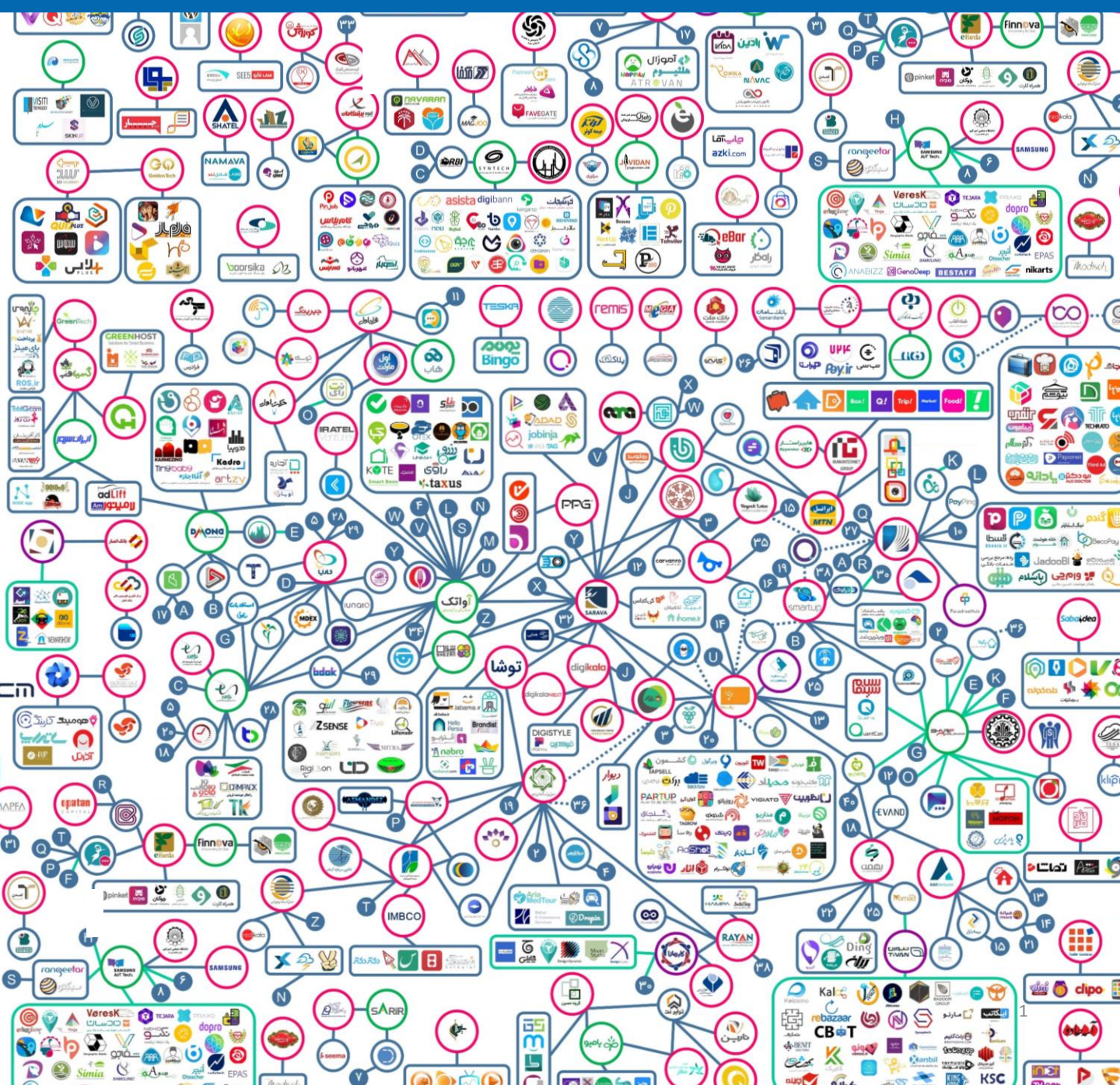




Mapping of the Existing Innovation Ecosystem in the I.R. of Iran



November 2021



Executive Summary

The “Iran’s Innovation Ecosystem Mapping” report, is prepared by UNDP Iran; a deep dive into the country’s innovation ecosystem.

The report provides a holistic view to the reader on innovation context in Iran, starting with an overview of the country’s innovation infrastructure and its place in the global innovation map, followed by the existing governmental support for Iranian startups, as one of the main players in Iran’s innovation ecosystem.

It illustrates the socio-economic characteristics of startups, the demography of startup support centers including; incubators, accelerators, venture capitals, and science and technology parks, in addition to the effect and impact of sanctions on Iran’s innovation ecosystem.

The report aims to provide a blueprint for data-driven decision-making on potential entry points for UNDP’s innovative interventions/programmes in Iran.

Report prepared by: Golnaz Shanehband

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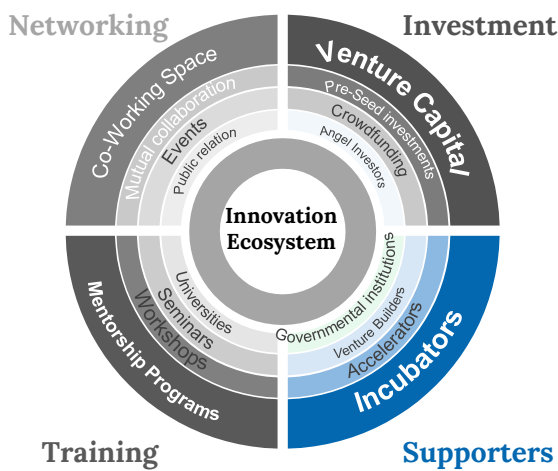
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Innovation Ecosystem Infrastructure



The infrastructure required to create a successful innovation ecosystem includes investment, networking, training, and supporters who can be a bridge for the ideas of entrepreneurs and innovative companies to create, grow, and develop startups. Each of the mentioned infrastructures according to the life cycle of a startup can include other sub-sections as shown below:



For each of the innovation ecosystem infrastructures shown in the figure above, separate organizations and structures with different functions to grow and develop the ecosystem and help startups have been formed. They are created and operating with more or less similar functions in Iran's ecosystem.

Besides the other three innovation ecosystem's infrastructures, supporters have a key role in the innovation ecosystem. Therefore, in this section a brief description of these centers and their role in innovation ecosystem is provided.

An Incubator is an institution that supports entrepreneurs in developing their startups, especially in the initial stages. These are a highly flexible combination of business development processes designed to nurture and grow new and small startups by supporting them through the early stages of development. In incubators, as early-stage hand-holders, there are commonly two different phases which are named the pre-incubation phase and incubation phase.

A Science and Technology Park (STP) is a governmental organization associated with the Ministry of Science, Research and Technology, which has several affiliated centers namely Incubators and the Innovation Centers. STP can also house small and medium-sized companies, research and development (R&D) centers, large corporations, and scientific associations. Technology Park stimulates and manages the flow of knowledge and technology amongst universities, R&D institutions, companies, and markets. It also facilitates the creation and growth of innovation-based companies through incubation and spin-off processes and provides other value-added services together with high-quality space, mentorship and facilities.

An accelerator is an organization that offers mentorship, capital, and connections to investors and business partners. It is designed for selecting startups with promising Minimum Viable Products and founders, as a way to rapidly scale growth. Accelerators are intense and fast-paced, taking 3-6 months to get an early-stage startup ready for market.

To get into an accelerator, startups go through a selective screening process as they are more growth-driven, typically aiming to produce startups that will scale rapidly and minimize resources.

An Innovation Center is a center consisting of one or more innovation teams working together with research centers and companies applying for new products, within the framework of a long-term plan.

Innovation centers and accelerators are mostly private organizations supported by big companies, banks, science and technology parks, and also universities. The services offered by innovation centers to startups and entrepreneurs include acceleration programs, co-work space, and venture investment.

Since almost all the innovation centers in Iran have an acceleration program as well, the name of the innovation center and the accelerator are used interchangeably in Iran.

A Venture Builder is known as "Startup Studio", creates potential startups professionally from the ground-up level. A venture builder enables startup to leverage its internal team of business developers, designers, marketers in the ideation, development, and launching of a company.

Where Does Iran Stand on the Global ‘Innovation’ Map



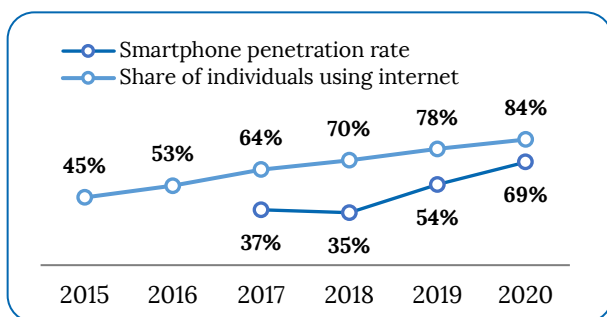
Multiple parties in Iran, in both the public and private sector, have invested in capital and research and development to construct and maintain the infrastructure that supports the digital ecosystem that makes the digital economy possible. These parties include communication service providers (CSPs), digital service and content providers, as well as hardware and software manufacturers.

In Iran, innovation ecosystem represents one of the main components of the digital economy in recent years. Review of Iran’s global digital and innovation indexes and indicator ratings during the last 5 years shows very promising improvements.

Iran’s Network Infrastructure

According to the Ministry of Information and Communications Technology of Iran, the number of internet subscribers in 2020 was **70.6 million people**. Internet penetration rate of **84%** is well above the world average.

Additionally, the smartphone penetration rate in Iran in 2020 was estimated to be **69%** which is relatively higher compared to global average (49%). This means **58.2 million people** in Iran have smartphones in their possession.



Iran’s smartphone and internet penetration rate

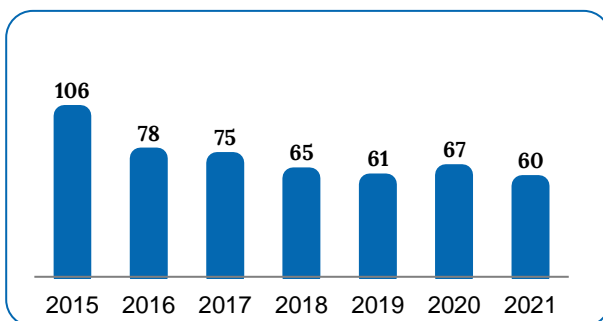
Network Readiness Index

The 2020 Network Readiness Index (NRI) ranks a total of 134 economies based on their performance across 60 variables. NRI applies a holistic approach covering issues ranging from future technologies such as Artificial Intelligence and the Internet of Things to the role of the digital economy in reaching the Sustainable Development Goals.

Iran is ranked **79th in NRI 2021** out of 130 countries. Compared to Iran’s rank in 2016 (92nd), Iran has moved up by 13 levels.

Global Innovation Index (GII)

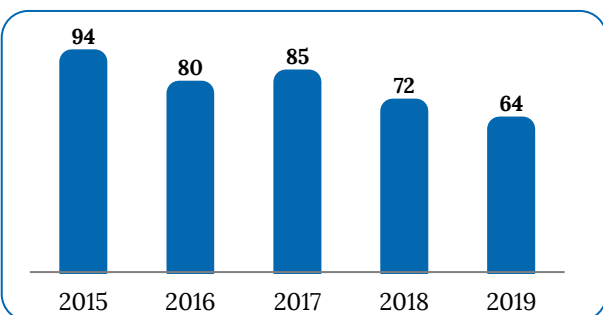
World Intellectual Property Organization (WIPO) publishes an annual global innovation index. The Global Innovation Index (GII) ranks the innovation ecosystem performance of economies around the globe by analyzing 80 indicators, including measures on the political environment, education, infrastructure, and knowledge creation of each economy each year. The Global Innovation Index 2021, captures the innovation ecosystem performance of 132 economies. Iran is ranked **60th in GII 2021** index. Regarding the “Top three innovation economies by region”, Iran is ranked second in Central and Southern Asia.



Iran's rank in Global Innovation Index (GII)

The Global Entrepreneurship Index (GEI)

GEI is an annual index published by the Global Entrepreneurship Development Institute (GEDI) that measures the health of entrepreneurship ecosystems in 137 countries. Iran is ranked **64th in GEI 2019** index as compared to 94th rank in 2015 showing a stable upward trend during the last 5 years.

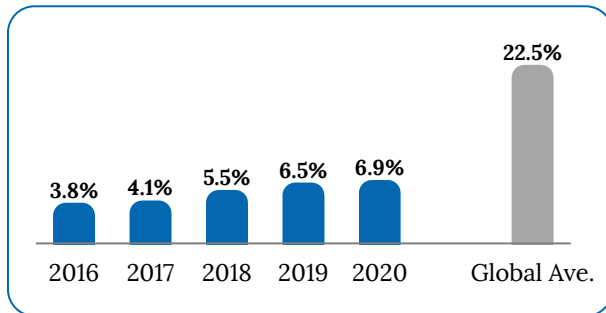


Iran's rank in Global Entrepreneurship Index (GEI)

Iran's Digital Economy at a Glance



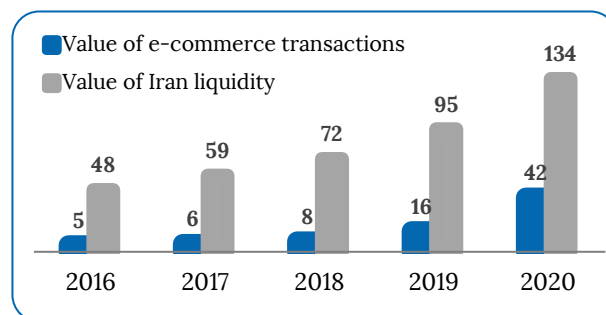
In the past decade, the digital economy has witnessed continuous growth in Iran. According to Statista, the share of the digital economy in Iran's GDP has increased from 3.8% in 2016 to **6.9%** in 2020. Although the average growth in this sector is higher than in other sectors of the Iranian economy, it is still far from its average value in the world economy.



Iran's digital economy share of GDP

According to the electronic card payment system of Iran (Shaparak), in 2020, the electronic purchases over Point of Sales, internet, and mobile phones in Iran have passed **USD 42 B.** (USD/IRR 260,000)

According to the Statistical Center of Iran, this amount is **34% of the country's liquidity** in 2020. This means that compared to 2019, the number of online purchases in Iran in 2020 has increased by more than 2.5 times.

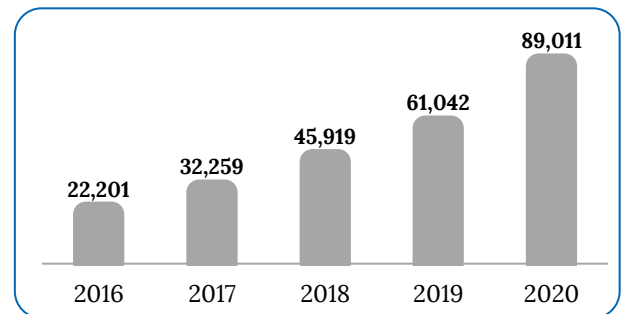


Value of e-commerce transactions and Iran's liquidity [B USD]

According to the e-commerce Development Center of Iran, the total number of e-commerce units is estimated to be around **350,000** units.

e-Namad license

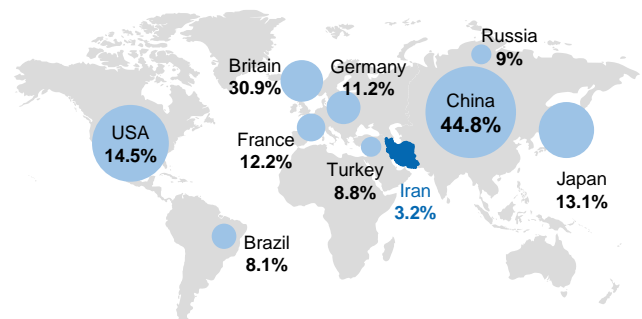
In 2008, Iran's Ministry of Industry and Mining took the responsibility to regulate and organize the online shops and started issuing e-Namad licenses for e-commerce websites. Any company or individual that wants to sell its products/services online via its website in Iran, should acquire the e-Namad, which is the official indicator for a trusted online vendor. However, a high share of these vendors are operating without this license.



Number of Iranian active e-commerce unit with e-Namad license

According to the annual report published in 2020 by Digikala (one of the country's leading e-commerce companies), the number of online shopping portals is estimated to be approximately **49,000**, which has more than tripled in the past 3 years. Moreover, the total number of Iranian producers working with Digikala has reached **152k** in 2020.

The share of online retail of total e-commerce transactions in Iran increased from 2% in 2019 to **3.2%** in 2020. This number is related to marketplace websites as well as social media. This upward trend in addition to natural and gradual growth has also been affected by the spread of the COVID-19. The map below illustrates Iran's share of online retail compared to other countries in 2020.



share of online retail in the world, 2020

Introduction to Innovation Ecosystem in Iran



Although the first incubator in Iran was established in 2000, the first wave of startups in Iran started after 2012, thanks to the initiatives taken by several universities, visionary individuals, and the return of foreign-educated Iranians. The movement was quite late compared with other developing countries such as India, but it quickly expanded and caught up with the latest technologies as more and more students, academics, entrepreneurs, government bodies, as well as domestic and foreign investors started to get involved.

In 2014, Several private and governmental investment and venture capital firms, as well as angel investors, accelerators, incubators, and science parks, were established to drive and develop the ecosystem. In terms of the number of startups, there were around 150 startups by the end of 2014.

In 2015, there has been a surprising growth in the number of startups reaching estimated number of up to 400 startups in Tehran alone. This shows an impressive 150% growth rate in the number of startups in Iran's startup ecosystem.

The second wave of Iranian startups, appeared in 2016, with companies working in other sectors such as Financial Technology (Fintech), Insurance Technology (InsurTech), Video-on-Demand (VOD), and messaging apps. Among them, the Fintech vibe in 2016 turned into the emerging trend in Iran's startup ecosystem.

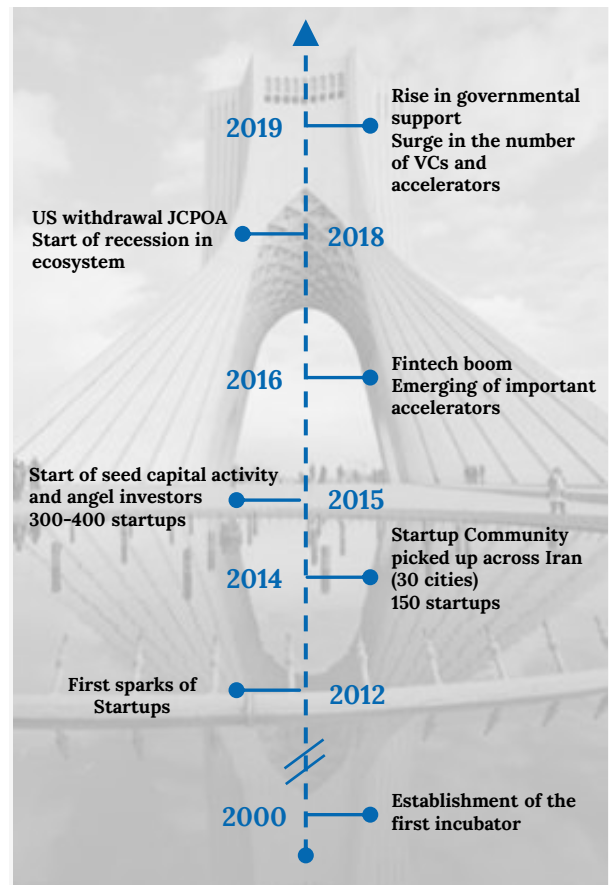
The third and the current wave started when the US withdrew from the Joint Comprehensive Plan of Action (JCPOA) in 2018. This has caused deterioration of the business environment for startups in several areas. Subsequently, the growth of startups in the country slowed down since 2018 due to a sharp decline in domestic and foreign investment in the field of startups.

However, restrictions can turn to opportunities and this is what happened in Iran. In the absence of international players, Iranians saw the opportunity and started to clone and localize the international platforms and services.

Between 2014 to 2020, the two institutions of the Vice Presidency for Science and Technology and the Ministry of Communications provided support for startups thorough different policy measures.

Throughout these years, the government has also tried to help entrepreneurs by easing the regulations and tax laws for early startups, through a "knowledge-based firms" plan. The government has supported VCs and accelerators by providing venue spaces on university campuses. Pardis Technology Park aka. "Silicon Valley of Iran" which also hosts many entrepreneurs, was funded by the government to help the tech sector.

Particularly, since 2019, after sanctions were re-imposed and in order to improve the concept of self-sufficiency, governmental support for startups increased sharply. The support included funding in the form of loans and direct investments (through Iran National Innovation Fund) and other incentives for building startup support facilities such as accelerators, innovation centers, and innovation factories. These policy measures resulted in rapid growth in the number of these centers between 2019 to 2020.



History of Iran's startup ecosystem

Government's Support to Iran's Innovation Ecosystem

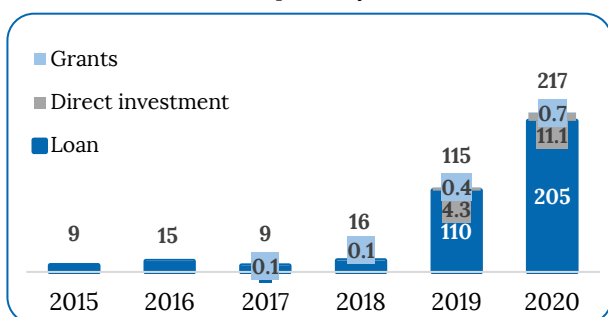


Iran's Science, technology, and innovation (STI) policies are categorized in 3 waves:

- Wave 1: Developing higher education and scientific publications (from 1990)
- Wave 2: Developing research and emerging technologies (from 2000)
- Wave 3: Transition towards innovation and a knowledge-based economy (from 2010)

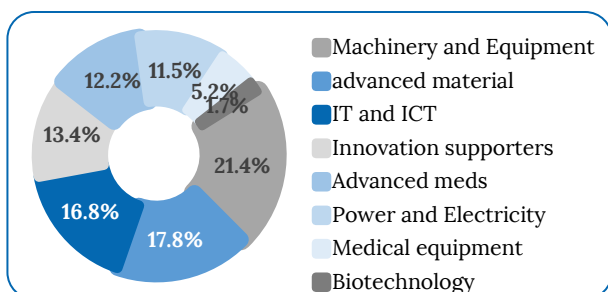
Looking at the current wave, wave 3, Iran National Innovation Fund (INIF) was established in 2011, in order to assist the non-governmental institutions and companies in the commercialization of innovation by providing financial support and services. INIF works as one of the key intermediary agencies under the direct supervision of the Vice Presidency for Science and Technology. The INIF's services are classified into Loan, Credit Notes, investment, and empowerment.

As illustrated in below figure, considerable support was provided through loans. Moreover, since 2019, there was a sharp increase in the fund allocation. The total financial support in 2019 and 2020 sums up to 87% of the total allocated fund in the past 5 years.



INIF financial support by type, M USD [2015-2020]

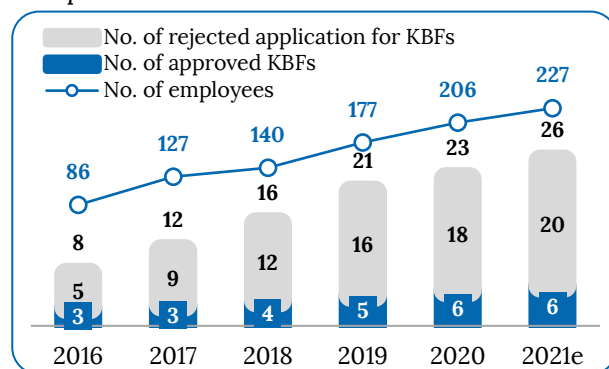
In the figure below, the INIF loan allocation in the period of 2018-2020 by type of application is presented. Working capital has the most considerable share in the total load allocations.



INIF loan allocation by sector, [2018-2020]

The government has also tried to help entrepreneurs by easing the regulations and tax laws for early startups, through a “Knowledge-based firms” plan.

A **Knowledge-Based Firm (KBF)** is an entity that engages in development and application of invention or innovation and commercialization of R&D outcomes in higher technologies with a high added value including designing and production of goods and services. In Iran, the number of KBFs has increased from around 3,000 in 2016 to more than **6,300** in 2021. There are strict criteria for admitting a company as a knowledge-based firm; among the total 26k applications for KBFs, only 24% have been accepted.



Cumulative number of knowledge-based firms [thousand]

Historically, each KBF provides jobs for an average of 35 people. The total number of employees for KBFs grew from 86k to 227k in 5 years.

Currently, many KBFs are active in different fields, including information and communication technology, healthcare, biotechnology, agriculture, and energy.

In addition to the formation of knowledge-based firms, there is another type of company under the support plan of the government, which officially came into existence in Iran in 2017 and was named “**Creative Company**”. The main activity of creative companies is in the field of art, creative industries, culture, and digital services.

Creative companies use creativity, innovation, and new business models in offering new products and services. However, the growth and development of their products and services are not based on advanced technology. The total number of creative companies in 2021 has reached **1,412**.

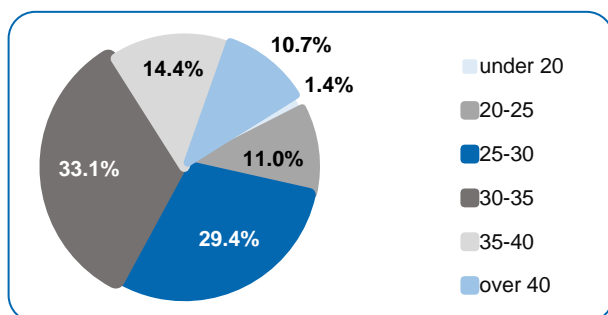
Socio-Economic Characteristic of Startups



The following analysis on Iranian startups is based on a questionnaire that was completed and submitted by 347 startups in Elecomp 2019 (Iran's Market of Electronics and Computer Products and Services):

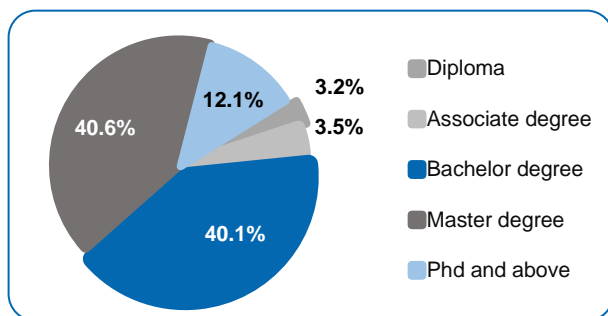
Demographic analysis of startups' founders

The socio-economic information shown below refers to the age group of startups founders. 62% of the founders are aged between 25 and 35 years.



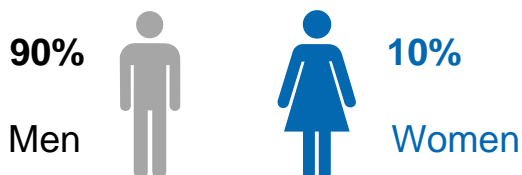
Founders of surveyed startups in Iran by age group

Regarding the educational level of the startup founders, the most widespread educational qualification is Master's Degree (40.6%). It is found that 92% have earned at least a university degree and approximately 12% have earned a Ph.D.



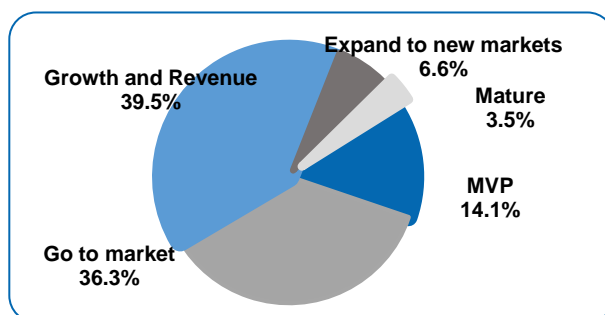
Founders of surveyed startups in Iran by educational background

According to the research, the comparative analysis of the distribution of the founders by gender shows that only 10% of the founders are female.



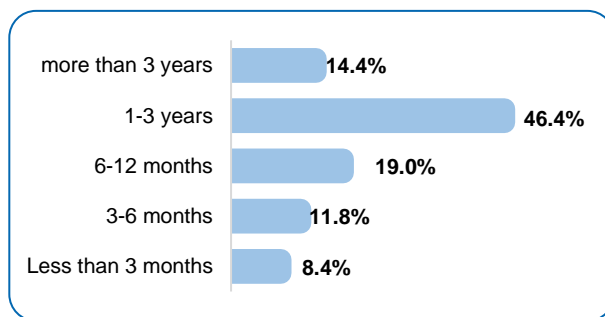
Business analysis of startups

Regarding the growth stage of startups, about 40% of surveyed startups were in the growth and revenue generation stage, 14% were in the stage of coming up with a Minimum Viable Product (MVP) and only 3.5% were considered as mature and in after growth stage.



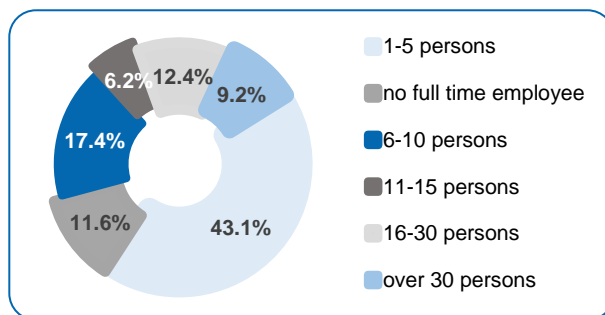
Growth stage of surveyed startups in Iran

Looking at the life cycle of the startups, approximately half of the surveyed startups have the age of 1 to 3 years and 8% were less than 3 months old.



Life cycle of surveyed startups in Iran

Regarding the number of employees, 43% of the startups have less than 5 full-time employees and only 9% have more than 30 full-time employees.



Surveyed startups in Iran by number of full-time employees

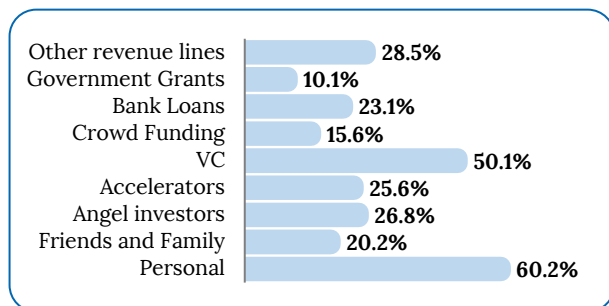
Socio-Economic Characteristic of Startups (cont'd)



The most common types of financing sources for startups are as follows:

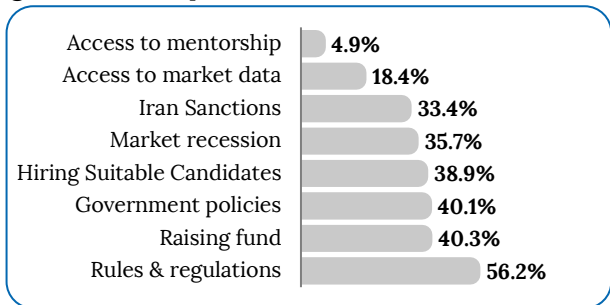
- Founders' resources;
- Donations from family and friends: contributions from relatives or friends of the entrepreneur that finance the capital of the startup while not entering into its company structure;
- Equity crowdfunding;
- Equity financing: investments by external investors, among them Venture Capital, business angel funds, and accelerators;
- Government financial support;
- Bootstrapping by other projects/revenue lines;
- Finally, use of bank loans, the traditional source of financing.

In particular, the survey included a question to indicate the financing sources they have benefitted from. As is shown below, the most common way of financing for startups is personal financing followed by VC resources. The frequency distributions are analyzed below



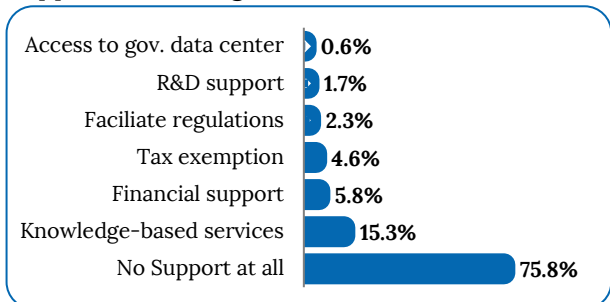
Surveyed startups in Iran financing methods

Startups and entrepreneurs, especially in Iran, are facing different challenges. In the figure below a number of these challenges are rated by the surveyed startups in Iran. Rules and regulations were considered the most challenging, followed by raising funds and governmental policies.



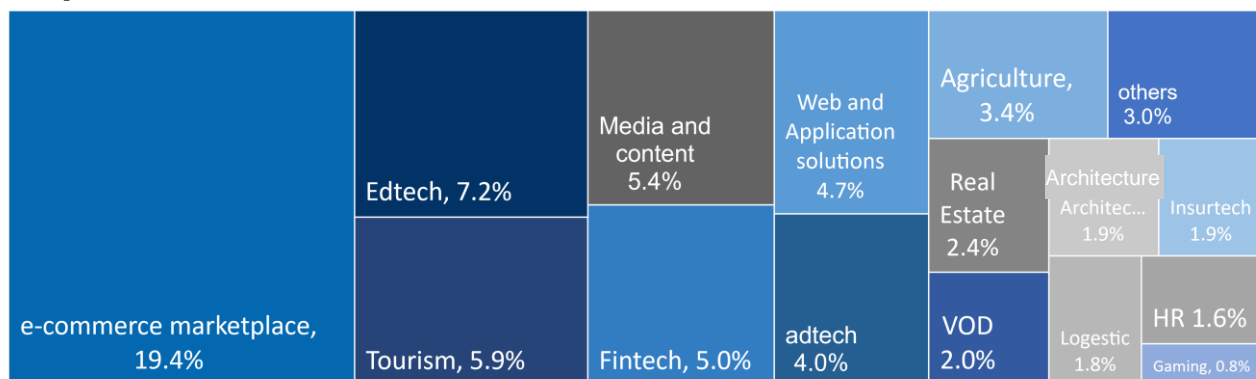
Challenges faced by surveyed startups in Iran

In another question, startups were asked about types of governmental support they have benefitted from. Their responses are illustrated in the figure below. It is worth mentioning that 75% of the surveyed startups received no support from the government.



How surveyed startups in Iran benefit from governmental support

In the absence of a reliable and official source of information on the number of startups in Iran, the total record of startups registered on the [Ecomotive](#) website is considered as a basis for analysis on the sector diversification of startups. By the time of preparing this report (Nov 2021), the total number of **1,632** enterprises was counted on the archive of Ecomotive. The industry analysis of this sample is shown below:



Estimated share of industries in Iranian startups

Iran's Sanctions and Innovation Ecosystem



During the past couple of years, especially since the US withdrawal from JCPOA in **May 2018**, the business environment for startups has transformed in several areas.

There is this belief among ecosystem players in Iran that sanctions among all of the challenges have somehow accelerated the growth rate of Iranian innovation ecosystem. Being cut off from the outside competitors has bought time for startups to grow in a safe space with easy competitors, making them ready for the time when the doors to Iran's market opens to the world.

Looking in-depth, one of the main reasons why sanctions helped many local tech companies in Iran grow, leads down to the banned payment systems and online transaction methods. This was the golden gate for Iranian entrepreneurs to create their localized version of these business models with in-house solutions for transaction methods. Companies and startups were forced to collaborate with other national companies which empowered the infrastructure of Iran's tech world.

Sanctions have also triggered the spread of the culture of entrepreneurship in Iran forcing aspiring entrepreneurs to take action in their own hands and build startups according to local needs. During 2019-2020, government-backed bodies including National Development Fund and National Innovation Fund, provided government-backed plans for supporting startups, through which they allocate loans and grants to existing and emerging startups. However, the size of these allocated funds may be comparably small to make a major difference considering the size of the Iranian startup ecosystem and the required initial investments.

However, sanctions have also caused several main obstacles for Iranian startup ecosystem. The domestic and foreign appetite for investments in Iranian technology startups reduced substantially since 2018, because of the perceived high risks due to the country's political and financial challenges. Even domestic investors have preferred to wait or to engage in less sensitive investment opportunities.

An additional issue is the lack of licensed access to many European and American hardware and software solutions due to the imposed US sanctions since May 2018. These restrictions take a serious toll on the technology startups as many of their products are running on European and American IT machines, platforms, and applications.

As a result, Iranian startups will not have proper access, if any, to European and American products as well as service providers, the international market, or get exposure to international players to perhaps be acquired by them or to become their partners.

Likewise, foreign companies - such as customers and suppliers - cannot buy or integrate Iranian startups' products into their solutions out of the fear of violating US sanctions even though they only cooperate with the startups within the private sector.

Therefore, unlike many other nations, Iranians have their local version of international startups. The marketplace business model is getting most of the traction in the country as it is empowering many businesses and individuals. Here is an infographic of some of the well-known Iranian startups and their international equivalent.



Some Iranian startups and their international equivalent

Iran Startup Ecosystem Demography



The infrastructure required to create a successful innovation ecosystem includes investment, networking, training, and supporters. The support centers help the ideas of entrepreneurs and innovative companies to grow. In Iran, the main startup support centers are as follows:

1. Science and technology parks
2. Venture capitalists
3. Co-working spaces
4. Incubators
5. Accelerator and innovation centers

In this section, the characteristic and estimated number of these centers in Iran are presented. The following map presents an overview of the estimated number of the key players in Iran's startup ecosystem by 2021.

1. Science and Technology Parks

According to the Ministry of Science, Research and Technology, as of Nov 2021, there are 49 Science and Technology Parks across the country. There is at least 1 STP in each province and in some provinces, there are more than 1 namely; Tehran (12), Razavi Khorasan, Semnan, Markazi, and Hormozgan with (2) STPs each.

2. Venture Capital is a form of financing that investors provide for small businesses that are believed to have long-term growth potential. Venture investment in Iran is mainly made by venture capitalist (VC), corporate venture capital (CVC), venture capital fund, research and technology fund (RTF), angel investor, and crowdfunding. As of Nov 2021, it is estimated that there are 85 venture investment companies in Iran. RTF is a non-governmental organization, provides services for startups and knowledge-based firms including loan, credit notes, free consulting and mentorship, and direct investment. There are a total of 61 registered RTFs.

3. Co-working spaces: Most accelerators and innovation centers in Iran provide co-working space as one of their main services for their startup teams that are in the program. However, there are co-working spaces that provide space open to the public and freelancers as well as admitted teams to their acceleration or incubation program. As of Nov 2021, the total number of independent co-working spaces in Iran is estimated to be 56.



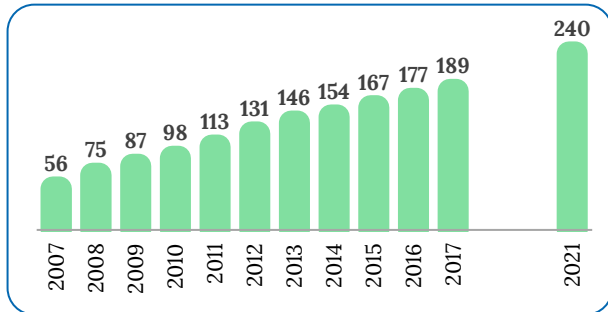
Iran's startup support centers map

Iran Startup Ecosystem Demography (cont'd)



4. Incubators in Iran

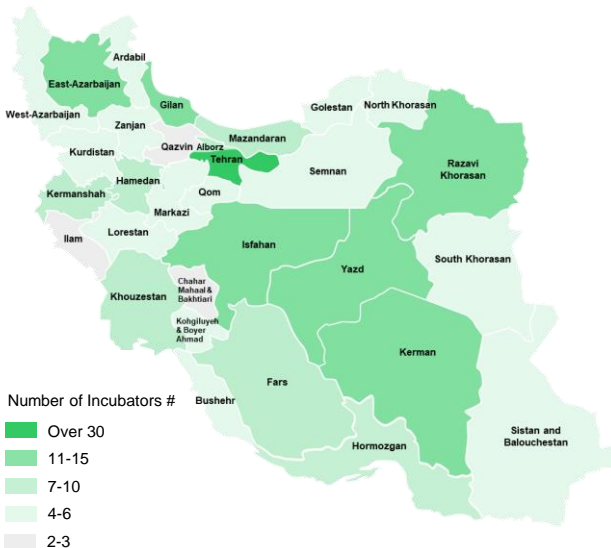
The first incubator in Iran was established in 2000. The number of incubators has had significant growth in recent years. According to the data gathered for this report, by Nov 2021, the total number of incubators in Iran is estimated to be **240**.



Total number of incubators in Iran by year

Incubators may have the general focus or specialized in a specific industry depending on stakeholders' areas of interest. 35% of incubators in Iran are specialized in different industries. The incubators in Iran are mostly affiliates of Science and Technology Parks (61%) and Universities (25%).

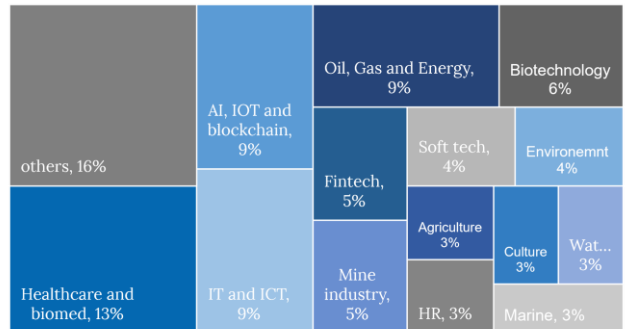
The dispersion of the 240 incubators in Iran is mapped in the figure below. The incubators are mostly located in the center and west of the country. However, there is no province with no incubator. The capital city of Tehran, with 32 incubators, has the highest share in the country.



Mapping of incubators in Iran

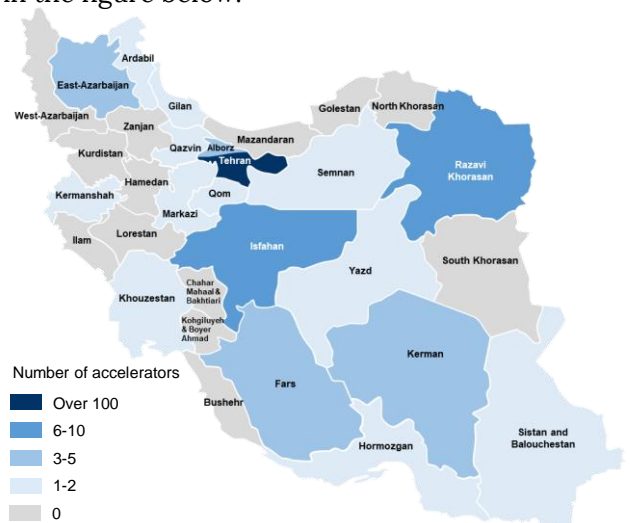
5. Accelerators and innovation centers in Iran

Among startup support mechanisms in Iran, accelerators are of paramount importance. Since they increase the chance of survival of startups. This issue is an emerging topic in countries like Iran, which had the experience of less effective incubators, science parks, etc. Accelerators in Iran are mostly private sector bodies. Accelerators are growing both quantitatively and qualitatively. The first accelerator in Iran, Avatech, was established in 2014. Along with that, the first wave of establishing accelerators in Iran started in 2016. According to the data gathered for this report, by Nov 2021, the total number of innovation centers and accelerators in Iran is estimated to be **162**. 69% of accelerators in Iran are specialized. The figure below is presenting the share of specialized accelerators in different industries.



Industry field of specialized accelerators in Iran

According to the gather data for this report, the dispersion of 162 accelerators in Iran is mapped in the figure below.



Mapping of innovation centers and accelerators in Iran

Importance of Systematic Innovation for UNDP Strategic Plan

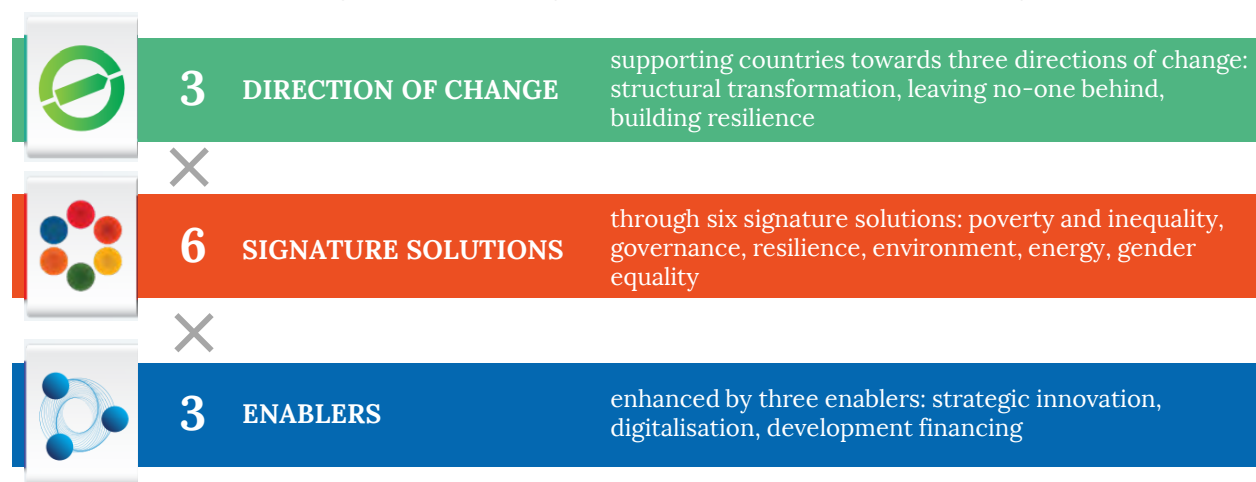


UNDP Strategic Plan (2022-2025) is structured around a clear framework of where UNDP is heading and how we plan to get there:

The Strategic plan is focused on **three directions** of change:

- Structural transformation towards more inclusive, green and digital transition
- Leaving no-one behind, a rights-based approach centered on human agency
- building resilience in the face of systemic uncertainty and risk

UNDP's development offer builds on the **six signature solutions** on poverty and inequality, governance, resilience, environment, energy and gender equality and is powered by **three enablers for scale and speed**: strategic innovation, digitalization and development financing.



As UNDP Administrator, Achim Steiner stated “This is a moment of choice: an opportunity to learn from our experience, to do things differently, to aspire to greater shared goals. This new Strategic Plan describes how UNDP intends to work together with our partners to deliver what’s required of us in these extraordinary times [...] The Strategic Plan explains how UNDP will develop our six signature solutions – powered by digitalization, innovation and development financing – for greater impact. To accelerate progress towards achieving the Global Goals, we need to be fast and curious. Partnering with incubators and accelerators will allow UNDP to close the gap between the current practices of international development in an accelerated pace of change and to make breakthroughs on the future of development.”

In line with the global strategy, UNDP Iran will design its Country Programme Document for 2023-2027 to foster innovation and creativity to help change systems and tackle the hardest development challenges.

3 Enablers

Maximising development impact

Enablers are capacities and approaches to scale-up development impact for country partners and within UNDP's own systems:



Digitalisation

Supporting countries to build inclusive, ethical and sustainable digital societies



Strategic innovation

Empowering governments and communities to enhance the performance of entire systems, making them adaptive and resilient



Development financing

Partnering with governments and the private sector to align public and private capital flows with the SDGs and mobilise finance at scale

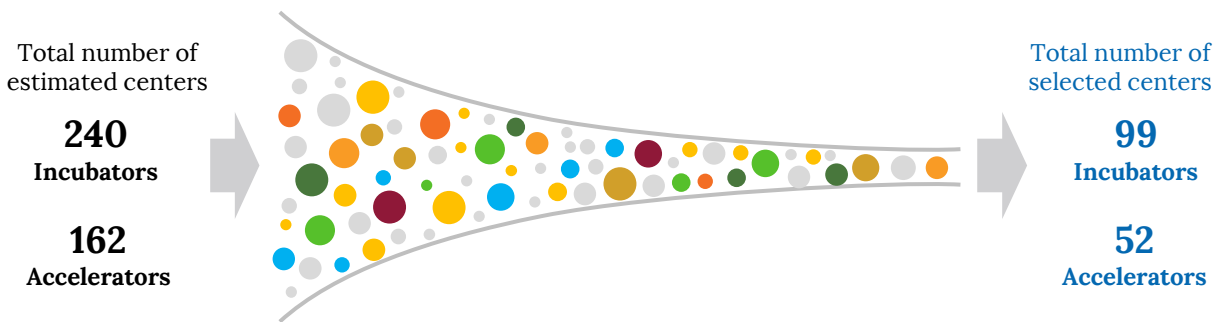
Potential Entry Points for UNDP's Innovative Programmes in Iran



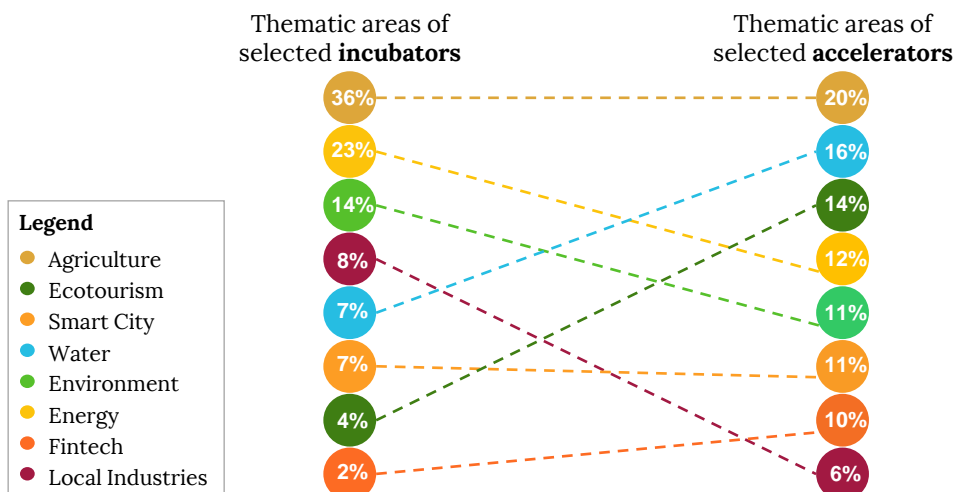
UNDP Iran Country Office is seeking to embed innovative solutions into its programmes and projects, through exploring potential entry points in the innovation ecosystem of Iran. To achieve this goal, relevant thematic areas namely agriculture, environment, local industries, fintech, ecotourism, water, smart city, and energy were defined as entry points for innovation. Nationwide incubators, accelerators, and innovation centers with mandates relevant to UNDP's thematic areas were thoroughly reviewed. The defined thematic areas are color-coded in the figure below.



According to the gathered information, by Nov 2021, the total number of incubators in Iran is estimated to be **240** and the total number of accelerators is estimated to be **162**. Applying the defined methodology to select the centers, the resulting shortlist consists of **99** incubators and **52** accelerators.



Comparison of the thematic areas of incubators and accelerators shows that the focus of these two types of centers can be quite different. As it is shown in the figure below, agriculture is the leading area in both centers. However, energy and local industries seem to be more popular in Iran's incubators and areas such as water and fintech represent significant area of interest for Iran's accelerators.



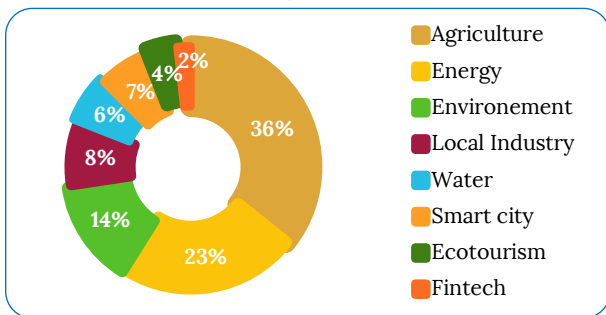
Potential Entry Points for UNDP's Innovative Programmes in Iran



Iran's incubators shortlist

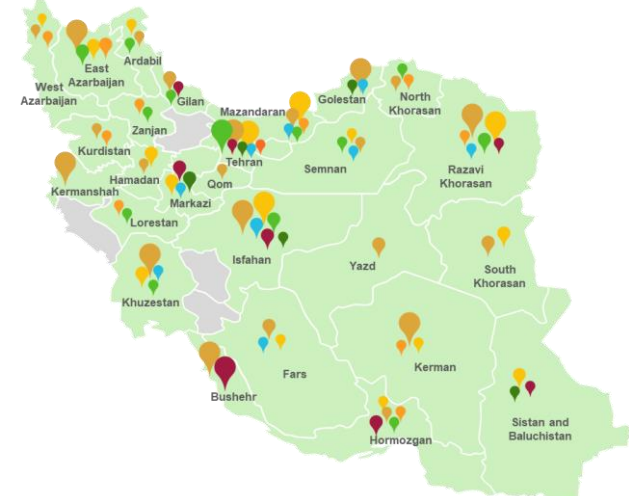
According to the precedent section, the 99 shortlisted incubators are categorized based on the province that they are located in, and the thematic areas that are covered by their portfolio of startups. Among the shortlisted incubators, 28% are specialized in the fields related to UNDP thematic areas. Iran's incubators are mostly government-backed. Additionally, ~75% of the shortlisted incubators are affiliates of science and technology parks and ~18% are affiliates of the Ministry of Agriculture.

As it is shown in the figure below, agriculture has a significant share among areas (36%), which is mainly because most of Iran's provinces have fertile soil and a suitable climate for agriculture. Sustainable energy has the second high share and is a popular field among different provinces. (23%)



Shortlisted incubators in Iran by thematic area

The selected incubators are located in 27 provinces of Iran (out of 31). Their distribution is presented in figure below. Most of the selected incubators are located in Tehran (22), East Azerbaijan (15), Razavi Khorasan (14), and Isfahan (14). Yazd and Qom have only 1 incubator in line with the thematic areas.

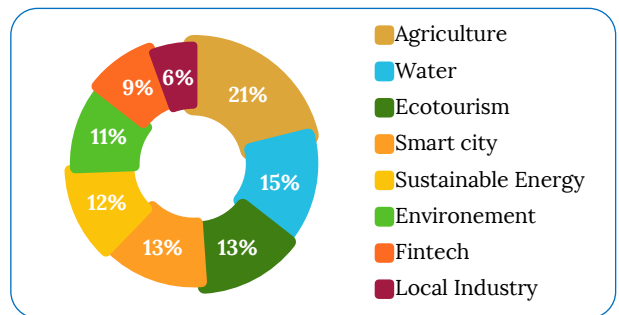


National incubators map by UNDP Iran's thematic areas

Iran's accelerators shortlist

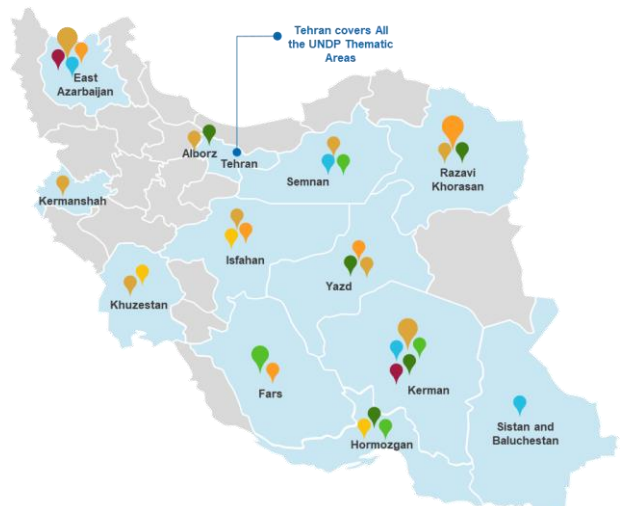
The total number of shortlisted accelerators is 52. The selected accelerators are categorized based on the province that they are located in and thematic areas that are covered by their portfolio of startups.

Unlike incubators, most of the shortlisted accelerators (62%) are specialized in line with UNDP thematic areas. ~90% of the shortlisted accelerators are affiliates of the private sector. Additionally, the average share of female employees in the selected accelerators is 42%. Similar to incubators, agriculture has a significant share among surveyed areas (21%). Water, ecotourism, and environment have the next high share. Fintech with (9%) share is more popular in accelerators compared to incubators.



Shortlisted accelerators in Iran by thematic area

The selected accelerators are located in 13 provinces of Iran (out of 31). Most of the incubators are located in Tehran (35), Razavi Khorasan (4), East Azerbaijan (2), and the other provinces with 2 or fewer accelerators in line with the thematic areas.



National accelerators map by UNDP Iran's thematic areas

The innovation ecosystem has been considered as one of the main components of the digital economy in recent years. In this report, the digital economy and innovation ecosystem in Iran were reviewed.

According to global indexes namely Global Innovation Index, Global Network Readiness Index, and Global Entrepreneurship Index, and UNCTAD B2C E-commerce Index,

“Iran’s rank’s shown very promising improvement in the past 5 years.”

Additionally, some digital economy indicators such as internet penetration reached 84% in 2020 which is relatively high compared to the world average of 56%.

According to Statista, Iran’s digital economy share of GDP rose from 2.2% in 2012 to 6.9% in 2020. Moreover, Iran’s ratio of the real value of e-commerce to GDP (oil excluded) reached 25% in 2020.

The government as one of the key players in Iran’s innovation ecosystem, established Iran National Innovation Fund (INIF) in 2011, to assist the non-governmental institutions and companies in the commercialization of innovations by providing financial support to knowledge-based firms (NBFs), mainly in the form of a loan. INIF’s loan allocation to Knowledge-based firms has helped to create 8,371 new jobs and help maintain approximately 79k jobs during the past 3 years. The total financial support of the government increased from USD 9 M to USD 217 M in 2020.

Therefore,

“The initiatives are a good start and reflect a drive from the government to expand the innovation ecosystem.”

They help reach a standardized definition for startups and form part of a move towards a digital economy.

Iran has made considerable progress in providing opportunities to support the growth of the digital economy and innovation ecosystem in the country. This type of support has resulted in a clear rise in the number of institutes and corporations engaging in the innovation ecosystem and the proliferation of players in the funding and support space in the country.

In this research, the UNDP Iran’s thematic areas namely agriculture, environment, local industries, fintech, ecotourism, water, smart city, and energy are defined and the incubators, accelerators, and innovation centers with relevant mandates across the country are identified and located.

“As the result, 99 incubators and 52 accelerators are identified and shortlisted as potential entry points for UNDP Iran’s thematic areas.”

Considering the results, it is understood that the geographic distribution of incubators and accelerators is quite the opposite across the country. While the shortlisted incubators are located in various provinces of Iran, shortlisted accelerators are located in big cities. Besides, the popularity of thematic areas in the two centers is different. Although agriculture is the most popular area in both centers, the rank of local industries is higher in incubators while fintech is most popular in accelerators.

“It’s important to look at the innovation ecosystem with a critical eye in order to progress in the future.”

Nevertheless, there are numerous challenges that startups in Iran especially in less developed provinces are facing which has resulted in the failure of so many startups with good ideas in the past years. To name a few: weak connections with innovation hubs in big cities of Iran in order to transfer knowledge and experience, inaccessibility to funds due to unfamiliarity of Iranian VCs with investment opportunities in those areas, difficulty in hiring professional resources, low-quality local mentorship programs, challenges in scaling and commercializing products across the country and accessing the market, etc.

However, UNDP Iran with the help of the government and the key stakeholders that have already stepped into expanding this ecosystem in Iran can address these overarching gaps and challenges. It will not only allow for startups and businesses to truly succeed in the country; but it will also result in job generation and future economic growth and raise the visibility of Iran in a positive way globally.



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