



## SCIENCE IN KAZAKHSTAN: CURRENT SITUATION AND NEW DEVELOPMENTS

When we look at the latest scientific and technological developments in the world, we can see that science covers almost all areas of our lives. In recent years, many changes and innovations have been implemented in Kazakhstan in terms of scientific developments. As it is known, many scientific project announcements supported by the state are carried out in a competitive environment. In this process, besides the production of information, some bureaucratic procedures are required to be completed. On the other hand, the level of compliance of the participants with various scientific criteria is also checked. It is possible to say that all these procedures are currently undergoing a significant change process. First of all, it should be noted that the number of scientific project competitions has been increased significantly, and steps have been taken to minimize the time spent by the participants for paperwork by providing various flexibility in the bureaucratic procedures required within the scope of the project. On the other hand, a number of different evaluation processes are initiated, such as paying attention to the quality of the publication rather than the numbers, by raising the bar for the scientific publications, titles and other indicators requested from the candidates who will participate in scientific projects.

First of all, in recent years, the requirements for higher and postgraduate, technical and vocational education have been strengthened in Kazakhstan, reducing the number of low-quality higher education institutions, such as universities and colleges, after a comprehensive inspection. According to the Ministry of Education and Science of the Republic of Kazakhstan, the number of higher education institutions, which was 132 in 2019, 128 in 2020 and finally reduced to 124 in 2021. The total number of technical and vocational colleges was reduced from 801 in 2019 to 795 in 2020 and to 778 in 2021. Due to the quality of universities and colleges and the increasing demands for science, the share of Kazakhstan universities in the global university rankings has been increasing in recent years. Since 2016, the number of Kazakhstan universities included in the QS World University Rankings has increased from 8 to 14. Al-Farabi Kazakh National University, K. Satpayev Kazakh National Technical Research University and Abay Kazakh National Pedagogical University were listed by Times Higher Education.

According to 2020 data, a total of 618,090 people are currently studying at universities in the country, including 576,557 undergraduate, 34,619 masters and 6,914 doctoral students. A total of 475,960 people are educated in technical and vocational education institutions (Ministry of Education and Science of the Republic of Kazakhstan, 2021a). According to the UNESCO Institute for Statistics (UIS), 790 out of every million people in Kazakhstan hold an academic title. One of the reasons for the positive change in higher education in recent years is the increase in state grants and state scholarships for students. According data of the Ministry of Education and Science of the Republic of Kazakhstan for July 2021, the number of grants allocated to undergraduate programs in the last four years has increased by 1.7 times,

for masters by 1.8 times and for doctoral programs by 3.7 times. In addition, for the first time in the last four years, the amount of scholarships given to all students has been increased by 50%. Monthly government scholarships are 31,423 tenge (\$72) for university students, 50,400 tenge (\$116) for pedagogical and health education students, 76,950 tenge (\$177) for undergraduate students and 172,500 tenge (\$397) for doctoral students.

It has been observed that the financial resources allocated by the government of Kazakhstan to science have increased significantly in recent years. For example, in 2019, a total of 82.33 billion tenge (approximately \$215.1 million) was spent on science and some 89.03 billion tenge (approximately \$215.6 million) was spent in 2020. These figures make only 0.12% of the country's GDP of 2019 and 0.13% of that of 2020 respectively. Until 2025, 1% of the country's GDP is planned to be spent each year on science. The share of budget money spent on science is around 1% of the GDP in Russia, 3% in the United States, and 2.2% in China. According to the European statistics, the EU member-states allocate more than \$306 billion euros to scientific research studies excluding private investments, which corresponds to 2.19% of their GDP.

According to the statistics of 2019, the countries that spend the most money on science in line with the numbers in GDP: Sweden (3.39% of GDP), Austria (3.19% of GDP), Germany (3.17% of GDP), Denmark (2.96% of GDP), Belgium (2.89% of GDP) and Finland (2.79% of GDP). Considering the world experience, it is possible to hope that the financial resources that the Kazakh government will allocate to science will increase in the future. In the statements of the President of the Republic of Kazakhstan, Kassym-Jomart Tokayev, the issue of increasing the funds allocated to science was also discussed and it was noted that money which allocated for science will be doubled in the next 2-3 years.

According to the July 2020 data of the Ministry of Education and Science of the Republic of Kazakhstan, there are 386 research institutions in the country dealing with scientific research and employing a total of 21,843 researchers. In recent years, new forms of grant funding have been introduced to promote research, including small grants and grants for international cooperation. Of the above-mentioned researchers, 7,420 are young scientists under the age of 35, and 166 projects for the years 2020-2022 are carried out by young scientists.

In order to increase the effectiveness of scientific studies among the important changes in recent years, there is an increasing requirements on being a scientific project coordinators and the results expected from scientific projects. In other words, intensive studies are carried out to increase both the quality of the publications in scientific journals, which are the results of scientific studies, and the quality of the journals. Thus, more qualified results are expected from the scientific studies carried out. The main purpose of these studies is to publish the results in journals in Scopus and Web of Science, which are international databases. The list of these journals includes 177 editions selected mainly

according to official criteria. For this reason, studies have been started to adapt the existing criteria towards to international requirements. As an example of these studies, the compliance of the projects with various criteria, from the selection to the conclusion, is checked.

These conditions will also be applied gradually to publications published in domestic journals included in this list. In this case, by focusing on quality rather than quantity, competition for quality content will increase and it will contribute to the formation of a professional academic culture of publishing international scientific publications. Basic requirements for all domestic journals included in the list of journals approved by the Ministry of Education in the country are being introduced gradually. In this regard, it can be stated that the number of publications will decrease significantly, but the quality of the publications will increase.

Considering the continuous increase in the share of publications published by scientists in leading databases and the fact that this has increased up to 1.5 times between 2015-2019, it is seen that the issue of giving importance to quantity rather than quality in scientific articles remains up-to-date. The analysis of the structure of the publications in Kazakhstan according to the fields of science shows that the articles in the natural sciences (40%) and technical (25%) fields dominate in the general ranking. For comparison, the share of studies in these fields in the total number of publications of the Web of Science Core Collection is 21% and 26%, respectively. At the same time, while the volume of publications in fields such as medicine, biology and agriculture is 24% in Kazakhstan, the share of scientific publications in these fields in the global structure reaches 52%. Similar to the traditionally low share of social sciences in the structure of publications around the world is around 11% in Kazakhstan.

As a result, it can be said that the effects of new breakthroughs in all fields of science in Kazakhstan in recent years have contributed to the development of science in the country. In this context, it can be stated that in addition to significantly increasing the financial resources allocated to science in the country, a comprehensive audit of all higher education institutions and increasing the demands for scientific journals play an important role. In addition, projects such as "New Humanities Education" and "100 New Textbooks in Kazakh Language" within the framework of the "Spiritual Revival" program for 2017-2020 will give a new direction to higher education and scientific research studies in the country. Therefore, it can be predicted that giving priority to science as a key factor in the socio-economic and cultural modernization of Kazakhstan will eliminate some of the problems that have been present for years in the field of science. In particular, the newly developed "New State Program for the Development of Education and Science for the Years 2020-2025" of the Ministry of Education and Science of Kazakhstan can contribute significantly to the further development of science in the country in the coming period.

## Politics, Foreign Affairs, and Security

- The President of Tajikistan Emomali Rahmon had a telephone conversation with his Russian counterpart Vladimir Putin. The Presidents discussed the situation on the Tajik-Afghan border and exchanged views on the development of the situation in Afghanistan. Agreements were reached to continue contacts on these issues at various levels, and the importance of further building up cooperation between the parties in the field of security was noted (Centralasia.news, 11.01.2022).
- Tehran hosted the forum "Prospects for Tajik-Iranian relations", organized by the Embassy of Tajikistan in Iran. The Forum was dedicated to the 30th anniversary of the establishment of diplomatic relations between Tajikistan and Iran and was attended by high-ranking Iranian officials, diplomats, and scholars. The participants discussed the progress made in the relations between the countries and noted the importance of consistent and constructive dialogue for strengthening cooperation in various fields between Tajikistan and Iran (Avesta.tj, 14.01.2022).
- During the press conference following a meeting of the NATO-Russia Council in Brussels, NATO Secretary-General Jens Stoltenberg called on Russia to withdraw its troops from Ukraine, Georgia, and Moldova. He emphasized that the sovereignty and territorial integrity of all nations is one of the key principles of European security. At the same time, Stoltenberg noted that although NATO continues to provide political and practical support to Ukraine, it is important to remember that Ukraine is a partner, not a NATO ally (Ukrinform.net, 13.01.2022).
- The President of Kazakhstan Kassym-Jomart Tokayev had telephone talks with leaders of the Collective Security Treaty Organization's (CSTO) member countries. The Head of State informed his CSTO colleagues about the withdrawal of the peacekeeping contingent from Kazakhstan that started on January 13, 2022, and expressed gratitude to them for their support at the time of the terrorist attack on Kazakhstan. President Tokayev stressed that the short-term stay of the collective peacekeeping forces in Kazakhstan demonstrated CSTO's relevance and effectiveness as a reputable international organization (Kazinform, 13.01.2022).
- The Acting Minister of Foreign Affairs of Afghanistan Amir Khan Muttaqi arrived in Turkmenistan, where he had a meeting with the Minister of Foreign Affairs of Turkmenistan Rashid Meredov. The parties discussed the development and strengthening of the partnership in a wide range of areas. Particular attention at the talks was paid to joint infrastructure projects, including the implementation of the Turkmenistan-Afghanistan-Pakistan-India pipeline. The Ministers noted the importance of the Turkmen-Afghan cooperation in the field of providing regional security (Kabar, 15.01.2022).
- The lead spokesperson for the European External Action Service, Peter Stano announced that the European Union (EU) welcomed the talks on the normalization of relations between Türkiye and Armenia. According to the statement, further concrete steps towards the normalization of relations would be good news for regional stability and that it is of "key importance for the EU in its engagement with both" Türkiye and Armenia (Anadolu Agency, 14.01.2022).

## Economy, Finance, and Energy

- The Atameken National Chamber of Entrepreneurs of Kazakhstan reported that the damage to the business from the riots is estimated to be almost \$240 million. The Chamber's call center received about 5,000 calls, of which about 2,000 inquiries were for looting and almost 300 for business resumption and damage assessment. The latest data shows that 1,615 affected business entities have been identified throughout the country and most of them are located in Almaty (Qazaq TV, 12.01.2022).
- Uzbekistan is transforming its energy sector by introducing new power plants. Recently, the steam and gas power plant with a capacity of 240 MW began supplying power to Uzbekistan's electricity network. The thermal power plant will generate 2 billion kWh of electricity annually. The high efficiency of the devices allows saving 290 million cubic meters of natural gas per year. The saved natural gas will generate an additional 1 billion kWh of electricity. Turkish company Aksa Enerji implemented this project worth \$150 million (UzReport, 15.01.2022).
- Chairman of the National Statistics Committee of Kyrgyzstan Baktybek Kudaibergenov recently reported that the volume of foreign trade turnover of the country in January-November 2021 increased by 21.4% compared to the same period last year. In particular, the indicator amounted to \$6.3 billion. Kudaibergenov added that exports decreased by 21.1%, while imports increased by almost 44%. The decline in export supplies was due to a 3.2-fold decrease in gold supplies. Trade turnover with countries of the Eurasian Economic Union increased by 31.4% (Kabar, 14.01.2022).
- Turkey initiated an extraordinary meeting of Foreign Ministers of the Organization of Turkic States on the situation in Kazakhstan. The Minister of Foreign Affairs of Turkmenistan Rashid Meredov stressed that Turkmenistan is interested in the soonest normalization of the situation in Kazakhstan, in its further socio-economic development. According to Meredov, Turkmenistan is ready to begin export deliveries of natural gas to Kazakhstan starting from March of 2022 and to provide the fraternal country with the necessary amount of electricity (Orient, 12.01.2022).
- Electricity in 16 provinces of Afghanistan is facing a stroke due to power cuts by Uzbekistan. Recently, Afghanistan's National Electricity Company claimed that Uzbekistan had cut electricity exports to the country by 60% without any coordination due to technical problems with the country's substation Tilimarjan. It is expected that the problem will be resolved within the next two to three days. Afghanistan buys most of its electricity from Central Asian countries, in particular from Uzbekistan and Tajikistan (Kun.uz, 13.01.2022).
- According to data from the Main Customs Administration of China, trade turnover between Russia and China gained 35.8% in 2021. In particular, the indicator amounted to a record-breaking \$146.88 billion. China's exports to Russia increased by 33.8% to about \$67.56 billion, while imports of goods and services grew by 37.5% to \$79.32 billion. The bilateral trade turnover contracted in 2020 by 2.9% due to the pandemic and amounted to \$107.76 billion (TASS, 14.01.2022).

## Society and Culture

- The working group under the CIS Health Cooperation Council held the first meeting in Minsk. During the meeting, the participation of representatives of Armenia, Belarus, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, the Eurasian Economic Commission, and the CIS Executive Committee exchanged their experience on organizing the process and keeping records of vaccinated citizens. The parties also supported the initiative of Russian colleagues to mutually recognize vaccination certificates in the CIS. (Centralasia.news, 15.01.2022).
- Türkiye's first mini-satellite Grizu-263A, launched into space on January 13, 2022, on a Falcon 9 carrier rocket, was successfully launched into orbit. The service life of the Grizu-263A, which will operate in a low earth orbit (approximately 525 km altitude), is 4 years and 8 months. The satellite was developed by specialists from the Grizu-263 group as part of Türkiye's First Pocket Satellite project (Avesta.tj, 14.01.2022).
- The Ambassador Extraordinary and Plenipotentiary of Kyrgyzstan to Azerbaijan Kairat Osmonaliyev met with the President of the International Turkic Culture and Heritage Foundation Gunay Efendiyeva within the framework of cultural and humanitarian cooperation. The parties discussed topical issues and areas of cooperation, joint events of the embassy and the Foundation. Ambassador Osmonaliyev presented the organization's library with books on the culture, history, and traditions of Kyrgyzstan (Kabar, 14.01.2022).
- The United States Agency for International Development (USAID) and the Institute for Development Policy (IDP) launched a new project to support the development of local government services (LSGs) in Kyrgyzstan. As part of the project, the municipalities of Jalal-Abad, Issyk-Kul, Naryn and Osh regions will work to improve local services such as water supply, garbage collection, landscaping etc. The project is aimed at strengthening the accountability of municipalities and improving the quality of life of the Kyrgyz people (Kabar, 12.01.2022).
- Tajik-Turkish cooperation in economic relations and tourism was discussed during the meeting of the Tajik Ambassador to Turkey Ashraf Gulov with the Turkish Minister of Culture and Tourism Mehmet Ersoy. The parties noted the benefits of the introduction of a visa-free regime for the entry of Turkish citizens to Tajikistan from January 1, 2022. The sides also agreed to organize and hold relevant events and conferences, including days of culture, in order to develop cooperation in the field of culture between the two countries (Avesta.tj, 13.01.2022).
- According to the State Statistics Committee of Uzbekistan, as of January 1, 2022, the permanent population of Uzbekistan reached 35 million 271 thousand 276 people. Of these, 17.9 million (50.7%) live in cities and 17.4 million (49.3%) live in rural areas. Thus over the course of 2021, the population of Uzbekistan has increased by 712,376 people (Rus.ozodi.org, 12.01.2022).