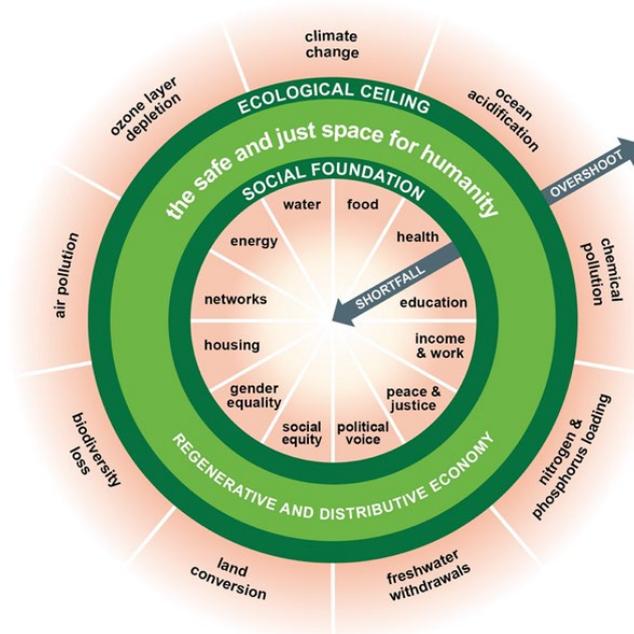
U-SOLVE's expected results will be innovative: start-up enterprises based on Urban sustainable development principles managed by / employing youths and, more specifically, graduates or equivalent between 24 and 35 years old and women (all ages) in traditional and non-traditional sectors and policy recommendations to local and national governments for urban development strategies based on environmentally friendly innovative concepts (doughnut economy principles, Figure 3).

**U-SOLVE** aims to Support innovative startups and recently established enterprises in tracking such urban sustainable development challenges. In this regard, the project seeks to address the following.

- The environmental challenge in the urban areas.
- The social-economic challenge of developing supportive business environments for business development and innovation.
- The promotion of youth and female economic participation and the creation of innovative startups through a more sustainable and inclusive model of economic growth.

U-SOLVE will establish a supporting process devoted to young and women innovative entrepreneurs with both local impact and high growth potential to boost the implementation of Sustainable Development Goals in urban contexts. The effect on income generation for start-ups will be substantial, with a minimum of 20 new business contracts signed. Consequently, the project will generate at least 40 new jobs in the supported start-ups. Moreover, the network of urban hubs to be caused by the project will represent a powerful tool at the Mediterranean level, where local policy-makers, knowledge providers, development agencies, innovators, and impact investors will act as a community for change, producing economic value within a sustainable development framework. From a mid-long term perspective, the project will contribute to the shift to an integrated, impact-oriented approach to entrepreneurship, where the local and global dimensions of new business are connected to the sustainable development paradigm.

Figure 3 The Doughnut economic model. Source: Wikimedia Commons.



## CONTRIBUTION TO POLICYMAKING

During the entrepreneurship ecosystem analysis and urban hub establishment, interaction with decision-makers will foster sustainable results at social, economic, and policy levels. A complete set of activities of the project is dedicated to producing policy proposals to promote entrepreneurship as a tool for sustainable development in urban areas, with direct involvement of public institutions throughout their elaboration. Finally, through a series of international workshops between responsible institutions in each participating city, a comparison among the strategies will be made to define a standard policy at the Mediterranean level.

## FINAL BENEFICIARIES

- 420 young and women entrepreneurs and potential entrepreneurs
- 30 start-ups operating in urban contexts
- Local urban populations

## WP 3 MAPPING ENTREPRENEURIAL ECOSYSTEM

### ENTREPRENEURSHIP ECOSYSTEM FRAMEWORK

Developing an enabling ecosystem for entrepreneurship has received considerable attention from governments, development agencies, and academics. Organizations like the Council on Competitiveness (CoC) in the United States, the GSM Association, the Organisation for Economic Co-operation and Development (OECD), the World Bank, and the World Economic Forum have developed comprehensive diagnostic tools for assessing and tracking the development of the ecosystem. Additionally, successful venture capitalists, development consultants, foundations, and academies have developed similar evaluative frameworks. These approaches vary widely and can be classified based on the geographic unit of analysis, their level of detail, and their sectoral or domain focus. For example, some approaches, such as the OECD's Entrepreneurship Measurement Framework and the World Bank's Doing Business ranking, are national-level assessment frameworks that can be used to make cross-country comparisons (ANDE, 2013)

### ENTREPRENEURSHIP AND ECONOMIC PERFORMANCE

Entrepreneurship is increasingly considered a means to achieve specific sustainable development goals and SDGs<sup>3</sup>. This notion accentuates the need to measure entrepreneurship as a booster of systemic development, considering the impact of entrepreneurial activity on socio-economic dynamics. This means that in analyzing the entrepreneurial ecosystem, we should include three main elements: (i) entrepreneurship determinants, (ii) entrepreneurial performance, and (ii) entrepreneurial impact. These three elements make sense as a starting point for ecosystem assessment (ANDE, 2013; Leendertse et al., 2021).

### ELEMENTS OF ASSESSING ENTREPRENEURIAL ECOSYSTEMS

Assessing the Entrepreneurial Ecosystem involves three main dimensions.

- **Entrepreneurship determinants** refer to factors that affect entrepreneurship. Despite the variety of entrepreneurial ecosystem assessing frameworks, they are relatively consistent in terms of broad themes and actors that would be considered determinants of entrepreneurship, such as specific policies, the amount of venture capital financing deployed, and the availability of business development services.
- **Entrepreneurial performance** refers to the specific activities that entrepreneurs perform that will ultimately deliver the impacts. Indicators such as the total number of formal businesses in an economy, the number of high-growth firms (gazelles), employment figures, and enterprise survival and death rates are all considered measures of entrepreneurial performance.
- **Impact** refers to the value created by entrepreneurs and entrepreneurship, which may be measured in macroeconomic variables, such as GDP growth, employment, etc., and transitional potentials, such as the effect on SDGs or other sustainable development KPIs. More specifically, U-SOLVE adopts the Doughnut Economy framework, which combines the goal of social development with the obligation to stay below the biophysical planetary boundaries (Raworth, 2017).

### ENTREPRENEURIAL ECOSYSTEM ASSESSMENT MODELS

The notion of linking entrepreneurship and entrepreneurial activities to their impact is reflected in three comprehensive and similar frameworks: The geography of entrepreneurship ecosystem measurement developed by (Leendertse et al., 2021) and the OECD's Entrepreneurship Measurement Framework and Aspen Network of Development Entrepreneur (ANDE, 2013)

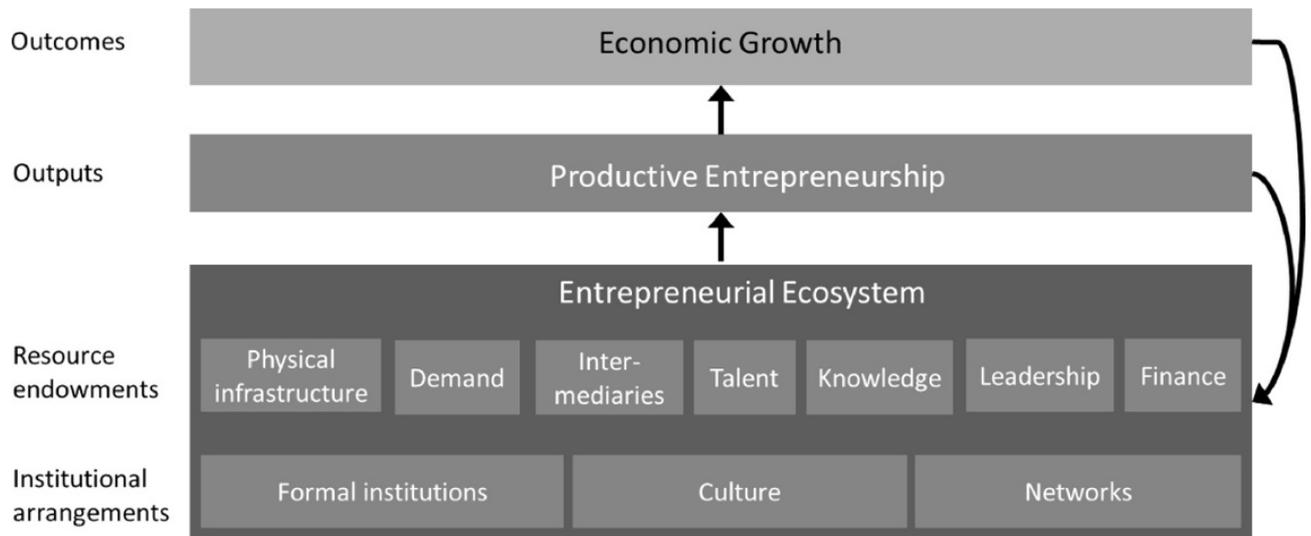
### GEOGRAPHIC MODEL OF ENTREPRENEURSHIP ECOSYSTEM (LEENDERTSE ET AL., 2021)

This framework adopts the geographical entrepreneurial ecosystem approach to capture the role of different factors enhancing the prevalence of entrepreneurship and its impact on the country or region levels. As shown in Figure 4, the model focused on ten determinants of the entrepreneurial ecosystem besides measuring entrepreneurial productivity (outputs) and economic growth as ultimate outcomes.

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<sup>3</sup> <https://www.seed.uno/topics/sdgs>

Figure 4 Elements, outputs and outcomes of an entrepreneurial ecosystem (Leendertse et al., 2021)

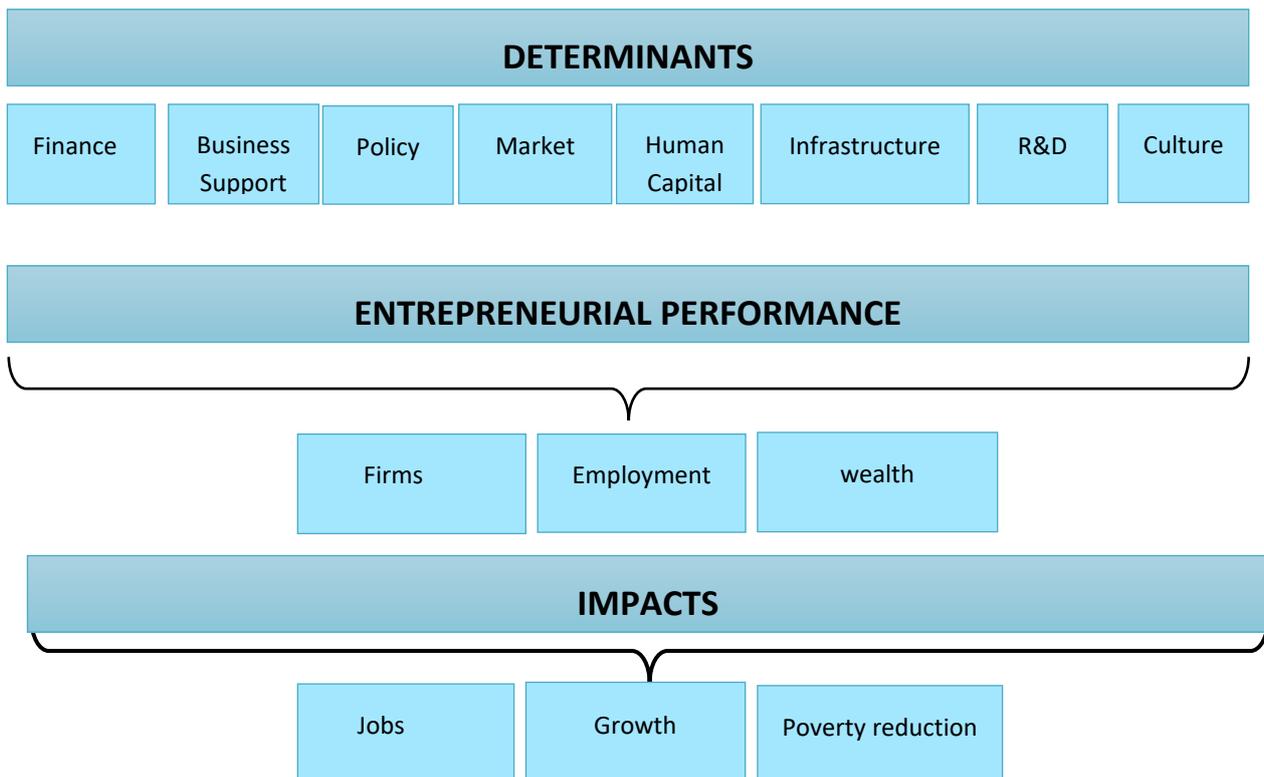


In the U-SOLVE perspective, this framework, which exclusively focuses on growth, should be reconsidered in terms of sustainable prosperity, accordingly to the UN SDGs and the broad Doughnut Economy perspective.

#### OECD EUROSTAT AND “ANDE” ENTREPRENEURSHIP MEASURING MODEL

Also, the OECD’s Entrepreneurship Measuring Framework, which Kauffman Foundation-supported, listed 57 key indicators to measure the determinants of entrepreneurship in a country, framed across nine domains: Policy, Finance, Infrastructure, Markets, Human Capital, Support / Services / Connections, Culture, R&D / Innovation, and Macroeconomic Conditions. The ANDE model was also developed based on the OECD’s framework and focused on the same elements, as shown in Figure 5. Final impacts take into account growth, but also jobs and poverty reduction

Figure 5 Entrepreneurship Measurement Framework ANDE adjusted from OECD.



## METHOD

### U-SOLVE- ENTREPRENEURSHIP ANALYTICAL FRAMEWORK

#### CONCEPTUALIZATION

While there is increasing awareness about innovation ecosystems, there remains uncertainty about who does what to support early-stage entrepreneurs. The separate line between the ecosystem's actors, roles, and functions is not yet clearly defined. An Entrepreneurial ecosystem can be considered as a combination of roles and functions. Roles are filled by different actors (i.e., people and organizations), including investors, media, co-working spaces, universities, and government. Functions are performed by roles/actors and include providing access to talent, mentoring, providing capital, developing policy, and building infrastructure.

U-SOLVE project focuses on mapping the main ecosystem functions & actors and their interrelationships. Therefore, we distinguish between functions and actors in the ecosystem to figure out who does what and whether the whole ecosystem's functions are fulfilled or not.

#### ECOSYSTEM FUNCTIONS

Comparing the three abovementioned measurements (Table 1), we combined the main super functional domains of the entrepreneurship ecosystem and created a framework to analyze the entrepreneurial ecosystem within the U-SOLVE project (Table 2).

Table 1 Elements entrepreneurial ecosystem analysis

<b>Functional Domains</b>	<b>Column 1 OECD Eurostat</b>	<b>Column 2 Geographic of EEs Leendertse et al., 2021</b>	<b>Column 3 ANDE</b>
Formal institutions		X	
Policy	X		X
Informal institutions (Culture)		X	
Entrepreneurship culture	X	X	X
Support/services/Connection	X		X
Networks		X	
Physical Infrastructure	X	X	X
Finance	X	X	X
Human Capital	X		X
Leadership		X	
Talent		X	
R&D/Innovation	X		X
New Knowledge		X	
Market	X		X
Demand		X	
Intermediate services		X	
Entrepreneurial performance/Output (Productive Entrepreneurship)	X	X	X
Outcomes (Economic Growth, Social Impacts)	X	X	X

In (Table 2), we compared ANDE and the geographic model of Leendertse et al., 2021, and defined eight main elements to measure the functionality of the entrepreneurial ecosystem. The table also encompasses a definition to explain what each element means.

Table 2 USOLVE Entrepreneurial Ecosystem's Functional Domains

<b>Functional Domains</b>	<b>Description</b>	<b>Example</b>
Formal institutions/Policies	The rules of the game in society and Entrepreneurship supporting policies	Tax rates, tax incentives, cost to start a business
Informal institutions/Culture	The degree to which entrepreneurship is valued	entrepreneurial motivation, cultural and social norms, the importance of being innovative, and trust in others

Physical Infrastructure	Transportation infrastructure and digital infrastructure	Access to telecom, Access to Electricity Access to Infrastructure
Finance/Capital	The availability of venture capital and access to finance	Debt access, VC access, Grants
Knowledge Creation (R&D/Innovation)	Investments in new knowledge	Patents, Intramural R&D expenditure
Market/ demand	Potential market demand	Domestic sales, international sales, Target market size
Human Capital (Talentes& Leadership)	The prevalence of individuals with high levels of human capital, both in terms of formal education and skills The presence of actors taking a leadership role in the ecosystem	Graduation rate, Quality of education
Business Support (Networks & Intermediate services)	The connectedness of businesses for new value creation and the supply and accessibility of intermediate business services	Industry Networks, Incubators/accelerators, legal/accounting services

### ECOSYSTEM ACTORS

As mentioned above, every ecosystem's function could be fulfilled by different actors who play different roles in the entrepreneurial ecosystem. For instance, financing/capital could be offered by banks, venture capitalists, business angels, etc. Business support services as a function could be provided by accelerators and incubators hosted by a public or a private ecosystem actor. Entrepreneurial Ecosystem Actors could be simplified and defined as people or organizations who work and interact to pursue ecosystem functionality. Table 3 below provides a general framework that demonstrates the main eight ecosystem functional domains and provides examples of expected actors under each functional domain, reviewed and integrated into the U-SOLVE perspective.

**Table 3 Entrepreneurial Ecosystem - Domains and Actors**

Formal institutions/ Policies	Informal institutions/ Culture	Physical Infrastructure	Finance/ Capital	Knowledge Creation (R&D/ Innovation)	Market/ demand	Human Capital	Business Support Services
National Government	Media	Electricity Providers	Banks	Public Research Centres and Laboratories	Domestic corporations	Universities	Incubators
State Government	Government	Transport providers	Venture Capital	Private research Centres and Laboratories	International corporations	Technical training institutes	Accelerators
Local Government	Schools	Communications (mobile& Internet)	Angel Investors	Technology platforms	Consumers	High schools	Industry associations/Networks
Development agencies	Professional associations	Other utility providers (gas, water)	Foundations	Sand boxes, Living Labs other	Distribution networks	Community colleges	Legal services
	Social organizations	Managers of natural infrastructures	Microfinance Institutions	Relevant startups and other private actors	Retail networks	Informal learning environments	Accounting services
	Cultural and civil society organizations	Managers of cultural infrastructures	Public capital market		Marketing networks		Technical experts/mentors
			Development finance institutions		Industrial clusters/chains		Credit rating agencies
			Government finance		Prosumers' associations and other emerging demand-side networks		Fablabs, maker spaces

## RESEARCH DESIGN

### METHODOLOGIES AND TOOLS

This report's fundamental goal is to better understand the EE in each country/city to assess its functions, actors, and connectivity while assessing the sustainable urban development challenges in this geographic area.

Given the scope of the assessment, a combination of quantitative and qualitative research methods was adopted. The data collection tools relied on primary and secondary data sources, including desk reviews, key informant interviews (KIIs), field observations, and focus group meetings.

The desk review included an analysis of the available established studies and reports addressing EE and Urban Sustainable Development issues. Key figures and statistics were used to support the claims and provide evidence-based information. Furthermore, focus group outcomes with representative key actors from the EE were used to validate the desk research results through descriptive analysis.

The survey addressed the urban entrepreneurial Ecosystem's status quo as perceived by the key actors. The classification of the EE key actors and EE functions was identified by (Leendertse et al., 2021) and the OECD's Entrepreneurship Measurement Framework and Aspen Network of Development Entrepreneurs (ANDE, 2013). The studies show the EE comprises eight functions: Formal institutions/ Policies, Informal institutions/ Culture, Physical Infrastructure, Finance/ Capital, Knowledge Creation (R&D/ Innovation), Market/ Demand, Human Capital, and Business Support Services.

The questionnaire was initially developed in English but translated into the language of each partnering country and revised and tested to ensure a common understanding among the assessment team members on the terms and concepts contained in the questionnaire (Appendix A Survey in English and Arabic).

We used a **stratified sampling** technique by classifying the main EE actors under the eight functional domains according to the following criteria:

- The relevance of the actor to the classification in terms of functions, scope, vision, and activities.
- The geographical presence: in this criterion
- The connection of work and activities with the urban development context.
- The ability to give concrete answers about the EE.

Most of the data were disaggregated by interviewees' characteristics, ecosystem functions, and business sectors, i.e., public, private, and civil society. The assessment also included the updates of the contact information of the interviewees and their availability for further discussion sessions.

### DATA ANALYSIS AND RESULTS

Following the ANDE model, we classified key actors of the EE; the level of analysis was conducted in two main stages:

- Actors Mapping: in this stage, qualitative analysis approaches were utilized to show the strengths and the weaknesses of the actors in the EE, identify gaps and draw the actors' map. Both primary and secondary data sources were used with
  - Secondary data: the desk research followed the ANDE model to classify each actor under the eight functional domains (please refer to Figure 5).
  - Primary data: a focus group on urban development priorities within each selected geographic territory.
- Functionality analysis: various research works have put forward performance indicators to assess the EE functionality and impact on the local economies. The quantitative techniques using secondary and primary data sources could fit properly to understand and estimate the EE functionalities and their impact.
  - Secondary data: using desk review to understand EE functions measuring indicators based on the ANDE model.
  - Primary data: the survey which was distributed, discussed, and filled in with EE key actors.

The survey concentrated on Actors and Functions and thematic challenges in the urban development context at the local and the national levels. The analysis of the survey would spot on the following points:

- a) The urban sustainability challenges ranking.
- b) The ecosystem function domains.
- c) The Ecosystem's key actors.
- d) The interrelationship between actors
- e) The impact of function domains, actors, and challenges addressing the EE.
- f) What is needed to be done to improve the performance of the ecosystem actors



While we employed a consistent and unified methodology for both data collection and analysis, the outcomes exhibited variations among participating partners due to contextual factors that impacted the data gathering and examination processes.

# **URBAN ENTREPRENEURIAL ECOSYSTEM ANALYSIS REPORT**

**(EGYPT)**

**ALEXANDRIA**

## EXECUTIVE SUMMARY

Results indicate that Egypt has a viable entrepreneurial ecosystem involving a variety of financial, scientific, and business support organizations. The city of Alexandria faces many Urban Development Sustainability Challenges; on the top of them are Sustainable Energy, Urban Food Systems, and Waste Management. Results also show that business support organizations in the urban entrepreneurial ecosystem want to connect with higher education and research institutions and the other way around. NGOs consider public authorities to be the most crucial actors, and they need to work together—private businesses and entrepreneurs eager to connect with all ecosystem actors, particularly with financial organizations. According to the data collected from the ecosystem actors, the current urban entrepreneurial ecosystem is functioning well in creating knowledge by universities and research institutes and supporting businesses through incubation, clusters, networking, or consultancies. Even though all ecosystem functions seem to be addressed on a good level, financing/capital availability is still the worst function on a poor level. Ecosystem experts expressed their positive evaluation of the potential impact of the current entrepreneurial activities on enhancing businesses and living conditions on the social, economic, and ecological dimensions. However, ecosystem actors need more support to perform better. In this regard, it is remarkable to observe that accessing sandboxes, living labs, and other co-design facilities and joining international, impact-oriented projects are coming the first place as high priorities for ecosystem actors. Generally, the outputs validate the main approach of the U-SOLVE project and the need for building Urban Living Labs (ULLs) to support ecosystem actors in solving urban challenges the city faces. In addition, the results could be used to establish an implementation strategy for the projected ULLs by defining their targeted goals and the main blind spots in the current entrepreneurial ecosystem that should be fulfilled.

## ENTREPRENEURIAL ECOSYSTEM IN EGYPT

In 2017, the Global Entrepreneurship & Development Index ranked Egypt 85 out of 116 and the pre-last of the Middle East and North African countries. According to GEDI, Egypt's business entrepreneurship ecosystem is suffering from significant weaknesses on specific pillars: [Pillar 2: Start-up skills, with a clear demand to empower young entrepreneurs' skills and leadership of directors of business intermediaries]. [Pillar 3: Risk Acceptance and availability of business angels]. [Pillar 4: Networking, aiming to share resources and mobilize expertise among various actors]. [Pillar 10: Product Innovation, to develop ideas/concepts into final products]. [Pillar 13: Internationalization, to enter the global market via a different mechanism, i.e., marketplace].

In 2020, according to the Doing Business report issued by the World Bank, Egypt moved from 120th place in 2019 to 114th in 2020. The report highlighted Egypt's improvements in doing and creating business easier by introducing a one-stop shop for the process, improving the reliability of electricity, protecting minority investors, and making tax payments easier. Various studies show that youth are engaged in MSMEs significantly across different sectors (e.g., ICT, education, agribusiness, health, and urban development). Identifying themselves as 'accidental entrepreneurs,' Egyptian entrepreneurs mostly do not have any formal training on entrepreneurial skills and their adaptation to the social change dimension (Younis, 2017). Thanks to the last decade's social and governmental movement that initiated several public and private business-social incubators and entrepreneurship/business development services and programs, as we will see in the next sections.



Figure 6 GEDI 2020 - Egypt Assessment Pillars

### Egypt's entrepreneurship ecosystem has expanded along several dimensions:

- Initiating various Venture Capital (VC) grants and a positive flow of local and international investments in MSMEs, mainly ICT. More entrepreneurship programs become more noticed;
- A variable range of technological innovation infrastructures and business support organizations (BSOs) to Egyptian MSMEs that was largely established based on the national 2005 industrial development strategy, aiming to boost the potentials of Egyptian enterprises and companies;
- Egypt embarked on an economic reform program and novel legislative measures. Reform of the macro-economy is key to encouraging and attracting more entrepreneurs and businesses to Egypt. Doing business 2018 reports incremental progress in reducing the "time-to-start" new business in Egypt, which is partly resulting from the recent reform strategy by the general authority of financial investment in Egypt;
- Advancing the MSME development and the national science, technology, and innovation ecosystem (STI) is characteristic of new initiatives, legislative measures, improved policies, and novel infrastructures, including the new Micro, Small, and Medium Enterprises Development Agency. In 2017, the Agency offered 215+ million EGP to fund +14K micro-small projects to create +19K jobs.

### QUALITATIVE PHASE: DESK RESEARCH

#### ACTORS MAPPING OF THE EGYPTIAN INNOVATION ECOSYSTEM

### MACRO LEVEL: GOVERNMENT: MINISTRIES INSTITUTIONAL UNITS AND LEGISLATIONS

#### ACADEMY OF SCIENTIFIC RESEARCH & TECHNOLOGY (ASRT)

In 2018, with the financial support of the European Commission under the Action "TED-PPP," coordinated by the academy, ASRT launched for the first time the "Egyptian Innovation Bank" (<https://eib.eg/login/?lang=en>), which MAP & MATCH incubators and accelerators, technology transfer offices, database of senior business consultants and angels, innovation and technological clusters, and database of funding agencies and programs to stimulate

interactions between innovation support organizations and service providers. EIB is operated virtually and hosted by the ENISTNET (Egyptian National S&T Network) at ASRT. The business and innovation enablers are mapped and profiled in the platform. At the time of reporting, the EIB DB includes 145 registered innovation enablers classified under nine essential service categories such as co-working spaces, administrative and legal support, seed funding, funding and access to finance, crowdfunding and venture capitalists, incubators, training centres, business plan competitions, business development support, and research and technology services.

#### MINISTRY OF COMMUNICATION AND INFORMATION TECHNOLOGY (MCIT)

##### ▪ **TIEC (Technology Innovation and Entrepreneurship Center):**

The Technology Innovation and Entrepreneurship Center's (TIEC) main objective is to drive innovation and entrepreneurship in the ICT sector in Egypt. The Ministry of Communication and Information Technology (MCIT) launched TIEC at Smart Village in 2010. Since then, it has been the leading regional Hub and world-class centre for ICT-based innovations and entrepreneurship in Egypt.

##### ▪ **EgyptInnovate HUB**

EgyptInnovate is an online national innovation hub where innovators and entrepreneurs can get educational material and be linked with other counterparts. The HUB has its practical tools and templates and access to various networks from innovation hubs and spaces around the globe. The HUB aims to expose Egypt's innovation and entrepreneurship ecosystem as main actors locally and globally, connecting nodes and building cooperation. According to the MCIT, entities involved in innovation-led growth in Egypt in the following makeup: It is important to note that the MCIT-EgyptInnovate hub and the ASRT-Egypt Innovation Bank platform are the only public online platforms/hubs in Egypt that target start-ups, SMEs, innovation support organizations, and entrepreneurs.

#### MINISTRY OF INVESTMENT AND INTERNATIONAL COOPERATION

The Ministry of Investment has many initiatives with great relevance to the Entrepreneurship ecosystem in Egypt.

##### ▪ **General Authority for Investment and Free Zones**

GAFI is the principal government body regulating and facilitating investments in Egypt ([www.gafi.gov.eg](http://www.gafi.gov.eg)). GAFI's mandate can be classified into endorsing various industrial and service sectors in Egypt with investment potentials, creating investment services and facilities, enhancing opportunities for innovation, and providing financial and non-financial support for entrepreneurs.

Example of Non-Financial services to MSMEs: GAFI has launched the service "Limited Liability Corporations" to provide legal support and services to company formation. Such digitization of initiating your company has shortened the process to a single day. Such speeding up the process reflects a substantial increase (doubled) in the number of established MSMEs in Egypt, which positively affects the Entrepreneurship ecosystem in Egypt. A study (Doing Business – Egypt 2019) shows Egypt is improving in the 'starting a business' metric, but female entrepreneurs face greater difficulties than males (check the gender sector).

##### ▪ **BEDAYA**

In 2009, GAFI established the Bedaya as its Entrepreneurship Service, Funding, and Consultancy body. BEDAYA offers a set of various financial and technical supports in exchange for equity. Prospective fund recipients must meet minimum net-worth requirements to be eligible for funding, except for environmental projects exempt from this rule. For instance, Renewable Energy SMEs have special attention. Bedaya has been providing support to an SME for five years, after which the supported enterprise is usually listed on the Nile Stock Exchange (NILEX).

##### ▪ **FEKRETAK SHERKETAK ([www.sherketak.com](http://www.sherketak.com))**

It is a national initiative aiming to empower the Egyptian entrepreneurship ecosystem and provide different support and services to young Egyptian entrepreneurs all over the country. In 2017, the program initiated a national accelerator FALAK, in which Egyptian Entrepreneurs can be at any phase of the maturity cycle. The acceleration program offers funding, mentorship, coaching, capacity-building programs, and a wide variety of benefits in a Toolbox that can develop and grow their businesses.

#### CENTRAL BANK OF EGYPT - NILE UNIVERSITY: NILEPRENEURS رواد النيل

Originally, the CBE dealt with monetary national policy and currency matters. In 2008, the Bank started stimulating youth employment via different actions and sectors, including supporting entrepreneurship. In 2008, The Bank issued a decision to exempt the MSMEs loan portfolio from mandatory reserve ratios, effectively making more funds available to MSMEs. In 2016, 200+ Billion EGPs (~13 billion USD) were pledged as loans to or investments in MSMEs. After spending 25% of the available budget, 33 000+ new MSMEs have been established. In 2019, the CBE recently launched a One billion EGP support fund (~60 million USD) to invest in innovative projects in Egypt. It also provides interest-free loans to youth-led innovative projects. NilePreneurs (<https://np.eg/en/nilepreneurs-2020-year-in-review/>) “is a nationwide initiative started in 2019 and powered by the Central Bank of Egypt and the Egyptian Banking Sector. Fuelled by various partnerships with governmental and private sector entities, NilePreneurs has been supporting start-ups and SMEs in manufacturing, agriculture, and digital transformation by applying different innovation instruments. The initiative is piloted at Nile University and has expanded to 4 other universities, and is still growing. Nilepreneurs incubated business ideas and prototypes related to ‘multifunctional furniture, allowing businesses with related ideas or prototypes to ‘take the challenge’ for potential funding and other types of support. The Initiative Services can be classified into the incubation services, ‘awareness program’ that benefits all Egyptian entrepreneurs at all stages of maturity, ‘enterprise development’ program to directly help businesses grow, and ‘design house’ service, translating ideas into detailed specifications.

#### MICRO, SMALL, MEDIUM ENTERPRISE DEVELOPMENT AUTHORITY

Previously it was known as the Social Fund for Development, as an autonomous development and poverty-alleviation agency established in 1991 with the support of the United Nations Development Programme, UNDP. In 2015, it was changed to be 4.1.1.1.5 Micro, Small, Medium Enterprise Development Authority. In 2017, MSMEDA allocated 4.8 billion EGP (0.3 B USD) to support projects. MSMEDA has expanded the provision of non-financial services to help MSMEs founders develop their enterprises and services. MSMEDA also provides support to non-governmental organizations to finance microenterprises. Such a service plans to support 2 800 micro-enterprises, with at least 25% allocated to women-led/owned enterprises..

#### LEGAL AND LEGISLATIVE FRAMEWORK

##### REGISTRATION FOR FORMAL ACTIVITY

According to OECD (2014), The entrepreneurship ecosystem was defined as “a set of interconnected entrepreneurial actors (both potential and existing), entrepreneurial organizations (e.g., firms, venture capitalists, business angels, banks), institutions (universities, public sector agencies, financial bodies), and entrepreneurial processes (e.g., the business birth rate, numbers of high growth firms, levels of “blockbuster entrepreneurship,” number of serial entrepreneurs, degree of sell-out mentality within firms, and levels of entrepreneurial ambition) which formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment.” The first pillar of the ecosystem focuses on the enabling factors and strategies, with two sub-elements: government and leadership. The Government part covers institutional/structural (e.g., investment and support), financial support (*e.g., GERD, BERD, tax benefits*), **REGULATORY FRAMEWORK, and VENTURE-SUPPORTIVE LEGISLATION**

According to studies, a Venture format would enable greater government support for it, which success stories show is needed. Registration benefits, access to financiers, special tariff rights, and better placement within Global Value Chains (GVCs) are among the benefits that could be expected from MSMEs legal formats in Egypt, according to studies and other country’s experiences (Abdou and El Ebrashi, 2015: 47).

##### TAXATION

One of the main challenges facing any start-up by people motivated by opportunity is facing red tape and tax paying. According to an EU project implemented by AECOM—namely, EU Synthesis Report (2016)—the main drawback to registering MSMEs in the MENA has to do with additional taxes incurred in income, value-added, and other taxes (AECOM, 2016: 62). MSMEs are also susceptible to audits and legal expenses, registration costs, and associated requirements such as renting an office space. MSME's founders voiced this concern.

In its report on 2019, the World Bank measured various indicators for the business environments of various countries at different levels, ranked Egypt 159/190 countries in ‘Paying Taxes.’ The ranking was based on 1) tax amounts, 2) the method and frequency of filing and paying taxes, 3) the time required to comply with tax filing

and payment, 4) a post-filing index to measure the time required to comply with and resolve refunds and corrections. According to a WB study, around 400 hours annually are needed to deal with taxes in Egypt by an average medium-sized enterprise (WB- Doing Business, 2019). Comparatively, the average time required in the MENA region was half (200 hours), while in OECD high-income countries, the average is 160 hours. On the other hand, the report highlighted Egypt's high FINANCIAL AUDITS frequency.

#### FINANCIAL LIBERTY

According to Egyptian law, the corresponding Ministry must first approve donor funding, foreign funding, and other forms of non-earned income. This particularly influences NGOs and public entities, as private business enterprises are not required to get such approval. Registered companies are much less affected as income is restricted from similar inspections. Private Sector companies are also more capable, if less needed, of accepting and using donor money without red tape. Such a privilege is positive for Egyptian MSMEs

#### CONTRACT ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS

According to the WB Doing Business 2019 Report, Egypt's main obstacles to doing business were related to trading across borders (rank: 171/190), paying taxes (rank: 159/190), and enforcing contracts (rank: 160/190). The latter ranking is determined by sorting the scores of the various indicators used for 'ease of enforcing contracts.' The indicators include numerous measures for time and cost (% of claim value) and the quality of judicial processes index.

Egypt set different measures aligned with the TRIPS agreement in the late 1990s, and the Egyptian Intellectual property rights law came into force in June 2002 (law 82 of 2002). The enforcement of Egypt's IPR law is challenged by many factors, including the unavailability of an electronic registry system for most of the IP protection categories, including Patents and Utility models, in addition to the large informal business sector and the insufficient training for the judiciary and other enforcement agencies in IPR issues. In addition to law enforcement, access to knowledge has also been recognized as another major obstacle. Existing intellectual properties such as patents, utility models, copyrights, and industrial designs shall be considered input for further R&D and technology development. However, the shortage of "access-to-knowledge" breaks up the routine cycle of innovation activities and increases the opportunity costs for entrepreneurs and innovators. Egypt's International Property Rights Index (IPRI) score increased in 2018 by 15%. Egypt's current global rank is 77 (out of 125), and its regional rank is 11 (out of the 15 MENA countries scored in the index). Egypt's global and regional positions mean there is work yet to be done in property rights and a strong basis to build off.

#### MESO LEVEL MAP: PROGRAMS

This part of the report will focus on the MESO level of the Entrepreneurship ecosystem in Egypt and the main actors and stakeholders that provide technical, financial, and other types of support to MSMEs. We can call them 'Intermediary Organizations (IOs).' IOs in Egypt take many legal formats and working modalities (private/public, academia/business, non-for-profit/for-profit...). While such support may be considered part of IOs' work and mandate as supporting MSMEs, other IOs are fully devoted to the purpose. IOs are growing in the MENA region and Egypt, with more financial and non-financial resources and instruments to unleash the Entrepreneurship environment. However, there is still a remarkable deficiency of the impact assessment of those IOs and the whole ecosystem of MSMEs in Egypt. Over the last five years, several actions and platforms have emerged to tackle this issue, as we will present in the next section. Such a mapping task under U-SOLVE Action makes it the right moment to conduct such an analysis.

#### ▪ EUROPAID-ECOSYS+ (ASRT)

ECOSYS+" The Egyptian Innovation Ecosystem Accelerator is a smart, built-in innovation resources portal to stimulate inclusive entrepreneurial growth by effectively interacting with innovation enablers, service providers, and innovators to leverage resources and assets while offering targeted support to promising ideas. ECOSYS+ is co-funded by the European Union and is the result of collaborations between Egypt, Italy, and Ireland through a variety of involved expertise, including the Academy of Scientific Research and Technology (ASRT), Industrial Council for Technology and Innovation -Ministry of Trade and Industry in Egypt (ICTI), NilePreneurs-Nile University (NilePreneur), Estebda - Yomken.com, Easy Integrazione di Sistemi, Sustainable Innovation Technology Services (SITeS)."

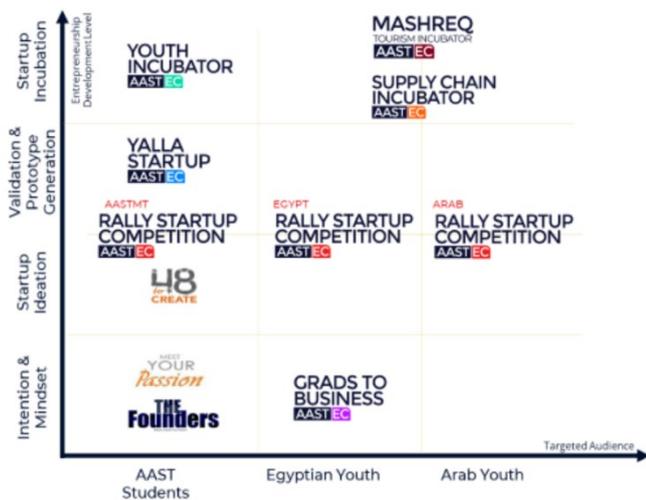
## USAID-SEED: STRENGTHENING ENTREPRENEURSHIP AND ENTERPRISE DEVELOPMENT<sup>4</sup>

SEED project offered technical and infrastructure support to 18 business service providers, incubators, and accelerators in Egypt to serve the MSMEs to help develop their business ideas, strengthen essential business development services, introduce new financial tools, and enhance financial literacy and management. SEED will also improve access to essential financing, information, and technology, reduce bureaucratic procedures, address policies that impact the ease of doing business, and expand and improve public one-stop shops responsible for business registration and licensing. Main COMPONENTS: 1) improving quality, availability, accessibility of financial and non-financial services; 2) connecting entrepreneurs and MSMEs with services; 3) linking service providers; 4) encouraging formalization of private enterprises, and 5) strengthening the ability of business associations to address policies that impact the ease of doing business.

### ▪ AAST Entrepreneurship Centre<sup>5</sup>

The AAST Entrepreneurship Centre was established by the Arab Academy for Science Technology & Maritime Transport in 2015 with the main focus of empowering the Arab youth to create a sustainable ecosystem in the Arab region & Africa. After a couple of years of continuous support to the academy community and seeing the returned benefit to the students & Egyptian ecosystem, AAST Entrepreneurship Centre started to go beyond the academy. It launched several programs for the Arab youth in different stages of the start-up maturity level. The center supports young entrepreneurs through their journey to becoming great business leaders.

Figure 7 AAST Entrep. Center - Startup Maturity Matrix



### ▪ Falak Startups<sup>6</sup>

The Ministry of International Cooperation initiates it. Falak Start-ups' mission is to empower talented and ambitious seed stage tech start-up founders and help them thrive in the region's rapidly changing entrepreneurship landscape. Its sector-agnostic offering focuses on improving start-ups' product-market fit; fine-tuning their business, operating, and revenue models, growing their customer base; and raising follow-on investments. FALAK arms entrepreneurs with the necessary tools, resources, and networks to develop their strategies and scale up their businesses. It offers equity investment, growth hacking, networking, mentorship, training, and various perks and benefits. After meeting the needed KPIs, its database of founders can highlight their start-ups on our Virtual Stage platform, a tool for connecting with potential investors, policymakers, stakeholders, and partners. Its support is ongoing through the start-ups' journey. We are a constant advisor and advocate for all our portfolio companies. Falak Start-ups' offers an unrivaled ticket size of up to 2,000,000 EGP and provides the support start-ups need to gain momentum and accelerate their growth. Falak also supports its portfolio of start-ups in securing follow-on investments from venture capital firms, angel investors, and/or corporates. Although Falak Start-ups is industry agnostic and focuses on tech-enabled and scalable start-ups, it has an additional focused track specializing in Financial Technology. It also fosters sector-specific sub-tracks with the support of key industry partners. Its start-ups operate from its fully equipped state-of-the-art, 700m2 office in the heart of Downtown Cairo that meets all office space needs.

### ▪ ASHOKA ARAB WORLD (AAW)<sup>7</sup>

Since 2003, Ashoka Arab World has pioneered and been the platform for social entrepreneurship across the Arab region, identifying and selecting the region's leading social entrepreneurs across 12 countries. From establishing the first terminology for social entrepreneurship in Arabic to hosting the first international summits on social

<sup>4</sup> (Source: <https://www.usaid.gov/sites/default/files/documents/1883/2015-11-25%20SEED.pdf>)

<sup>5</sup> (Source: <http://www.aast.edu/en/centers/Entrepreneurship/index.php>)

<sup>6</sup> (Source: <https://falakstartups.com/about-falak-startups/#>)

<sup>7</sup> (Source: <https://www.ashoka.org/en/about/arab-world>)

entrepreneurship in the Arab world and serving on the boards of emerging local and regional organizations with social entrepreneurship-oriented programs, Ashoka Arab World has paved the way for a formal and flourishing social entrepreneurship sector in the region.

- **Flat6Labs<sup>8</sup>**

Flat6Labs is the MENA region's leading seed and early-stage venture capital firm, currently running the most renowned start-up programs. Annually, Flat6Labs invests in more than 100 innovative and technology-driven start-ups enabling thousands of passionate entrepreneurs to achieve their daring ambitions and ultimately become institutional co-founders. Flat6Labs manages several seed funds with a total AUM above \$85M. More than 25 leading institutions have invested in the Flat6Labs managed funds, believing in the asset class and Flat6Labs' proven track record as the market leader. Flat6Labs provides a wide range of investment ticket sizes ranging from \$50K to \$500k, supporting start-ups through their early journeys from Pre-Seed all the way to Pre-Series A-stages. Alongside the investments, Flat6Labs' exceptional start-up programs, executed to cater specifically to the needs of innovative entrepreneurs, help them accelerate their growth by providing them with a plethora of support services and connecting them to unparalleled opportunities with an expansive network comprising hundreds of business mentors, investors and corporates. Launched and headquartered in Cairo in 2011, Flat6Labs has multiple regional offices with ongoing plans to expand into other emerging markets. At the time of reporting, the entity published that they managed to: exist in 7 locations all-over the Arab states, 1000+ registered mentors, 8000+ jobs have been created, organizing 40+ demo days at various MENA countries, and most importantly, supporting more than 2000 MSMEs in MENA region.

- **Flat6Labs- EGYPT**

Since its launch in 2011 by Sawari Ventures, Flat6Labs has been a key player in building and re-shaping the entrepreneurial scene in Egypt, offering young innovators with unique business ideas the opportunity to turn their vision into market-leading ventures. Egypt is recognized for being such a fertile place of growth due to the remarkable increase in the number of deals and total funding (31% increase in 2020) that the country has seen in recent years.

- **INJAZ Egypt<sup>9</sup>**

INJAZ has been working in Egypt since 2003 to promote employability and entrepreneurship skills among Egypt's chronically unemployed youth. At the time of reporting, Injaz had impacted, according to their own self-reporting, 690,000 students, 335 public schools, 33 universities, 53 start-ups, and recruited +5000 volunteers ([www.injaz-egypt.org](http://www.injaz-egypt.org)).

Injaz offers different programs and tracks: Work Readiness, Financial Literacy, and Entrepreneurship track.

- **IceCairo<sup>10</sup>**

ICECAIRO is a technology innovation hub that aims to accelerate Egypt's economic growth by promoting market-driven and environmentally viable innovations. <http://icecairo.com/> <http://icecairo.com/arabic>. Established in 2011, IceCairo is a green technology innovation hub, a community of individuals with innovative ideas working on local solutions to local & global challenges.

It is part of the emerging ice (innovation – collaboration – entrepreneurship) network of technology innovation hubs, currently implemented in Ethiopia, Egypt, and Germany. IceCairo provides shared workspace, training, and networking opportunities like its sister hubs. With a state-of-the-art digital fabrication facility, including 3D printing, laser cutting, CNC machining, and total project fabrication. The IceHubs represent local community, international network, business incubation, investment opportunity, inspiration, high-tech, improvisation, low-tech, collaboration, dreaming & making.

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<sup>8</sup> (Source: <https://flat6labs.com/>)

<sup>9</sup> (Source: <http://injaz-egypt.org/>)

<sup>10</sup> (Source: <http://www.icecairo.com/fablab>)

▪ **Nahdet el Mahrousa** <sup>11</sup>

Founded in 2003, Nahdet El Mahrousa, meaning “Egypt’s Renaissance,” is an NGO built to help social entrepreneurs in Egypt by providing incubation services and seed funding. NM puts special focus on youth by including them in its mission statement and tailoring programs specific to them. NM services are split up into five areas (Table 4):

**Table 4 Nahdet el Mahrousa Main Focus Areas**

1	<b>Entrepreneurship Training:</b> complete training and coaching provided to phase I and phase II prospective Ses
2	<b>Mentorship:</b> one-on-one guidance between managing partners of prospective SEs and experts with proven entrepreneurial success in Egypt
3	<b>Management Support (for start-ups):</b> bi-monthly one-on-one support offered to early stage SEs, their teams, and management
4	<b>Technical Consultations:</b> NM mobilizes its membership base and extended network of SEs, SESOs, and business entrepreneurs as sector- and field-specific consultants to one another
5	<b>Fully equipped co-working spaces:</b> Office space available to SEs to work, hold meetings, or host events

According to its internal impact assessment, NM has, in its first decade, incubated around 40 social enterprises and impacted 50,000 beneficiaries in the area of youth development, education, employment, healthcare, and culture. This includes SEs covered in this report, such as Studio Meem and Nawaya. NM also maintains an active presence and dissemination effort, including a regular newsletter to raise awareness about the SE ecosystem in Egypt. While seemingly a minor aspect, such outreach and awareness campaigns are critical to beginning the policy conversation in Egypt around SEs.

## METHOD AND SAMPLE DESCRIPTION

In this phase, the research focuses on exploring the Urban Entrepreneurial Ecosystem with a focus on the city of Alexandria, covering the following points

- a) The urban sustainability challenges ranking.
- b) The ecosystem function domains.
- c) The Ecosystem’s key actors.
- d) The interrelationship between actors
- e) The impact of function domains, actors, and challenges addressing the EE.
- f) What is needed to be done to improve the performance of the ecosystem actors

### DATA COLLECTION: Using a Survey

Using indicators from the ANDE and OCED/Eurostat framework, besides some other indicators extracted from the geographic mode of Leendertse et al., 2021, we designed a survey to capture ecosystem experts/actors’ opinions on the ecosystem’s functions in Alexandria City. The survey was designed around four blocks (**Appendix A**):

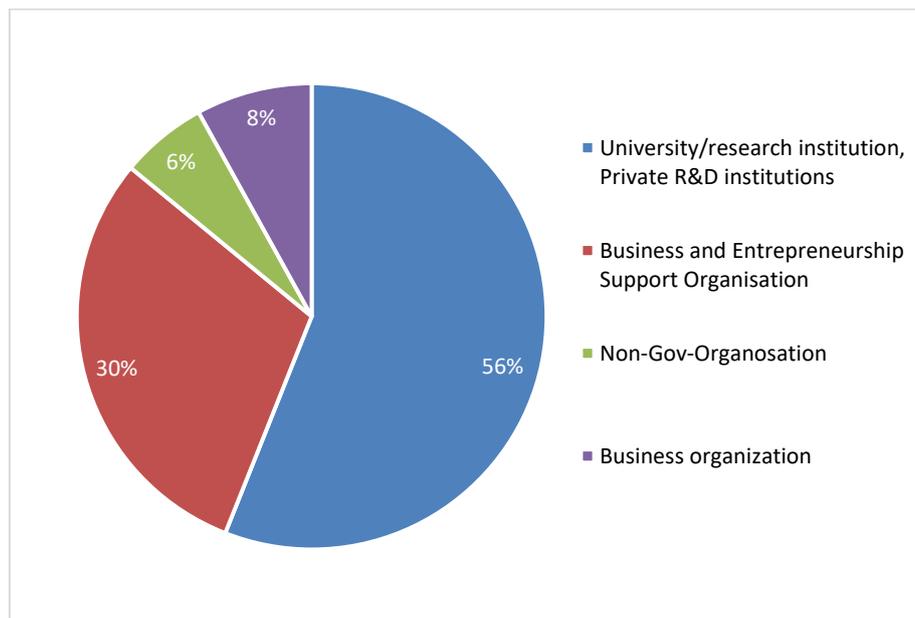
1. Demographic information
2. Detailed questions regarding each ecosystem’s function
3. Connectedness and interactivity of entrepreneurial ecosystem actors

<sup>11</sup> (Source: <https://www.nahdetelmahrousa.org/>)

#### 4. The impact of entrepreneurial ecosystem activities on sustainable development.

An electronic version of the survey was created in two languages, i.e., English and Arabic, and sent to more than 150 ecosystem actors from academia, business, policymakers, NGOs, funding institutions, etc. we received 63 responses representing different ecosystem actors in Alexandria city. The analysis and results rely on a sample consisting of 56% academics, 30% business support organizations, 6% NGOs, and 8% Private business actors (Figure 8)

Figure 8 Sample Breakdown of EE Actors



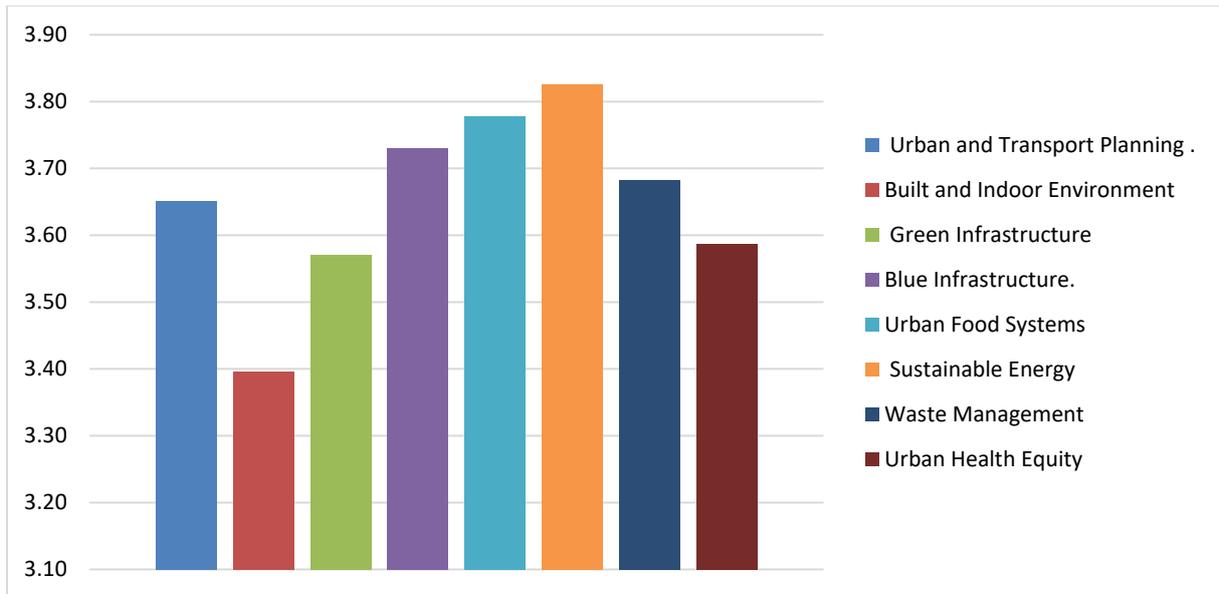
## RESULTS OF URBAN ENTREPRENEURIAL ECOSYSTEM ANALYSIS

### THE URBAN DEVELOPMENT SUSTAINABILITY CHALLENGES.

In the survey, a list of Urban Development sustainability challenges was given. Respondents were asked to evaluate them on a Likert scale from 1 to 5, while one means that the challenge is not crucial at all and five means it is very crucial. Results appear in Figure 9 below indicate that all listed challenges received a value beyond the median 3. Ecosystem actors perceive all Urban sustainability challenges as crucial without significant differences between them. This reflects that urban development challenges have a mutual impact on each other; one problem generates and echoes others. On the other hand, solving one issue will generate a positive domino effect. Yet, the actors have ranked **Sustainable Energy, Urban Food Systems, and Waste Management** as the top three major challenges to urban development sustainability in Alexandria. However, for the sake of the next steps in WP4, we ranked urban sustainability challenges according to their level of cruciality as the following

1. **Sustainable Energy:** renewable Energy.
2. **Urban Food Systems:** healthy diets, food safety and security.
3. **Blue Infrastructure:** water elements, wastewater management, water treatment, and accessibility.
4. **Waste Management:** recycling.
5. **Urban and Transport Planning:** traffic-related issues, noise, gas emissions.
6. **Urban Health Equity:** threats related to environmental injustice to access health facilities and services.
7. **Green Infrastructure:** protection of natural resources
8. **Built and Indoor Environment:** internal environmental quality, inadequate ventilation, indoor pollution.

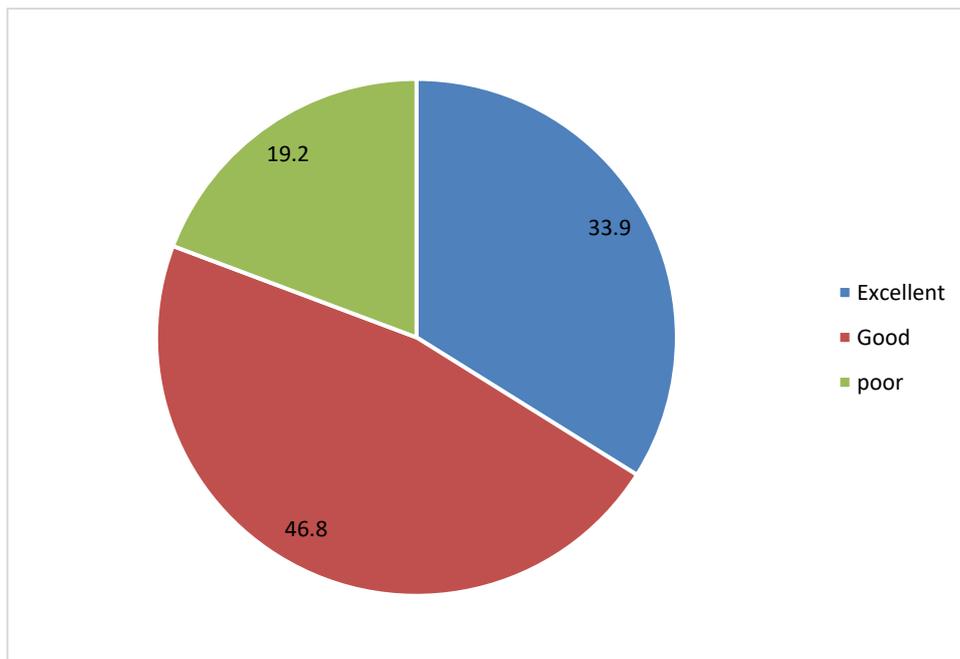
Figure 9 Urban Development Sustainability Challenges



### EVALUATING THE FUNCTIONALITY OF THE CURRENT ENTREPRENEURIAL ECOSYSTEM

Ecosystem functionality can be captured in terms of the services that any functional ecosystem should provide for the stakeholders, particularly entrepreneurs and startups. Understanding the current status of the urban entrepreneurial ecosystem would guide U- SOLVE project in defining the blind spots where additional instruments such as ULLs can serve and fill a real gap in the ecosystem. In the survey, actors had to evaluate the urban entrepreneurial ecosystem in terms of eight functions (i.e., Access to capital/finance, Knowledge creation, Accessibility to physical and digital infrastructure, human resources, Existence of business supporting organizations, regulations and policies, Entrepreneurial, culture and awareness, The market for innovative products). In general, Figure 10 shows that actors evaluate the Urban Entrepreneurial Ecosystem UEE as having good or excellent overall functionality.

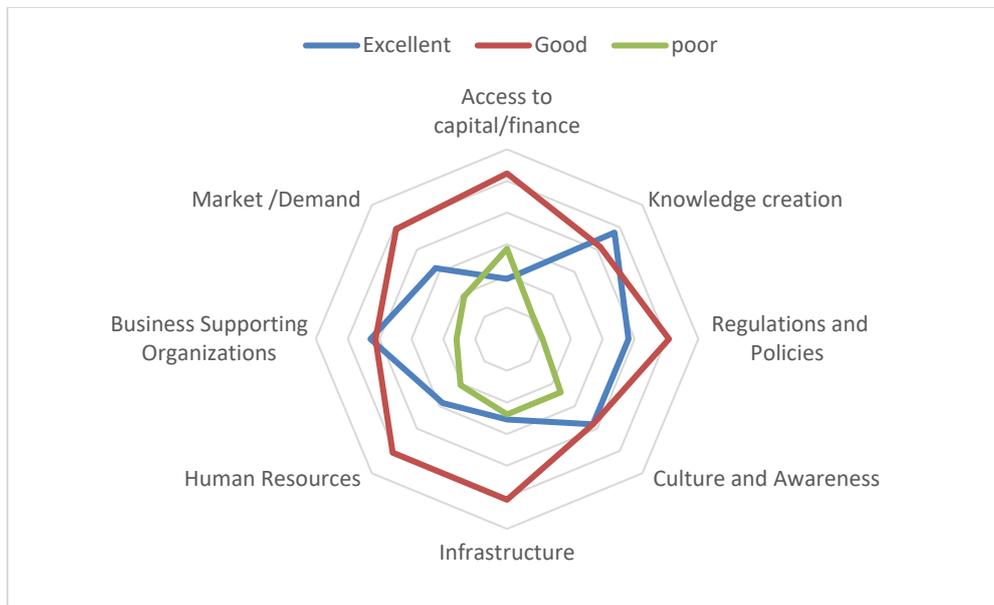
**Figure 10 General Evaluation of UEE functionality**



Looking deeply into the individual functions of the UEE (**Figure 11**), we figure out that actors evaluate knowledge creation through university and research institutes as the most significant functions (47.6%), followed by the presence of business support organizations (42.9%). On the other hand, access to finance still appears to be the

most challenging function in the ecosystem, as actors evaluate it as the worst function on the poor evaluation scale.

**Figure 11 Functional evaluation of UEE**

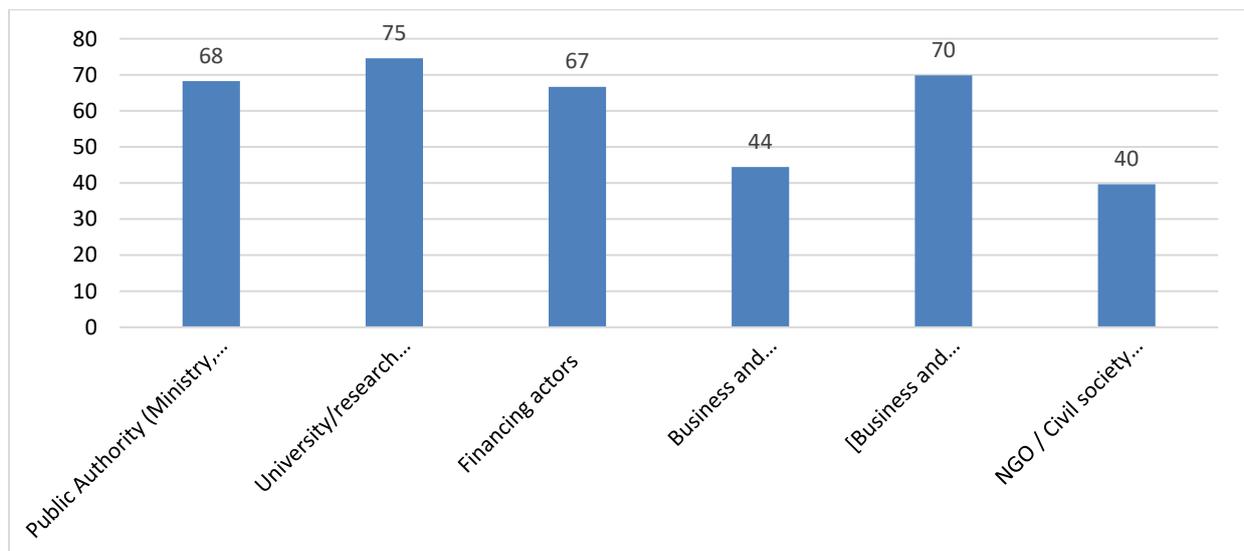


## URBAN ECOSYSTEM ACTORS

### Important actors

The desk research results show the richness and granularity of the entrepreneurial ecosystem scene in Egypt. In the survey, respondents were asked to indicate which ecosystem actor is considered the most important for solving urban sustainable development challenges. While all actors are almost on the same level of importance (**Figure 12 General evaluation of EE actors according to their importance**), accumulated evaluations indicate that universities and research institutes, followed by the private sector, are the most important players. This validates the overall approach of the U-SOLVE project of supporting startups and entrepreneurs to get their innovative solution implemented.

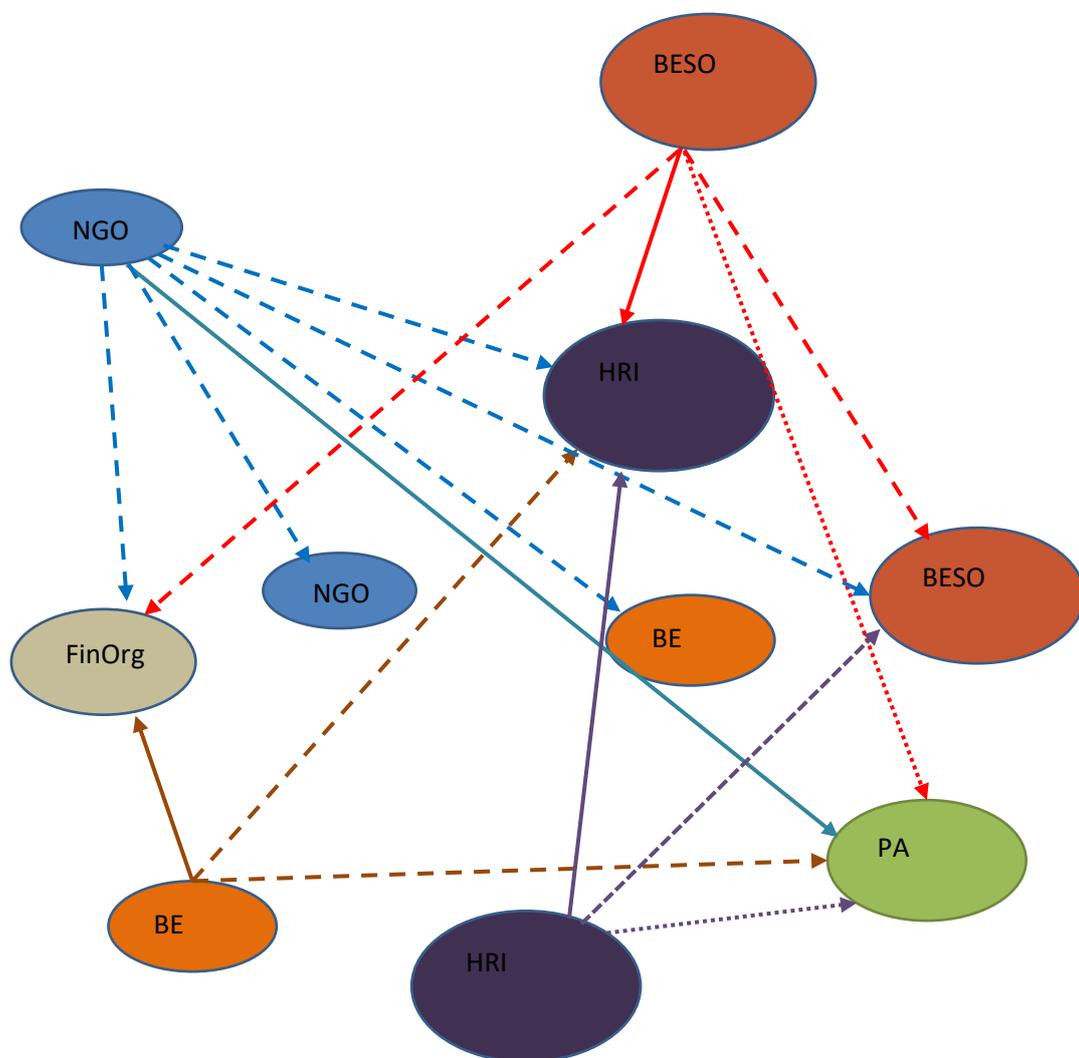
**Figure 12 General evaluation of EE actors according to their importance**



## ACTORS CONNECTIVITY: DESIRED CONNECTIONS BETWEEN EE ACTORS

Ecosystem connectedness is crucial in improving the overall outcomes of the ecosystem and helps avoid redundancy by creating new entities. Knowing which actor is playing the central role in the ecosystem and which actor wants to connect with whom is a benefit of the U-SOLVE project to define the objectives and the strategy of the projected Urban Living Labs. Unfortunately, building social network analysis required intensive data collection, which cannot be fulfilled in our case. We relied on the survey of the key actors of the EE to obtain information about the connectivity among the actors. The following Figure 13 is a result of analyzing the survey with the key actors in the EE when we asked them to define which other actors they perceive as highly important for their activities and would prefer to connect with. The degree of connectivity is represented in this Figure by the bold line (which refers to the strong connection) to the dashed lines (the weak connection).

**Figure 13 Mapping Connectivity Between Core EE actors**



**Table 5 Desired Connections between EE actors**

Actor	Actor would prefer to connect with
Business and Entrepreneurs Supporting Organization	Higher Education and Research Institutions
Higher Education and Research Institutions	Higher Education and Research Institutions and Business and Entrepreneurs Supporting Organization
Business actors and Entrepreneurs	Financing Organization
NGO	Policy Agency

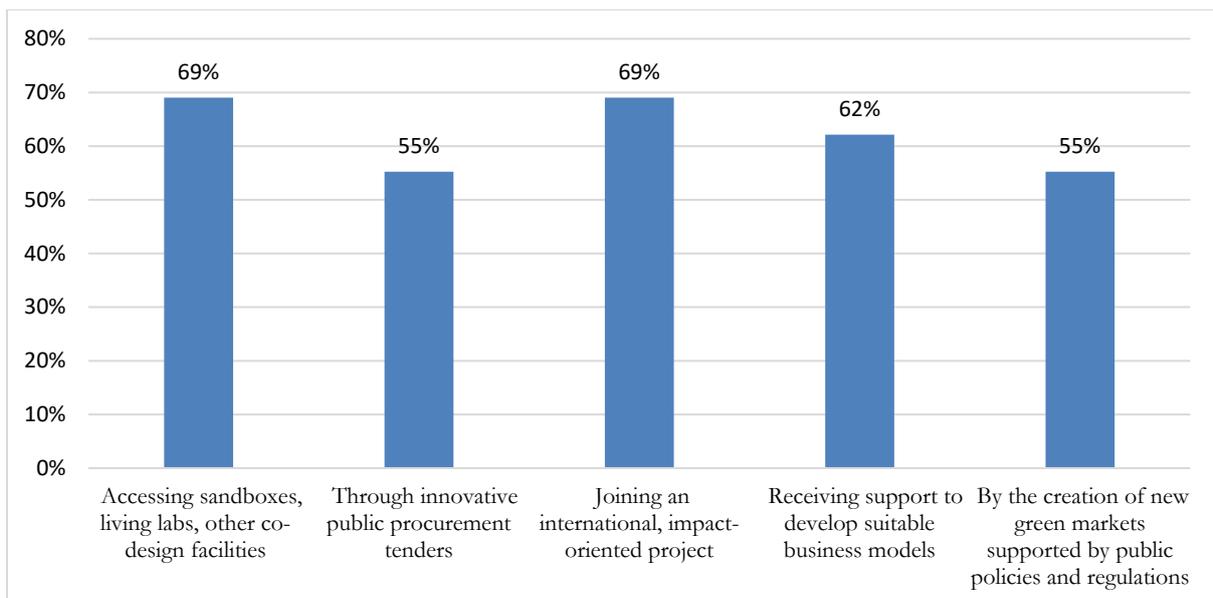
**NEEDS OF ECOSYSTEM ACTORS**

Egyptian EE actors expressed their requirements to perform better and generate a higher impact on the social and economic level while solving the Urban Development Sustainability Challenges. The table below ranks the needs according to their frequency. It is remarkable that accessing sandboxes, living labs, and other co-design facilities and joining international, impact-oriented projects are coming in the first place as a desperate need for ecosystem actors (**Table 6, Figure 14**). This finding again confirms the validity and the significance of the U-SOLVE project.

**Table 6 Ranked Needs of Urban Entrepreneurial Ecosystem Actors**

Accessing sandboxes, living labs, other co-design facilities	69%
Joining an international, impact-oriented project	69%
Receiving support to develop suitable business models	62%
By the creation of new green markets supported by public policies and regulations	55%
Through innovative public procurement tenders,	55%

**Figure 14 Needs of Urban Entrepreneurial Ecosystem Actors**



## IMPACT OF ENTREPRENEURIAL ECOSYSTEM

In the survey, EE actors were also asked to express their opinions regarding the impact of the current EE services on improving social, economic, and ecological conditions in Egypt. The results show that the current EE should have a significant role in achieving actual impacts at different levels

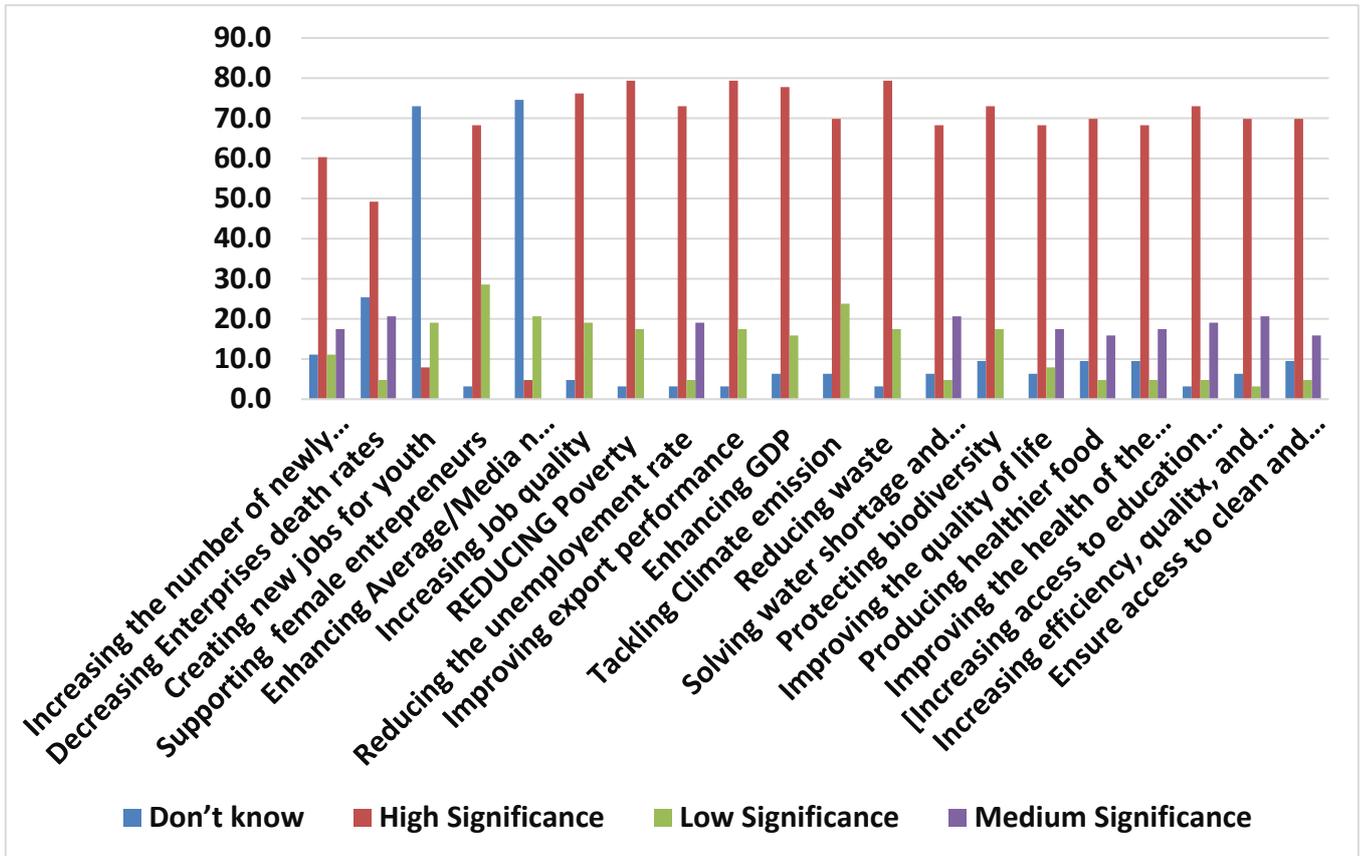


Figure 15 Impact of EE services on improving social, economic and ecological business and life conditions in Egypt

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# **URBAN ENTREPRENEURIAL ECOSYSTEM ANALYSIS REPORT**

(Palestine)

**BETHLEHEM AND HEBRON**

## EXECUTIVE SUMMARY

The Palestinian Entrepreneurial Ecosystem (EE) is characterized by complex functions and services synergy. Several studies addressed the Palestinian EE to investigate the roles of the actors, the functions, and the challenges. However, the lack of studies that address the Urban EE in Palestine and offer a clear roadmap to the decision-makers and entrepreneurs is a persistent gap. This report provides a mapping study within the U-SOLVE project activities to understand the Palestinian urban EE and characterize its actors, functions, impact, and urban thematic challenges. The study relied on two sources of data: primary and secondary. The primary source is represented by interviewing 50 actors from the Palestinian EE and conducting focus group meetings with representatives from the EE. The secondary source relied on desk review research of related reports, strategic plans, and established literature in the urban EE in Palestine. This study targeted Bethlehem and Hebron to represent the local urban territory of interest, whereas Ramallah expressed the national level. This study provided a Social Network Analysis to understand the local actors' connectivity and impact based on their functions. The findings reveal that connectivity among EE actors is still weak and needs to be enhanced. The Financial Capital and Public actors had the most significant connectivity to Human Capital and Knowledge Creation actors, which showed the least connectivity. This study shows that the most challenging urban thematic areas are Sustainable Energy, the blue infrastructure (water waste and access), Waste Management, Tourism, Cultural Heritage, and ICT. Finally, the findings and recommendations of this study should serve as a guiding roadmap for EE decision-makers, entrepreneurs, and the U-SOLVE community.

## METHOD AND SAMPLE DESCRIPTION

Following the ANDE model, we classified key actors of the Palestinian EE; the level of analysis was conducted in two main stages:

- Actors Mapping: in this stage, qualitative analysis approaches were utilized to show the strengths and the weaknesses of the actors in the EE, identify gaps and draw the actors' map. Both primary and secondary data sources were used with
  - Secondary data: the desk research followed the ANDE model to classify each actor under the eight functional domains (Table 7).
  - Primary data: a focus group on urban development priorities within the Palestinian EE.

FUNCTION	ACTORS	EXAMPLES FROM THE PALESTINIAN EE
<b>FORMAL INSTITUTION</b>	The national government, State Government, Local Government	Ministry of Economy, Ministry of Entrepreneurship
<b>INFORMAL INSTITUTIONS</b>	Media, Social organizations	Maan news agency.
<b>PHYSICAL INFRASTRUCTURE</b>	Transportation infrastructure, Energy, and digital infrastructure. ,	PALTEL
<b>FINANCE/CAPITAL</b>	Banks, Venture Capital	FATEN, IBTIKAR fund.
<b>KNOWLEDGE CREATION (R&amp;D/INNOVATION)</b>	Public research centers and laboratories, living labs, and technology platforms.	Palestinian Centra Bureau of Statistics
<b>MARKET/ DEMAND</b>	Domestic corporations, consumers, and distribution networks.	Hebron Expo
<b>HUMAN CAPITAL (TALENTES&amp; LEADERSHIP)</b>	Universities, technical training institutes, community colleges.	Palestine Ahliya University, PPU
<b>BUSINESS SUPPORT (NETWORKS &amp; INTERMEDIATE SERVICES)</b>	Incubators, accelerators, legal services	PICTI, BBI, Leaders.

Table 7 Functions and Actors of the EE

- Functionality analysis: various research works have put forward performance indicators to assess the EE functionality and impact on the local economies. The quantitative techniques using secondary and primary data sources could fit properly to understand and estimate the EE functionalities and their impact.
  - Secondary data: using desk review to understand EE functions measuring indicators based on the ANDE model [1] referenced in Table 7.
  - Primary data: the survey was distributed, discussed, and filled in with EE key actors.

The survey concentrated on Actors and Functions and thematic challenges in the urban development context at the local and national levels. The analysis of the survey would spot on the following points:

- g) The demographic information of the EE actors surveyed.
- h) The urban sustainability challenges ranking.
- i) The ecosystem function domains.
- j) The Ecosystem's key actors.
- k) The interrelationship between actors, function domains, and urban sustainability challenges.
- l) The interrelationship between actors using Social Network Analysis.
- m) The impact of function domains, actors, and challenges addressing the EE.

The following sections attempt to provide the analysis for each of the points above and link this analysis with the desk review research and other qualitative tools used by PAU, including the analysis achieved from focus groups and key actors' interviews and discussion symposiums.

### Demographic Characteristics of Respondents

The resulting 50 key actors from the classification process referenced in Table 1 were interviewed. The actors are 74% Males and 26% Females, while their educational qualifications are shown in Figure 16.

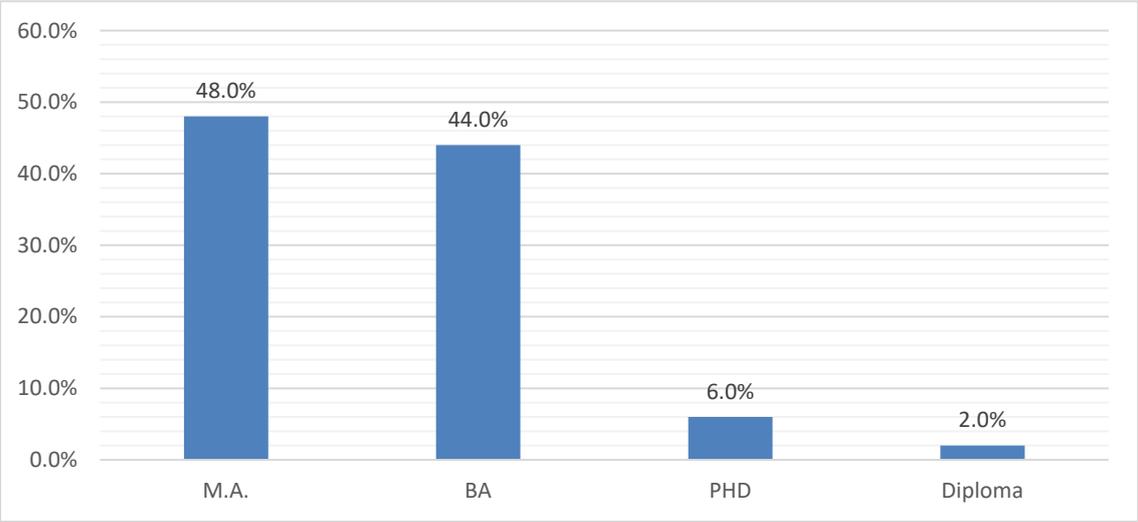


Figure 16 The educational level of the interviewed actors

Even if the number of Ph.D. holders is not decent, it is promising to see they are contributing to the EE besides academia which is usually the most frequent destination. The survey results indicate that the urban Entrepreneurial Ecosystem in Palestine is more likely to be shaped by actors who are working and located in Ramallah. The actors are mainly located in 36% in Ramallah, 32% in Bethlehem, and 32% are in Hebron.

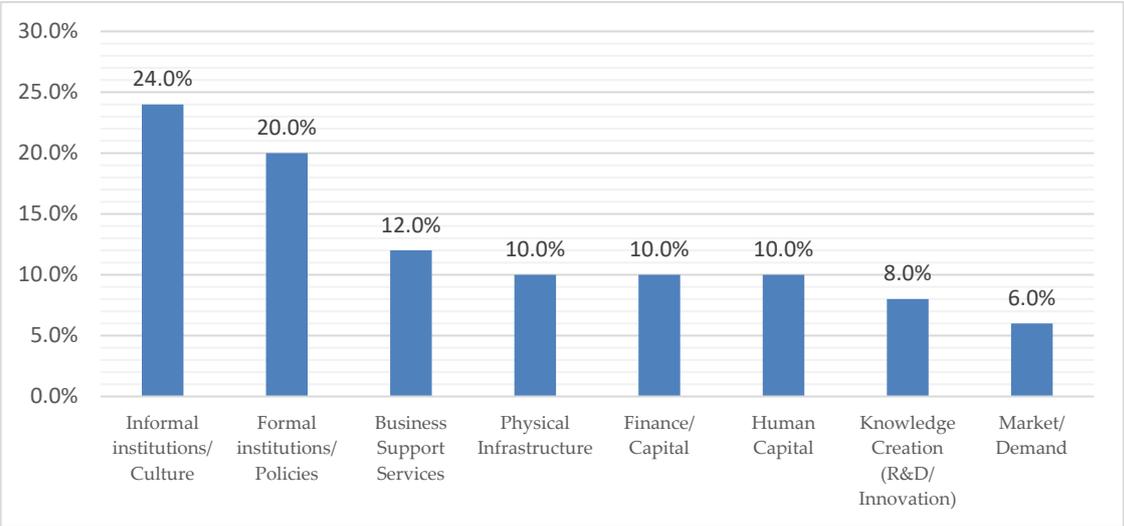


Figure 17. Functional domains of the interviewed actors

This distribution could be interpreted as the headquarters of ministries and key institutions in Ramallah more than Hebron and Bethlehem. Although this sample (50 actors) would not necessarily represent the whole Palestinian Ecosystem, established literature studies support this claim (e.g., [2]). Key actors in the EE include business incubators and accelerators such as PICTI, Leaders, and Flow. However, Bethlehem and Hebron represent the local side of the EE studied in this report. Bethlehem and Hebron also encompass important incubators such as Bethlehem Business Incubator (BBI) and Palestine Polytechnic University Incubator (PPU). The interviews addressed actors based on their functional domains, as shown in Figure 17.

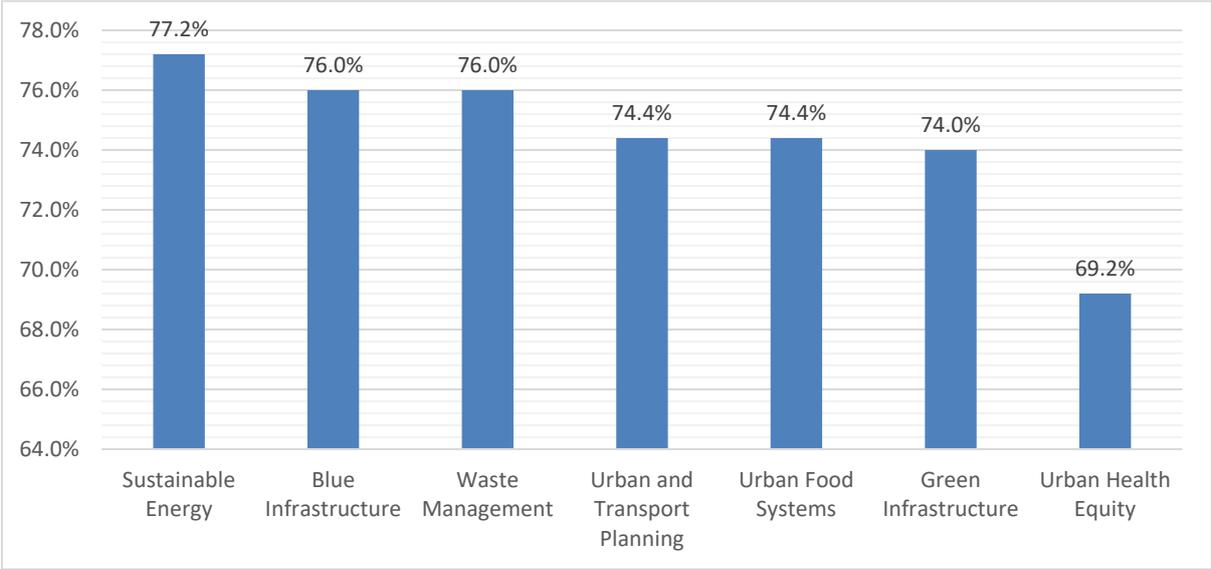
The results indicate that the actors of urban EE in Palestine are more likely to represent informal and formal institutions than the other ecosystem functions. On the other hand, we can see the market demand occupies the least. In a mapping study of the Palestinian EE [3], the author shows that the Palestinian market depends on the Israeli side as the trading partner. The mapping study shows that in 2020, this dependency constituted around 82.5% of Palestinian imports and 55% of Palestinian exports. We also notice that knowledge creation (R&D) Innovation is still not in the desired breadth. Again, although this sample of actors does not necessarily represent the whole Palestinian EE, it could give a glimpse into the gaps in some functional domains. Later in this section, the report shows each domain’s gaps and impact in detail in the urban sustainable development context.

**RESULTS OF THE URBAN ECOSYSTEM ANALYSIS**

**THE URBAN DEVELOPMENT SUSTAINABILITY CHALLENGES.**

The deep analysis of how the Palestinian (local and national) urban EE actors perceive different sustainability challenges is enormous. It means we can better understand the EE priorities, needs, and gaps, which lead decision makers to intervene and the entrepreneurs to achieve a map telling what and where to navigate and explore.

After conducting the interviewing survey with the key stakeholders of the EE, the results were interesting, as appears in Figure 18. The results above show that the actors of the Palestinian urban EE are likely to perceive all the urban challenges at the same level of importance.



**Figure 18 Urban Challenges Importance as perceived by EE actors**

Still, the actors have ranked the challenges of Sustainable Energy, Blue Infrastructure, and Waste Management as the top three ranked themes that pose challenges to urban development sustainability in Palestine. These results crosscut in some areas with the focus group’s results. The focus group gathered 30 key actors from the urban EE and discussed the challenges in fine detail. The focus group session provided EE actors with a survey to rank the challenges from 1-5 according to their importance to the local and national suitability priorities, as appears in Figure 19 below.

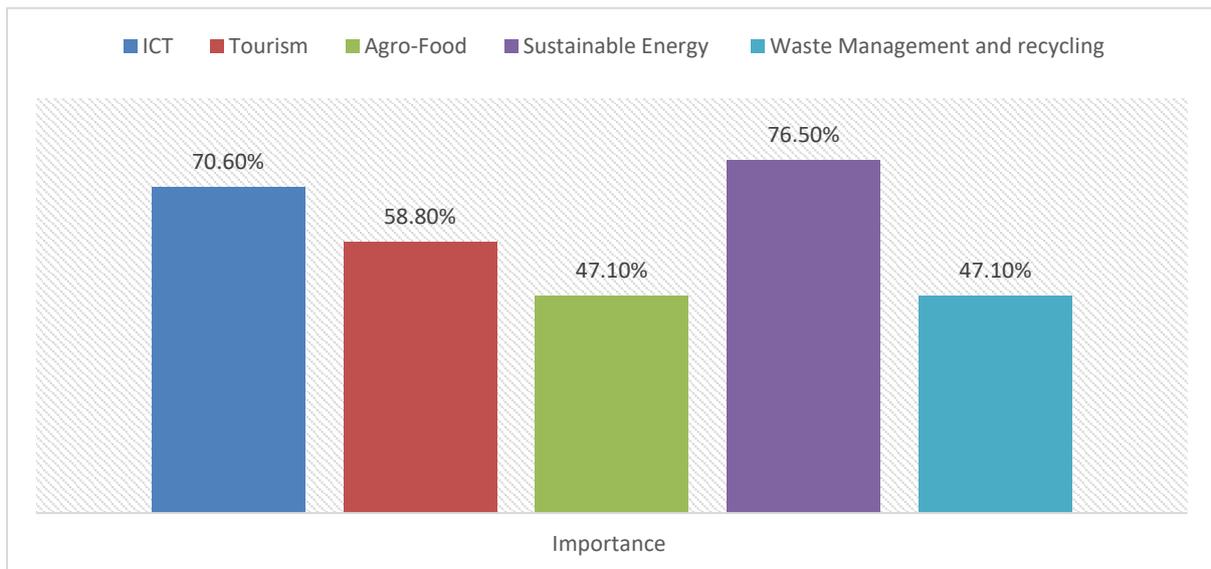


Figure 19 Urban Challenges Importance as perceived by EE representatives in a focus group

As we notice, Sustainable Energy has the most votes from both the survey responses and the focus group meeting's results. It is essential to mention that both surveyed populations are different. The next rank of importance, according to Figure 19, is Information and Communication Technology (ICT), which can lead to breakthroughs in creating startups that serve urban development sustainability. From a similar angle, the *SwitchMed* report that described the Palestinian economic profile [4] highlighted sustainable development as a national priority in the country's plan (2020-2022). The report shows that Palestine should attract investors and entrepreneurs to invest in construction, transport, tourism, agriculture, and ICT sectors, which comply with the results shown in Figure 18 and Figure 19.

They provided concrete examples of these challenges. However, as we notice in the word frequency

**Q2. What are the challenges encountered in the Urban Development Sustainability in Palestine?**

**Sustainable Energy ranked 1<sup>st</sup> in importance. Other challenges such as Blue Infrastructure, Waste Management, ICT, and Tourism also achieved significant attention.**

**Q1. Do EE actors perceive challenges equally?**

in Table 8, the points represent a high diversity of views and thoughts, indicating a lack of coordination and the shared vision among the EE actors in their perspective on various challenges.

Urban Challenge	Examples of challenges - verbatim	Comments
<b>Urban and Transport Planning:</b>	<ul style="list-style-type: none"> <li>Traffic congestion due to lack of proper urban.</li> <li>Vehicle's emissions pollution.</li> <li>The disproportion between the existing roads and the number of vehicles.</li> <li>The difference between planning and actual execution.</li> <li>Presence of illegal cars.</li> </ul>	Although proper planning is mentioned twice, the diversity of thoughts is still high. This result should urge more coordination between EE in the urban planning context, such as the policymakers, the urban hubs (to initiate ideas), the financial capitals, and the universities.

	<ul style="list-style-type: none"> <li>• Weakness of the appropriate financial capabilities for implementing proper urban planning</li> <li>• Absence of laws</li> <li>• Poor infrastructure of roads</li> <li>• The Israeli occupation, barriers, and restriction of movements.</li> <li>• <b>Non-participation of all relevant stakeholders in the planning process</b></li> </ul>	
<b>Green Infrastructure</b>	<ul style="list-style-type: none"> <li>• Urban expansion at the cost of green areas</li> <li>• Israeli occupation</li> <li>• Lack of interest in and awareness of the importance of the agricultural and green spaces</li> <li>• Climate changes</li> <li>• Industrial waste and gaseous pollutants</li> <li>• Weak water resources needed for the agriculture</li> <li>• Lack of deterrent laws</li> </ul>	Although opinions are different by nature, the vast diversity of views implies the weak connectivity and coordination among EE actors in Green Infrastructure.
<b>Blue Infrastructure</b>	<ul style="list-style-type: none"> <li>• Israeli control on water resources</li> <li>• Lack of ground and surface water resources</li> <li>• Random water management</li> <li>• Lack of awareness of citizens about ways to rationalize water</li> <li>• High cost and uncontrol of drilling underground wells</li> <li>• Pollution of groundwater</li> </ul>	Lack of control on the water resources, poor management of water/wastewater, and inefficient water harvesting methods are the top-ranked challenges to urban blue infrastructure. There was also divergence in defining what blue infrastructure is at this point. The lack of standard definitions in the EE can be seen here.
<b>Urban Food Systems</b>	<ul style="list-style-type: none"> <li>• The decline in the food security rates</li> <li>• The decline in food production</li> <li>• lack of monitoring on the food quality</li> <li>• The duality between the Palestinian and Israeli standards</li> <li>• Lack of community health education</li> </ul>	The case here is not different from other examples of other challenges. Still, the divergence is so high in the opinions presented. The ideal EE would propagate food security/quality/accessibility facts and problems from universities to business centers and the market.
<b>Sustainable Energy</b>	<ul style="list-style-type: none"> <li>• High cost of Renewable Energy</li> <li>• Spaces challenges for the production.</li> <li>• Israeli control on energy resources</li> <li>• Weak infrastructure</li> <li>• Lack of projects to produce alternative/renewable Energy</li> <li>• Lack of citizens awareness</li> <li>• Reliance on importing raw materials</li> </ul>	This challenge seems to be the highest among urban challenges. Nonetheless, the lack of coordination and initiatives in the EE made renewable/sustainable energy utilization not well-shaped.
<b>Waste Management</b>	<ul style="list-style-type: none"> <li>• Lack of proper landfills for the separation of waste</li> </ul>	The views seem to converge to the point of lack of management and planning.

	<ul style="list-style-type: none"> <li>• Lack of waste recycling infrastructure</li> <li>• Lack of an administrative system to treat waste</li> <li>• Random landfills scattered in the peripherals of cities</li> </ul>	Nevertheless, EE coordination in this field is still needed.
<b>Urban Health Equity:</b>	<ul style="list-style-type: none"> <li>• Climate and environmental changes</li> <li>• Weak infrastructure for services provision</li> <li>• Residential areas close to polluted areas</li> <li>• Lack of national projects to advance the health service sector</li> <li>• The spread of viruses and epidemics in the recent period</li> </ul>	The actors of urban Entrepreneurial Ecosystem in Palestine are more likely EE actors perceive that Climate and environmental changes that affect agriculture and the lives of citizens, i.e., high temperatures, fluctuation of rainfall, and high rates of desertification and drought, is the top-ranked challenge to health equity.

**Table 8 Examples of Urban Challenges Verbatim by Palestinian EE actors**

As we notice in Table 8, the conclusion is that the lack of solid coordination among EE actors in different fields and thematic areas causes such divergence and incoherency in expressing views on urban challenges in the same geographical areas. Supporting data from the survey shows this lack of connectivity. For instance, formal institutions perceive sustainable energy importance at about 80%. In contrast, capital and financial capital ranked it the lowest at about 68%, which has the same opinion as the market demand view. This result is easy to comprehend; banks and financial institutions are closer to the market than formal institutions or even universities and R&D centers, divergent from the market and economic views.

However, to give a macro analysis view on the connectivity among actors, we assess the connectivity at three levels: based on the type of business (e.g., public, private, financial...etc.), functional domain, and actor classification.

## ECOSYSTEM ACTORS AND CONNECTIVITY

The entrepreneurs need to get complete insights into the EE actors and how they are connected at a territorial granularity level. The connectivity is typically perceived from a functional standpoint. In other words, EE actors tend to communicate within the Ecosystem initiated by the function they are providing/requesting. In Palestine, the EE actors can be classified according to different EE models like OECD/ANDE [1]. Table 9 shows a finer granularity of the Palestinian EE as depicted by a non-profit organization called Trip to Innovation (TTI). Please see the full map here [5].

Main category	Subcategories	Actors in the Palestinian EE
<b>Governance</b>	Policy	Ministry of National Economy, Ministry of Labor
	Regulations	Ministry of Entrepreneurship & Empowerment HCIE, PCMA, FPCCIA
	Advocacy	Oxfam-medup, Palestinian Vision Organization
<b>Finance</b>	Venture Capital	Ibtikar Fund, PIPA, Fund-Sharakat, IZDEHAR
	Seed Funding	Ibtikar, PARC
	Micro-Finance	Bank of Palestine, anera, ACAD finance, faten, ASALA, Vitas, Reef finance
<b>Business Support Organizations</b>	Incubators	PICTI, UCASTI, Al Nayzak, PFI-Maharat, ABTIC, Glow, HCIE, station, PARC, Hebron Municipality's business incubator center, Palestinian Incubator for Energy, PPU incubator, Birzeit B-Hub, Fikra-Paltel
	Accelerators	Founder Institute, Agribusiness Accelerator, Flow Accelerator

	Research	PCS, Palestinian Centra Bureau of Statistics
	Networking	Ibdaa, PARC, Build Palestine, anima, Taghyeer, Arab Innovation Entrepreneurship Network, iPark Ecosystem, ArabWIC, MENA catalyst foundation.
	Coaching Mentoring	Hebron Innovation Space, PICTI, UCASTI
	Co-working space	Palestine-India TechnoPark, uMake, UNRWA Ggateway, stationj
	Grants	EU, UNDP, GIZ, Oxfam, Canadian Government CFLI, drosos, Mercy Corps, AECID, spark, BMZ
	Awards and Competitions	Taawon Youth Award, seedstarts, MIT forum, Hult Prize
<b>Advisory Services</b>	IP	Ministry of National Economy
	Legal	Ministry of National Economy, Ministry of Telcom and Information Technology, Ministry of Entrepreneurship & Empowerment
	Financial	Bank of Palestine – Felestineya Gold Loan for Women
<b>Learning</b>	Education	PPU, Al-Quds University, Birzeit, PAU
	Training	ASALA, CDCE-I, uMake, Injaz, VTeachBoard, Grow, ITIQ
	Prototyping	Palestine- India TechnoPark
<b>Media</b>	TVs and Radios	Maan, Marah FM, Raya FM, Masader FM, Radio Nisaa, Radio Bethlehem.

Table 9 Examples of Urban Challenges Verbatim by Palestinian EE actors

We can notice from the Table 9 above that some classes of actors have a good number of representatives, while others lack that number (e.g., research). On top of that, we observe **a lack of specialized urban hubs, incubators,**

### Q3. Do EE actors perceive challenges equally?

Table 9 above summarizes the most active EE actors. Seemingly, Finance/Financial actors represent the most influential actors according to desk review studies.

**or even coaching/advisory actors,** except for the Hebron Municipality Incubator and the Palestinian Incubator for Energy. However, these two entities do not cover most of the urban challenges mentioned in this study. Despite the suitable number of actors in the business support class, Palestinian EE lacks coordination between the private and public sectors regarding business support services, including incubation and acceleration services. This conclusion of “lack of coordination” was also reported in [5], which complies with our previous analysis of the EE actors’ divergent perspectives on urban challenges.

When asking the EE actors to rank the importance of connectivity with actors in the same EE arena, the first three ranked were 48% given to university/research institutions, Private R&D institutions, 46% to NGO / Civil society representatives, and 45.3% to business and entrepreneurship support organizations. The rest of the ranking results appear in Figure 20.

The survey also addressed the importance of connectivity among actors based on the function and not only on the actor. The results were as follows: 58.9% was given to Finance/ Capital, 50.6% was given to Formal institutions/ Policies, 48.1% was given to Market/ Demand, 41.7% was given to Business Support Services, 40% was given to Physical Infrastructure. As we notice, the importance of Finance/Capital is significant. According to a study that addressed the Palestinian EE [5], the influential actors are mainly financial-based organizations. The rest of the ranking of the actor’s importance based solely on the function is shown in Figure 20.

It is interesting to see how each actor perceives the importance and the need for connectivity to each actor. The “intra” EE analysis results indicate that connectivity importance as perceived by Public Authority (Ministry, City, Governmental agency) are in the following order: 60% was given to actors in Formal institutions/ Policies and Finance/Capital, 44.4% was given to Market Demand and Business Support Services, 40% was given to Physical Infrastructure, 33.3% was given to Informal institutions/ Culture and Knowledge Creation (R&D/ Innovation), and 26.7% was given to Human Capital. It is evident that public authorities need to connect with formal institutions due to the high overlap between the works of the two sides.

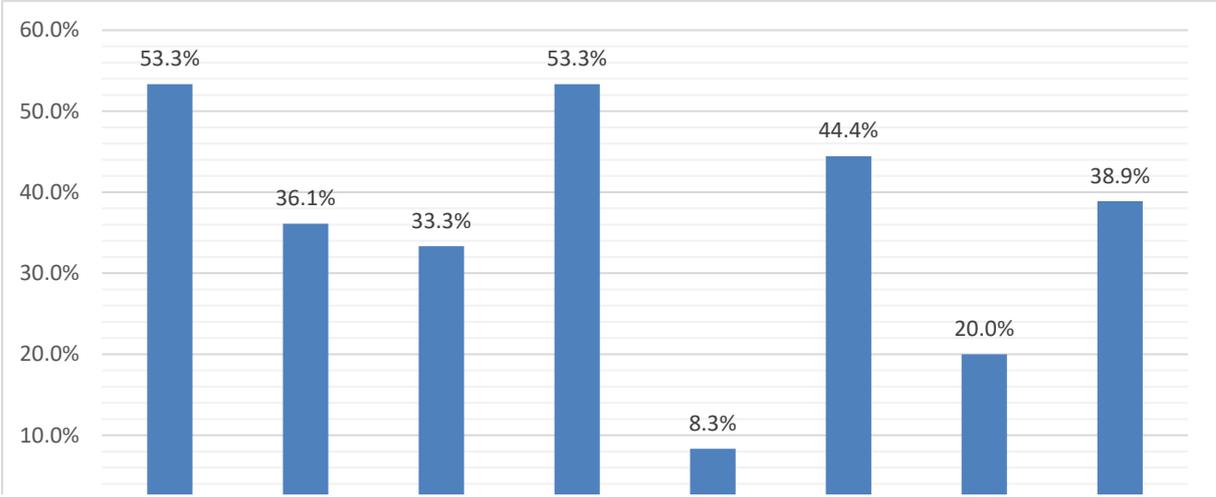


Figure 20 Actors' importance ranking as perceived by the Financial Capital

On the other hand, University/research institutions perceive the connectivity importance in the following order: 60% was given to actors in Formal institutions/ Policies, 53.3% was given to Finance/Capital, 47.2% was given to Informal institutions/ Culture, 46.7% was given to Physical Infrastructure, 44.4% was given to Market Demand and Human Capital, 41.7% was given to Knowledge Creation (R&D/ Innovation), and 33.3% was delivered to Business Support Services.

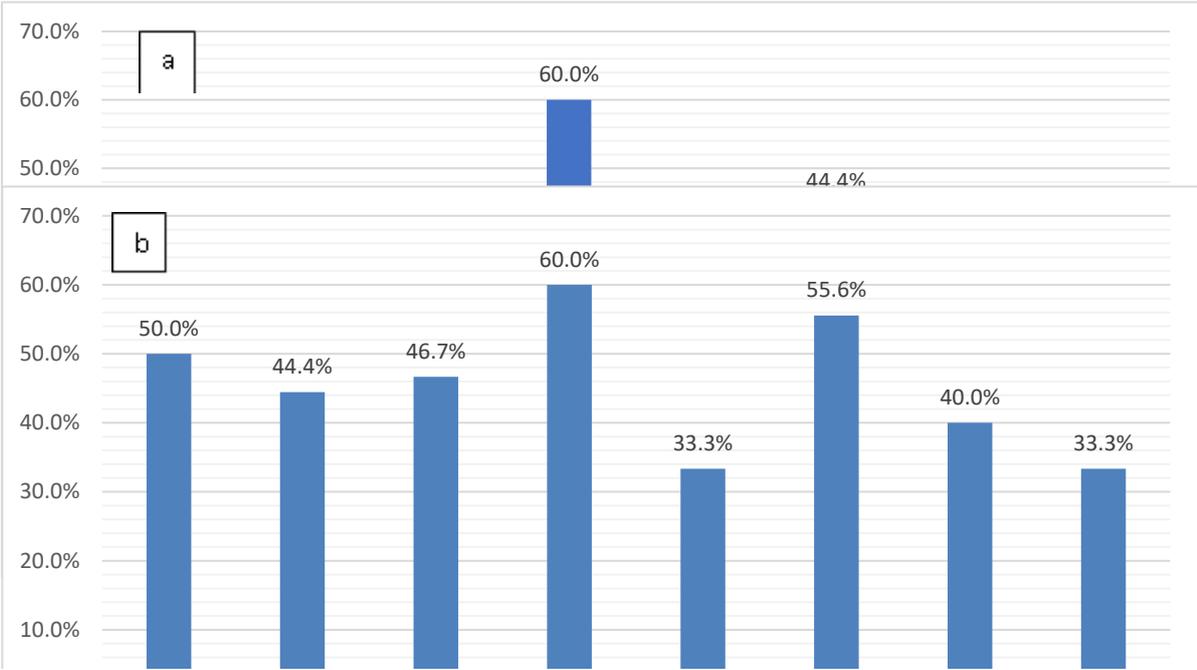


Figure 21 (A) Actors' connectivity importance perceived by Business organizations. (b) Actors' connectivity importance perceived by business and entrepreneurship supporting organizations

We can notice that the two actors (the public authority and the University/Research) agree on the importance of connections with formal institutions and financial capital. The same applies to the view of financial capital, as we can see in Figure 20, where the formal institutions/policies and the financial capital received the same ranking. Interestingly, startup, SMEs, corporate, and business cluster/association has the same perception of the importance of the finance/capital actor. This importance also appears in the Business and Entrepreneurship supporting organizations and NGO / Civil society representatives' opinions. One of the interesting findings in this study shows that the business organizations and the business and entrepreneurship supporting organizations do not give much weight to the connectivity importance between them and the human capital, as we see in Figure 21 (a) and (b), respectively. Universities should represent the nuclei of driving innovative ideas and solutions to urban challenges and creating value-based enterprises. The underestimation of the human capital actors (including universities and research institutions) by business organizations and supporting organizations shows the gaps between these entities/actors. In the next section, we are conducting a Social Network Analysis to get more insights into the connectivity between actors.

#### SOCIAL NETWORK ANALYSIS OF THE EE

Theoretically, strengthening the EE network should improve ecosystem coherence and robustness. The improvement process does not imply increasing or duplicating actors (e.g., establishing a new incubator) or favoring existing entities in grants. Instead, improving the EE should support the synergy among actors. The synergy among actors could be achieved through various means such as boosting the policies that call for cooperation among actors, establishing connection hubs that take the responsibility of networking, and continuously assessing the connectivity using several techniques like Social Network Analysis (SNA). The idea of applying the SNA is to understand the complex structure of the Ecosystem, which usually does not follow predictable or rationale paradigms. The notion of using the SNA in Entrepreneurship provides insights into the depth and breadth of the EE [6]. Within the scope of the current report, we show a part of the network analysis, which is represented by the relationship between actors/functions in the Palestinian EE.

The SNA taxonomy is based on Graph Theory. Its representation consists of nodes and edges (ties). Nodes can be the EE actors, such as the business organizations and public authorities. Lines connect nodes, representing the edge (i.e., connectivity or the relationship between the EE actors). The relationship could be official, like offering services, or less formal, like knowledge/experience exchange.

The analysis of the SNA should carefully determine the support requirements (weak links) and identify the major players (i.e., actors) in the EE. For example, if we discover a weak link between the Universities and the Business Organizations and Incubators, we analyze the reasons, the conditions, and the challenges to mitigate that weakness.

To measure the performance of the EE through the SN, studies looked at a set of performance indicators [6] as follows:

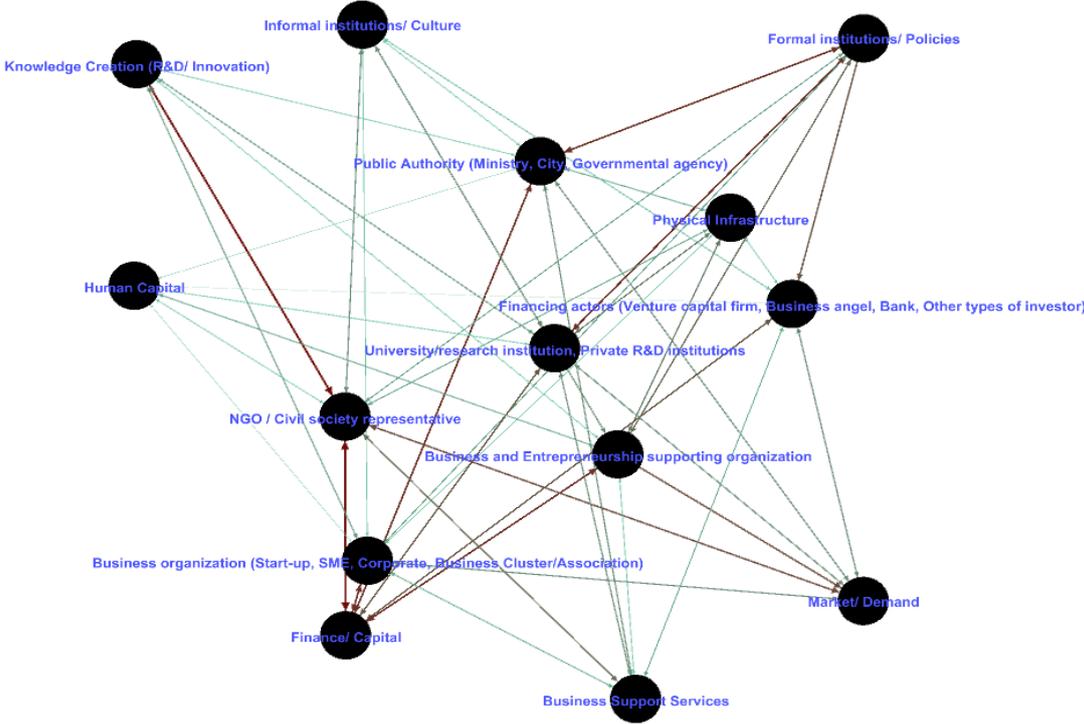
- Density: represents the actual connectivity among actors horizontally (e.g., business centres with business centers) or vertically (e.g., incubators with universities).
- Fluidity: represents the assessment level of the EE services provided to the entrepreneurs.
- Diversity refers to the diversity of services provided by the EE.
- Collaboration: represents the cooperation among the EE actors

#### **Q4. How is the connectivity among the ecosystem actors?**

However, it was not easy to quantify those indicators in our study. Nonetheless, we relied on our questionnaire to the key actors of the EE to obtain information about the connectivity among the actors. The following Figure 22 is a result of analyzing the questionnaire with the key actors in the EE when asking them about the importance

of connecting with other actors in the same EE. The degree of connectivity is represented in Figure 22 by the red line (refers to the strong connection) to the green (refers to the weak connection). The analysis was conducted using Gephi [20] software for SNA. The average weight of connectivity between the actors is 41.9% which is classified as below the average (i.e., 50%). This means that the overall connectivity among actors is weak and will be enhanced in various ways

As we visualize in Figure 22, the green lines (the weak connectivity) dominate the red lines (the strong connectivity). A step deeper in the Figure, we notice that human capital has the lowest connectivity among all



actors. Likewise, the informal/cultural institutions encounter weak connectivity from other actors. In contrast,

Figure 22 SNA of the Palestinian EE

Financial Capital and Formal Institutions seem to have higher connectivity with other factors. This is reasonable since all entities and actors should come across financial issues and legalization from formal institutions. We can see that public authorities have reasonable connectivity with the formal institutions, which is justified due to the crosscutting in work between the two actors. Knowledge (R&D) and innovation actors have better connections with NGOs than other actors. This might be because most NGOs working in the field of Entrepreneurship rely on funded projects that address R&D and innovation aspects. Table 10 shows in depth the parameters that illustrate the EE actors’ connectivity from the SNA perspective, as we can see that the closeness centrality indicates how close an actor is to all other actors. For instance, in the Table below, the financial capital has the highest closeness centrality. In contrast, the knowledge creation (R&D)/Innovation and the human capital have the lowest score, which means they are not quite close to other actors in the EE. This triggers an interesting recommendation to the R&D centres to boost connectivity with other actors through initiatives, events, and MoUs.

Actor	Closeness centrality	Weighted indegree	Weighted outdegree	Weighted Degree	Modularity class
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<b>Formal Institutions/ Policies</b>	0.65	303.3	303.3	606.6	0
<b>Informal Institutions/ Culture</b>	0.55	238.7	238.7	477.4	1
<b>Physical Infrastructure</b>	0.58	240	240	480	0
<b>Finance/ Capital</b>	0.72	353.3	352.7	706	2
<b>Knowledge Creation (R&amp;D/ Innovation)</b>	0.41	208.3	225	433.3	2
<b>Market/ Demand</b>	0.55	288.8	288.8	577.6	1
<b>Human Capital</b>	0.41	166.7	178.6	345.3	1
<b>Business Support Services</b>	0.57	244.4	249.9	494.3	2

Table 10 SNA parameters analysis

Regarding the weighted in-degree, which represents the actors that have an influence on other actors, we notice the financial capital and the formal institutions won the battle again. In contrast, human capital knowledge creation (R&D/innovation) has the least scores in the weighted in-degree (i.e., influence). The same applies to the weighted outdegree, which refers to the capacity of the actor to exchange with others. The highest was assigned to the Financial/Capital again. Finally, the density could be assessed here through the “modularity class.” In other words, the higher number, the more modularity, the denser structure the actor has. In Table 5, the formal institutions and the physical infrastructure have zero modularity, meaning their work and cooperation structure are not completely dense. A deep understanding of the connectivity among EE actors requires breadth and depth knowledge in the EE functions. The next section discusses the Palestinian EE from a functional standpoint.

## ECOSYSTEM INNOVATION FUNCTIONS AND CHALLENGES

Understanding how Innovation EEs work and emerge is essential in evaluating EE. After analyzing the connectivity among the actors, it is necessary to dive deeper into the innovation functions of the EE. This function exploration would help the entrepreneurs understand the EE and evaluate its status, impact, and challenges.

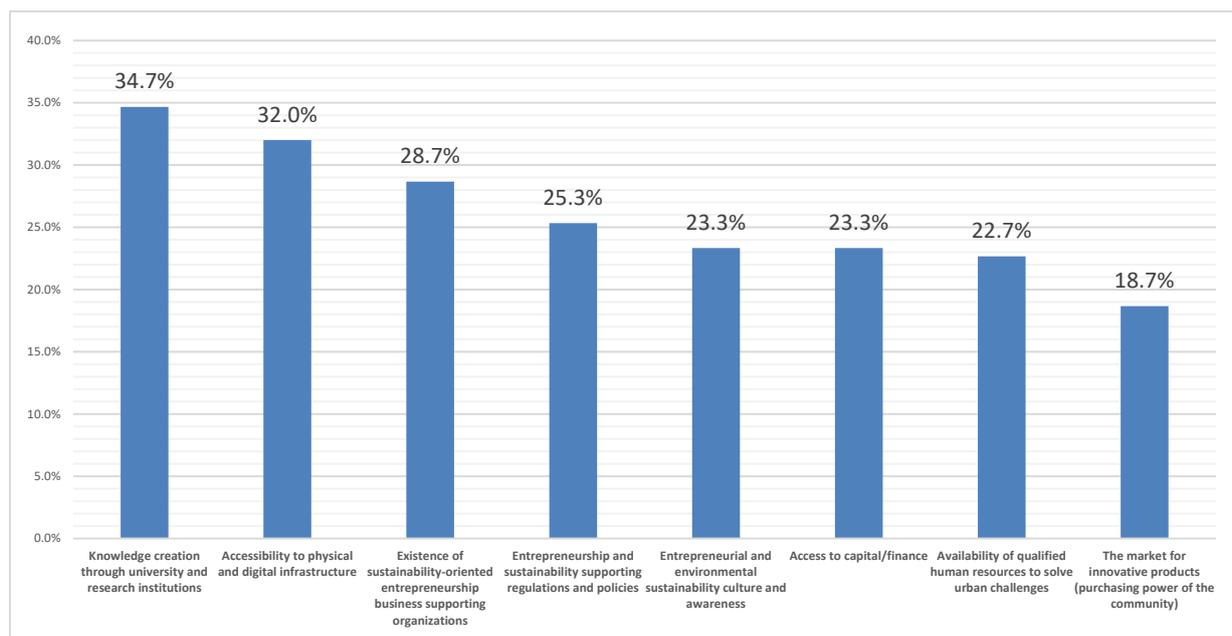


Figure 23 EE innovation functions importance as perceived by actors

The EE functions constitute a set of relations across the actors. Therefore, the actors can give their insights, feedback, and evaluation to the functions according to their performance in the EE. Figure 23 shows that EE Palestinian actors evaluate the knowledge creation through the university and research institutes as the most significant function by 34.7% of the votes. The second-ranked innovation function was access to the physical and digital infrastructure. Finally, the least ranked function was given to the market for innovative products. Even the first ranked function, the research & development, is considered within the poor evaluation scale.

Obviously, in Palestine, the freedom to access traditional markets is encountering several geopolitical challenges. The challenge is still out there in innovative products from two perspectives: accessibility and purchasing power. Given the low evaluation of the ecosystem functions, obstacles must be presented and discussed per function. Starting with knowledge creation, 61% of the EE actors’ votes were given to Brain drains of researchers and scientists. Brain drains can be explained in terms of the challenge imposed on Palestinians by the Israeli occupation, the high unemployment rate, and the lack of entrepreneurial opportunities. 56.5% of the actors’ votes were given to the expenditure on Research & Development, 52.5% to the availability of urban sustainable development scientific studies, and 31% to the lack of research institutes.

Let’s look at the policy and business environment that is important to legalize, regulate, and organize the EE. The following percentages represent the most persistent challenges evaluated by the Palestinian EE actors: 58% was given to the lack of incentives for entrepreneurs and creative ideas to solve environmental or urban challenges, 54.1% was given to the lack of sustainability and environmental challenges-oriented policies and regulations, and 51% was given to the need of information or data on the national level.

From the infrastructure standpoint, the actors considered the physical infrastructure from the electricity, gas, and waterside is 54% sufficient 24% insufficient. Whereas there considered the digital infrastructure, including telecom and network, as 64% sufficient and 10% insufficient.

We know the human infrastructure informing the EE is quite essential. Therefore, it was relevant to address the obstacles in the human capital as a function in the EE. The following Figure 24 shows these obstacles.

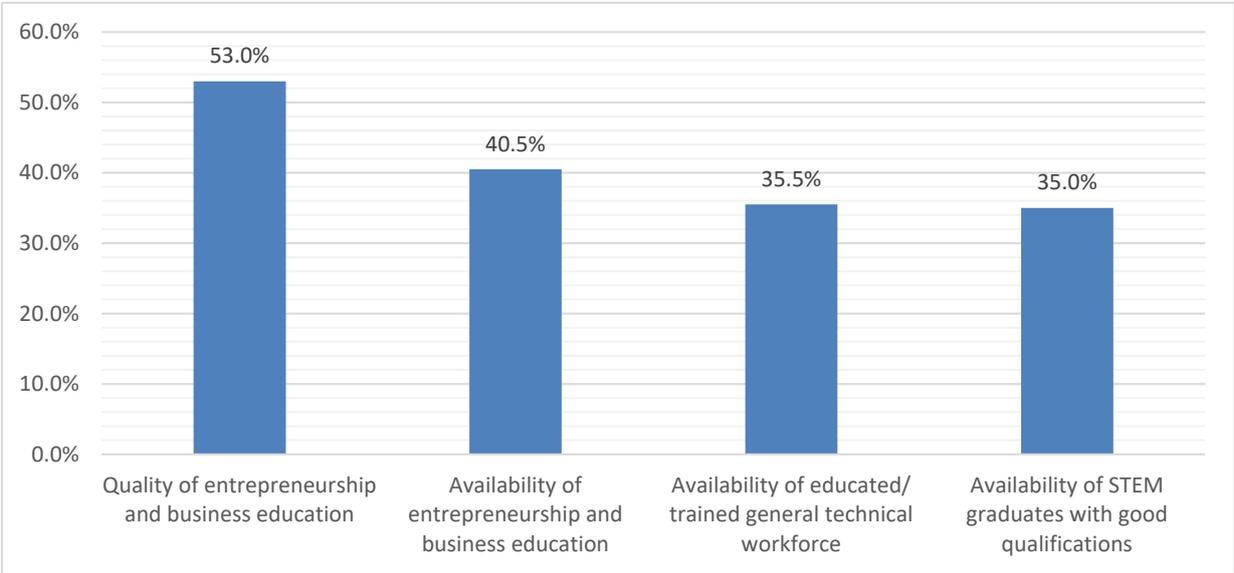


Figure 24 Human Capital Obstacles in the Palestinian EE

We can see that the obstacles in the human capital can be represented in the quality of entrepreneurship and business education, which received the highest rank. Obviously, our business education cannot fully empower student entrepreneurs due to the inflexibility of the curriculum changes at the school and the university levels. Other obstacles also were present such as the availability of entrepreneurship and business education, and educated/ trained general technical workforce, and the availability of STEM graduates with suitable

qualifications. The obstacles do not persist only in the early stages of entrepreneurship (i.e., education and training) but also in later stages such as access to the market. The actors ranked the obstacles in this function as follows: 54% was given to the access to international markets, 53% was potential purchasing power (income per capita), 46.5% was given to Potential market size expressed in the population, 44% was given to the availability of market Information/studies, and 35% was given to access to local markets.

## NEEDS OF ECOSYSTEM ACTORS

Although the evaluation of the innovation functions reveals the relatively poor performance of the EE, the Palestinian actors believe that the EE can have a more substantial impact in addressing local urban sustainability challenges. Addressing these challenges can be achieved through various ways in which the actors rank:

- 94% was given to create new green markets supported by public policies.
- 92% was given to join an international, impact-oriented project
- 90% was given to receive support to develop suitable business models
- 88% was given to assess sandboxes, living labs
- 54% was given to innovative public procurement tenders.

The green market aims to develop and advertise products based on their natural environmental sustainability. In Palestine, one of the thematic challenges that could be addressed in U-Solve is the agro-food in which various eco-friendliness practices could be transformed into an entrepreneurial experience. Moreover, the actors of the Urban Entrepreneurial Ecosystem in Palestine stated additional actions that could create a more substantial impact in addressing local Urban Sustainability Challenges in Palestine represented by:

- Orientation and guidance for entrepreneurs.
- Networking with and strengthening local and international relations.
- Enhancing appropriate funding and financing opportunities for entrepreneurs.
- Adopting new technologies suitable for the Palestinian context.
- Facilitation of procedures and regulations for the work of entrepreneurs.
- Securing an information center for entrepreneurs; and
- Providing systems for the protection and support of the entrepreneurial system in Palestine.

## IMPACT OF ENTREPRENEURIAL ECOSYSTEM

Some of the points above can be addressed through an urban hub with a clear vision and plan to better network among actors, entities, and international entities. The Palestinian actors expressed that the current EE should have a significant role in achieving actual impacts. They voted on various factors that could help empower the current EE through the services. Figure 25 shows the rank of these factors. We notice that creating new jobs for youth with 56.9% votes is a primary concern. Creating jobs is one of the U-SOLVE priorities to achieve through creating values from the startups that emerge in the urban areas of the targeted countries. It is not surprising that the following factors increased job quality and reduced the unemployment rate, which is getting higher (around 27%) in Palestine, especially after the pandemic. Gender support and equality were also on the list, emphasizing empowering women and achieving gender equality with 51.4%.

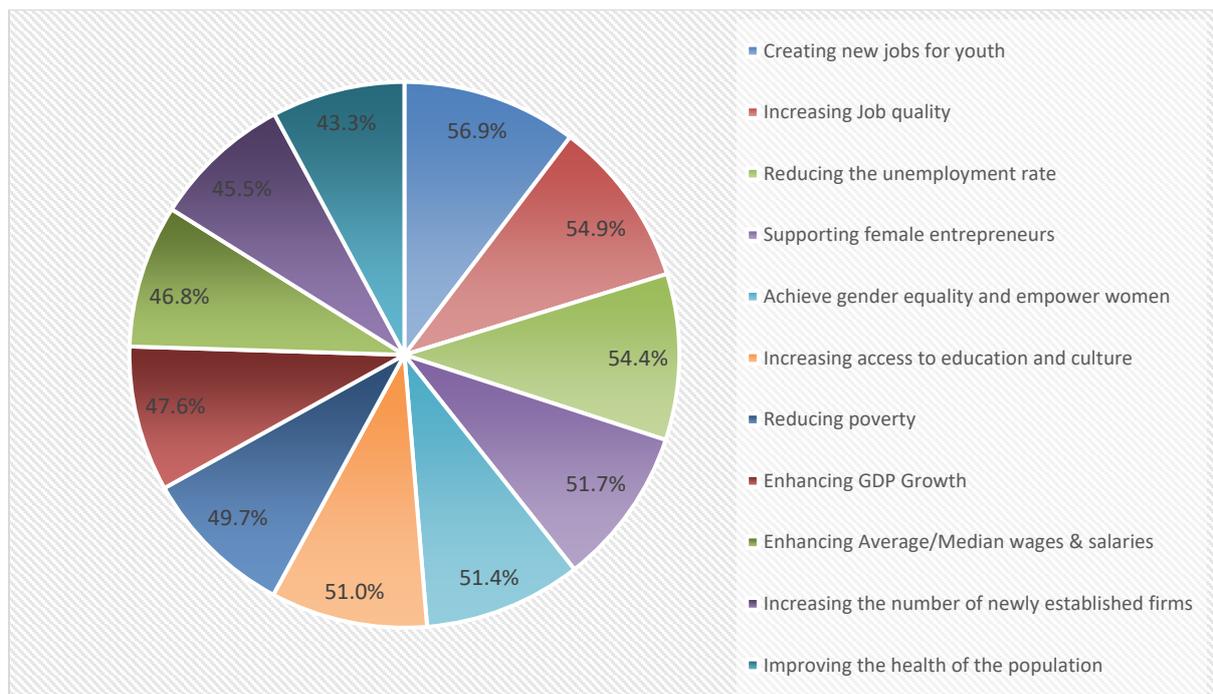


Figure 25 Significance of the Current Entrepreneurial Ecosystem Services

A general remark on the Figure above is that most of the factors have equal significance in their role in empowering the EE. Other factors also were considered, such as improving the quality of life in cities (42.9%), clean and affordable energy (41.7%), increasing efficiency, quality, and cleanliness of the productive systems (41.3%), reducing waste generation and disposal (40.8%) which share the same significance with producing healthier food. The margin of improvements achieved by the significant role of entrepreneurship in mitigating sustainable urban challenges is high. However, the intervention should be carefully designed, monitored, and mentored.

## CONCLUSION AND IMPLICATIONS

This report presented a descriptive-analytical study on the Palestinian Entrepreneurship Ecosystem or what we abbreviated with EE. The study aimed to analyze the EE's two main dimensions: the actors and the functions based on OECD/ANDE model. The study targeted the southern part of Palestine (Hebron and Bethlehem) to represent the local, territorial urban area, whereas Ramallah expressed the national level in the analysis. The study relied on the descriptive analysis methodology, where quantitative and qualitative approaches were utilized. The primary source of information was a questionnaire with 50 Palestinian EE actors. Moreover, we relied on Focus Group meetings with EE stakeholders. On the other hand, a secondary source of information was utilized represented by desk research from the established literature, national plans, strategic plans, and entrepreneurial evaluation reports at the regional and sub-regional level of resolution.

The study addressed the urban sustainability challenges from the Palestinian EE perspective. The actors perceive the following challenges are the most demanding ones in the context of urban sustainability in the targeted areas:

**Sustainable Energy** ranked 1st in bringing EE actors' attention to the existing urban challenges, and this result can be explained under the circumstances of increasing power cost and global warming threats. Other challenges also witnessed attention, such as the **blue infrastructure**, which means water waste management, water access, and other geopolitical concerns of water in Palestine as a country under population. Surprisingly, **waste management** achieved the same significance as the blue infrastructure, which has high potential to attract entrepreneurial ideas to address various challenges (e.g., city pollution).

Since urban areas vary in features, needs, and conditions, Bethlehem and Hebron actors pointed out that **Tourism & Cultural Heritage, Agro-Food, and ICT** are other significant thematic challenges that need to be

addressed in urban territorial areas. They recommended having development models such as the one that U-SOLVE is establishing through the project to empower emerging ideas or established SMEs in these themes. The findings show that the **overall evaluation of the Palestinian EE is weak**. One of the main reasons is that the Palestinian EE actors have **weak coordination** among each other in varying degrees according to the following reasons:

1. The study showed that actors tend to give divergent opinions on urban challenges even in the same urban territory, implying they do not have typical dialogues, meetings, or joint initiatives.
2. The Social Network Analysis (SNA) showed that the average connectivity between the actors is weak with 41.9% connectivity weight.
3. The SNA revealed that **knowledge creation actors and Human Capital actors** have fewer connections than other EE actors, such as the public institutions or the Financial Capital.
4. There is a lack of hubs that coordinate urban sustainability issues and provide innovative solutions.

At the same time, actors believe that **knowledge creation and R&D** are the most significant functions of the EE that could lead to value creation and wealth maximization. The actors believe that the EE urgently requires sustainable urban development scientific studies and coordinating bodies.

The findings revealed that the **quality of entrepreneurship education and training, the availability of educated, trained, skilled workforces, and the availability of STEM graduates with good qualifications** are priorities to empower the emerging innovation market and to provide creative solutions to the urban challenges.

The recommendations of this study can be summarized in the following points:

- Palestinian EE connectivity in the urban development context must be boosted and enhanced through various means such as establishing specialized hubs that can:
  - Coordinate among EE actors in urban development projects, initiatives, and research.
  - Coordinate between universities, research centers, and business incubators to support, coach, and mentor entrepreneurial ideas in the urban sustainability contexts.
  - Conduct statistical and empirical studies on the urban challenges in the territorial areas in which the hub exists.
  - Network with countries that share the same global challenges (e.g., global warming and sustainable Energy).
- Universities and schools should enhance business and entrepreneurship education and training, especially in the STEM fields, while including urban challenges and global concerns in their curriculum and extra-curricular activities.
- An urban sustainability model should be established by the joint effort of actors in the urban areas to support value creation through innovation and entrepreneurship.
- More attention should be given to the “Blue Infrastructure” in the Palestinian context, representing water access, sanitation, and water waste management.

The entrepreneurship and innovation activities in the urban sustainability context should comply with the SDGs to mitigate the sustainability risks of the area and the world we live in. The assessment models and the judgment of the entrepreneurial ideas and the established enterprises should also bypass the sustainability filters. The Doughnut economy model is an example to monitor the resources needed to avoid the overshoot threats while keeping the resources as sustainable as possible. Finally, to provide a take-away message from this report, we highlight the following recommendations categorized into two levels of granularity: the national level and the urban development level.

#### **National Level:**

- Policies and regulations are needed to be in place or updated to facilitate the process and accessibility to the Urban EE, mainly the synergy and coordination between formal, finance, and market demands institutions. These policies should reflect regulations and practices on the local level to motivate and enhance investment and creation of MSMEs (Micro, small, and medium enterprises”. Such legislation and policies could also encourage and regulate cooperative schemes among the ecosystem actors. It could also enhance the participation of the weaker segments, particularly youth and women, to increase in the economic sphere.
- More financial incentives (accessibility) to be given to entrepreneurs
- National policies, plans, and agendas to be more aligned with the key challenges in EE, including Sustainable Energy, Blue Infrastructure, Waste Management, Urban Transport Planning, Urban Food, Green Inf, and Healy Equity.

- Universities/research institutions, NGOs, Businesses, and public actors to be more oriented towards the EE through their plans and strategies with a special focus on Sus Energy, Blue inf, Waste Management, Urban Transport Planning, Urban Food, Green Inf, and Healy Equity
- UE success depends on overcoming obstacles in (1) Knowledge Creation, (2) Access to Equity Finance, (3) Incentives and creative ideas to solve environmental and urban challenges, (4) Policies and Regulations. (5) Accessibly to telecom/internet networks, (6) Quality of Entrepreneurship. Education, (7) Access to technical support, (8) Access to international markets
- Promoting women engagement in UEE mainly from Private and Public sectors

**Urban level (Municipal Level):**

- More attention to be given to the infrastructure that supports the UE
- Linkage of Urban with surrounding areas for capitalization of limited resources available in urban areas (Palestine)
- Urban policies, plans, and agendas to be more aligned with the key changes in EE, including Urban Transport Planning, Green and Blue Infrastructure, and Sus Energy

We believe that this report shall be in the hands of decision-makers in the Palestinian EE, the young entrepreneurs, and the U-SOLVE community partners and stakeholders. The information should serve as a diagnostic tool of the Palestinian EE and as a clear road map of the target readership.

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# **URBAN ENTREPRENEURIAL ECOSYSTEM ANALYSIS REPORT**

(Cyprus)

**NICOSIA CASE**

## EXECUTIVE SUMMARY

This report seeks to present collected information and data relating to U-SOLVE'S Work Package 3 requirements. Under U-SOLVE WP3-related activities, The Cyprus Institute and The University of Cyprus have conducted research into Nicosia's business and entrepreneurial ecosystem to identify the most pressing sustainable development challenges, paving the way to the detection and application of appropriate solutions for sustainable change and progress, arising from the Cultural and Creative sector.

The report provides a comprehensive analysis of data collected from desk-based research, online surveys, and in-depth interviews conducted on a significant sample of Nicosia's entrepreneurial ecosystem and underlying business culture. For this purpose, the partners of U-SOLVE in Cyprus – The Cyprus Institute and The University of Cyprus – have classified and defined the most important urban actors and approached them with the purpose of gathering more information about their activities and their expert knowledge on the strengths and weaknesses of Nicosia's ecosystem. The local U-SOLVE team has identified one hundred stakeholders collected **fifty-one** complete **surveys** on **urban sustainable development initiatives, challenges, and opportunities** in Nicosia, together with **thirty-five in-depth interviews**.

These interviews and surveys have been with local stakeholders representing civil society, start-ups/SMEs, local authorities, policy makers, academia/research organizations, business support organizations as well as cultural agencies and governmental organizations. A desk-based research approach has also been employed to help with the triangulation of information and data.

The outcome of the analysis is manifold, offering insights about the current conditions under which the innovation and entrepreneurial ecosystem operates and their underlying business culture, the relationships amongst actors, and their knowledge or perception on the most critical urban sustainable development challenges to be addressed.

Collected information and data suggest that Nicosia, the capital city of Cyprus, is facing important sustainable development challenges. Chief amongst these challenges is the projection that Cyprus (and of course Nicosia) is part of a Region that will become a global climate change 'hot spot', with shifting weather patterns and changing climate conditions.

**Key findings** from interviews, surveys, and desk-based research:

- The Top 3 urban domains facing pressing sustainable development challenges in Nicosia are **waste management, sustainable energy, and urban and mobility planning**.
- The **Cypriot Culture** is a considerable obstacle when it comes to people accepting sustainable change and progress.
- **Public Authorities (Ministries, Cities, Governmental Agencies)** are the **most important** urban actors when it comes to supporting other organisations and their initiatives for sustainable development.
- **Policies and Regulations** that support sustainability in Nicosia are needed, as those are deemed crucial for the success of initiatives and activities for sustainable development.
- **Transportation Services** in Nicosia require urgent attention.
- **Access to International Markets** is a significant challenge, due to the insularity.
- **More incentives are needed** in order to inspire and influence entrepreneurs to work on developing

## METHOD AND SAMPLE DESCRIPTION

### NICOSIA AT A GLANCE

Before embarking on implementing initiatives and activities aimed towards improving an urban area, it is crucial that urban actors have a clear understanding and knowledge of the state of affairs in that area.

Following are some key facts about the city of Nicosia:

- Nicosia is the largest city, capital, and seat of government of the island of Cyprus.
- Nicosia is the southeasternmost of all EU Member States' capitals.
- As of 2022, the population of Nicosia is about 200,452 people.
- Nicosia covers a total area of 111 square kilometres (43 square miles).
- The city has average elevation of 220 meters (720 feet) above sea level.
- It has been continuously inhabited for over 4,500 years
- The earliest mention of Nicosia is in the clay prism of the Assyrian king Esarhaddon in 672 BC.
- The town has been the seat of government of Cyprus since the 10th century.
- Nicosia came successively under the control of the Byzantines (330–1191), the Lusignan kings (1192–1489), the Venetians (1489–1571), the Turks (1571–1878), and the British (1878–1960), and thus reflects the vicissitudes of Cypriot history and both Eastern and Western influences.
- Apart from its legislative and administrative functions, Nicosia has established itself as the island's financial capital and its main international business centre.
- In 2018, Nicosia was the 32nd richest city in the world in relative purchasing power.
- Nicosia is the only divided capital city in the world.

### QUANTITATIVE DATA: DESK-BASED RESEARCH

Using secondary data collection (desk research), a complete documentation and evaluation of approximately **one-hundred urban actors** active in the city of Nicosia, was achieved. With the help of published studies, articles, reports, and actors' websites an initial picture of Nicosia's current urban ecosystem environment and actors was formed (Table 11). Table Following a high-level review of the initial contact list and after forming a better idea on who were the most important urban actors, the local U-SOLVE team selected **seventy out of** the initially identified **one-hundred** actors in order to approach them for the arrangement of in-depth interviews and ask for their input in the U-SOLVE survey.

Title of Report/Study	Author	Date	Website/URL
Cyprus Country Report	CyprusProfile	2020	<a href="https://www.yumpu.com/en/document/read/64714116/2020-cyprus-country-report">https://www.yumpu.com/en/document/read/64714116/2020-cyprus-country-report</a>
Entrepreneurship in Cyprus	Global Entrepreneurs hip Monitor	2019/2020	<a href="https://www.c4e.org.cy/reports/2019/Entrepreneurship%20in%20Cyprus_GEM%20National%20Report%202019_2020.pdf">https://www.c4e.org.cy/reports/2019/Entrepreneurship%20in%20Cyprus_GEM%20National%20Report%202019_2020.pdf</a>
Inclusive Entrepreneurship Policies, Country Assessment Notes	OECD	2020	<a href="https://www.oecd.org/cfe/smes/Cyprus-IE-2020.pdf">https://www.oecd.org/cfe/smes/Cyprus-IE-2020.pdf</a>
Cyprus Island-Wide Entrepreneurship Ecosystem Analysis Report	CyprusInno	2020	<a href="https://cyprusinno.com/wp-content/uploads/2017/01/CyInnoReport2020.pdf">https://cyprusinno.com/wp-content/uploads/2017/01/CyInnoReport2020.pdf</a>
Doing Business in: Cyprus	Elias Neocleous and Co LLC	2020	<a href="https://neo.law/wp-content/uploads/2021/01/SA-0121-022-Doing-business-in-Cyprus-3.pdf">https://neo.law/wp-content/uploads/2021/01/SA-0121-022-Doing-business-in-Cyprus-3.pdf</a>
Doing Business: Economy Profile Cyprus	World Bank Group	2020	<a href="https://www.doingbusiness.org/content/dam/doingBusiness/country/c/cyprus/CYP.pdf">https://www.doingbusiness.org/content/dam/doingBusiness/country/c/cyprus/CYP.pdf</a>

Table 11 Examples of Reports and Studies on Cyprus' Urban Ecosystem

### QUANTITATIVE DATA: SURVEY

The U-SOLVE survey has been employed in order to capture Nicosia's ecosystem experts/actors' opinions on the ecosystem's functions. This survey was designed using indicators from the ANDE (ANDE, 2013) and OCED/Eurostat framework (OECD, 2008), besides some other indicators extracted from the geographic mode of

Leendertse et al. (2021). *Between* the months of **December 2021** and **February 2022**, **fifty-one surveys** have been **completed**. Figure 26 shows the percentage of each stakeholder category that completed our survey. It can be argued that there is a satisfactory actor sample from each ecosystem domain who completed the survey.

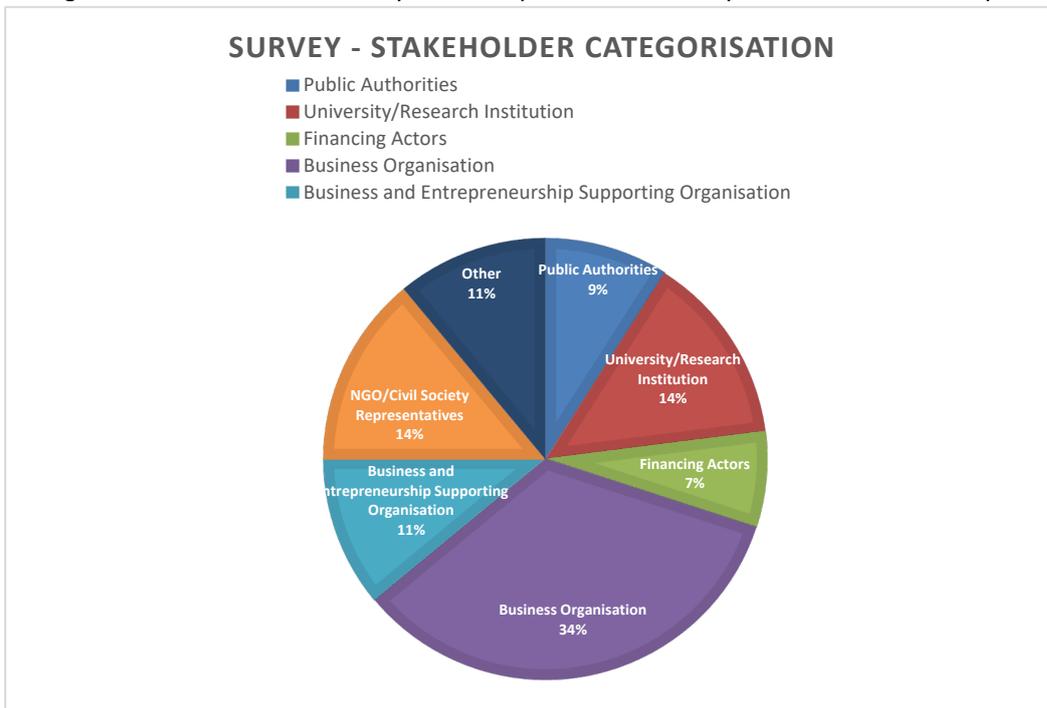


Figure 26 Categorization of Stakeholders who Completed U-SOLVE Survey.

The majority of these surveys have been filled in and submitted during our in-depth interviews with the stakeholders. This ensured that the survey respondents understood what each question was asking and did not rush to complete it. Consequently, the results of the surveys can be considered more trustworthy.

#### Some other general facts about the completed surveys:

- The U-SOLVE survey has been promoted and advertised through UCY’s Facebook and LinkedIn pages as well as through the Cypriot team’s personal social media pages<sup>12</sup>. This helped reach and inform a wide audience in addition to the promotion of the survey through email communications to and our in-depth interviews with targeted audience.
- A statistically significant number of local stakeholders representing civil society, start-ups/SMEs, local authorities, policy makers, academia/research organizations, business support organizations as well as cultural agencies and governmental organizations has been targeted.
- “Other” category mentioned in Figure 26 comprises of urban actors such as artists, musicians, entrepreneurship instructors, and sculptors (and other Creative Industries’ representatives).
- The completion time of the survey was ranging from **30 to 60 minutes**.
- The majority of survey respondents hold **managerial/executive positions**.
- **52%** of respondents are **men** and **48% women**.
- Around **49%** of respondents are between the ages of **36-45** and hold a **Postgraduate Degree**.

#### QUALITATIVE DATA: IN-DEPTH INTERVIEWS

Using information gathered from the desk-based research on the identified one-hundred key urban actors, the Cypriot U-SOLVE team attempted to narrow this list even further, at a first stage. **Seventy** actors have been chosen; these actors can be relatively easily approached and can possibly have the biggest role and influence in the U-SOLVE project. Out of these seventy actors and *between* the months of **December 2021** to **February 2022**, **thirty-five** in-depth interviews have been **scheduled and fulfilled**. Results from these in-depth interviews have

<sup>12</sup> <https://www.linkedin.com/feed/update/urn:li:activity:6877189015917912065/>  
<https://www.facebook.com/UniversityOfCyprus/posts/4594463260637589>  
[https://www.linkedin.com/posts/anixi-antonakoudi-meng-phd-mba-84180049\\_usolve-enicbcmmed-urbandevelopment-activity-6877200991368884224-gO5w/](https://www.linkedin.com/posts/anixi-antonakoudi-meng-phd-mba-84180049_usolve-enicbcmmed-urbandevelopment-activity-6877200991368884224-gO5w/)

been extremely useful for understanding the state of affairs in urban sustainable development challenges and initiatives in Nicosia. Additionally, these results complement desk research activities and have been used to complete the main actors mapping as well as validate the classification of each actor under a specific functional domain.

Because of covid19 related restrictions, around **70%** of these interviews have been **online** and **30% face-to-face**. Around **35%** of the shortlisted actors who have been approached (via email and telephone) have not replied back and **one** actor (Business Organisation) declined our invitation to a meeting. Appendix A provides the name and type of organisation approached for an interview as well as the names of the organisation's representative(s) at the interview. It can be noted here that the in-depth interviews will continue beyond the time of the writing of this report – this will not affect collected information/data up to this point, but rather help arguments and conclusions become more robust. The team has been aiming for quality interview respondents and reaching out to such influential urban actors can be a difficult task. Many of these organisations and their people have busy schedules and a lot of times are worried to engage in additional activities that might compromise in one way or the other their own projects and responsibilities.

#### **Flow of Interview Meetings**

Some other general facts about the completed in-depth interviews:

- All interviews started with the U-SOLVE team providing a thorough description of the project and its objectives so that interviewees can better understand the topic of discussion and what we are asking from them.
- Interviewees then provided more information about themselves and the organisation they represent.
- Following the above step, the conversation shifted to more open-ended and specific/fitting to each interviewee Q&A approach.
- We tried to find synergies with interviewees' own projects and activities and ways that we can join forces.
- We received expert advice and suggestions from individuals and organisations' representatives on how to better prepare for and plan upcoming U-SOLVE activities (e.g., design of focus groups, call for ideas and solutions, discover opportunities for available and suitable urban hubs).
- Using thematic analysis, we managed to identify certain commonalities between interviewees' responses, especially when they were debating about Nicosia's urban ecosystem and the obstacles that need to be overcome for sustainable development.
- Approximately **87%** of interviewees and survey respondents expressed **interest in helping us** with future U-SOLVE related activities and initiatives.

## RESULTS OF THE URBAN ECOSYSTEM ANALYSIS

### THE URBAN DEVELOPMENT SUSTAINABILITY CHALLENGES.

The U-SOLVE survey identifies eight principal urban domains that cities and their actors are focusing on when trying to solve challenges for sustainable development. The survey asks respondents to rate the level of importance of sustainable development challenges in each domain from 1 to 5, where 1 is not important and 5 very important/critical.

Adding all survey responses together, Figure 27 shows urban actors who completed the survey have given:

- **Urban and transport planning** challenges in Nicosia **4.5/5** in terms of level of importance.
- **Built and indoor environment** challenges in Nicosia **4/5** in terms of level of importance.
- **Green infrastructure** challenges in Nicosia **4.3/5** in terms of level of importance.
- **Blue infrastructure** challenges in Nicosia **4/5** in terms of level of importance.
- **Urban food systems** challenge in Nicosia **3.9/5** in terms of level of importance.
- **Sustainable energy** challenges in Nicosia **4.6/5** in terms of level of importance.
- **Waste management** challenges in Nicosia **4.68/5** in terms of level of importance.
- **Urban health equity** challenges in Nicosia **4.3/5** in terms of level of importance

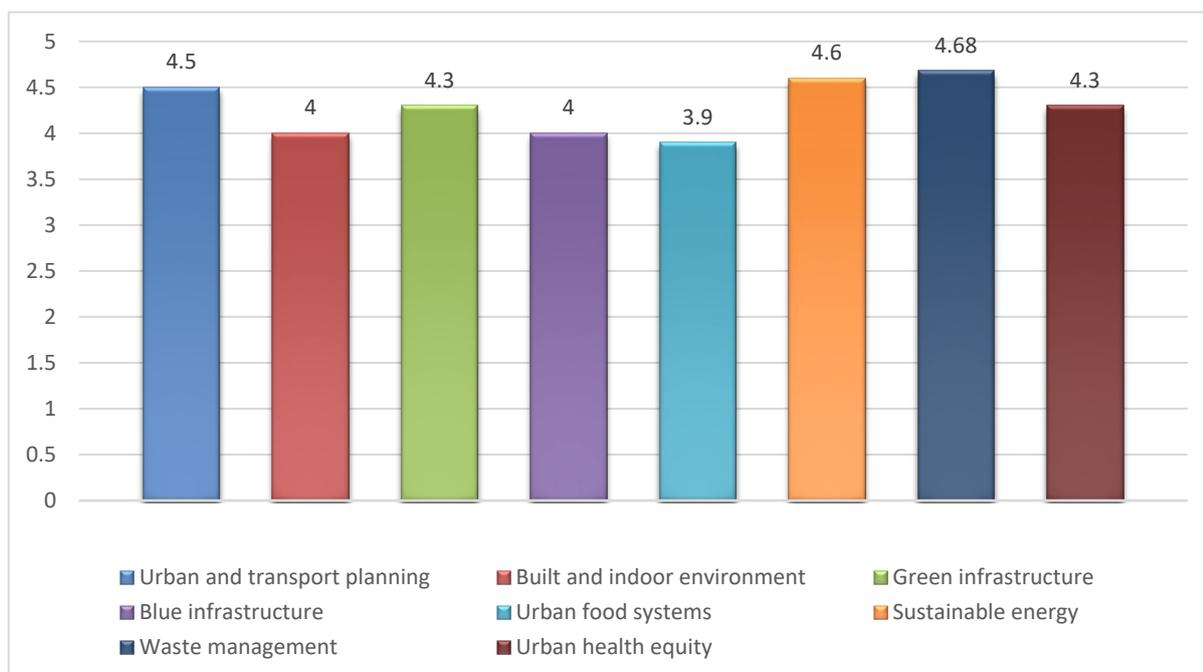


Figure 27 Importance Level of Sustainable Development Challenges in 8 Urban Domains.

As it can be concluded from these results, **waste management** and related challenges (**including circular economy**) are considered to be the **most important** when it comes to sustainable development in the city of Nicosia, followed by **sustainable energy** and **urban and transport planning challenges**. Of course, reflecting on the survey results, almost all eight identified urban domains are facing important challenges.

What is more, the survey allowed respondents to add additional issues that, from their experience, are important in terms of sustainable development. Respondents mentioned:

- **Education and misinformation;**
- **Corruption and lack of transparency;**
- **Cypriot culture, attitude and mindset;**
- **Social inclusion or lack of;**
- **Low population growth rates and;**
- **Democratic governance and community participation.**

It can be argued that the additional issues that the respondents mentioned are not challenges as such, but rather overarching characteristics and peculiarities of the business ecosystem and society in Cyprus that contribute to

the creation of challenges in the eight urban domains evaluated in Figure 27. Since U-SOLVE focusses on inviting ideas/solutions to sustainable development challenges from the Creative Sector, it foresees that such ideas and solutions will be very suitable for influencing behaviors and culture as well as the promotion of structural changes leading to a more sustainable socio-technical regime.

## ECOSYSTEM INNOVATION FUNCTIONS AND CHALLENGES

Continuing with the analysis of data, survey participants were asked to give their opinion on how well they believe the ecosystem is set up to support entrepreneurial innovation in Nicosia. They were asked to rate a number of ecosystem functions as poor, good, and excellent.

Figure 28 above presents the abovementioned results. Notably, the **purchasing power of the community**, the **culture and awareness for sustainable development**, and the **access to capital/finance** have been voted as **poor**

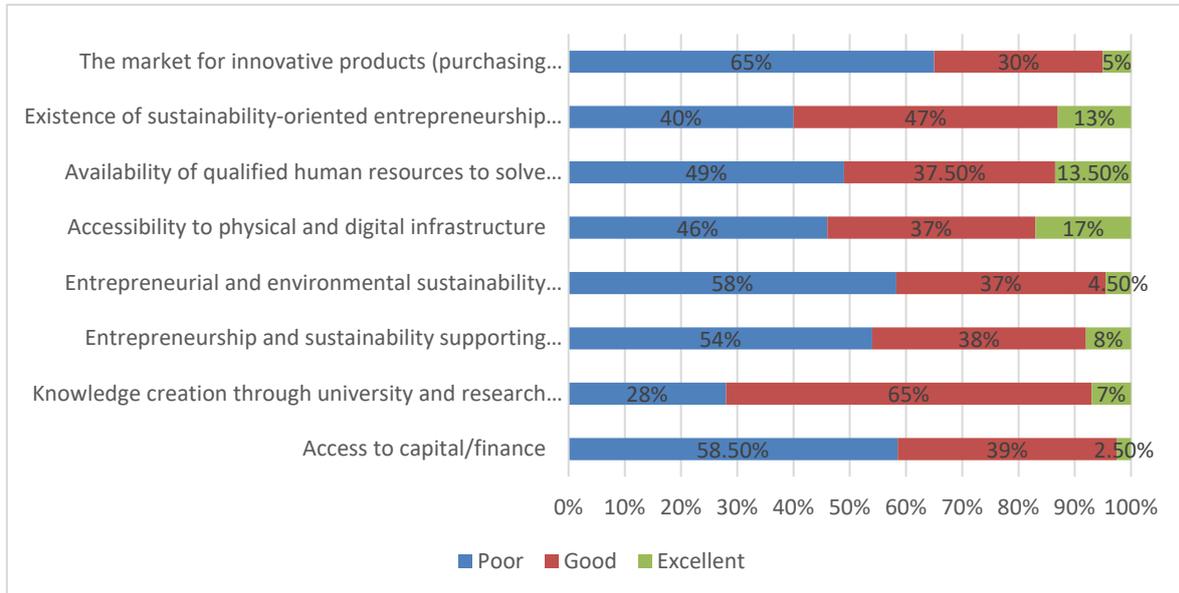


Figure 28 Evaluation of Nicosia's Innovation Ecosystem's Functions

by more than **55%** of the survey respondents. The most satisfactory ecosystem function seems to be the **knowledge creation through Universities and Research Institutions** that has been voted as **good** (but not excellent) by more than **65%** of survey respondents. Furthermore, **accessibility to physical and digital infrastructure** is the ecosystem function that received the **highest "excellent" percentage** (17%). Generally, all Nicosia's ecosystem functions need attention and improvement. The next subsections take each one of the eight innovation ecosystem functions (depicted in Figure 28) and break them down into more specific indicators for a more detailed assessment of Nicosia's ecosystem. Survey respondents are asked to rate each indicator based on how big of an obstacle they considered it to be for the growth of entrepreneurial activities and start-up companies.

### ▪ Capital/Finance

For **Capital/Finance**, the survey measures **three** different **indicators**: Access to Debt Finance; Access to Equity Finance; and Access to Grants. Table 12 presents the results.

	No Obstacle	Minor Obstacle	Moderate Obstacle	Major Obstacle
Access to Debt Finance	4%	14%	49%	33%
Access to Equity Finance	0%	18%	46%	36%
Access to Grants	8%	24%	37%	31%

Table 12 Capital/Finance Related Indicators for Assessing Nicosia's Ecosystem.

Looking at these results it can be argued that **Capital/Finance** related **challenges** present **moderate obstacle** for entrepreneurs and start-up companies trying to operate in the city of Nicosia.

### ▪ Knowledge Creation

For **Knowledge Creation**, the survey measures **four** different **indicators**: Existence of enough Universities and Research Institutes; Expenditure on Research & Development; Availability of Urban Sustainable Development Scientific Studies; and Brain Drains of Researchers and Scientists. Table 13 presents the results.

	No Obstacle	Minor Obstacle	Moderate Obstacle	Major Obstacle
Existence of enough Universities and Research Institutes	52%	22%	21%	5%
Expenditure on Research & Development	15%	15%	35%	35%
Availability of Urban Sustainable Development Scientific Studies	4%	36%	43%	17%
Brain Drains of Researchers and Scientists	6%	29%	31%	34%

Table 13 Knowledge Creation Related Indicators for Assessing Nicosia's Ecosystem

When it comes to Knowledge Creation related challenges, availability of **Urban Sustainable Development Scientific Studies** is considered to be a **significant obstacle** for entrepreneurs and start-up companies. Whereas, the majority of survey respondents (**52%**) believe that the **number of and accessibility to Universities and Research Institutes** is **NOT** really **an obstacle**

#### ▪ Policy and Business Environment Elements

For **Policy and Business Environment Elements**, the survey measures **three** different **indicators**: Existence of Sustainability and Environmental Challenges-Oriented Policies and Regulations; Incentives for entrepreneurs and creative ideas to solve environmental or urban challenges; and Availability of Information or Data on the National Level. Table 14 presents the results.

	No Obstacle	Minor Obstacle	Moderate Obstacle	Major Obstacle
Existence of Sustainability and Environmental Challenges-Oriented Policies and Regulations	12%	23%	45%	20%
Incentives for entrepreneurs and creative ideas to solve environmental or urban challenges	6%	10%	41%	43%
Availability of Information or Data on the National Level	6%	18%	43%	33%

Table 14 Policy and Business Environment Elements Related Indicators

#### ▪ Entrepreneurial Culture in Cyprus (and Nicosia)

When it comes to assessing the **Entrepreneurial Culture** in Cyprus, the survey identifies and measures **five** indicators: Entrepreneurial Motivation in Society; Inclination for Risk; Entrepreneurial Cultural and Social Norms; Positive Media Narratives of Entrepreneurship; Awareness of the Importance of Being Innovative. Table 15 below shows the results. For this function, the survey is assessing the indicators based on if they are present or not in the Cypriot society and ecosystem.

	Not Present	Relatively Present	Strongly Present
Entrepreneurial Motivation in Society	27%	70%	3%
Inclination for Risk	35%	58%	7%
Entrepreneurial Cultural and Social Norms	43%	54%	3%
Positive Media Narratives of Entrepreneurship	34%	56%	10%
Awareness of the Importance of Being Innovative	34%	56%	10%

Table 15 Entrepreneurial Culture Related Indicators.

Survey answers reveal that the **Entrepreneurial Culture and Motivation** in Cyprus is **present**, but there is a strong **belief** from a significant percentage of respondents that this culture should **be promoted and encouraged further**.

### ▪ Physical and Digital Infrastructure

Moving to Physical and Digital Infrastructure, the survey assesses three indicators: Availability and Quality of Utilities; Accessible Telecom/Internet/ Mobile Networks; Accessible Transportation Services. Table 16 presents the results. For this function, the survey measures the indicators based on how adequate they are.

	Inadequate	Adequate	Excellent
Availability and Quality of Utilities	18%	45%	37%
Accessible Telecom/Internet/ Mobile Networks	4%	37%	59%
Accessible Transportation Services	58%	30%	12%

Table 16 Physical and Digital Infrastructure Related Indicators

Immediately, one can notice from the survey results that Transportation Services in Cyprus and more specifically in Nicosia need attention and improvement. Equally notable is the satisfaction of the survey respondents with the Telecommunications Networks in the country and city of focus

### ▪ Human Capital Elements

Referring to Human Capital Elements, the survey provides four indicators: Availability of Entrepreneurship and Business Education; Quality of Entrepreneurship and Business Education; Availability of STEM Graduates with Good Qualifications; Availability of Educated/ Trained General Technical Workforce. The survey returns back to measuring the indicators based on how big of an obstacle they are. Table 17 below presents the results.

	No Obstacle	Minor Obstacle	Moderate Obstacle	Major Obstacle
Availability of Entrepreneurship and Business Education	20%	22%	33%	25%
Quality of Entrepreneurship and Business Education	12%	22%	39%	27%
Availability of STEM Graduates with Good Qualifications	8%	28%	41%	23%
Availability of Educated/ Trained General Technical Workforce	8%	10%	56%	26%

Table 17 Human Capital Elements Related Indicators.

The *availability* and *quality* of *Human Capital Elements* in Nicosia seems to be somewhat weak and a considerable obstacle for entrepreneurship and start-ups based on survey results.

### ▪ Business Support Services

Talking about *Business Support Services*, the survey looks into how easy it is to access *four* different services: Legal Services; Tax and Accounting Services; Incubators/ Accelerators; Technical Consultants/ Mentors / Advisors. Table 18 provides the results.

	Not Accessible/ Hard to Access	Moderate Accessibility	Easy to Access
Legal Services	12%	45%	43%
Tax and Accounting Services	4%	34%	62%

Incubators/ Accelerators	22%	70%	8%
Technical Consultants/ Mentors / Advisors	24%	59%	17%

**Table 18 Business Support Services Related Indicators**

Importantly, it can be argued that **Business Support Services** in Cyprus and Nicosia are **accessible**. Accessibility seems to not be considered an important obstacle, based on survey results, for entrepreneurial and business activity in the city of Nicosia.

▪ **Market Demand Elements**

Looking at the **Regional Market Elements** and how big of an obstacle it is, the survey identifies and measures **five** indicators: Availability of Market Information/ Studies; Potential Market Size Expressed in the Population; Potential Purchasing Power (income per capita); Access to Local Markets; Access International Markets. Table 19 below presents the results.

	No Obstacle	Minor Obstacle	Moderate Obstacle	Major Obstacle
Availability of Market Information/ Studies	6%	28%	52%	14%
Potential Market Size Expressed in the Population	4%	19%	41%	36%
Potential Purchasing Power (income per capita)	0%	32%	49%	19%
Access to Local Markets	15%	47%	23%	15%
Access International Markets	6%	12%	26%	56%

**Table 19 Market Demand Elements Related Indicators**

It seems that survey respondents believe that the **Cypriot Market** and related subfunctions are an **obstacle for business and entrepreneurial activity**. Importantly, **Access to the Local Market** is considered to be a **minor obstacle** from the majority of survey respondents.

## ECOSYSTEM ACTORS AND CONNECTIVITY

### ENTREPRENEURIAL ECOSYSTEM ACTORS IMPORTANT FOR URBAN SUSTAINABLE DEVELOPMENT

Based on survey responses, section 4.0 presents weighted results on how important a number of predefined urban actors are for supporting organisations operating in Nicosia's urban ecosystem respond to urban sustainability challenges.

Adding all responses together, survey results (88% of survey respondents) show that **Public Authorities (Ministries, Cities, Governmental Agencies)** are the **most important** urban actors when it comes to supporting other organisations and their initiatives for sustainable development. Figure 29 below shows all six predefined urban actors mentioned in the survey and ranks them based on their level of importance

As mentioned previously, **88%** of the survey respondents stated that **Public Authorities** followed by **Financing Actors (with 68%)** and **University/Research/Private R&D institutions (63%)** have **high level of importance** and are crucial for influencing sustainable development initiatives and projects. Almost all actors want to connect and have some type of relationship with the previous-mentioned ecosystem actors.

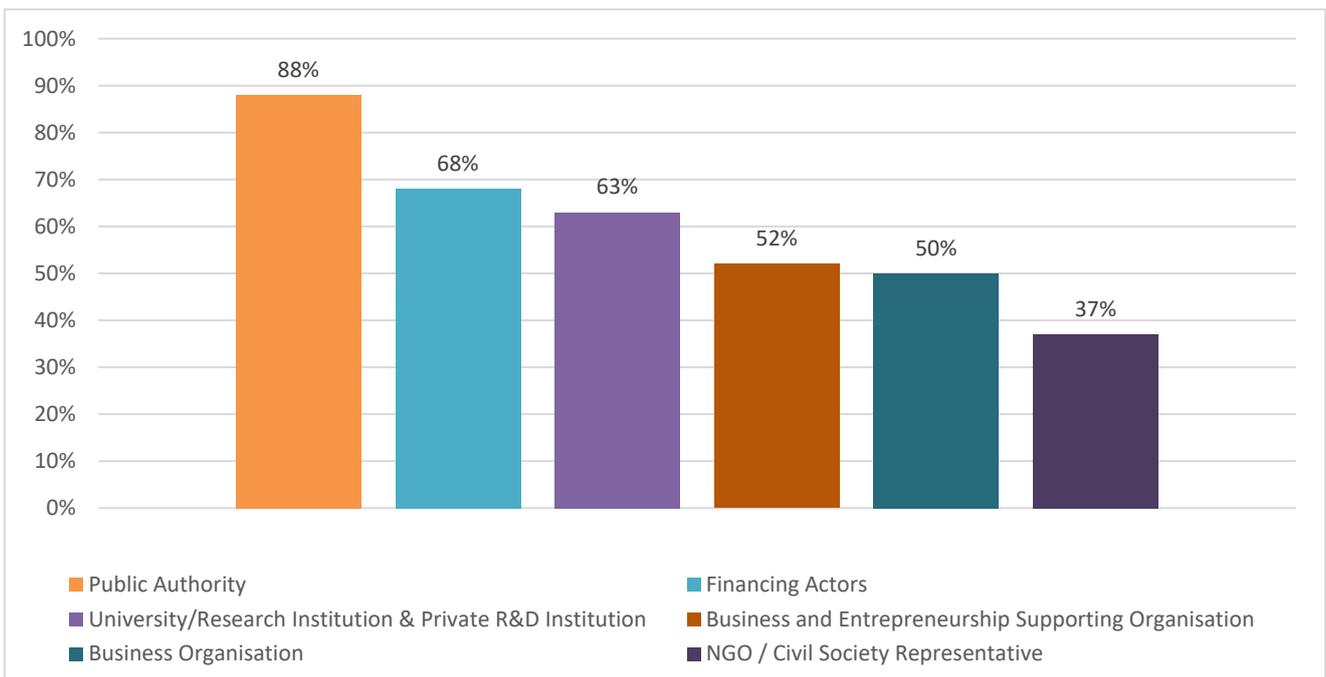


Figure 29 Urban Actors and Their Importance in Nicosia for Sustainable Development

NEEDS OF ECOSYSTEM ACTORS

The opportunities and support that the ecosystem of an urban area creates and provides to people and urban actors has the power to make or break efforts for sustainable development. This section presents collected information/data regarding survey respondents’ beliefs on what type of support can be beneficial for their operations and for addressing sustainable development challenges. The survey identifies **five** different **types of support** that urban entrepreneurial actors can take advantage of when working towards **solving sustainability challenges**: Access to Sandboxes, Living Labs, Other Co-Design Facilities; Through Innovative Public Procurement Tenders; Joining International, Impact-Oriented Projects; Support for Developing Suitable Business Models; Introduction of Policies and Regulations that Support the Creation of New Green Markets. Survey respondents are asked to choose which types of support they believe is important. Figure 30 presents the results.

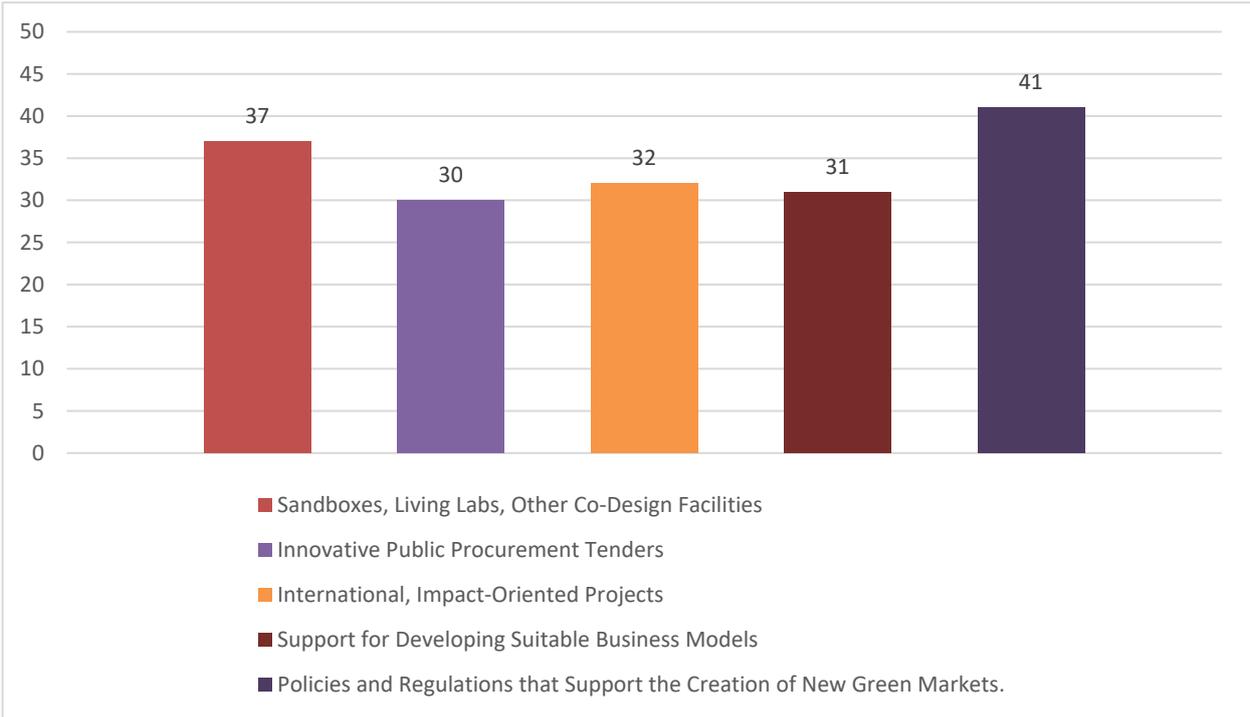


Figure 30 Types of Support Valuable for Sustainable Development Initiatives and Activities

The results of the survey presented in Figure 30 confirm the importance of these five different types of support when it comes to stimulating impact and helping sustainable development initiatives flourish. **All types of support** mentioned in the survey **received the endorsement of thirty or more** urban actors out of the fifty-one who completed the survey thus far. The support with the **biggest endorsement** is the introduction of **Policies and Regulations** beneficial for sustainable development (**41 out of 50**). This type of support can have the biggest impact when it comes to creating the right environment for sustainable initiatives in Nicosia to succeed.

The survey allowed respondents to add other support options that they considered important and that were not included in the survey. There were only four additional comments here, but with no answers worth mentioning here. It can be argued that the four comments fall under one of the five types of support already mentioned.

## IMPACT OF ENTREPRENEURIAL ECOSYSTEM

After trying to gather information/data about the state of affairs in Nicosia's urban ecosystem and sustainable development challenges, the survey concludes by asking respondents to evaluate how significant twenty-one very specific types of changes/transformations that can occur are for improving the current performance of the (business and entrepreneurial) ecosystem and its actors. Results from this are offered below. Figure 31 presents these twenty-one proposed changes/transformations and how the survey respondents felt about each one

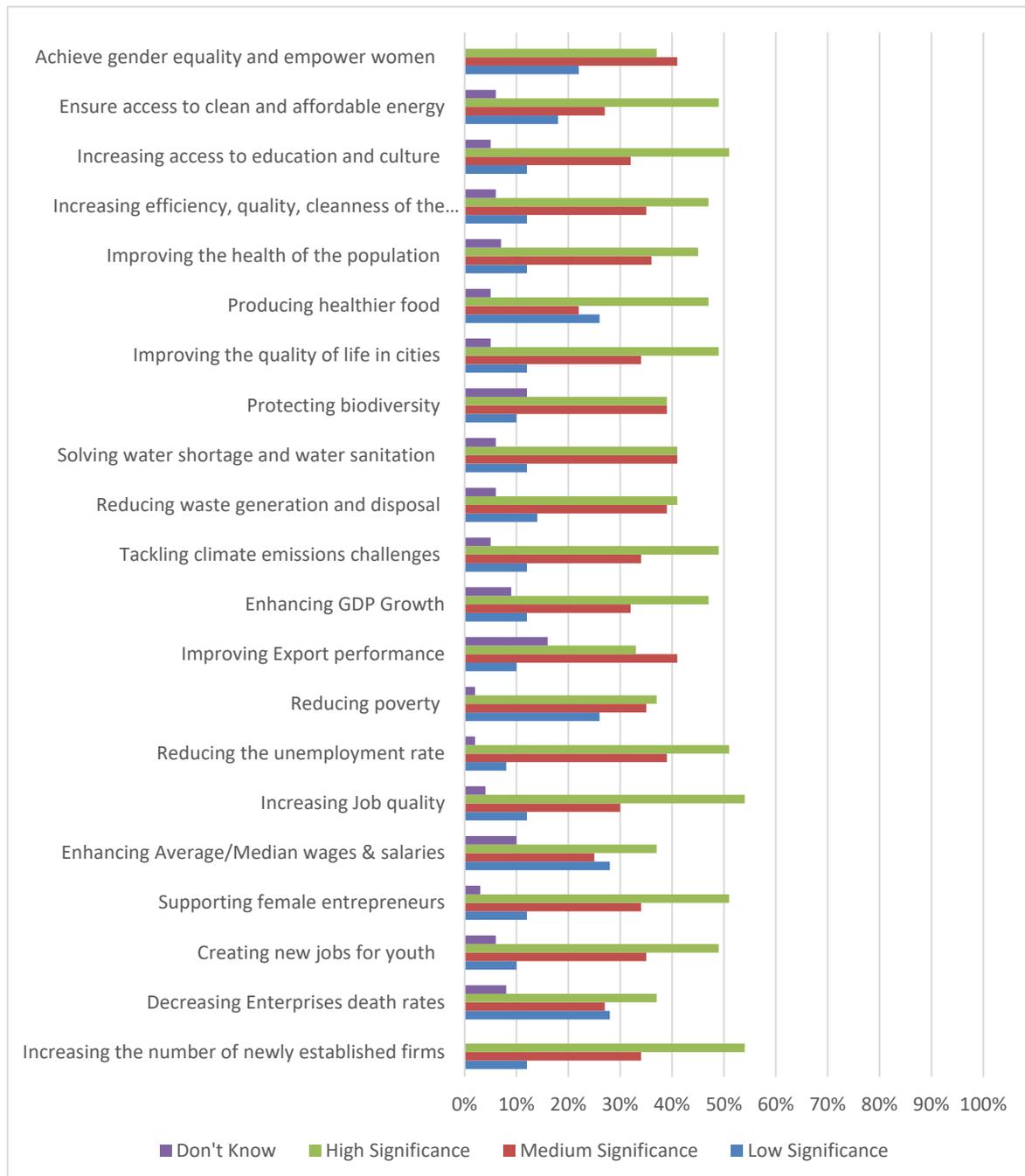


Figure 31 CHANGES/TRANSFORMATIONS FOR IMPROVING THE PERFORMANCE OF THE ECOSYSTEM AND ITS ACTORS

Reflecting on the results from Figure 31 , it can be argued that all the suggested changes/transformations are considered valuable by survey respondents for helping the current ecosystem in Nicosia improve and supporting the actors operating within this urban area. However, scrutinising these results further it can be noticed that the changes/transformations voted by respondents as highly significant are the changes/transformations the U-SOLVE project is looking to introduce through its different actions and activities. Increasing the number of newly established firms and reducing the unemployment rate, creating new jobs for youth, supporting female entrepreneurs, and increasing access to education and culture have all received a lot of attention from survey respondents. This is favourable news for U-SOLVE as it seems that there is a clear need for projects and interventions that seek to promote and help realise such changes/transformations in Nicosia.

## CONCLUSION

Tackling sustainable development challenges in urban areas is vital for everyone's future. The city of Nicosia has unique characteristics and peculiarities, but that does not mean that progress cannot be made. The U-SOLVE project and the Cypriot team, UCY and Cyl, utilising quantitative and qualitative methods have collected the necessary information and data that can enable and assist urban actors to act strategically and with targeted solutions. It can be argued that the Creative Sector might be the missing link that can enable behavioural and structural changes to happen and help the city of Nicosia become a more sustainable city worth comparing to trailblazer sustainable cities around the world.

This report addressed the entrepreneurial and business ecosystem of Nicosia, Cyprus. With the information and data collected available at hand, reflecting holistically, it can be concluded that **attention** is needed when it comes to **improving Nicosia's ecosystem performance**. Attention needs to also be shifted towards finding solutions to the many **urban sustainable development challenges** identified as critical in this report. **Public authorities** have been identified as the **most important urban actor** for helping the city of Nicosia reach its sustainable targets through supporting private (and public) development interventions and creating the right legal and regulatory environment for helping these interventions flourish. In conjunction with the previous mentioned, **cultural and behavioural** ecosystem characteristics need to be positively influenced so that different urban actors are not resistant to sustainable changes/transformations. Finally, the **U-SOLVE project** in the city of Nicosia has the chance to **make a difference** as the current status quo requires actions that involve increasing the number of newly established firms and reducing the unemployment rate, creating new jobs for youth, supporting female entrepreneurs, and increasing access to education and culture.

In closing, looking back at the discussions that took place during the interviews and surveys one key takeaway is interviewees' uneasiness for the sustainable future of Nicosia and their desire to see this city become a more sustainable and liveable place. Another key takeaway is the belief that the U-SOLVE project is very promising and has the potential to stimulate sustainable behaviours and mobilise people to act more responsibly.

**Member of the House of Representatives:** *'I am worried for the future of Cyprus and especially for cities that are close to the shore due to negative effects and changes brought by climate change. Cypriots risk becoming environmental refugees.'*

*'U-SOLVE's unique proposition of employing art and culture to solve urban sustainable development challenges is a very interesting approach and way to talk to people. When art, culture, and creativity are consumed, people are ready to listen and possibly accept what is being transmitted to them.'*

**Sustainability Manager at Large Business Organisation:** *'Sustainable interventions are very important for cities like Nicosia and that is why we put so much effort and emphasis in promoting sustainability and integrating it into every aspect of how we operate'*

*'U-SOLVE and other similar projects and interventions are very important for cities and their inhabitants.'*

**University Lecturer:** *'I believe that entrepreneurship and innovation can help create the right conditions for change to happen so that Nicosia and other urban areas can move to a more sustainable development model.'*

*'U-SOLVE has a lot of potential and the unique characteristic of this project, the focus on an open innovation model and the need for multiple different actors to get involved in co-creation processes, is the differentiating element from other similar projects that has the power to bring the desired change.'*

**Representative of Ministry of Agriculture, Rural Development and Environment:** *'Our Department and the Ministry are engaged in many projects that have sustainability at their core. The city of Nicosia and the island of Cyprus require and deserve a brighter, more sustainable future.'*

**Private Consulting Firm Representative:** *'I am surprised that the average citizen does not understand and respect the importance of sustainability, and this is very disappointing when there is so much international effort to promote sustainable projects and reach certain targets. The sustainable projects that run and have been running in Cyprus deserve more support from citizens and other actors.'*

**Social Enterprise Representative:** *'Through various different initiatives and collaborations, we are trying to provide quality support services to children, the elderly, immigrants, families, and unemployed citizens living in Nicosia. These people are in need of such help and it's a shame that other urban actors are not doing more to help. When is this going to change?'*

*'I want to support your project in any way fitting as it is very relevant to what we are trying to do here.'*

**SME Representative:** *'The topic of urban sustainable development is of utmost importance for the city of Nicosia. Mobility, traffic management, quality of public space, and a weak infrastructure are areas that need urgent attention. Collaboration and support are needed urgently!'*

*'I am very interested in being involved in U-SOLVE because it is part of our strategy and mission to seek initiatives that are sustainable and try to have an impact. Being involved in U-SOLVE will also help us raise awareness about our own offering, vision and mission.'*

**Business Support Organisation Representative:** *'We focus on giving young students the opportunity to be creative and innovative. We believe that students and young people can make the difference and are the ones who hold the future of Nicosia in their hands.'*

*'I find your project and its methodology very promising and unique. Importantly, the motives that the project gives to the entrepreneurs for submitting their ideas, such as funding and support, are very important and make a huge difference.'*

## Appendix B Completed Interview Detail

Name of Organisation	Organisation Representative(s)	Type of Organisation
Lelantus Innovations	Alexis Kyriacou - Founder	Technological startup
Phoebe Innovations	George Milis - Founder	Smart technologies SME
EUROCY Innovations	Represented by George Milis	Development and consulting services startup
Urban Gorillas	Teresa Tourvas - Strategic Planner and Board Director	NGO (civil society organisation)
Cyprus Seeds	Maria Georgiadou - Managing Director	Independent, non-profit, entrepreneurship supporting organisation
Cyprus Chamber of Commerce and Industry	Andreas Andreou - Director Department of Industrial Development, Innovation and Environment	Independent, private corporate body
Eletoyia Photovoltaics	Yiannis Tofis - Founder	Energy startup
Strovolos Municipality	Eleni Andreou, Antri Demetriadou, Maria Tsangari	Public/governmental authority (municipality)
Logicom Solutions	Chrysostomos Kridiotis - Managing Director	Business organisation (corporate)
AKTI & ISOTECH Ltd	Michalis Loizides - Member of Board of Directors AKTI/Managing Director ISOTECH Ltd	NGO (ENGO) - AKTI / Research SME - ISOTECH
Crysalis Leap Ltd	Stelios Procopiou - Co-founder/Managing Director	Entrepreneurship supporting organisation (accelerator)
Polidinamo Kentro Lefkosias & First Elements	Marilena Ioannidou - Entrepreneurship Advisor PKL/Co-Managing Director FE	NGO (civil society organisation) - PKL / Business and entrepreneurship supporting organisation -
C.A. Papaellinas Group	Melanie Michaelidou - Senior Director of Human Resources and Sustainability & Savvas Hadjiyiangu - Sustainability Manager	Business organisation (corporate)
IDEA Innovation Center	Maria Evgeniou - Innovation and Entrepreneurship Officer & Angela Panayiotou - Manager	Entrepreneurship supporting organisation (incubator-accelerator)
Public Works Department	Aristotelis Savva - Executive Engineer	Public/governmental authority
Cyprus Employers & Industrialists Federation (OEB)	Marios Papageorgiou - Officer, Department of Energy & Environment	Business organisation (industry association)
Cyprus University of Technology (& EIT Climate-KIC CY)	Dr Stelios Yiatros - Associate Professor in Structural Engineering (CUT) & Education Lead (EIT/Climate-KIC CY)	University/research institution
CYTA	Aliki Drakou, Alekos Alexandrou, Theodoros Makryiannis, Nikolaos Georgiades, Klairi Parouti, Neophytos Morphis, Stephanos Stephanou	Semi-governmental business organisation (corporate)
RIF	Litsa Kountouridou - Scientific Officer A', Office of the Director General	Non-profit, private legal organisation
Cyprus Energy Agency	Marina Kyriakou - Architect and Urban Planner	Independent, non-profit NGO (ENGO)
Green Dot	Marios Vrahimis - General Manager	Non-profit, business organisation
Navigator Consulting	Philip Ammerman - Managing Partner	Business organisation (SME)
Spiros Pisinis	Spiros Pisinis	Other/independent
NCCI & NTB	Socrates Heracleous (Director, NCCI), Andreas Antoniadis (Director of Industry, NCCI), Matina Zisiadou (NTB)	Private, non-profit organisation - NCCI / Non-profit, public agency - NTB
CYENS	Yiorgos Chrysanthou (Research Director), Styliani Petroudi (Senior Project Manager)	R&D institution
Φίλοι της Λευκωσίας	Dr Nicos Maroudias (President), Eleni Ekkeshi (General Secretary), Edith Kessler-Charalambous (Board Member)	NGO (civil society organisation)
Junior Achievement Cyprus	Antigoni Komodiki - CEO	Non-profit, entrepreneurship supporting organisation
Cyprus Green Party	Alexandra Attalides	Member of Parliament
Department of Environment - Ministry of Agriculture, Rural Development and Environment	Joanna Konstantinidou - Environment Officer A'	Public/governmental authority
Avaton	Nicolas Pantopiou and Nikolas Markantonis	Business organisation (SME)
Individual	Andreas Fasoulides	Other/independent
CyprusInno	Burak Doluay	Social startup
FullView/Green Line Project	Ioannis Bekiaris	Business organisation (SME)
Ministry of Energy, Commerce and Industry	Constantinos Karageorgis (Commerce and Industry Senior Officer), Maria Theodorou (Commerce and Industry Officer A'), Lefki Theodorou (Industrial Extension Officer)	Public/governmental authority (ministry)

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# **URBAN ENTREPRENEURIAL ECOSYSTEM ANALYSIS REPORT**

(Greece)

## EXECUTIVE SUMMARY

Greece is emerging as a hub for innovative start-ups. Although capital is a catalyst for growth, a sustainable start-up ecosystem requires more than investor interest. Collaboration among established enterprises, universities and government agencies can play a critical role in nurturing the start-up ecosystem by partnering in product development and funding mentoring programs. It can give growing start-ups a competitive edge. That's why the Entrepreneurship ecosystem analysis is needed.

The Entrepreneurship ecosystem is the set of individuals, organizations or institutions (outside the individual entrepreneur). Organizations and individuals representing these elements are referred to as entrepreneurship stakeholders. Stakeholders are any entity that has an interest, actually or potentially, in there being more entrepreneurship in the region. Entrepreneurship stakeholders may include government, schools, universities, private sector, family businesses, investors, banks, entrepreneurs, social leaders, research centres, military, labour representatives, students, lawyers, cooperatives, communes, multinationals, private foundations, and international aid agencies.

To explain or create sustainable entrepreneurship, one isolated element in the ecosystem is rarely sufficient. In regions with extensive entrepreneurship, many ecosystem elements are vital and typically have evolved in tandem.

In this Entrepreneur ecosystem analysis, we will analyse how the main Greek stakeholders perceive the urban development challenges, how is the connectivity among the actors, how they evaluate the ecosystem functions, and what is needed to improve the performance of the ecosystem actors.

## METHOD AND SAMPLE DESCRIPTION

data analysis is the process of converting collected raw data into usable information. it involves looking for trends, clusters, or causality, assessing performance against baselines and targets, forming conclusions, anticipating problems, and identifying solutions and best practices for decision-making and organizational learning. for these reasons, this is a critical step of the planning process because it shapes the information that is reported and its potential use. it is really a continuous process throughout the cycle to make sense of gathered data to inform ongoing project operations, work packages, and future interventions.

### ▪ Data collecting survey data

During November and December 2021, both IED and E-TRIKALA, as partners of the U-SOLVE project, launched the survey to map the ecosystem actors from the side of Greece. The actions and online activity were multifaceted, as both organizations used many means to promote the survey not only locally (in Larissa and Trikala, where the headquarters of the two organizations are located) but also reached responses on a national level. **More specifically, the following outreach actions took place:**

WHO	ACTIVITY	URL/EVIDENCE
IED	Open call/article for the survey at IEDs official Greek website	<a href="https://entre.gr/u-solve-erevna-gia-ti-diervnisi-tou-epicheirimatikou-oikosystematos/">https://entre.gr/u-solve-erevna-gia-ti-diervnisi-tou-epicheirimatikou-oikosystematos/</a>
IED	Post in iED's Facebook account (EN)	<a href="https://facebook.com/ied.europe/posts/1994577607391404?_tn=-R">https://facebook.com/ied.europe/posts/1994577607391404?_tn=-R</a>
IED	Post in iED's Facebook account (GR)	<a href="https://www.facebook.com/entre.gr/posts/4626018994159862">https://www.facebook.com/entre.gr/posts/4626018994159862</a>
IED	Post in iED's Facebook account (GR)	<a href="https://www.facebook.com/entre.gr/posts/4648983541863407">https://www.facebook.com/entre.gr/posts/4648983541863407</a>
IED	Post in iED's Facebook account (GR)	<a href="https://www.facebook.com/entre.gr/posts/4675551655873262">https://www.facebook.com/entre.gr/posts/4675551655873262</a>
IED	Post in iED's Facebook account (GR)	<a href="https://www.facebook.com/entre.gr/posts/4706220366139724">https://www.facebook.com/entre.gr/posts/4706220366139724</a>
IED	Post in IEDs Twitter account	<a href="https://twitter.com/ied_europe/status/1465965036195700746">https://twitter.com/ied_europe/status/1465965036195700746</a>
IED	Post in IEDs LinkedIn account	<a href="https://www.linkedin.com/feed/update/urn:li:activity:6871729149866717184/">https://www.linkedin.com/feed/update/urn:li:activity:6871729149866717184/</a>
IED	Post in IEDs Instagram account	<a href="https://www.instagram.com/p/CW8VgH5s4Hp/">https://www.instagram.com/p/CW8VgH5s4Hp/</a>
IED	GR - Newsletter: "U-SOLVE Research to Probe the Entrepreneurship Ecosystem"	<a href="http://do.contactpigeon.com/apps/en/stem/vie_wmail.html?gm_pid=1298673&amp;gm_nID=&amp;crid=70728846&amp;rdme=90543502&amp;">http://do.contactpigeon.com/apps/en/stem/vie_wmail.html?gm_pid=1298673&amp;gm_nID=&amp;crid=70728846&amp;rdme=90543502&amp;</a>
IED	Additional dissemination activities	Mailing
IED	Press Release in news website	<a href="https://www.larissanet.gr/2021/12/01/erevna-pano-sta-kyria-stoicheia-kai-tis-leitourgies-tou-epicheirimatikou-oikosystematos/">https://www.larissanet.gr/2021/12/01/erevna-pano-sta-kyria-stoicheia-kai-tis-leitourgies-tou-epicheirimatikou-oikosystematos/</a>

E-TRIKALA	Post in E-TRIKALAs Facebook page	<a href="https://www.facebook.com/etrikala.SA/posts/2131442590365909">https://www.facebook.com/etrikala.SA/posts/2131442590365909</a>
E-TRIKALA	Post in E-TRIKALAs Twitter page	<a href="https://twitter.com/etrikala/status/1467873371753000961">https://twitter.com/etrikala/status/1467873371753000961</a>
E-TRIKALA	Additional dissemination activities	Mailing & Phone calls

Table 20 Data Collection Method

### Sample Description

Through all these dissemination activities, a total number of 53 respondents replied to the survey. The following Figure 32 provides the breakdown of the sample per ecosystem actor participated in the survey.

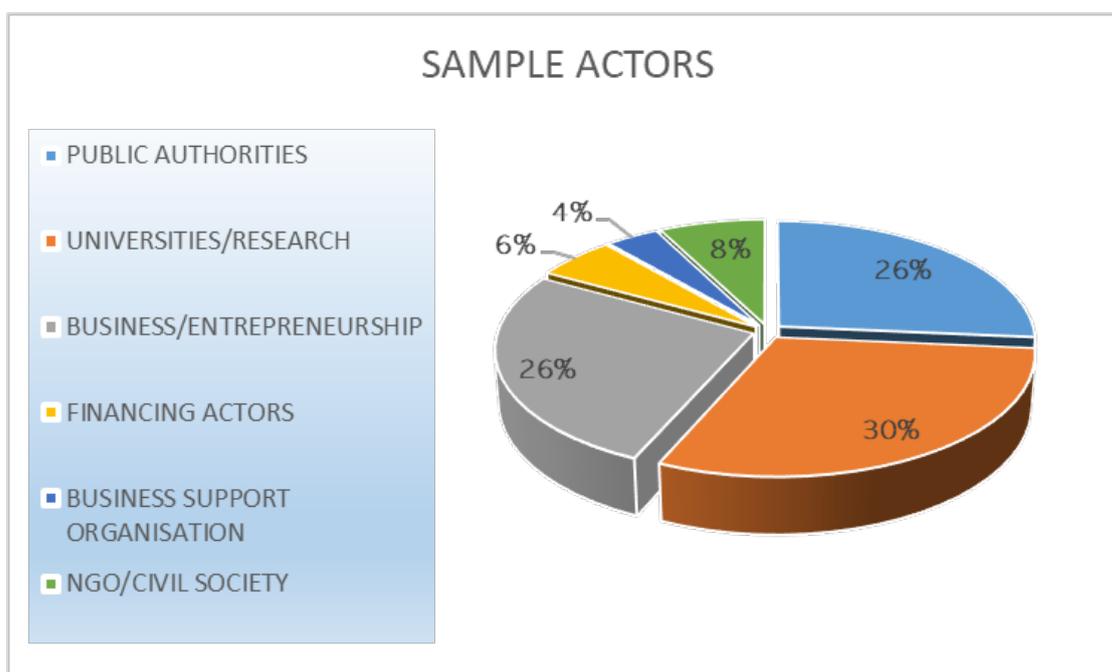


Figure 32 Sample breakdown according to ecosystem actor

## RESULTS OF THE URBAN ECOSYSTEM ANALYSIS

### THE URBAN DEVELOPMENT SUSTAINABILITY CHALLENGES.

In general, all Urban Development Sustainability Challenges already mentioned in the survey rated quite high in terms of importance (Figure 33).

To be precise, each category was related as very important as follows:

- **Waste management** was rated as very important by 71,7% of the actors
- **Urban and transport planning**, Green infrastructure and Urban Health Equity was rated as very important by 62,3% of the actors
- **Green Infrastructure** was rated as very important by 62,3% of the actors
- **Urban Health Equity** was rated as very important by 62,3% of the actors
- **Sustainable Energy** was rated as very important by 58,5% of the actors
- **Blue Infrastructure** was rated as very important by 56,6% of the stakeholders
- **Built and Indoor Environment** was rated as very important by 52,8% of the actors
- Lastly, **urban food systems** were rated as very important by 43,4% of the actors.

## Urban Development Sustainability Challenges

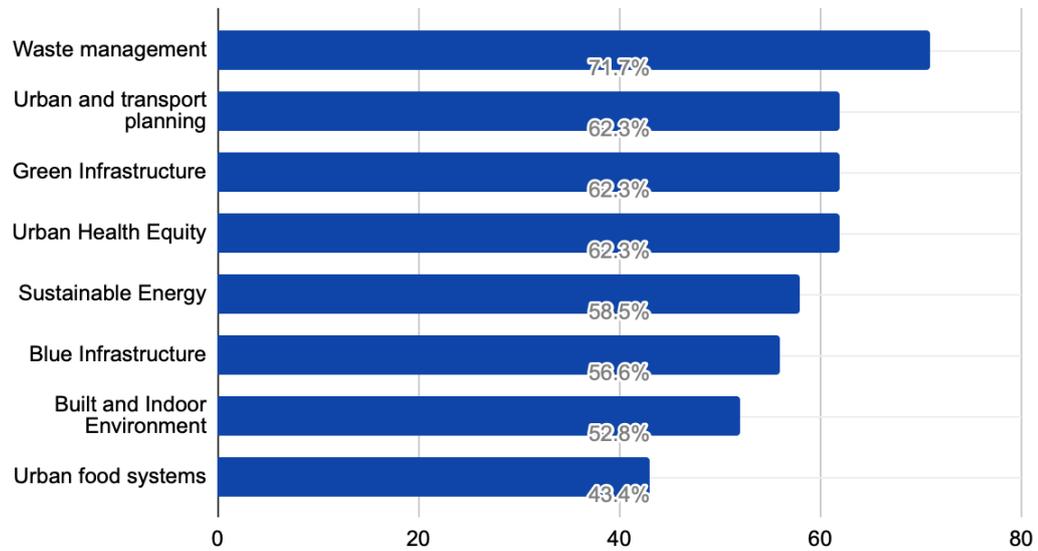


Figure 33 Urban Development Sustainability Challenges in Greece

In the free text section, some actors identified the lack of social support infrastructures as important challenges and the lack of co-decision at a local level. As can be deduced from the survey, it is quite difficult to choose just one Problem to solve. Green Infrastructures, Urban transport planning, and Urban Health Equity were very important from the same percentage of stakeholders (62.3%), and only Waste management was very important to a slightly higher rate of stakeholders (71.7%).

## ECOSYSTEM INNOVATION FUNCTIONS AND CHALLENGES

Answers of the participants about the evaluation of the ecosystem functions, on the Table 21 below

Entrepreneurial Ecosystem Functions		Evaluation		
		Poor	Good	Excellent
1	Access to <u>capital/finance</u>	26%	53%	21%
2	<u>Knowledge creation</u> through university and research institutions	23%	45%	32%
3	Entrepreneurship and sustainability supporting <u>regulations and policies</u>	32%	47%	21%
4	Entrepreneurial and environmental sustainability <u>culture and awareness</u>	30%	38%	32%
5	Accessibility to physical and digital <u>infrastructure</u>	15%	51%	34%
6	Availability of qualified <u>human resources</u> to solve urban challenges	30%	40%	30%
7	Existence of sustainability-oriented entrepreneurship <u>business supporting organizations</u>	30%	47%	23%
8	<u>The market</u> for innovative products (purchasing power of the community)	43%	34%	23%

Table 21 evaluation of the ecosystem functions

This table shows that:

- **The market for innovative products** (purchasing power of the community) is rated poor by the highest percentage of stakeholders (43%).

- **Accessibility to physical and digital infrastructure** is rated poor by the lower percentage of stakeholders (15%).
  - All other functions are rated poorly by the same percentage of stakeholders (about 30%).
- Most stakeholders rated none of these functions excellent; only **Access to capital/finance** is rated as good by 53%.

#### DETAILED EVALUATION OF DIFFERENT ECOSYSTEM FUNCTIONS

##### ▪ Access to capital/finance

Access to finance is considered a moderate/major obstacle in terms of Access to Debt Finance, Access to Equity Finance, and Access to Grants (90%).

Finance/Capital	Moderate Obstacle	Major Obstacle
Access to Debt Finance	4 (7%)	49 (93%)
Access to Equity Finance	4 (7%)	49 (93%)
Access to Grants	6 (11%)	57 (89%)

##### ▪ Knowledge creation

In this case, the problem turns out to be more in terms of **Expenditure on Research & Development** (75%), **Availability of urban sustainable development scientific studies** (71%), and **Brain drains of researchers and scientists** (88%). in contrast, the Existence of enough universities and research institutes seems to be seen as a minor obstacle or not an obstacle (53%).

Finance/Capital	Moderate Obstacle	Major Obstacle
Existence of enough universities and research institutes	28 (53%)	25 (47%)
Expenditure on Research & Development	13 (25%)	40 (75%)
Availability of urban sustainable development scientific studies	15 (28%)	38 (72%)
Brain drains of researchers and scientists	6 (11%)	47 (89%)

##### ▪ Supporting regulations and policies

Supporting regulations and policies are viewed on average as more of a moderate obstacle or a major obstacle. 60% of the stakeholder sees the Existence of Sustainability and Environmental Challenges-Oriented Policies and Regulations as an obstacle, 71% of the stakeholder sees the Incentives for entrepreneurs and creative ideas to solve environmental or urban challenges as an obstacle, and 75% of the stakeholder sees the Availability of Information or data on the national level as an obstacle.

Policy & Business Environment	No Obstacles	Minor Obstacle	Moderate Obstacle	Major Obstacle
Existence of Sustainability and Environmental Challenges-Oriented Policies and Regulations	4 (7%)	17 (32%)	21 (40%)	11 (21%)
Incentives for entrepreneurs and creative ideas to solve environmental or urban challenges	6 (11%)	9 (17%)	21 (40%)	17 (32%)
Availability of Information or data on the national level	2 (4%)	11 (21%)	23 (43%)	17 (32%)

##### ▪ Culture and awareness

in general, culture and awareness are all relatively present (in the range of 47% to 57% of the stakeholders). Greece is a developed country with an open economy with a heavy reliance on the service sector at 85%. The remaining national economic output comes from the second industry sector (12.0%) and the agricultural sector (3.0%). Although Greece is a significant agricultural and fisheries producer within the European Union, the tourist industry forms the basis of the economy. According to the United Nations World Tourism Organization, Greece ranks as the 7th most visited country in the EU and 16th in the world. Also, merchant shipping represents 16.2% of the world's total capacity.

The Greek economy has been in recession since the global financial crisis of 2008. The current state of the economy is mainly the result of the European sovereign debt crisis, and only through implementing severe austerity measures and benefiting from two multi-billion Euro rescue packages has the economy begun to stabilize.

Entrepreneurial Culture	Not present	Relatively present	Strongly present
Entrepreneurial motivation in society	11 (21%)	30 (57%)	12 (23%)
inclination for risk	14 (26%)	30 (57%)	10 (19%)
Entrepreneurial cultural and social norms	13 (25%)	29 (55%)	11 (21%)
Positive media narratives of entrepreneurship	12 (23%)	28 (53%)	13 (25%)
Awareness of the importance of being innovative	17 (32%)	25 (47%)	13 (25%)

#### ▪ Physical and digital infrastructure

Physical and digital infrastructure In general, the physical and digital infrastructure are all considerably adequate ( according to 53% to 66% of the stakeholders).

Infrastructure	inadequate	Adequate	Excellent
Availability and quality of utilities such as (gas, water, and electricity)	8 (15%)	35 (66%)	11 (21%)
accessible telecom/Internet/ mobile networks	11 (21%)	28 (53%)	15 (28%)
Accessible transportation services	14 (26%)	32 (60%)	7 (13%)

#### ▪ Human resources

Human resources are viewed on average as more of a moderate or a major obstacle. 83% of the stakeholder sees the Availability of entrepreneurship and business education as an obstacle. 85% of the stakeholder sees the quality of entrepreneurship and business education as an obstacle. 75% of the stakeholder sees the Availability of STEM graduates with good qualifications as an obstacle, and 77% of the stakeholder sees the Availability of educated/ trained general technical workforce as an obstacle.

Human Capital	Minor Obstacle	Major obstacle
Availability of entrepreneurship and business education	9 (17%)	44 (83%)
Quality of entrepreneurship and business education	8 (15%)	45 (85%)
Availability of STEM graduates with good qualifications	12 (23%)	40 (77%)
Availability of educated/ trained general technical workforce	12 (23%)	41 (77%)

#### ▪ Business supporting services

in general, the Business supporting services are all considered moderately accessible (according to the range 57% to 72% of the stakeholders). Greece is one of the countries currently receiving a massive inflow of investments because it has presently managed to incorporate significant changes for the formation of companies and the acceleration of internal business processes. However, apart from establishing companies, almost all transactions of entrepreneurs and companies with competent local chambers, tax authorities and insurance organizations have been smoothed and changed. This is because complicated and inefficient bureaucracy and a lack of access to regulatory information have always characterized Greece and made it quite tricky to start a business in Greece. In the World Bank Ease of Doing Business Survey for 2020, Greece was ranked 79th out of 190 countries. However, the country did well in areas such as starting a business (11th) and trading across borders (34th). In

general, the business supporting services are all considered moderate accessible (according to the range 57% to 72% of the stakeholders).

Business Support Services	Not/Hard to access	Moderate accessibility	Easy to access
Access to Legal Services	7 (13%)	34 (64%)	13 (25%)
Access to Tax and Accounting Services	6 (11%)	30 (57%)	18 (34%)
Access to Incubators/Accelerators	13 (25%)	34 (64%)	8 (15%)
Access to technical consultants/mentors/advisors	6 (11%)	38 (72%)	9 (17%)

▪ **The market for innovative products**

**The market for innovative products** is viewed on average as **more of a moderate obstacle or a major obstacle**.

- 68% of the stakeholder sees the **Availability of Market Information/studies** as an obstacle,
- 72% of the stakeholder sees the **Potential market size expressed in the population** as an obstacle,
- 89% of the stakeholder sees the **Potential purchasing power (income per capita)** as an obstacle,
- 73% of the stakeholder sees the **Access to local markets** as an obstacle, and 88% of the stakeholder sees the **Access international markets** as an obstacle.

Market/demand	No Obstacles	Major obstacle
Availability of market Information/studies	17 (32%)	36 (68%)
Potential market size expressed in the population	15 (28%)	38 (72%)
Potential purchasing power (income per capita)	6 (11%)	47 (89%)
Access to local markets	14 (26%)	39 (74%)
Access international markets	6 (11%)	47 (89%)

## ECOSYSTEM ACTORS AND CONNECTIVITY

In relation to connectivity between actors and the level of importance to the connection of an organization with each ecosystem actor, the results are the following:

- **Connectivity with Public authorities** was rated as of high importance for 46 out of 53 actors (86%).
- **Connectivity with Universities/research institutions** etc., was rated of high importance for 38 out of 53 actors (71%).
- **Connectivity with Business and entrepreneurship** supporting organizations were rated of high importance for 30 out of the 53 actors (56%).
- **Connectivity with Financing actors and Business organizations** were both rated as of high importance for 27 out of 53 actors (50%).
- **Connectivity with NGOs** and civil society representatives was rated as of high importance for only 20 actors (37%).

## NEEDS OF ECOSYSTEM ACTORS

Regarding the actions to be conducted in order the entrepreneurial actors have stronger impact in addressing local sustainability challenges, the creation of new green markets supported by public policies and regulations has been indicated as the most preferable action by the participants. The joining at international & impact-oriented projects is following. On the other hand, the cooperation through innovative public procurements has been rated low by the participants. The following graph depicts the responses of the participants about how the entrepreneurial actors could have stronger impacts on addressing local Urban Sustainability Challenges.

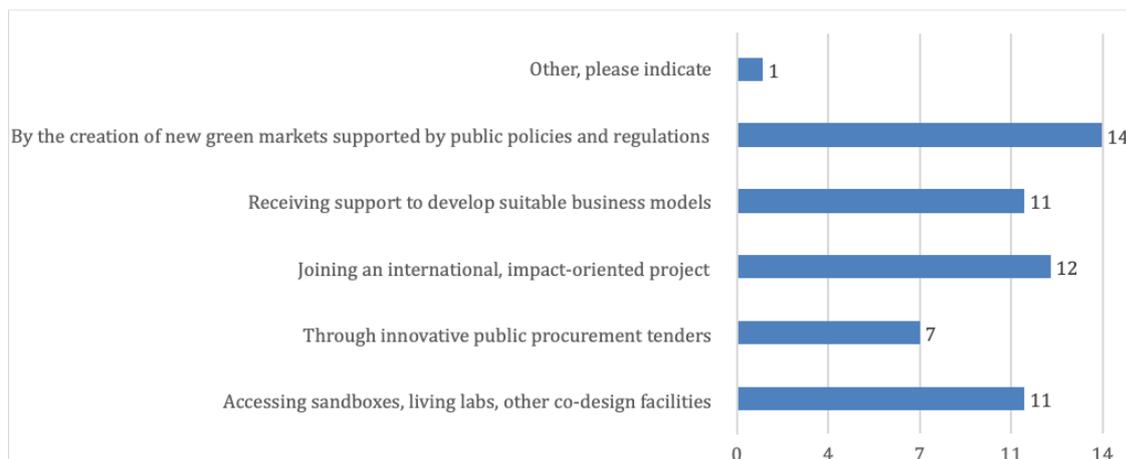


Figure 34 Needs of ecosystem actors

## IMPACT OF ENTREPRENEURIAL ECOSYSTEM

The participants have been requested to indicate the significance of the role of the current entrepreneurial ecosystem in certain challenges, connected with the Sustainable Development Goals in the local urban context. The following table presents the submitted responses.

The current entrepreneurial ecosystem services play a role in	Not Significant	Significant	Don't know
Increasing the number of newly established firms	11%	87%	2%
Decreasing Enterprises death rates	15%	85%	0%
Creating new jobs for youth	8%	89%	4%
Supporting female entrepreneurs	4%	94%	2%
Enhancing Average/Median wages & salaries	11%	83%	6%
Increasing Job quality	11%	83%	6%
Reducing the unemployment rate	15%	75%	9%
Reducing poverty	17%	72%	11%
Improving Export performance	21%	75%	4%
Enhancing GDP Growth	25%	64%	11%
Tackling climate emissions challenges	26%	68%	6%
Reducing waste generation and disposal	26%	66%	8%
Solving water shortage and water sanitation	25%	66%	9%
Protecting biodiversity	26%	70%	4%
Improving the quality of life in cities	13%	77%	9%
Producing healthier food	26%	64%	9%
Improving the health of the population	15%	72%	13%
Increasing efficiency, quality, cleanness of the productive systems	30%	68%	2%
Increasing access to education and culture	21%	79%	0%
Ensure access to clean and affordable energy	13%	77%	9%
Achieve gender equality and empower women	11%	79%	9%

According to the participants, the current entrepreneurial ecosystem services play most significant role in the supporting of female entrepreneurs and creating new jobs for youth. On the other hand, the current entrepreneurial services do not play significant role in increasing efficiency, quality, cleanness of the productive systems.

## CONCLUSION

According to the survey conducted, the key Urban Development Sustainability challenges to be addressed through the supported entrepreneurial ideas by U-SOLVE project are the waste management, the urban & transport planning, the green infrastructure and the urban health equity. The public authorities and the

Universities and Research organisations have the strongest connectivity with the other actors of the ecosystem. An interesting point that emerged by the survey is the poor evaluation of the key entrepreneurial ecosystem functions, indicating the significant internal roadblocks of the current entrepreneurial ecosystem and the need for multifaceted support of the local entrepreneurial actors. The poor evaluation of the impact of the current entrepreneurial ecosystem in challenges directly connected with SDGs (tackling climate emissions challenges, reducing waste generation and disposal) introduces the need for new innovative entrepreneurial ideas to address urban sustainable challenges on the local level. The U-SOLVE will use the results of the survey to plan the next project activities

# **URBAN ENTREPRENEURIAL ECOSYSTEM ANALYSIS REPORT**

(Jordan)

## METHOD AND SAMPLE DESCRIPTION

U-SOLVE project prepared a survey targeting the different actors in the Urban Entrepreneurial Ecosystem in the partner countries of the U-SOLVE. The target was 50 completed applications from each country. JUST and HCST could secure more than 75 completed applications from the different actors of the Urban Entrepreneurial Ecosystem in Jordan. Below are the main findings of the analysis of the surveys completed in Jordan.

## RESULTS OF THE URBAN ECOSYSTEM ANALYSIS

### THE URBAN DEVELOPMENT SUSTAINABILITY CHALLENGES.

The results indicate that all Urban Development Sustainability Challenges already mentioned in the survey rated quite high in terms of importance (Figure 35). As noted from the analysis, the urban food system had the greatest importance, at a rate of 88.4%, while the least important was the built and indoor environment, at a rate of 81.7%. It was also found through data collection that 53.5% of the study sample indicated the presence of other challenges (i.e. Water conflict, the industrial revolution, Recycling, Healthy Food Supply Chain Issues, Organizations structure and governance, leadership and management of innovation, Climate change and Drought, urban planning and building healthy cities, and the Financial issues).

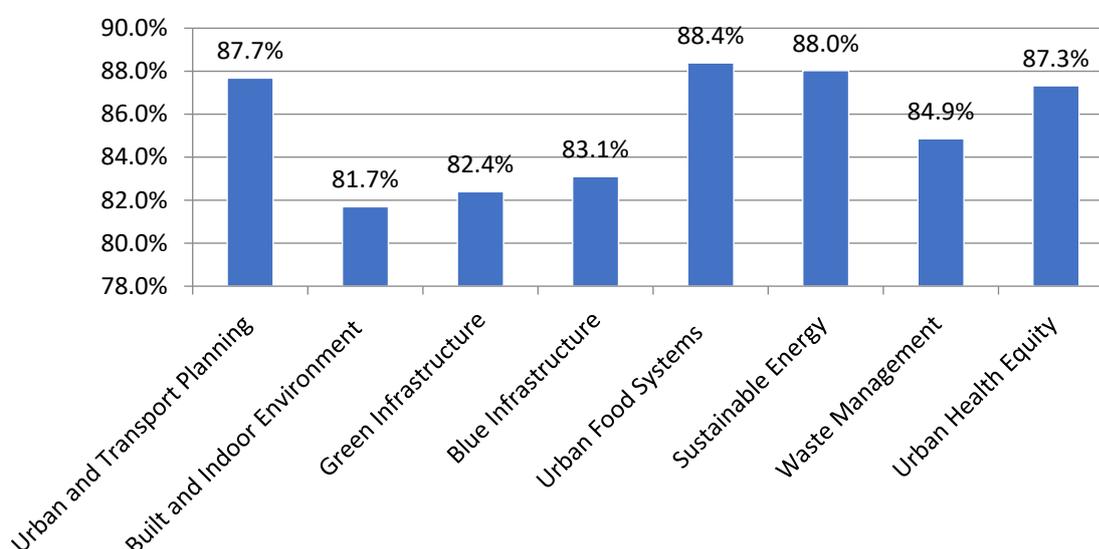


Figure 35 Urban Development Sustainability Challenges Importance

### ECOSYSTEM INNOVATION FUNCTIONS AND CHALLENGES

Regarding the entrepreneurial ecosystem functions evaluation, the access to capital finance ranked as the poorest (46.5%), while the availability of qualified human resources to solve urban challenges ranked as the most while the availability of qualified human resources to solve urban challenges ranked as the most excellent (25.4%). In general, most functions are evaluated as good (Table 22).

Entrepreneurial Ecosystem Functions	Poor %	Good %	Excellent %
Access to capital/finance	46.5	42.3	11.3
Knowledge creation through university and research institutions	22.5	56.3	21.1
Entrepreneurship and sustainability supporting regulations and policies	26.8	57.7	15.5
Entrepreneurial and environmental sustainability culture and awareness	29.6	56.3	14.1
Accessibility to physical and digital infrastructure	29.6	54.9	15.5
Availability of qualified human resources to solve urban challenges	25.4	49.3	25.4

Existence of sustainability-oriented entrepreneurship business supporting organizations	33.8	53.5	12.7
The market for innovative products (purchasing power of the community)	32.4	52.1	15.5

Table 22 Evaluation of the Ecosystem Functions

## ECOSYSTEM FUNCTIONS IN DETAILS

### ▪ Finance / Capital

Most of actors have ranked finance function as moderate obstacles (74.6 – 78.9%), and the highest percent was for access to equity finance.

#### Finance / Capital function evaluation

Finance/Capital	No Obstacles %	Minor Obstacles %	Moderate Obstacles %
Access to Debt Finance	4.2	21.1	74.6
Access to Equity Finance	4.2	16.9	78.9
Access to Grants	2.8	21.1	76.1

### ▪ Knowledge Creation

Most of the actors have ranked knowledge creation function as moderate obstacles (38 – 77.5%), and the highest percentage was for Expenditure on R&D

#### Knowledge Creation Function Evaluation

Knowledge Creation	No Obstacles %	Minor Obstacles %	Moderate Obstacles %
Existence of enough universities and research institutes	26.8	35.2	38.0
Expenditure on Research & Development	4.2	18.3	77.5
Availability of urban sustainable development scientific studies]	7.0	21.1	71.8
Brain drains of researchers and scientists	7.0	16.9	76.1

### ▪ Policy and Business Environment Elements

Most of the actors have ranked policy and business environment function as moderate obstacles (60.6 – 70.4%), and the highest percentage was for Incentives and also for the availability of information or data on the national level

#### Policy and Business Environment Function Evaluation

Policy and Business Environment	No Obstacles %	Minor Obstacles %	Moderate Obstacles %
Existence of Sustainability and Environmental Challenges-Oriented Policies and Regulations	9.9	29.6	60.6
Incentives for entrepreneurs and creative ideas to solve environmental or urban challenges	7	22.5	70.4
Availability of Information or data on the national level	12.7	16.9	70.4

### ▪ Entrepreneurial Culture

Most of actors have ranked entrepreneurial culture function as Relatively present (47.9 – 63.4%), and the highest percent was for entrepreneurial culture and social norms.

### Entrepreneurial Culture Function Evaluation

Entrepreneurial Culture	Missing %	Not Present %	Relatively Present %	Strongly Present %
Entrepreneurial motivation in society	4.2	15.5	47.9	32.4
inclination for risk	2.8	22.5	53.5	21.1
Entrepreneurial cultural and social norms	5.6	14.1	63.4	16.9
Positive media narratives of entrepreneurship	4.2	15.5	52.1	28.2
Awareness of the importance of being innovative	11.3	12.7	54.9	21.1

#### Physical and Digital Entrepreneurial Ecosystem

Most of the actors have ranked Physical and Digital entrepreneurial Ecosystem function as Adequate (56.3 – 73.2%), and the highest percentage was for Availability and quality of utilities such as (gas, water, electricity).

### Physical and Digital Entrepreneurial Ecosystem Function Evaluation

Physical and Digital entrepreneurial Ecosystem	Inadequate %	Adequate %	Excellent %
Availability and quality of utilities such as (gas, water, electricity)	9.9	73.2	16.9
accessible telecom/Internet/ mobile networks	2.8	56.3	40.8
Accessible transportation services	22.5	70.4	7

#### Human Capital

Most of the actors have ranked Human Capital function as Moderate Obstacles (57.7 – 63.4%), and the highest percentage was for Availability of entrepreneurship and business education .

### Human Capital Function Evaluation

Human Capital	No Obstacles %	Minor Obstacles %	Moderate Obstacles %
Availability of entrepreneurship and business education	15.5	21.1	63.4
Quality of entrepreneurship and business education	14.1	23.9	62
Availability of STEM graduates with good qualifications	14.1	28.2	57.7
Availability of educated/ trained general technical workforce	14.1	25.4	60.6

#### 1.1.1. Business Support Services

Most of the actors have ranked Business Support Services function as Moderate accessibility (52.1 – 56.3%), and the highest percentage was for Access to legal services

**Table 23 Business Support Services Function Evaluation**

Business Support	Not /Hard to access %	Moderate accessibility %	Easy to access %
Access to Legal Services	28.2	56.3	15.5
Access to Tax and Accounting Services	23.9	52.1	23.9
Access to Incubators/Accelerators	25.4	53.5	21.1
Access to technical consultants/mentors/advisors	29.6	52.1	18.3

### 1.1.2. Market Demands

Most of the actors have ranked Market Demands function as Moderate Obstacles (56.3 – 70.4%), and the highest percentage was for Access international market

#### Market Demands Function Evaluation

Market Demands	No Obstacles %	Minor Obstacles %	Moderate Obstacles %
Availability of market Information/studies	9.9	29.6	60.6
Potential market size expressed in the population	7	28.2	64.8
Potential purchasing power (income per capita)	2.8	29.6	67.6
Access to local markets	9.9	33.8	56.3
Access international markets	5.6	23.9	70.4

## ECOSYSTEM ACTORS AND CONNECTIVITY

### Important actors

Regarding connectivity between actors, the following figure indicates the rate of high importance (Figure 36), where connectivity with University/research institutions, Private R&D institutions has been rated as the highest importance (62%), while the connectivity with NGO / Civil society representative rated as the lowest importance (28.2%).

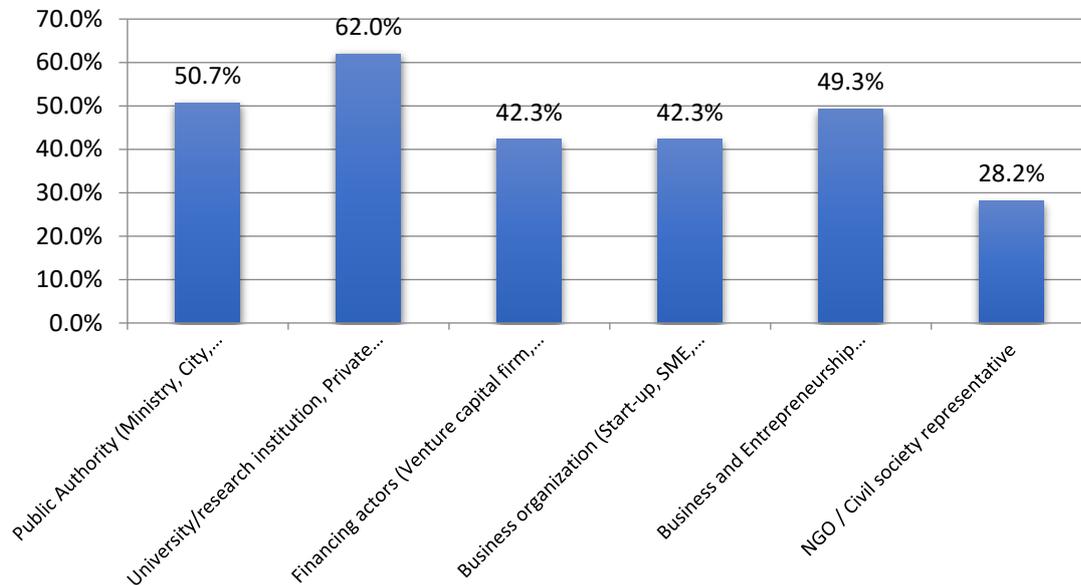


Figure 36 Entrepreneurial Ecosystem Actors Connectivity High Importance

## NEEDS OF ECOSYSTEM ACTORS

The following figure indicates that receiving support to develop a suitable business model has the most impact (80.3%), while innovative public procurement tenders have the lowest impact (52.1%) according to the sample opinion Figure 37

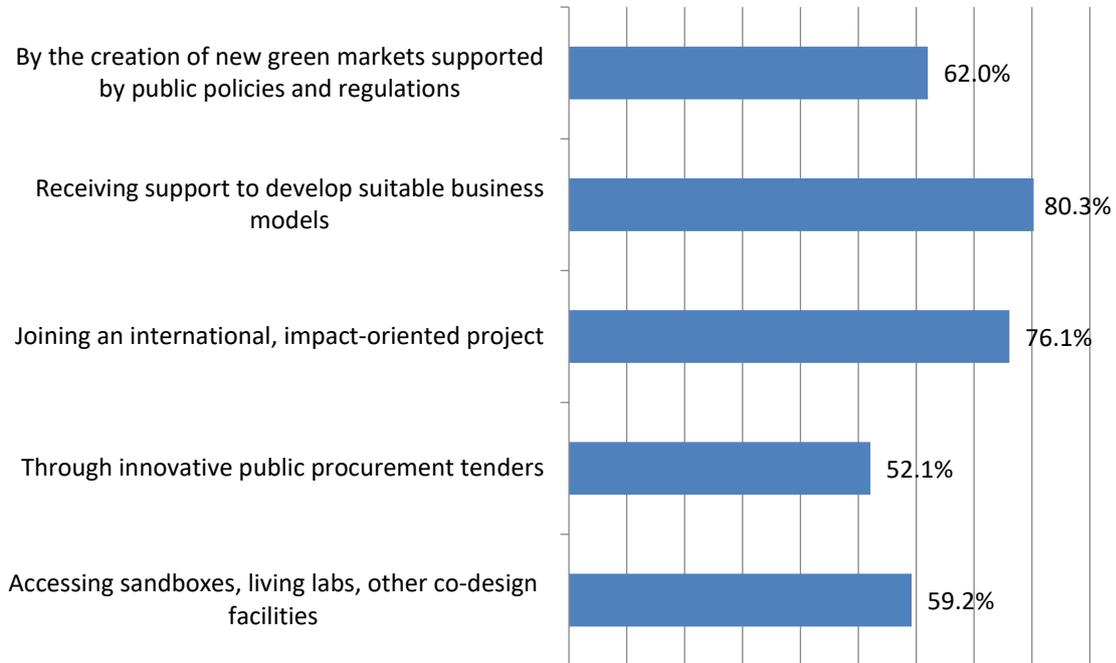


Figure 37 Needs of ecosystem actors

## IMPACT OF ENTREPRENEURIAL ECOSYSTEM

Most of the actors have ranked the needed procedures in order to improve the performance of the ecosystem as High Significance (33.8 - 62%), and the highest percentage was for Creating new jobs for youth and Reducing the unemployment rate (Figure 38; Table 24)

The current entrepreneurial ecosystem services play a role in	Low Significance %	Medium Significance%	High Significance %	Don't know %
Increasing the number of newly established firms	4.2	47.9	40.8	7
Decreasing Enterprises death rates	9.9	29.6	43.7	16.9
Creating new jobs for youth	2.8	26.8	62	8.5
Supporting female entrepreneurs	4.2	35.2	50.7	9.9
Enhancing Average/Median wages & salaries	7	28.2	57.7	7
Increasing Job quality	2.8	31	54.9	11.3
Reducing the unemployment rate	7	21.1	62	9.9
Reducing poverty	12.7	23.9	49.3	14.1
Improving Export performance	11.3	22.5	53.5	12.7
Enhancing GDP Growth	7	25.4	52.1	15.5
Tackling climate emissions challenges	11.3	32.4	43.7	12.7
Reducing waste generation and disposal	8.5	39.4	46.5	5.6
Solving water shortage and water sanitation	9.9	28.2	47.9	14.1
Protecting biodiversity	8.5	38	43.7	9.9
Improving the quality of life in cities	9.9	29.6	57.7	2.8
Producing healthier food	4.2	33.8	53.5	8.5
Improving the health of the population	8.5	28.2	54.9	8.5
Increasing efficiency, quality, cleanness of the productive systems	4.2	33.8	49.3	12.7
Increasing access to education and culture	7	26.8	57.7	8.5
Ensure access to clean and affordable energy	5.6	31	54.9	8.5
Achieve gender equality and empower women	11.3	21.1	33.8	33.8

Table 24 Improve the performance of the ecosystem actors

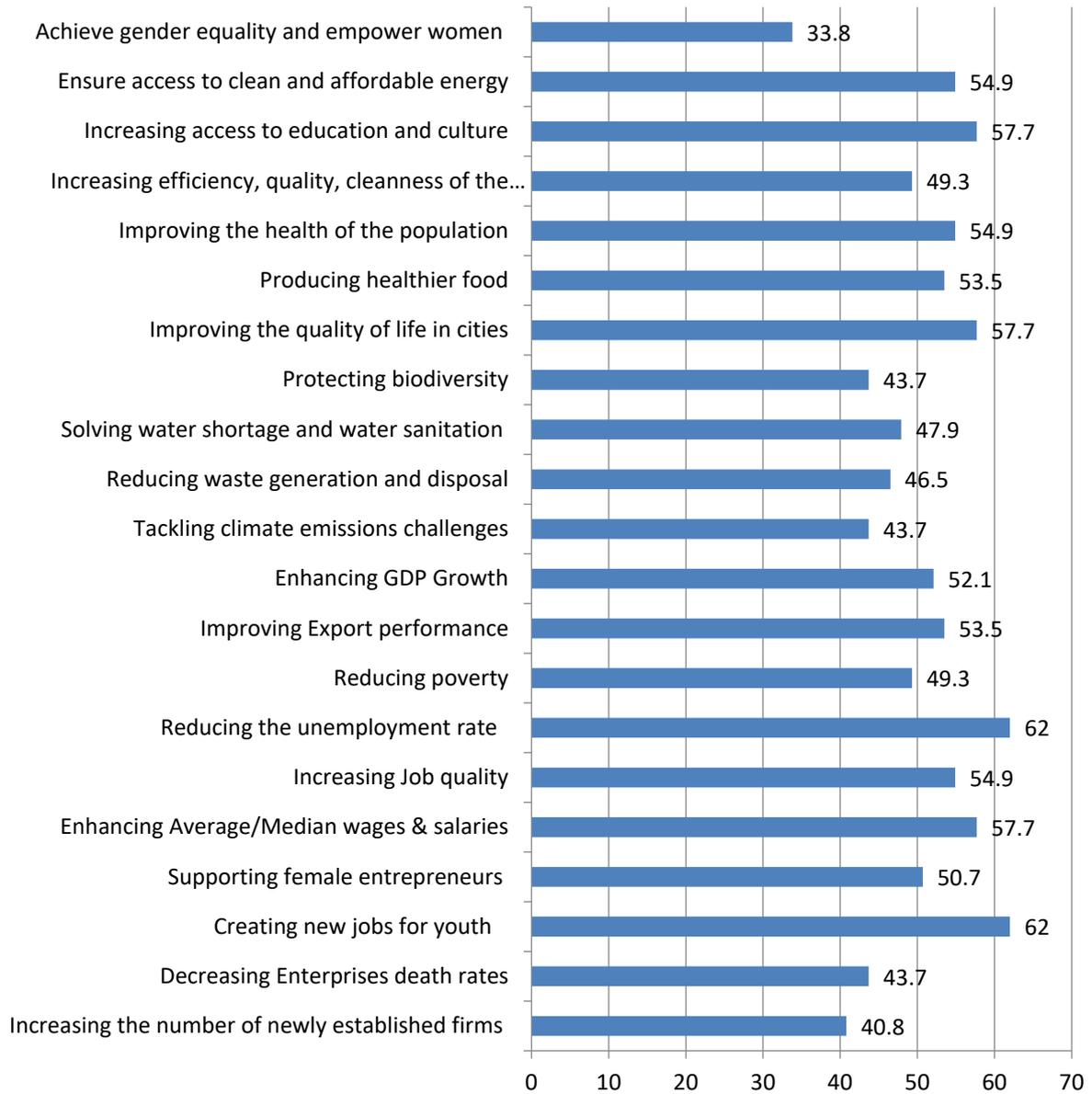


Figure 38 High Significance to improve the performance of the ecosystem actors

# **URBAN ENTREPRENEURIAL ECOSYSTEM ANALYSIS REPORT**

**(ITALY)**

**PALERMO CASE**

This report seeks to present collected information and data relating to U-SOLVE'S Work Package 3 requirements. Under U-SOLVE WP3 related activities, Consorzio ARCA conducted research on Palermo's business and entrepreneurial ecosystem to identify the most pressing sustainable development challenges, paving the way for the detection and application of appropriate solutions from the Cultural and Creative sector for sustainable change and progress. The report provides a comprehensive representation of all the stakeholders who might influence urban sustainable development in Palermo (Italy) and consequently the U-SOLVE project – entrepreneurial ecosystem mapping. It is based upon a complete analysis of data collected from desk-based research, online surveys, and in-depth interviews. All of these were conducted using a significant sample of Palermo's entrepreneurial ecosystem and underlying business culture. U-SOLVE's partners in Italy – Consorzio ARCA – have classified and defined the most important urban actors and approached them with the purpose of gathering more information about their activities and their expert knowledge on the strengths and weaknesses of Palermo's ecosystem. The local U-SOLVE team has identified one hundred stakeholders, collected fifty-one complete surveys on urban sustainable development initiatives, challenges and opportunities in Palermo, and produced fifteen in-depth interviews. These interviews and surveys have been with local stakeholders who represent civil society, startups/ SMEs, local authorities, policy makers, academic/research organisations, business support organisations as well as cultural agencies and governmental organisations. A desk-based research approach has also been employed to enable the triangulation of information and data. City's stakeholders have suggested where the problems and obstacles lie, who has the authority to bring change, envisaged the possible strategic partnerships. Therefore, the outcome of the analysis offers insight into the current conditions under which the innovation and entrepreneurial ecosystem operates; it provides an understanding of the underlying business culture in Palermo and the relationships amongst actors and presents their knowledge or perception of the most critical urban sustainable development challenges. It offers an insight towards the identification of the most relevant bottlenecks and the resources to be leveraged.

## METHOD AND SAMPLE DESCRIPTION

### PALERMO AT A GLANCE

before embarking on implementing initiatives and activities aimed towards improving an urban area, it is crucial that urban actors have a clear understanding and knowledge of the state of affairs in that area.

following are some key facts about the city of palermo:

- palermo is fifth largest municipality in italy in terms of population and capital of the sicily regions.
- palermo is the seat of the sicilian regional parliament and government. sicily has a special statute and enjoys a high degree of autonomy compared to the rest of the italian regions
- the city of palermo is divided into eight administrative zones, which in turn are divided into 25 districts and 55 first-level units.
- as of 01/01/2021, the population of palermo was 637.885 people (istat data).
- palermo lies within a plain of about 160 km<sup>2</sup> (the conca d'oro) overlooking the sea, displaying the characteristics of a typically mediterranean climate: variable, but generally temperate.
- the city was founded by the phoenicians between the 7th and 6th centuries bc. previously the area had been a commercial and logistical centre for north-western sicily.
- the city of palermo was called zyz (pronounced /'zi:z/) by the phoenicians (meaning "the flower") the present name derives from the ancient greek πᾶσ, pas, "all" and ὄρμος, hormos, "port", "wide harbour", due to the presence of the two rivers kemonia and papyrethus creating a huge natural harbour, and became panormus with the romans. the arabs pronounced the name of the city balarm, a diction that was partially adopted in the official form balermus of the norman period. palermo was definitively acquired in modern times. in 254 bc the city was conquered by the romans who managed to take it away from the carthaginians.
- after the fall of the western roman empire in 535 sicily was largely devastated with the arrival of the vandals in the west of the island. palermo was rebuilt by the byzantines, who held palermo for three centuries.
- in the 9th century, muslims from north africa invaded sicily. the muslim governors moved the capital of sicily from syracuse to palermo and the city was provided with all the bureaucratic structures and services necessary for a capital city. the arabs introduced the first citrus groves, forming the conca d'oro and opening up a new possibility for economic development. in 948, the city had more than 200,000 inhabitants, making it one of the most populous cities in the world.
- in 1098, the normans completed their conquest of the rest of the island: the capital, first of the grand county of sicily, then of the kingdom of sicily, remained in palermo, but the population fell dramatically. the arrival of the normans in palermo led to the construction of a considerable number of christian buildings and the city reached its peak under the rule of ruggero ii. after the norman reign in sicily came the swabians (from 1194 to 1266), who made palermo an imperial administrative centre. on the death of federico ii (1250), palermo and sicily lost importance in the political scene: power shifted to naples.
- the island lost its independence in the 15th century and came under the rule of the kingdom of spain, with palermo becoming the seat of the viceroys.
- in 1734 the city became the domain of the bourbons, who kept the kingdom of sicily and naples separate. in 1816 the kingdoms were united to form the kingdom of the two sicilies: palermo lost its status as capital, becoming the second administrative centre after naples. however, Palermo continued to hold the title of capital of the island part of the kingdom.
- in the first two decades of the 20th century palermo went through a flourishing period, with a short but intense art nouveau period, mainly characterised by eclectic architecture. the protagonists of this season were the florio, a family with an industrial tradition, who made the city an international protagonist in the so-called belle epoque. unaffected by the first world war, palermo suffered considerable destruction due to bombing during the Second World War, until it was occupied in July 1943 by the Allied troops of American General George Patton.
- The second half of the 20th century was characterised by Sicily being granted the status of a region with a special statute, which once again made Palermo the centre of regional bureaucracy and politics.

- From the end of the 1950s onwards, the main Sicilian criminal organisation, Cosa Nostra, thanks to the economic boom and the process of urbanisation of the peasant population, experienced a phase of growth, managing to infiltrate public spending, post-war reconstruction and expansion of the city. This was the period of the sack of Palermo, the uncontrolled expansion of the city northwards, even at the cost of demolishing Art Nouveau villas. From the 1960s to the 1980s, there were three mafia wars with many deaths among the members of the mafia. In that period and afterwards, entrepreneurs, journalists, doctors, magistrates such as Giovanni Falcone and Paolo Borsellino, policemen and the Italian cultural heritage were also affected, which led to a strong response from the state and civil society and a consequent retreat from Mafia power.
- In March 2015, a number of jurists, human rights activists, public administrators and nongovernmental organisations signed the *Carta di Palermo* to urge the world community to review legislation on residence permits and policies related to migration phenomena, supporting international human mobility as an inalienable right of the person. In November 2015, Palermo joined the Safer Cities programme launched in 1996 by the UN-Habitat Agency, assuming the global co-chairmanship.
- The Arab-Norman residences, the cathedral and other churches, together with the cathedral of Monreale and that of Cefalu, were included in the list of UNESCO World Heritage Sites on 3 July 2015 in the serial site “Arab-Norman Palermo and the cathedrals of Cefalu and Monreale”.
- Apart from its legislative and administrative functions, Palermo is one of the two main island's financial and business hubs together with the city of Catania.

#### QUANTITATIVE DATA: DESK-BASED RESEARCH

Using secondary data collection (desk research), a complete documentation and evaluation of approximately one-hundred urban actors, active in the city of Palermo, was achieved. With the help of published studies, articles, reports, and actors’ websites an initial picture of Palermo’s current urban ecosystem environment and actors was formed. In section 9.0 – References, we list a sample of key studies and reports utilised for gathering information and data concerning sustainable development, entrepreneurship, innovation, and the urban (business/entrepreneurial) ecosystem in Sicily and the city of Palermo. Following a high-level review of the initial contact list and after forming a better idea on who were the most important urban actors, the local U-SOLVE team selected seventy out of the initially identified one hundred actors in order to approach them for the arrangement of in-depth interviews and ask for their input in the U-SOLVE survey.

#### QUANTITATIVE DATA: SURVEY

The U-SOLVE survey has been employed in order to capture Palermo’s ecosystem experts/actors’ opinions on the ecosystem’s functions. This survey was designed using indicators from the ANDE (ANDE, 2013) and OCED/Eurostat framework (OECD, 2008), besides some other indicators extracted from the geographic mode of Leendertse et al. (2021).

Between the months of December 2021 and March 2022, fifty-one surveys have been completed. shows the percentage of each stakeholder category that completed our survey. It can be argued that there is a satisfactory actor sample from each ecosystem domain who completed the survey Figure 39.

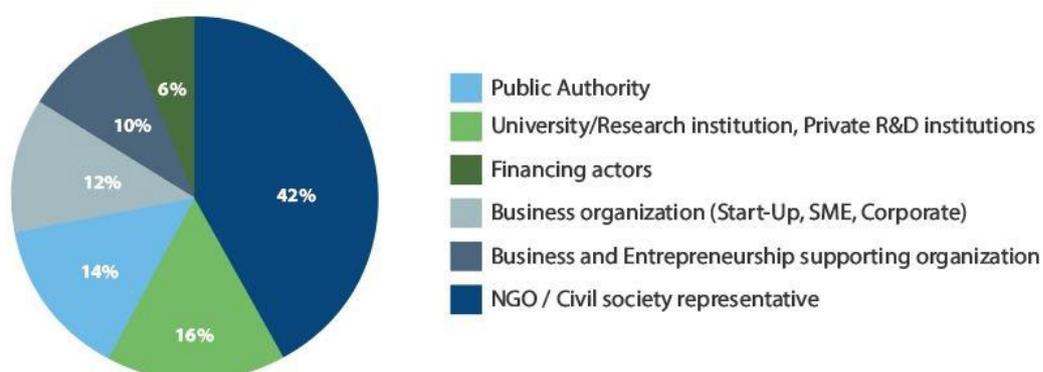


Figure 39 Categorisation of Stakeholders who Completed U-SOLVE Survey.

The majority of these surveys have been filled in and submitted during our in-depth interviews with the stakeholders. This ensured that the survey respondents understood what each question was asking and did not rush to complete it. Consequently, the results of the surveys can be considered more trustworthy. Some other general facts about the completed surveys:

- The U-SOLVE survey has been widely promoted and advertised through ARCA's network of contacts. This helped reach and inform a wide audience in addition to the promotion of the survey through email communications to and our in-depth interviews with targeted audience.
- A statistically significant number of local stakeholders representing civil society, start-ups/SMEs, local authorities, policy makers, academia/research organizations, business support organizations as well as cultural agencies and governmental organizations has been targeted.
- The completion time of the survey was ranging from **30 to 60 minutes**.
- The majority of survey respondents hold **managerial/executive positions** and the 82% with **more than 10 years** of experience
- **72%** of respondents are **men** and **28% women**.
- Around **34%** of respondents hold a **Postgraduate Degree**.

#### QUALITATIVE DATA: IN-DEPTH INTERVIEWS

Using information gathered from the desk-based research on the identified one-hundred key urban actors, the Italian U-SOLVE team attempted to narrow this list even further, at a first stage. **Seventy** actors have been chosen; these actors can be relatively easily approached and can possibly have the biggest role and influence in the U-SOLVE project. Out of these seventy actors and **between** the months of **December 2021** to **March 2022**, **fifteen** in-depth interviews have been **scheduled and fulfilled**. Results from these in-depth interviews have been extremely useful for understanding the state of affairs in urban sustainable development challenges and initiatives in Palermo. Additionally, these results complement desk research activities and have been used to complete the main actors mapping as well as validate the classification of each actor under a specific functional domain. Because of covid19 related restrictions, around **70%** of these interviews have been **online** and **30% face-toface**. It can be noted here that the indepth interviews will continue beyond the time of the writing of this report – this will not affect collected information/data up to this point, but rather help arguments and conclusions become more robust. The team has been aiming for quality interview respondents and reaching out to such influential urban actors can be a difficult task. Many of these organisations and their people have busy schedules and a lot of times are worried to engage in additional activities that might compromise in one way or the other their own projects and responsibilities.

## RESULTS OF THE URBAN ECOSYSTEM ANALYSIS

### THE URBAN DEVELOPMENT SUSTAINABILITY CHALLENGES.

Adding all survey responses together, urban actors who completed the survey have given:

- **Urban and transport planning** challenges in Palermo **3.94/4** in terms of level of importance.
- **Built and indoor environment** challenges in Palermo **2.8/4** in terms of level of importance.
- **Green infrastructure** challenges in Palermo **3.88/4** in terms of level of importance.
- **Blue infrastructure** challenges in Palermo **3.44/4** in terms of level of importance.
- **Urban food systems** challenges in Palermo **2.82/4** in terms of level of importance.
- **Sustainable energy** challenges in Palermo **3.66/4** in terms of level of importance.
- **Waste management** challenges in Palermo **3.8/4** in terms of level of importance.
- **Urban health equity** challenges in Palermo **3.54/4** in terms of level of importance.

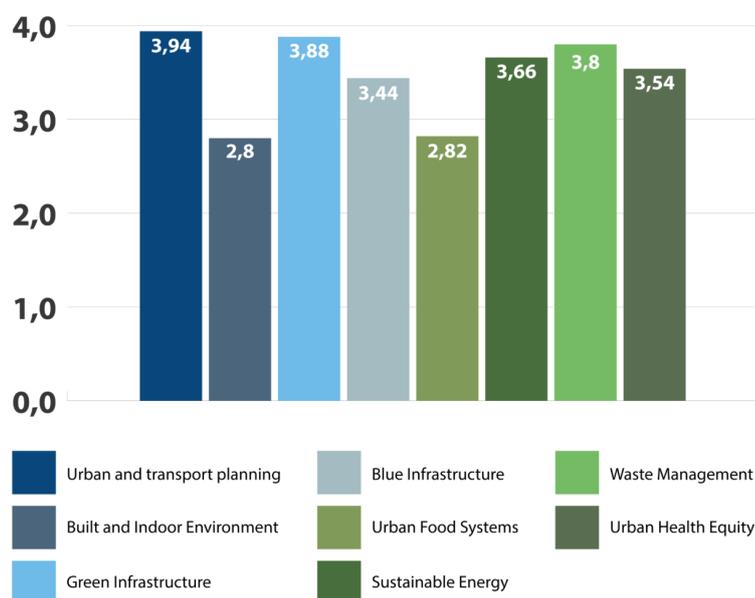


Figure 40 Sustainable Development Challenges in Palermo

As it can be concluded from these results, **urban and transport planning** are considered to be the **most important** when it comes to sustainable development in the city of Palermo, followed by **sustainable energy** and **waste management** and related challenges (**including circular economy**). Of course, reflecting on the survey results, almost all eight identified urban domains are facing important challenges. What is more, the survey allowed respondents to add additional issues that, from their experience, are important in terms of sustainable development. Respondents mentioned:

- **education and misinformation;**
- **Sicilian culture, attitude and mindset;**
- **social inclusion or lack of;**
- **democratic governance and community participation;**
- **social justice and social equity.**

It can be argued that the additional issues that the respondents mentioned are not challenges as such, but rather overarching characteristics and peculiarities of the business ecosystem and society in Sicily that contribute to the creation of challenges in the eight urban domains evaluated in Figure 40. Since U-SOLVE focusses on inviting ideas/solutions to sustainable development challenges from the Creative Sector, it foresees that such ideas and solutions will be very suitable for influencing behaviors and culture as well as the promotion of structural changes leading to a more sustainable socio-technical regime

## ECOSYSTEM INNOVATION FUNCTIONS AND CHALLENGES

Adding all responses together, survey results (70% of survey respondents) show that **Public Authorities (Ministries, Cities, Governmental Agencies)** are the **most important** urban actors when it comes to supporting other organisations and their initiatives for sustainable development. Figure 41 below shows all six predefined urban actors mentioned in the survey and ranks them based on their level of importance.

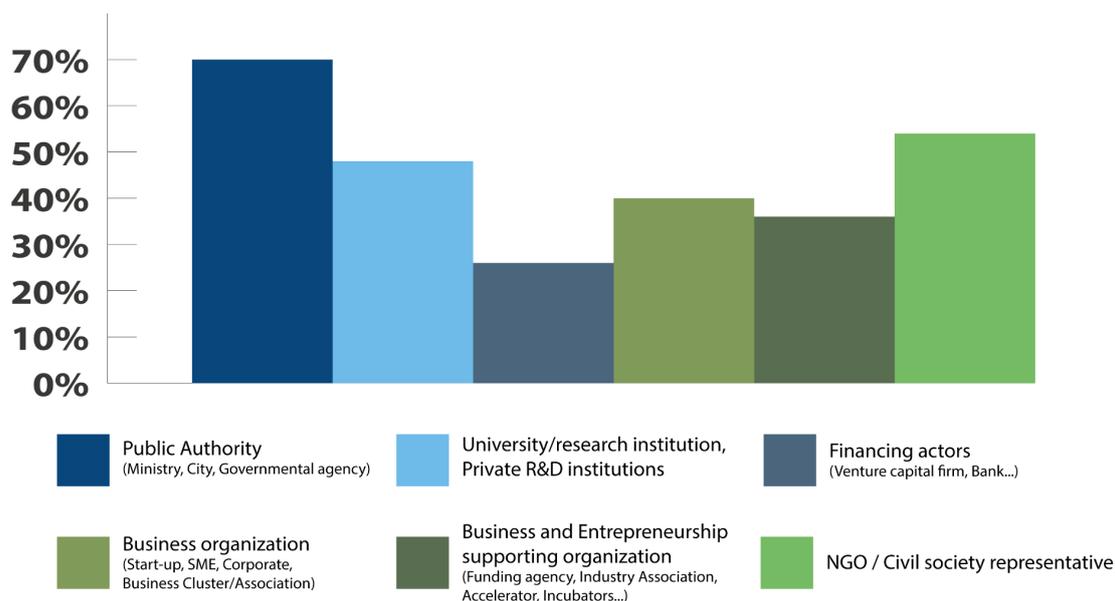


Figure 41 Urban Actors and Their Importance in Palermo for Sustainable Development.

As mentioned previously, **70%** of the survey respondents stated that **Public Authorities** followed by **NGO/Civil society representative (with 54%)** and **University/Research/Private R&D institutions (48%)** have **high level of importance** and are crucial for influencing sustainable development initiatives and projects. Almost all actors want to connect and have some type of relationship with the previous mentioned ecosystem actors.

## ECOSYSTEM ACTORS AND CONNECTIVITY

The next subsections take each one of the eight innovation ecosystem functions and break them down into more specific indicators for a more detailed assessment of Palermo's ecosystem. Survey respondents are asked to rate each indicator based on how big of an obstacle they considered it to be for the growth of entrepreneurial activities and start-up companies.

### Capital/Finance

For **Capital/Finance**, the survey measures **three** different **indicators**: Access to Debt Finance; Access to Equity Finance; and Access to Grants.

#### Capital/Finance Related Indicators for Assessing Palermo's Ecosystem

	No Obstacle	Minor Obstacle	Moderate Obstacle	Major Obstacle
Access to Debt Finance	2%	24%	44%	30%
Access to Equity Finance	10%	28%	32%	30%
Access to Grants	2%	42%	46%	10%

Looking at these results it can be argued that **Access to Debt and Equity Finance** related **challenges** present **moderate to major obstacle** for entrepreneurs and start-up companies trying to operate in the city of Palermo. **Access to Grants** represent a **minor to moderate obstacle**.

### Knowledge Creation

For **Knowledge Creation**, the survey measures **four** different **indicators**: Existence of enough Universities and Research Institutes; Expenditure on Research & Development; Availability of Urban Sustainable Development Scientific Studies; and Brain Drains of Researchers and Scientists.

### Knowledge Creation Related Indicators for Assessing Palermo's Ecosystem

	No Obstacle	Minor Obstacle	Moderate Obstacle	Major Obstacle
Existence of enough Universities and Research Institutes	20%	50%	24%	6%
Expenditure on Research & Development	12%	20%	26%	42%
Availability of Urban Sustainable Development Scientific Studies	16%	34%	34%	16%

When it comes to Knowledge Creation related challenges, availability of *Urban Sustainable Development Scientific Studies* is considered to be a *significant obstacle* for entrepreneurs and start-up companies. Whereas, the majority of survey respondents (50%) believe that the *number of and accessibility to Universities and Research Institutes* is *NOT* really an obstacle.

#### ▪ Policy and Business Environment Elements

For **Policy and Business Environment Elements**, the survey measures **three** different **indicators**: Existence of Sustainability and Environmental Challenges-Oriented Policies and Regulations; Incentives for entrepreneurs and creative ideas to solve environmental or urban challenges; and Availability of Information or Data on the National Level. Looking at Table below shows a substantial lack of homogeneity in the opinions expressed by the participants concerning **Policy and Business Environment** Elements in Palermo, which are considered a significant obstacle by about 50% while the remaining 50% consider them a minor obstacle or no obstacle at all.

#### Policy and Business Environment Elements Related Indicators.

	No Obstacle	Minor Obstacle	Moderate Obstacle	Major Obstacle
Existence of Sustainability and Environmental Challenges-Oriented Policies and Regulations	22%	24%	30%	24%
Incentives for entrepreneurs and creative ideas to solve environmental or urban challenges	24%	28%	26%	22%
Availability of Information or Data on the National Level	30%	24%	30%	16%

#### ▪ Entrepreneurial Culture in Italy/Sicily (and Palermo)

When it comes to assessing the **Entrepreneurial Culture** in Italy/Sicily, the survey identifies and measures **five** indicators: Entrepreneurial Motivation in Society; Inclination for Risk; Entrepreneurial Cultural and Social Norms; Positive Media Narratives of Entrepreneurship; Awareness of the Importance of Being Innovative. Table below shows the results. For this function, the survey is assessing the indicators based on if they are present or not in the Cypriot society and ecosystem.

#### Entrepreneurial Culture Related Indicators.

	Not Present	Relatively Present	Strongly Present
Entrepreneurial Motivation in Society	16%	78%	6%
Inclination for Risk	40%	58%	2%
Entrepreneurial Cultural and Social Norms	32%	66%	2%
Positive Media Narratives of Entrepreneurship	14%	62%	24%
Awareness of the Importance of Being Innovative	14%	68%	18%

Survey answers reveal that the **Entrepreneurial Culture and Motivation** in Palermo is **present**, but there is a strong **belief** from a significant percentage of respondents that this culture should **be promoted and encouraged further**.

- **Physical and Digital Infrastructure**

Moving to **Physical and Digital Infrastructure**, the survey assesses **three** indicators: Availability and Quality of Utilities; Accessible Telecom/Internet/ Mobile Networks; Accessible Transportation Services. Table below presents the results. For this function, the survey measures the indicators based on how adequate they are.

**Physical and Digital Infrastructure Related Indicators**

	Inadequate	Adequate	Excellent
Availability and Quality of Utilities	40%	56%	4%
Accessible Telecom/Internet/ Mobile Networks	32%	60%	8%
Accessible Transportation Services	92%	8%	0%

Immediately, one can notice from the survey results that **Transportation Services** in Palermo **represent an absolute priority**. Equally notable is the **satisfaction** of the survey respondents **with the Telecommunications Networks** in the country and city of focus.

- **Human Capital Elements**

Referring to **Human Capital Elements**, the survey provides **four** indicators: Availability of Entrepreneurship and Business Education; Quality of Entrepreneurship and Business Education; Availability of STEM Graduates with Good Qualifications; Availability of Educated/ Trained General Technical Workforce. The survey returns back to measuring the indicators based on how big of an obstacle they are.

**Human Capital Elements Related Indicators.**

	No Obstacle	Minor Obstacle	Moderate Obstacle	Major Obstacle
Availability of Entrepreneurship and Business Education	12%	24%	46%	18%
Quality of Entrepreneurship and Business Education	6%	20%	46%	28%
Availability of STEM Graduates with Good Qualifications	8%	28%	30%	34%
Availability of Educated/ Trained General Technical Workforce	4%	32%	34%	30%

The availability and quality of Human Capital Elements in Palermo seems to be somewhat weak and a considerable obstacle for entrepreneurship and start-ups based on survey results.

- **Business Support Services**

Talking about Business Support Services, the survey looks into how easy it is to access four different services: Legal Services; Tax and Accounting Services; Incubators/ Accelerators; Technical Consultants/ Mentors / Advisors.

**Business Support Services Related Indicators.**

	Not Accessible/ Hard to Access	Moderate Accessibility	Easy to Access
Legal Services	30%	58%	12%
Tax and Accounting Services	18%	58%	24%
Incubators/ Accelerators	22%	72%	6%
Technical Consultants/ Mentors / Advisors	22%	66%	12%

Importantly, it can be argued that Business Support Services in Palermo are accessible. Accessibility seems to not be considered an important obstacle, based on survey results, for entrepreneurial and business activity in the city of Palermo.

- **Market Demand Elements**

Looking at the Regional Market Elements and how big of an obstacle it is, the survey identifies and measures five indicators: Availability of Market Information/ Studies; Potential Market Size Expressed in the Population; Potential Purchasing Power (income per capita); Access to Local Markets; Access International Markets

**Market Demand Elements Related Indicators**

	No Obstacle	Minor Obstacle	Moderate Obstacle	Major Obstacle
Availability of Market Information/ Studies	14%	36%	42%	8%
Potential Market Size Expressed in the Population	8%	6%	48%	38%
Potential Purchasing Power (income per capita)	6%	6%	42%	46%
Access to Local Markets	15%	47%	23%	15%
Access International Markets	8%	29%	46%	17%

It seems that survey respondents believe that the **Local Market** and related subfunctions are a major **obstacle for business and entrepreneurial activity**. Importantly, **Access to the Local Market** is considered to be a **minor/moderate obstacle** from the large majority of survey respondents while **Access to the International Market** is considered a moderate/major obstacle

## NEEDS OF ECOSYSTEM ACTORS

The survey identifies **five** different **types of support** that urban entrepreneurial actors can take advantage of when working towards **solving sustainability challenges**: Access to Sandboxes, Living Labs, Other Co- Design Facilities; Through Innovative Public Procurement Tenders; Joining International, Impact-Oriented Projects; Support for Developing Suitable Business Models; Introduction of Policies and Regulations that Support the Creation of New Green Markets. Survey respondents are asked to choose which types of support they believe is important. Figure 42 presents the results

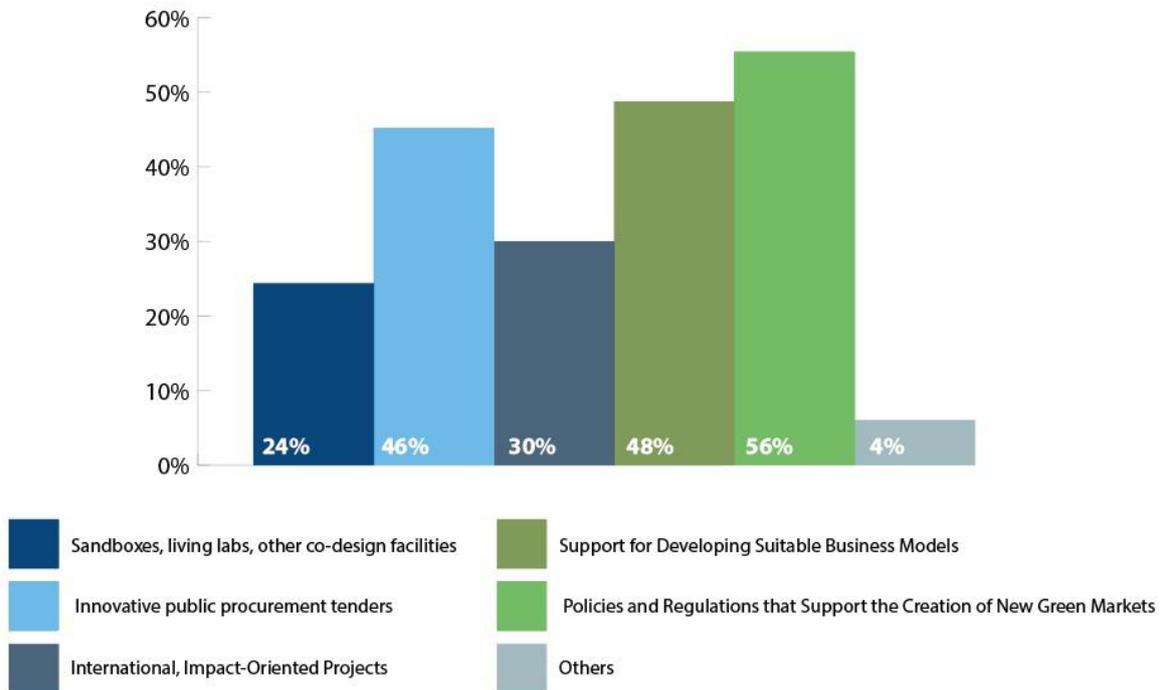


Figure 42 Types of Support Valuable for Sustainable Development Initiatives and Activities

The results of the survey presented in Figure 42 confirm the importance of these five different types of support when it comes to stimulating impact and helping sustainable development initiatives flourish. **All types of support** mentioned in the survey **received the endorsement** of urban actors out of the fifty-one who completed the survey thus far. The support with the **biggest endorsement** is the introduction of **Policies and Regulations** beneficial for sustainable development (**56%**). This type of support can have the biggest impact when it comes to creating the right environment for sustainable initiatives in Palermo to succeed. The survey allowed respondents to add other support options that they considered important and that were not included in the survey. There were only two additional comments that stress the need to improve communitarian dynamics and to implement a leaner collaboration between companies and professionals

## IMPACT OF ENTREPRENEURIAL ECOSYSTEM

After trying to gather general information about the state of Palermo’s business and entrepreneurial ecosystem and sustainable development challenges, the survey concludes by asking respondents to evaluate how significant twenty-one very specific types of challenges are for improving the current performance of the ecosystem and its actors. Results from this are offered below.

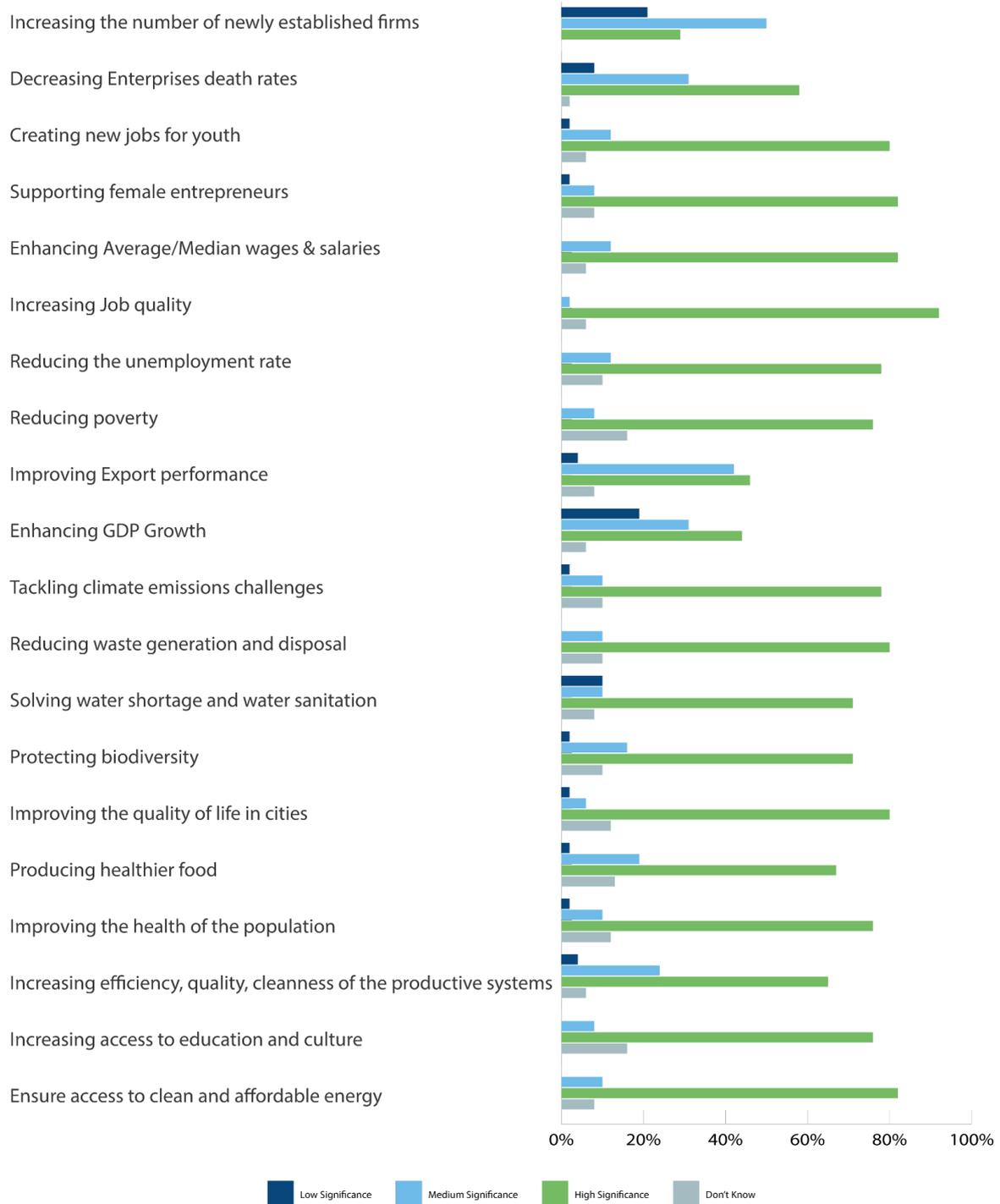


Figure 43 Challenges for Improving the Performance of the Ecosystem and its Actors.

Reflecting on the results from Figure 43, we could conclude that all the challenges were considered highly valuable by survey respondents. However, it can be realized that the most voted ones as highly significant are aligned with U-SOLVE key priorities. The respondents clearly converged in highlighting the challenge of improving the job market, with better wages and quality, reduction of unemployment and more jobs for youth. Supporting female entrepreneurs, and increasing access to education and culture have all received a high level of attention from survey respondents. Clean energy, waste management and access to water are also top ranking, together with health and quality of cities.

## CONCLUSION

The dialogue we have so far conducted with relevant stakeholders is pointing out substantial point of weakness in the local business and entrepreneurial ecosystems. In particular, the city of Palermo is showing critical needs in terms of physical and immaterial infrastructures, as their lack seems preventing the development of a mature business and entrepreneurial environment. There is a potential in terms of human resources and generation of knowledge, which is not translated into sustainable development, yet. Public authorities are asked to implement combined policies to promote the development of new sustainable businesses by public procurement, new regulations and specific support. In a relatively poor entrepreneurial environment, the civil society has been identified as a key player together with the knowledge and education providers (University/Research/Private R&D institutions). Any attempt to mobilize energies towards the sustainable development goals should connect actors from these three environments Waste management, mobility and green infrastructures have been identified as the key playgrounds for the sustainable development of the city and it is commonly accepted that cultural and behavioural transition is needed to accelerate the adoption of innovative solutions. Along the dialogue, U-SOLVE has confirmed its potential to unlock the current status quo, because of the combined action on sustainability, culture and entrepreneurship

## APPENDIX A: QUESTIONNAIRE IN ENGLISH AND ARABIC

A) English Part

### Section 1: Demographic Questions

I represent a:

- Public Authority (Ministry, City, Governmental agency)
- University/research institution, Private R&D institutions
- Financing actors (Venture capital firm, Business angel, Bank, Other types of investors)
- Business organization (Start-up, SME, Corporate)
- Business and Entrepreneurship supporting organization (funding agency, industry Association, Accelerator, Incubators, Other types of support providers)
- NGO / Civil society representative
- Other (specify)

.....

Name of the organization: .....

Position at organization: .....

Education level:

Country: .....

### Section 2: Urban Development Sustainability Challenges in your Geographic Area

In this section, we ask you to think about the central **Urban Sustainable Development Challenges** the community faces in your area. We provide a list of possible challenges just as examples, and please feel free to choose from the list or define any other challenges.

**2.1 Rate the importance of each of the following Urban sustainability Challenges for your country/emancipatory/ governorate/district.**

**Urban and Transport Planning** (related problems such as traffic-related air pollution, sedentary, inactive lifestyles, noise and greenhouse gas emissions, and associated effects on health).

Rate level of importance from 0 to 4, where 0 is not important and 4 very important/critical

*Provide your selection here .....*

**Built and Indoor Environment** (We spend most of our time in indoor environments (house, school, office). A poor indoor environmental quality may be due to inadequate ventilation, indoor pollution sources (including biomass burning for cooking and heating in low-income settings), overheating, poor lighting, mold, and noise.)

Rate level of importance from 0 to 4, where 0 is not important and 4 very important/critical

*Provide your selection here .....*

**Green Infrastructure** ((Urban green infrastructure has also been associated with several environmental and societal co-benefits, such as air pollution and climate change mitigation (i.e., vegetation has the capacity to remove carbon dioxide, gaseous pollutants, and airborne particles) and cultural-aesthetic and recreational benefits. On the other hand, potential negative effects include pollen emissions and volatile organic compounds, urban ticks, safety concerns, and energy input and cost of maintenance of urban green spaces.)

Rate level of importance from 0 to 4, where 0 is not important and 4 very important/critical)

*Provide your selection here .....*

**Blue Infrastructure** (Blue infrastructure refers to water elements, like rivers, canals, ponds, wetlands, floodplains, water treatment facilities, etc.)

Rate level of importance from 0 to 4, where 0 is not important and 4 very important/critical

*Provide your selection here .....*

**Urban Food Systems** (healthy diets, food safety and security, and urban food infrastructure (for food production, storage, and distribution).

Rate level of importance from 0 to 4, where 0 is not important and 4 very important/critical

*Provide your selection here .....*

**Sustainable Energy** (Urbanization and raising living standards are projected to increase energy demand and, particularly in rapidly urbanizing low and middle-income countries.)

Rate level of importance from 0 to 4, where 0 is not important and 4 very important/critical

*..Provide your selection here .....*

**Waste Management** (Urbanization and raising living standards are projected to increase waste production).

Rate level of importance from 0 to 4, where 0 is not important and 4 very important/critical

*Provide your selection here .....*

**Urban Health Equity** (Climate change, pollution, inadequate housing, and unsustainable production and consumption are threatening environmental justice and health equity across generations, socioeconomic strata, and urban settings. Vulnerable groups (young children, the elderly, the poor, and those with

compromised health) are likely to suffer more from environmental pollution and climate extremes, such as heatwaves, floods and droughts.)

Rate level of importance from 0 to 4, where 0 is not important and 4 very important/critical

Provide your selection here .....

**Other Challenges**.....

Provide your selection here .....

### Section 3: Ecosystem Actors and Connectivity

**3.1 Regarding the Urban Sustainability Challenges in your territory, which of the following ecosystem actors are important to be connected with your organization?**

Ecosystem Actors	Importance level		
	Low	Medium	High
Public Authority (Ministry, City, Governmental agency)			
University/research institution, Private R&D institutions			
Financing actors (Venture capital firm, Business angel, Bank, Other types of investors)			
Business organization (Start-up, SME, Corporate, Business Cluster/Association)			
Business and Entrepreneurship supporting organization (funding agency, industry Association, Accelerator, Incubators, Other types of support providers)			
NGO / Civil society representative			
<b>Others</b>			

## Section 4: Entrepreneurial Ecosystem Evaluation

**4.1 Considering the Urban Sustainability Challenges in your area, how do you evaluate the following functions of the ENTREPRENEURIAL INNOVATION ECOSYSTEM<sup>13</sup> you are operating in?**

Entrepreneurial Ecosystem Functions		Evaluation		
		Poor	Good	Excellent
1	Access to <u>capital/finance</u>			
2	<u>Knowledge creation</u> through university and research institutions			
3	Entrepreneurship and sustainability supporting <u>regulations and policies</u>			
4	Entrepreneurial and environmental sustainability <u>culture and awareness</u>			
5	Accessibility to physical and digital <u>infrastructure</u>			
6	Availability of qualified <u>human resources</u> to solve urban challenges			
7	Existence of sustainability-oriented entrepreneurship <u>business supporting organizations</u>			
8	<u>The market</u> for innovative products (purchasing power of the community)			

## Section 5: Ecosystem Functions in Details

In this section, we provide many indicators covering each ecosystem function. We kindly ask you to evaluate these indicators considering your community's urban development challenges and entrepreneurial ecosystem.

**5.1 To what degree are the following elements of Finance/Capital an obstacle for entrepreneurs and startups companies in your ecosystem**

Finance/Capital	No Obstacles	Minor Obstacle	Moderate Obstacle	Major Obstacle
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<sup>13</sup> Innovation Ecosystem refers to a loosely interconnected network of companies and other entities that co-evolve capabilities around a shared set of technologies, knowledge, or skills, and work cooperatively and competitively to develop new products and services (Nambisan and Baron 2013 pp. 1071–1072)

Access to Debt Finance				
Access to Equity Finance				
Access to Grants				

**5.2 To what degree are the following elements of Knowledge Creation<sup>14</sup> represent an obstacle for entrepreneurs and startups companies in your ecosystem**

Knowledge Creation	No Obstacles	Minor Obstacle	Moderate Obstacle	Major Obstacle
Existence of enough universities and research institutes				
Expenditure on Research & Development				
Availability of urban sustainable development scientific studies				
Brain drains of researchers and scientists				

**5.3 To what degree are the Policy & Business Environment elements an obstacle to the current operations of innovation-based enterprises/startups?**

	No Obstacles	Minor Obstacle	Moderate Obstacle	Major Obstacle
Existence of Sustainability and Environmental Challenges-Oriented Policies and Regulations				
Incentives for entrepreneurs and creative ideas to solve environmental or urban challenges				
Availability of Information or data on the national level				

**5.4 Which of the following elements is a part of the Entrepreneurial Culture in your country? (Not present, relatively present, strongly present)**

Entrepreneurial Culture	Not present	Relatively present	Strongly present
Entrepreneurial motivation in society			
inclination for risk			
Entrepreneurial cultural and social norms			

<sup>14</sup> The creation of new knowledge by either private or public organizations provides new business opportunities and It is therefore an important source of entrepreneurship

Positive media narratives of entrepreneurship			
Awareness of the importance of being innovative			

**5.5 How do you evaluate the following elements of the physical and digital entrepreneurial ecosystem's infrastructure?**

<b>Infrastructure</b>	inadequate	Adequate	Excellent
Availability and quality of utilities such as (gas, water, electricity)			
accessible telecom/Internet/ mobile networks			
Accessible transportation services			

**5.6 To what degree are the following elements of Human Capital representing an obstacle for the entrepreneurial ecosystem operations.**

<b>Human Capital</b>	No Obstacles	Minor Obstacle	Moderate obstacle	Major obstacle
Availability of entrepreneurship and business education				
Quality of entrepreneurship and business education				
Availability of STEM graduates with good qualifications				
Availability of educated/ trained general technical workforce				

**5.7 To what degree are the following elements of Business Support Services being accessible in the entrepreneurial ecosystem**

<b>Business Support Services</b>	Not/Hard to access	Moderate accessibility	Easy to access
Access to Legal Services			
Access to Tax and Accounting Services			
Access to Incubators/Accelerators			
Access to technical consultants/mentors/advisors			

**5.8 To what degree are the following elements of the Market/demand<sup>15</sup> an obstacle to the current operations of this firm**

Market/demand	No Obstacles	Minor obstacle	Moderate obstacle	Major obstacle
Availability of market Information/studies				
Potential market size expressed in the population				
Potential purchasing power (income per capita)				
Access to local markets				
Access international markets				

## Section 6: Entrepreneurial Ecosystem Actors' needs and Potential Impact

**6.1 How can the entrepreneurial actors (i.e., SMEs, startups, incubators, fund managers, investors, VCs) have stronger impact in addressing local Urban Sustainability Challenges? Tick as many as applicable.**

- Accessing sandboxes, living labs, other co-design facilities
- Through innovative public procurement tenders
- Joining an international, impact-oriented project
- Receiving support to develop suitable business models
- By the creation of new green markets supported by public policies and regulations
- Other, please indicate

**6.2 Based on your knowledge, information, or experience within your local entrepreneurial ecosystem, to what extent do you agree with the below statements;**

The current entrepreneurial ecosystem services play a role in:	Low Significance	Medium Significance	High Significance	Don't know
Increasing the number of newly established firms				
Decreasing Enterprises death rates				
Creating new jobs for youth				
Supporting female entrepreneurs				

<sup>15</sup> Entrepreneurs and start-ups companies mainly market new products and serve larger markets not just the regional one. However, it is important for start-ups to have a potential regional market which they can easily access. Start-ups also success if the regional market has purchasing power and potential demand for goods and services and if the population has the financial means to buy them.

Enhancing Average/Median wages & salaries				
Increasing Job quality				
Reducing the unemployment rate				
Reducing poverty				
Improving Export performance				
Enhancing GDP Growth				
Tackling climate emissions challenges				
Reducing waste generation and disposal				
Solving water shortage and water sanitation				
Protecting biodiversity				
Improving the quality of life in cities				
Producing healthier food				
Improving the health of the population				
Increasing efficiency, quality, cleanness of the productive systems				
Increasing access to education and culture				
Ensure access to clean and affordable Energy				
Achieve gender equality and empower women				
Other (specify)				

## Section 7. Contact

**We will follow this survey by organizing a series of workshops with Entrepreneurial ecosystem actors representing the main ecosystem segments to discuss the urban development-related challenges.**

**We would appreciate it if you participated with us in such events.**

**Should we invite you to the upcoming workshops**

- Yes**  
 **No**

*If yes, would you kindly provide your contact details*

- *Name:*
- *Title:*
- *Telephone/ Mobile:*

- *Email:*
- *Post address:*

***Thank you for your time and valuable input.***

English Part

## APPENDIX

U-SOLVE أو مشروع حلول تنموية حضرية مستدامة لدعم ريادة الأعمال، المشروع ممول من الاتحاد الأوروبي وينفذ على مدار 30 شهرًا في 6 دول متوسطة (فلسطين والاردن ومصر وقبرص واليونان وإيطاليا) من خلال 10 شركاء أحدهم جامعة فلسطين الاهلية .

يهدف المشروع الى تعزيز ودعم الرياديات والرياديين الشباب في المناطق الحضرية مع التركيز على التنمية المستدامة في منطقة البحر الأبيض المتوسط. يتكون المشروع من ستة حزم عمل تركز على رسم خريطة الطريق لفحص وتطوير الأطر الناظمة لريادة الأعمال الحضرية، واستكشاف أفكار الأعمال ودعم عملية إطلاق مشاريع مستدامة، انشاء مراكز حضارية، وتطوير توصيات وسياسات.

يسعى المشروع لنقل عملية إنشاء الشركات الناشئة نحو إستراتيجية التنمية الريادية المستدامة، بهدف تجسير الفجوة بين السياسات الداعمة للريادة وتنفيذ أهداف التنمية المستدامة على المستوى الحضري. إن أكثر التحديات الملحة في المجتمعات الحضرية في منطقة البحر الأبيض المتوسط والمتعلقة بأهداف التنمية المستدامة يمكن تجاوزها من خلال القنوات الابتكارية والتي تسمح بظهور التحالفات الريادية التي تعمل كعوامل تغييرية وإيجاد فرص عمل ذات قيمة اقتصادية من جهة، ودعم التوجه والانتقال نحو نموذج مستدام ذمن جهة أخرى.

تم تصميم هذا الاستطلاع لالتقاط آراء الخبراء فيما يتعلق بعناصر ووظائف النظام البيئي الحاضن لريادة الأعمال (مثل رأس المال وخدمات دعم الأعمال ورأس المال البشري والبنية التحتية وخلق المعرفة وحاضنات ريادة الأعمال). بالإضافة إلى ذلك، نتطلع إلى معرفة رأيك

فيما يتعلق بالتشبيك بين الجهات الفاعلة في النظام البيئي الحاضن للريادة وتأثير المساعي الحالية على إنتاجية ريادة الأعمال والأداء الاقتصادي العام.

نحن نقدر مشاركتك ونضمن أن المعلومات الشخصية ستكون مجهولة المصدر؛ ستبقى جميع الآراء المقدمة سرية ولن تُستخدم إلا لغرض البحث.

### القسم 1: معلومات أساسية

\* انت تمثل:

- هيئات عامة (وزارات، بلديات، جهات حكومية)
- جامعة / مؤسسة بحثية، مؤسسات بحث وتطوير
- جهات ممولة (شركات رأس مال استثماري، ملاك الأعمال، بنوك، أنواع أخرى من المستثمرين)
- مؤسسات أعمال (شركات صغيرة ومتوسطة، شركات كبيرة)
- منظمات داعمة لريادة الأعمال (وكالة تمويل، جمعيات، مسرعات، حاضنات، أنواع أخرى من مقدمي الدعم)
- منظمات غير حكومية (مجتمع مدني)
- أخرى \_\_\_\_\_

\* اسم المؤسسة / الجهة:

\* الموقع الوظيفي:

\* المستوى التعليمي:

### القسم 2: تحديات استدامة التنمية الحضرية في منطقتك

في هذا القسم، نطلب منك التفكير في تحديات التنمية الحضرية المستدامة التي يواجهها المجتمع في منطقتك. وللتسهيل، نعرض قائمة بالتحديات المحتملة كأمثلة لذلك ولا تتردد في الاختيار من القائمة أو تحديد أي تحديات أخرى.

2.1 قيم أهمية كل من تحديات الاستدامة الحضرية التالية لمنطقتك الجغرافية.

قيم مستوى الأهمية من 0 إلى 4 ، حيث 0 ليس مهمًا و 4 مهم جدًا

\*التخطيط الحضري وتخطيط النقل (المشاكل ذات الصلة مثل تلوث الهواء المرتبط بمشاكل المرور، وأنماط الحياة الخاملة وغير النشطة، الضوضاء وانبعاثات غازات الاحتباس الحراري والآثار المرتبطة بذلك على الصحة العامة).

مهم جدا 4 3 2 1 0 ليس مهما

هل يمكن أن تذكر أكبر تحد في هذا المجال؟

\* البنية التحتية الخضراء ((ارتبطت البنية التحتية الخضراء في المناطق الحضرية أيضًا بالعديد من الفوائد التي تعود على البيئة والمجتمع، مثل التخفيف من آثار تلوث الهواء وتغير المناخ (أي أن الغطاء النباتي لديه القدرة على إزالة ثاني أكسيد الكربون والملوثات الغازية والجزيئات المحمولة جواً) بالإضافة إلى الفوائد الجمالية والترفيهية. أما من ناحية أخرى، فتشمل الآثار السلبية المحتملة كانبعاثات حبوب اللقاح والمركبات العضوية المتطايرة، والقراد في المناطق الحضرية، ومخاوف السلامة، ومدخلات الطاقة وتكلفة صيانة المساحات الخضراء في المناطق الحضرية).

مهم جدا 4 3 2 1 0 ليس مهما

هل يمكن أن تذكر أكبر تحد في هذا المجال؟

\* البنية التحتية الزرقاء (ونعني بها عناصر المياه، مثل الأنهار والقنوات والبرك والأراضي الرطبة والسهول الفيضية ومرافق معالجة المياه، إلخ)

مهم جدا 4 3 2 1 0 ليس مهما

هل يمكن أن تذكر أكبر تحد في هذا المجال؟

\* الأنظمة الغذائية في المناطق الحضرية (الأنظمة الغذائية الصحية، وسلامة الأغذية وأمنها، والبنية التحتية الغذائية في المناطق الحضرية (من ناحية إنتاج الغذاء وتخزينه وتوزيعه)).

مهم جدا 4 3 2 1 0 ليس مهما

هل يمكن أن تذكر أكبر تحد في هذا المجال؟

\* الطاقة المستدامة (من المتوقع أن يؤدي التحضر ورفع مستويات المعيشة إلى زيادة الطلب على الطاقة، ولا سيما في البلدان منخفضة ومتوسطة الدخل وسريعة التحضر).

مهم جدا 4 3 2 1 0 ليس مهما

هل يمكن أن تذكر أكبر تحد في هذا المجال؟

\* إدارة النفايات (من المتوقع أن يؤدي التحضر ورفع مستويات المعيشة إلى زيادة إنتاج النفايات).

مهم جدا 4 3 2 1 0 ليس مهما

هل يمكن أن تذكر أكبر تحد في هذا المجال؟

\* المساواة الصحية الحضرية (تغير المناخ، والتلوث، والسكن غير المناسب، والإنتاج والاستهلاك غير المستدامين، يهددون العدالة البيئية والصحية عبر الأجيال والطبقات الاجتماعية والاقتصادية والبيئات الحضرية. الفئات الضعيفة (الأطفال الصغار، وكبار السن، والفقراء، والذين يعانون من مشاكل صحية) من المرجح أن يعانون أكثر من التلوث البيئي والظواهر المناخية المتطرفة، مثل موجات الحر والفيضانات والجفاف).

مهم جدا 4 3 2 1 0 ليس مهما

هل يمكن أن تذكر أكبر تحد في هذا المجال؟

\* تحديات أخرى:

### القسم 3: الجهات الفاعلة في النظام البيئي الريادي واتصالهم

3.1 فيما يتعلق بتحديات الاستدامة الحضرية في منطقتك، أي من الجهات الفاعلة التالية في النظام الريادي مهمة لتكون على اتصال بمؤسستك/عملك؟

درجة الأهمية			أصحاب المصلحة للنظام البيئي الريادي
عالية	متوسطة	قليلة	
			هيئة عامة (وزارة، مدينة، جهة حكومية)
			جامعة/ مؤسسة بحثية، مؤسسات بحث وتطوير خاصة
			جهات مالية (شركة رأس مال استثماري، شركات تجارية ممولة، بنك، أنواع أخرى من الممولين)

			منظمات تجارية (شركة ناشئة، شركة صغيرة ومتوسطة، شركة كبرى، شبكة تجارية/ جمعية)
			منظمة داعمة للشركات التجارية وريادة الأعمال (وكالة تمويل، رابطة صناعة، مسرع أعمال، حاضنات، أنواع أخرى من مقدمي الدعم)
			منظمة غير حكومية/ ممثل المجتمع المدني
			أخرى

#### القسم 4: تقييم النظام البيئي الريادي

4.1 بالنظر إلى تحديات الاستدامة الحضرية في منطقتك، كيف تقيم الوظائف التالية للنظام والبيئة الحاضنة للابتكار الريادي الذي تعمل فيه؟

التقييم			وظائف النظام البيئي لريادة الأعمال
ممتاز	جيد	ضعيف	
			الوصول إلى رأس المال/ التمويل
			خلق المعرفة من خلال المؤسسات الجامعية والبحثية
			الأنظمة والسياسات الداعمة للريادة والاستدامة
			الثقافة والوعي بالريادة والاستدامة البيئية
			توافر الموارد البشرية المؤهلة لحل المشكلات الحضرية
			إمكانية الوصول إلى البنية التحتية المادية والرقمية
			وجود منظمات داعمة للأعمال الريادية الموجهة نحو الاستدامة
			سوق المنتجات المبتكرة (القوة الشرائية للمجتمع)
			الوصول إلى رأس المال/ التمويل
			خلق المعرفة من خلال المؤسسات الجامعية والبحثية
			الأنظمة والسياسات الداعمة للريادة والاستدامة
			الثقافة والوعي بالريادة والاستدامة البيئية
			توافر الموارد البشرية المؤهلة لحل المشكلات الحضرية
			إمكانية الوصول إلى البنية التحتية المادية والرقمية
			وجود منظمات داعمة للأعمال الريادية الموجهة نحو الاستدامة
			سوق المنتجات المبتكرة (القوة الشرائية للمجتمع)

#### القسم 5: وظائف البيئة الحاضنة للريادة بالتفصيل

5.1 إلى أي درجة تعتبر عناصر التمويل/ رأس المال التالية عقبة أمام رواد الأعمال والشركات الناشئة \*

عقبات كبيرة	عقبات متوسطة	عقبات طفيفة	لا عقبات	عناصر التمويل/ رأس المال
				الوصول إلى التمويل بالدين
				الوصول إلى التمويل الأسهم
				الوصول إلى المنح

5.2 إلى أي درجة تمثل العناصر التالية في إنشاء المعرفة عقبة أمام رواد الأعمال والشركات الناشئة في البيئة الحاضنة للريادة\*

عقبات كبرى	عقبات متوسطة	عقبات طفيفة	لا عقبات	انشاء المعرفة
				وجود عدد كافٍ من الجامعات والمعاهد البحثية
				الإفناق على البحث والتطوير
				توافر دراسات علمية عن التنمية الحضرية المستدامة
				استنزاف أدمغة/ هجرة الباحثين والعلماء

5.3 إلى أي درجة تشكل عناصر السياسة وبيئة الأعمال عقبة أمام العمليات الحالية للمؤسسات / الشركات الناشئة القائمة على الابتكار؟\*

عقبات كبرى	عقبات متوسطة	عقبات طفيفة	لا عقبات	
				وجود سياسات ولوائح موجهة نحو الاستدامة والتحديات البيئية
				حوافز للرياديين والافكار الابداعية لحل المشكلات البيئية أو الحضرية
				توافر المعلومات أو البيانات على المستوى الوطني

5.4 أي من العناصر التالية هو جزء من ثقافة ريادة الأعمال في بلدك؟ (غير موجود ، موجود نسبيًا ، موجود بقوة)\*

موجود بقوة	موجود نسبيًا	غير موجود	
			حافز ريادي في المجتمع
			الميل إلى المخاطرة
			الأعراف الثقافية والاجتماعية لريادة الأعمال
			الروايات الإعلامية الإيجابية عن ريادة الأعمال
			الوعي بأهمية أن تكون مبتكرًا

5.5 كيف تقيم العناصر التالية للبنية التحتية للنظام الحاضن للريادة (المادي والرقمي) \*

ممتازة	كافية	غير كافية	
			توافر وجودة المرافق مثل (الغاز والمياه والكهرباء)
			شبكات اتصال/إنترنت /نقال يمكن الوصول إليها
			خدمات النقل التي يمكن الوصول إليها

5.6 إلى أي مدى تمثل العناصر التالية لرأس المال البشري عقبة أمام عمليات النظام الحاضن للريادة \*

عقبات كبرى	عقبات متوسطة	عقبات طفيفة	لا عقبات	

				توفر تعليم الريادة وإدارة الأعمال
				جودة تعليم الريادة وإدارة الأعمال
				توفر خريجي نظام تعليم العلوم والتكنولوجيا والهندسة والرياضيات (STEM) بمؤهلات جيدة
				توفر القوى العاملة الفنية العامة المتعلمة / المدربة

5.7 إلى أي مدى يمكن الوصول إلى العناصر التالية من خدمات دعم الأعمال في البيئة الحاضنة للريادة \*

صعبة الوصول	إمكانية وصول معتدلة	سهلة الوصول		
				وصول إلى الخدمات القانونية
				الوصول إلى الخدمات الضريبية والمحاسبية
				الوصول إلى الحاضنات / مسرعات الاعمال
				الوصول إلى المستشارين التقنيين / المرشدين / المستشارين

5.8 إلى أي درجة تعتبر العناصر التالية من السوق /الطلب عقبة أمام العمليات الحالية لمنظمتك \*

عقبات كبرى	عقبات متوسطة	عقبات طفيفة	لا عقبات	
				توافر معلومات عن السوق /دراسات
				حجم السوق المحتمل معبراً عنه في عدد السكان
				القوة الشرائية المحتملة (دخل الفرد)
				الوصول للأسواق المحلية
				الوصول للأسواق الدولية

#### القسم 6: احتياجات الفاعلين في النظام الحاضن للريادة والتأثير المحتمل

6.1 كيف يمكن للرياديين الفاعلين (مثل الشركات الصغيرة والمتوسطة، والشركات الناشئة، والحاضنات، ومديري التمويل، والمستثمرين، ورأس المال المجازف) أن يكون لهم تأثير أقوى في مواجهة تحديات الاستدامة الحضرية المحلية؟ ضع علامة صح على كل ما ينطبق \*

- الوصول إلى البرامج الداعمة والمختبرات الحيوية وجهات العمل المشترك
- من خلال الدخول في مناقصات شرائية عامة متطورة.
- الانضمام إلى مشروع دولي يركز على إحداث أثر تحديات الاستدامة الحضرية.
- تلقي الدعم لتطوير نماذج الأعمال المناسبة
- من خلال إنشاء أسواق خضراء جديدة مدعومة بالسياسات واللوائح العامة

غير ذلك ، يرجى توضيح ذلك

6.2 بناءً على معرفتك أو معلوماتك أو خبرتك داخل نظامك الريادي المحلي، إلى أي مدى توافق على العبارات التالية؛\*

لا أعرف	عالي الأهمية	متوسطة الأهمية	منخفض الأهمية	تلعب خدمات النظام الحالي الداعم لريادة الأعمال دوراً في:
				زيادة عدد الشركات المنشأة حديثاً

				انخفاض معدلات إغلاق الشركات
				خلق فرص عمل جديدة للشباب
				دعم السيدات رائدات الأعمال
				تحسين معدل / متوسط الأجور والرواتب
				زيادة جودة العمل
				تخفيض معدل البطالة
				الحد من الفقر
				تحسين أداء التصدير
				تعزيز نمو الناتج المحلي الإجمالي
				معالجة تحديات الانبعاثات المناخية
				التقليل من إنتاج النفايات والتخلص منها
				حل مشكلة نقص المياه والصرف الصحي
				حماية التنوع البيولوجي
				تحسين نوعية الحياة في المدن
				إنتاج طعام صحي
				تحسين صحة السكان
				زيادة كفاءة وجودة ونظافة الأنظمة الإنتاجية
				زيادة الوصول إلى التعليم والثقافة
				ضمان الحصول على طاقة نظيفة وبأسعار معقولة
				تحقيق المساواة بين الجنسين وتمكين المرأة
				اخرى

#### القسم 7: الاتصال

سوف نتابع هذا الاستطلاع من خلال تنظيم سلسلة من ورش العمل مع الجهات الفاعلة في النظام البيئي الريادي الذين يمثلون قطاعات النظام البيئي الرئيسية لمناقشة التحديات المتعلقة بالتنمية الحضرية.

سنكون ممتنين إذا شاركت معنا في مثل هذه الأحداث. هل تحب أن ندعوك إلى ورش عملنا القادمة في نفس هذا السياق؟\*

- نعم  
 لا

شكرا لك على وقتك ومدخلاتك القيمة