

## **A brief overview of current best practices and recent developments in incubators, science parks and technology transfer to promote sustainable development in SPECA countries**

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This review is based on materials presented by participants at the capacity-building event for SPECA countries “From ideas to action: sharing best practices in incubators, science parks and technology transfer”, which took place in Moscow, 21-23 October 2019.

### **Azerbaijan**

According to the development strategy of Azerbaijan for 2020, along with the development of innovative entrepreneurship and the creation of an enabling environment for the development of new activities and products, it is planned to strengthen measures for the transfer and use of advanced technologies, as well as for the creation of industrial parks and innovative zones for the development and application of high-tech products and technology.<sup>1</sup> Since 2005, industrial zones, industrial parks and agricultural parks have been established in many cities and regions of the Republic of Azerbaijan; work is underway to cluster and diversify the national economy. Some steps have been taken to form a national innovation system in the Republic of Azerbaijan, the Center for Scientific Innovations of the National Academy of Sciences of Azerbaijan and the Science Development Fund have been created, and legislative and regulatory acts have been adopted to regulate this area.

More specific steps to support SMEs were taken after the establishment of the Agency for the Development of Small and Medium Business by presidential decree of December 28, 2017. The agency’s mandate was further formed by decree of June 26, 2018. Steps are being taken to achieve national goals, increasing GDP growth, creating jobs, and increasing export products.

The following technology parks and incubators currently operate in Azerbaijan: Business incubator in the Cuba-Khachmaz economic region (Cuba), Mingachevir High Technology Park, High Technology Park in Pirallahi (Baku), Business incubator in the Aran Economic Region (Ganja). The Hi-Tech Park in Pirallahi, created by presidential decree in 2012, consists of 50 hectares in the area of Baku City. Its mission is to promote a high-tech economy that provides a business-friendly environment with modern amenities, economic incentives and business services. However, today it is more perceived as an industrial park, so the number of existing companies providing computer services is small. Also in 2015, a resident company in the Mingachevir High-Tech Park began production of computers, tablets and other electronic devices. The state encourages industrial agglomeration and clustering in parks, exempting enterprises from VAT on the import of equipment for construction, research work and other activities.

In technology parks and industrial districts of Azerbaijan, 82 business entities operate as residents. The volume of investments by residents in projects implemented in industrial parks and quarters amounted to 5.7 billion manat. For the entire period of activity, residents of technology

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<sup>1</sup> Direct link: Azerbaijan 2020 development strategy [https://president.az/files/future\\_ru.pdf](https://president.az/files/future_ru.pdf)

parks and industrial districts produced products worth 1.5 billion manat. Of this amount, products worth 310 million manat were exported.<sup>2</sup>

The Azerbaijani government also plans to increase the period of tax and customs benefits for residents of industrial parks and industrial parks from 7 to 10 years.<sup>3</sup> Residents of industrial parks and industrial parks will be exempted from paying income tax, land tax, property tax, and customs duties when importing machinery, plants and technological equipment for a period of 10 years from the date of registration.

## **Belarus**

Belarus has adopted the National Strategy for Sustainable Socio-Economic Development for the Period until 2030, which was prepared in accordance with the UN Agenda for Sustainable Development for the Period until 2030.<sup>4</sup> Its implementation is currently being carried out at the first stage, 2016–2020 with the support of the five-year National Socio-Economic Program. In one of its sections devoted to the development of science and innovations, a set of tools is identified that facilitate the transition of Belarus to a knowledge economy, with a developed high-tech industry and a research and development sector. In particular, the Government of Belarus initiated the State Program for Innovative Development for 2016–2020 - a well-structured political basis for innovation, which includes specific measures and implementation timelines.<sup>5</sup>

The activity and support of innovative activity in the Republic at the governmental and legislative levels is provided by two presidential decrees: Decree No. 357 of August 7, 2012 on the procedure for the formation and use of innovative funds, which ensures the concentration of assets for the implementation of significant innovative projects (financing of innovative projects through innovative funds and assets); and decree No. 229 "On some measures to stimulate the implementation of innovative projects" - provides state financial support to small innovative businesses at an early stage the implementation of innovative projects in the form of innovative vouchers and grants.<sup>6</sup>

One of the tools to support the private sector and the development of innovative enterprises is the Brest Science and Technology Park. The technopark is located in a former factory complex and provides an opportunity for start-ups to use services on favourable terms. At the moment, 80% of the premises are rented to residents. The technopark has a shared centre available to all residents, where residents produce products using 3D printers. Residents of the technology park receive benefits for the rate at the simplified tax system (0%) and the profit tax rate (10%). The minimum investment is unlimited. \$ 1.4 per month for renting industrial premises and \$ 3.4 for a month for renting office premises. At present, 31 enterprises are residents of the Technopark Innovation House. At the industrial park there is a centre that provides consulting services for enterprises. The list of services of the centre includes the establishment of an optimal and

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<sup>2</sup> "Residents of industrial parks and industrial quarters of Azerbaijan produced products worth 1.5 billion manat."

Trend News Agency. September 27, 2019 <https://www.trend.az/azerbaijan/business/3124868.html>

<sup>3</sup> "Azerbaijan plans to increase the period of tax incentives for residents of industrial parks and industrial parks to 10 years," Interfax-Azerbaijan. <https://interfax.az/view/781887>

<sup>4</sup> Ministry of Economy of Belarus [https://www.economy.gov.by/ru/dejst\\_prognoz\\_dok-ru/](https://www.economy.gov.by/ru/dejst_prognoz_dok-ru/)

<sup>5</sup> State Committee on Science and Technology <http://www.gknt.gov.by/deyatelnost/innovatsionnaya-politika/gpir/>

<sup>6</sup> Internet-Portal of the President of Belarus:

Decree № 357 - [http://president.gov.by/ru/official\\_documents\\_ru/view/ukaz-357-ot-7-avgusta-2012-g-1414/](http://president.gov.by/ru/official_documents_ru/view/ukaz-357-ot-7-avgusta-2012-g-1414/)

Decree № 229 <http://pravo.newsby.org/belarus/ukaz0/uk167.htm>

balanced accounting system, assistance in developing a business plan, legal assistance, assistance in finding sources of investment, advice on doing business, organizing public events and a virtual office.

There are a number of mandatory requirements for potential residents of the technology park. Its resident can only be a legal entity or an individual entrepreneur. Also, the resident of the technology park must carry out innovative activities, i.e. activities that ensure the creation and implementation of innovations, and the average number of employees of a resident enterprise cannot exceed 100 people.

The next step is to provide a number of documents for consideration. The site of the technology park provides all forms of documents, which include an application for the granting of resident status of a science and technology park; information on the average number of employees; brief description of the enterprise; copies of constituent documents: charter of an enterprise, constituent agreement (if any), certificate of state registration of a legal entity.

After the technopark receives a package of documents, residents are invited to a meeting of the Technopark Council, which is assembled when 3 or more applications are received from potential residents. The Technopark Council also deals with the issue of major transactions and the admission of residents, all purchases are coordinated with local authorities. The meeting also provides an opportunity for candidates to talk about their activities and to argue their innovativeness.

The final stage provides for the conclusion of agreements with the technopark, namely, a real estate lease agreement and an employment contract. In conclusion, a certificate of a resident of the science and technology park is issued.

The same rules apply to residents of business incubators as to residents of an industrial park, but there is an additional requirement that the period of operation of an enterprise from the date of state registration should not exceed three years.

The technology park also has restrictions on the scope of technology parks. A resident enterprise cannot engage in gambling, lottery activities; organization and (or) conduct of electronic interactive games; activities for the production and (or) sale of excisable goods; activities for the production and (or) sale of jewelry made of precious metals and (or) precious stones; mining activities, with the exception of common minerals, real estate activities; insurance activity.

The Brest Technopark was created on the basis of the analysis of competitors, the scientific environment and internal resources, and partners. Before coming to the technology park, a roadmap was created to determine strategic directions, marketing and PR, determine the value proposition and agree. The technopark has a special SMM team that supports the activity of the technopark on social networks.

The technopark has identified seven main strategic directions:

1. Robotics
2. IT / Telecommunications
3. Consulting
4. Education and research

5. Media marketing

6. Additive technology and prototyping

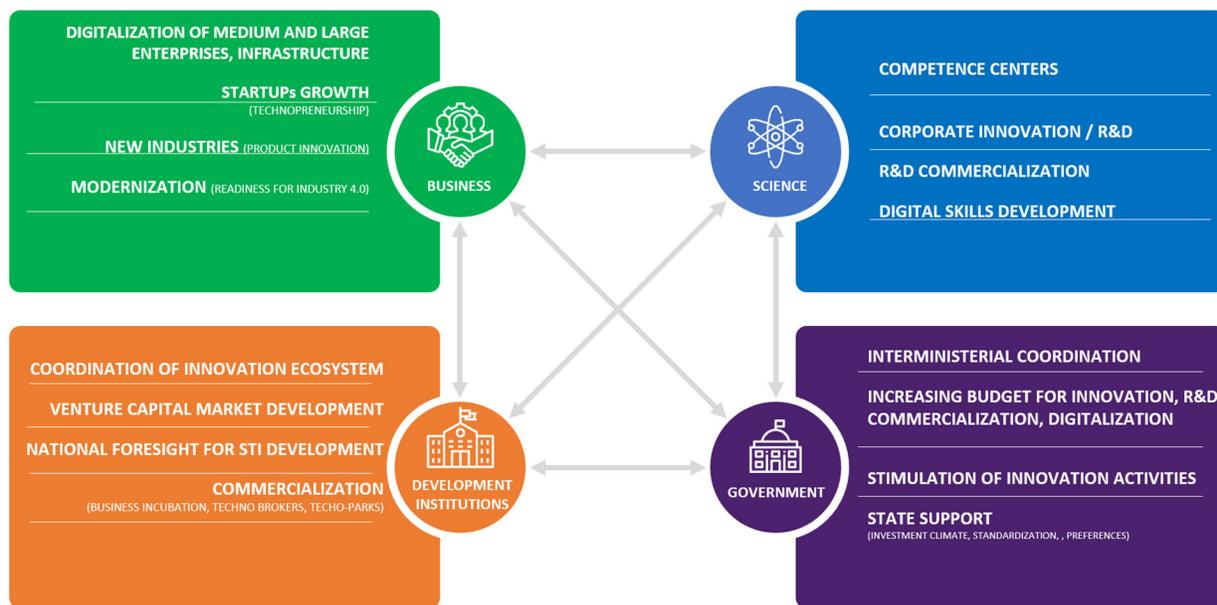
7. VR / AR virtual and additional reality

The main goal of the Brest Science and Technology Park is to provide a platform for the formation of an entrepreneurial community that will help residents share their experiences and promote new projects.

### **Kazakhstan**

Despite the achievements of the government in the development of the innovation field in recent years, Kazakhstan still lacks many of the elements necessary to create a fully innovative ecosystem. Among the problems are lack of prioritisation and coordination of STI activities among various government agencies involved in regulating and stimulating innovation. This is also the case for the higher inter-ministerial collaboration on the subject. Kazakhstan ranks 97<sup>th</sup> in gross expenditure on R&D as percentage of GDP according to the 2019 Global Innovation Index. Other aspects of innovation such as science-business collaboration, expenditure on education, knowledge absorption while outperform most countries of the region remain underdeveloped compared to countries of similar economic potential. Global Competitiveness Index Innovation Sub-index of 2019 also ranks Kazakhstan 8 positions lower compared to the previous year.

Innovative infrastructure	Existing Government Support Tools	Development Authority
Accelerator	Missing	Missing
Technoparks	Missing	Missing
Tech brokers	Missing	Missing
Business angels	Missing	Missing
Commercialization Offices	Missing	Missing
National STI Information System	Missing	Missing
Business Incubators	Business Incubators Program	QazTech Ventures, Astana Hub
Venture Funds	Co-funding with private VF	QazTech Ventures
Technology Transfer	Grants	QazIndustry
R&D Commercialization Support	Grants	QazIndustry, Science Fund
Startups Support	Grants, Competitions, Roadshow	AstanaHub, Zerde, TechGarden



*The target model for the development of STI (presentation by Yelena Shevchenko).*

Support for the development of business incubators in Kazakhstan is provided by the state-owned enterprise Qaztech Ventures, which is a subsidiary of Baiterek Holding, under the Ministry of Industry. The main objectives of the enterprise is to promote the development of technological entrepreneurship through venture financing, business incubation and technological consulting.

A total of 18 incubators operate in Kazakhstan (Alma-Ata - 7, Nur-Sultan - 5, Karaganda - 3, Uralsk - 1, Pavlodar - 1, Kostanay 1). Of these, 6 are public, 10 private and 2 with a mixed form of ownership. Out of 18 business incubators, only 6 managed to attract investments of more than \$ 100,000. As a result of the work of incubators, 56 start-ups expanded to other CIS countries, 13 outside the region, 15 incubators managed to attract international partners, 51 start-ups attracted investments in 2019.

A comparative analysis of international statistics on the number of business incubators per population shows that Kazakhstan is inferior to most developed economies in the world with an indicator of 0.3 incubators per million people.

Country	Population	Number of incubators	Incubators per 1 million people
Finland	5.5 mln	82	14.9
Israel	8.5 mln	90	10.6
UK	66.5 mln	368	5.5
Singapore	5.8 mln	28	4.8
Estonia	1.3 mln	6	4.6
South Africa	58.1 mln	58	1
Russia	145 mln	109	0.7
Poland	38.6 mln	12	0.31
Kazakhstan	18 mln	6	0.3

The business incubators development program in Kazakhstan provides for co-financing of operating expenses by 50% in an amount not exceeding \$ 90,000. Operating expenses include salary, rental of premises, utilities and communications, as well as third-party services for the selection and support of projects.

In addition to financial support, there is also methodological assistance to incubators by attracting foreign strategic partners. Methodological support also includes training and capacity building, consulting, services for diagnosing problems and identifying niches, advice on solving problems, advice on choosing a start-up.

The selection process for selecting business incubators has a number of requirements. The leased premises should not be less than 250 m<sup>2</sup>. At least 5 qualified employees must work in it. There are also requirements for financial stability, the company must be capable of 6 months of self-sufficiency without state financial support. Partnership with academic institutions of Kazakhstan is also included in the list of mandatory requirements.

The first step in getting support is to accept QTV applications. Further, the decision is made by a council of specialists, including employees of ministries, field and international experts, based on the following criteria: the number of employees with higher education, the number of start-ups ready for incubation, infrastructure, essays and interviews. Upon successful completion of all stages of the selection process, an agreement is signed between QazTech Ventures with the selected incubators and the KPI wording. In the process, 100 business ideas were considered, 50 entrepreneurs took part in the trainings, 8 successful residents applied for state grants, 3 of them managed to attract investment or receive state grants.

Funding for start-ups in incubators. The initial stages are the selection of start-ups, which consists in screening all incubators in the country. The following is the incubation process, which consists in developing the project, formulating a business model, prototyping a product or services. An application for funding is considered based on the condition that 80% of the project costs up to \$ 130,000. The stage of evaluation and selection of enterprises consists in the technical, financial and legal evaluation of start-ups for financing. At the stage of financing, monitoring of the costs of the fund and the execution of the contract is carried out. Securing funding for the next round by the Venture Fund.

As a result of enterprise support, in 2018, 12 applications were received from 6 regions of Kazakhstan (Nur-Sultan, Alma-Ata, Pavlodar, Karaganda, Kostanay, Uralsk). Of these, 3 were selected for financing (1 enterprise from Nur-Sultan and 2 in Alma-Ata). Specialists from 3 incubators also participated in the FRII Accelerator training in Moscow. As a result of state support, the number of incubator residents increased 4.6 times, and the number of events, trainings, etc.

Future plans include the creation of an association of business incubators in Kazakhstan to set universal industry standards. In 2020, it is planned to provide the first series of grants to incubator residents. Also, 2 venture funds will be opened together with foreign partners to start financing the next rounds. Assistance will be provided in opening corporate incubators in large companies and in opening university incubators at large institutes.

## Kyrgyzstan

The main state body for the promotion of innovative activity in the Kyrgyz Republic is the State Intellectual Property Service - Kyrgyzpatent. The authority of this body includes the provision and enforcement of intellectual property and traditional knowledge; development of a national patent technical information system; assistance in the development of creativity in the field of literature, art and science, as well as the promotion of promising scientific and technological developments and the commercialization of intellectual property, as well as the development and promotion of innovation. The development of the country's innovation system, as well as the activities of Kyrgyzpatent, is based on two main strategic documents: the state program for the development of intellectual property 2017-2021 and the concept of scientific and innovative development of the Kyrgyz Republic for the period until 2022. The main areas of activity include normative support of innovation, training and professional development for the development of innovations, infrastructure development and stimulation of innovation, as well as international cooperation and information support of innovation.

In the first area, at the moment, an interdepartmental working group is taking measures to update the law of the Kyrgyz Republic "On innovation through amendments", as well as the development of a draft law "On technology parks". In the field of infrastructure development and stimulating innovation, a competition was held to create technology parks at the country's universities. The winners are Kyrgyz State Technical University. I. Razzakova (in areas of light and food industries; mechanical engineering and transport; information and telecommunication systems; energy saving and energy efficiency), Kyrgyz State University of Civil Engineering and Architecture (in areas of construction; development of architectural, town planning and engineering survey projects for industrial, civil, bridge structures and buildings; design of engineering systems, networks and structures; inspection of the technical condition of buildings), Osh Technological University (information technology and software; energy saving and energy efficiency; design of geological exploration and mining).

Kyrgyzpatent also holds an event to promote innovation in the country, "The Best Innovation Project." The competition consists of six stages: application submission, initial inspection, examination, verification by the organizing committee, conclusion of an agreement and further monitoring of the project. The implemented projects are aimed at improving the innovative structure of the country. Funded projects cover a wide range of economic activities. These include the technology of water intake from a fleeting channel through a water outlet due to a change in hydraulic flow resistance; introduction of a steam boiler of a new operating principle with increased thermal and economic efficiency; production of biofertilizers to meet the needs of farmers in order to increase soil fertility and productivity of grain, vegetable and industrial crops; obtaining high-quality certified seed material of the super-elite; performing ploughing operations to the depth of the arable layer, levelling the surface, sowing seeds in a scatter manner, crushing lumps and cutting irrigation canals.

In the field of international cooperation, Kyrgyzpatent cooperates with the Skolkovo Foundation for the Development and Commercialization of New Technologies of the Russian Federation, the State Intellectual Property Office of the People's Republic of China, the EIPTTC Centre for Intellectual Property and Technology Transfer of Estonia, and the National Agency for Technological Development of the Republic of Kazakhstan NATD.

Kyrgyzpatent also plans to create infrastructure to help start-ups and enterprises at the initial stage of development. Multifunctional conference rooms and an innovation centre will be created in the State Patent and Technical Library with opportunities for coworking, conferences and meetings, equipping with a technical laboratory, as well as the creation of a children's technical laboratory.

## **Tajikistan**

A review of indicators of innovative development of the Republic of Tajikistan shows that there are serious problems that hinder creation of a modern, full-fledged innovation system. The main issues include the lack of involvement of scientific, scientific and technical potential in innovative processes; lack of developed innovation infrastructure; low rates of establishment of a modern system of training in the field of innovation; the mismatch of the real state of the information and communication technology system with the requirements for organizing a modern information system in the field of innovation; the lack of an established system for introduction of the results of scientific research into the economic turnover, commercialization of scientific and technological developments; lack of measures to stimulate the creation of small innovative enterprises and innovative entrepreneurship; poor use of the potential of international cooperation to support innovation processes in the country.

To solve the abovementioned problems, the government adopted an Innovative Development Programme, approved by the Government of the Republic of April 30, 2011. The goal of the program is to form an effective innovation system that will increase the technological level and competitiveness of production, introduce innovative products to domestic and foreign markets, increase import substitution, accelerate socio-economic development and achieve national strategic goals.

To achieve the objectives of the Program, the following main tasks need to be solved: stimulation of scientific, technical and innovative activity; formation of a regulatory framework for innovation; involvement of scientific, scientific and technical potential of the country into innovative processes; effective use of scientific and technological developments and inventions; introduction of the results of scientific research into the economy and commercialization of the results of scientific and technical activities; creation and development of innovative infrastructure; financial support for the implementation of program activities; development and implementation of innovative projects.

The program provides for two stages of implementation:

- The first stage (2011-2014) - the preparatory and organizational stage;
- the second stage (2015-2020) - the stage of innovative development.

The development of the National Innovation System of the Republic of Tajikistan is aimed at achieving sustainable development of the country through diversification of economic sectors and its departure from the raw material orientation. The innovation is identified as the main factor determining the competitiveness of the national economy. The full use of innovations for the further dynamic development of the economy and society is possible when the state pursues a targeted innovation policy.

For the formation of the National Innovation System, the government identified 4 main elements: scientific and technological potential, innovative activity, innovative and financial infrastructure.

According to the State Statistics Committee of the Republic of Tatarstan, the innovative activity of enterprises in Tajikistan in 2019 amounted to 2.0%. Based on the potential of scientific potential, the relevant resolution of the Government of the Republic of Tajikistan approved a list of promising areas of research on the basis of which innovative projects can be compiled.

Starting from 2016, a new National Development Strategy of the Republic of Tajikistan for the period until 2030 is being implemented. National consultations on the SDG agenda made it possible to identify the main priorities of the country's development after 2015, the implementation of which is aimed at economic ideology, basic principles and a set of measures specified in SDG-2030. These include: (1) education; (2) healthcare; (3) employment; (4) inequality; (5) anti-corruption; (6) food security and nutrition; (7) effective management; (8) social protection of the population; (9) prevention of potential conflicts; (10) energy security, ecology and population management.

## **Uzbekistan**

The President of Uzbekistan declared 2018 the year of support for active entrepreneurship, innovative ideas and technologies. He emphasized that in 2018 priority attention will be paid to providing large-scale support that creates favourable conditions for entrepreneurs and significantly reduces various bureaucratic barriers.

In order to ensure accelerated innovative development of all sectors of the economy and social sphere on the basis of international best practices, modern achievements of world experience, the government is solving the tasks defined by the Strategy of Action in five priority areas of the country's development. This is supported by the decree of the President of the Republic of Uzbekistan No. UP-5264 dated November 29, 2017 "On the establishment of the Ministry of Innovative Development of the Republic of Uzbekistan", which has become the authorized body to promote innovative activities in the country.

Decisions and government support resulted in C.A.T. Science Accelerator, an initiative of the Centre for Advanced Technology (C.A.T.) under the Ministry of Innovative Development. The centre is an accelerator for scientific projects and commercialization of scientific developments for establishing links between projects with corporations and business. This is the first initiative aimed at creating favourable conditions for creative ideas and creating competitive innovations for world-class technologies in order to further introduce them into the economy of Uzbekistan. The state allocated \$ 16 million dollars for the construction of infrastructure and the purchase of modern equipment. The project involves 100 specialists working in the field of natural sciences. The aim of the project is to promote the development of the scientific ecosystem of Uzbekistan, and the union of scientific research, business and education to develop cost-effective solutions to social problems. This is achieved by providing a technological platform in the natural sciences, creating points of interaction of knowledge and ideas, promoting talents: entrepreneurs, scientists and students, as well as attracting investors.

The Centre for Advanced Technologies identifies several thematic areas of activity, in particular: biotechnology, geophysics and nanominerology, experimental biophysics, physical and chemical research methods. Support is provided to start-ups in the fields of chemistry, physics, biology, geology and medicine.

The support process consists of several stages. First, based on a set of applications from potential candidates, specialization is determined and a set of teams is announced. The second stage is

the selection of candidates, where the main criteria are the relevance of the problem and the competence of team members. After the selection, measures are taken to recruit teams that will be jointly involved in work on projects for 6 months. The work consists of group classes, individual meetings and laboratory work. Participants must provide weekly project reports to be presented on the day of the demonstrations of project progress/achievements. The best projects receive support in attracting investors and potential partners, as well as media coverage.

Thus, teams learn to identify problems and needs of the market, work in multidisciplinary environment, support is provided for the development of a marketing strategy and PR. All this contributes to the development of the entrepreneurial spirit in the scientific environment, as well as provides opportunities for students to implement business ideas. The centre has the necessary resources and equipment, and assistance is provided by experts and mentors.