



CLIMATE CHANGE IN KAZAKHSTAN: CONSEQUENCES AND SOLUTIONS

For quite a long time, issues related to climate change and its consequences have not received due attention in Kazakhstan, and virtually no fundamental scientific research on the current situation and possible scenarios of its development has been conducted. Although Kazakhstan ratified the UN Framework Convention on Climate Change in 1995 and signed the Kyoto Protocol in 1999, it took 10 years to ratify the protocol. It was widely believed that Kazakhstan was not at risk, since due to its geographical location and lack of access to the sea global warming would not have a particular impact on the country. Only in the last decade, an understanding has emerged that it is precisely because of its location within the continent, as well as the presence of a vast territory with different climatic zones, Kazakhstan in the long run will be exposed to negative effects of climate change to a greater extent than many other countries of the world. At the same time, Kazakhstan is among the world leaders in terms of greenhouse gas emissions per capita and per unit of GDP. The largest contribution to the volume of carbon dioxide emissions is made by the electric power industry based on the combustion of hydrocarbons.

The country already experiences relatively rapid rates of temperature increase: according to Kazhydromet, the average annual temperature in Kazakhstan increases every 10 years by 0.34 degrees, and seven of the ten warmest years during 1941-2015 occurred in the early 21st century. In addition, the number of extreme weather events and natural disasters is on the rise: abrupt weather changes (early thaws and frosts), heavy precipitation (heavy snowfalls and heavy rains), abnormal droughts, glacier retreat, floods, inundations, landslides, mudslides, hurricane winds, dust and salt storms. Changes in weather and climate conditions adversely affect economic sectors, primarily agriculture. For example, plant vegetation periods are altered, and moisture conditions deteriorate.

Experts predict that due to a further significant increase in the greenhouse effect the climatic conditions in Kazakhstan will continue to worsen, creating new risks. The frequency and strength of natural disasters, damaging the environment, economy, infrastructure, population health and livelihood, will increase considerably, especially against the background of physical depreciation of the bulk of the protective infrastructure, specifically, hydro-engineering structures. Temperatures will be distributed differently throughout the year, and the irregularity of the annual distribution of precipitation will also rise. The hydrological regime of water basins will change: water resources will grow in mountain rivers and decline in lowland rivers, which can lead to an increase in mudflow and landslide hazard in the south and east, and to desertification in the western, northern and central parts of the country. However, eventually, we should expect a general decrease in water availability, since in a more arid and harsher climate water evaporation and consumption will only increase. The largest costs due to climate change will be incurred by agriculture as a climate-dependent sector of the economy: the area of arable land and hayfields will be significantly reduced, the yield of grain crops will decrease, and the loss

of livestock will increase. This will jeopardize the country's food security.

In recent years, the understanding of potential environmental, economic, and social consequences of climate change has improved in Kazakhstan. The problem has indeed turned urgent and comes to the surface both at the expert and state levels. Combating climate change and its consequences has been declared one of the priority tasks of the country's government, which actively supports initiatives aimed at introducing green economy and developing green business, in particular, projects related to energy saving, energy efficiency and renewable energy. In 2016, Kazakhstan ratified the Paris Climate Agreement, declaring its intention to reduce greenhouse gas emissions by 15% below the 1990 level by 2030 and, conditionally, by 25% with additional international support. The Concept for the Transition of the Republic of Kazakhstan to Green Economy was adopted, and the corresponding action plan was approved. The Ministry of Energy, jointly with the UN Development Program and other international partners, develops a national plan for adaptation to climate change. The International Center for Green Technology and Investment Projects has been created in Astana, one of the main goals of which is to attract investments for the implementation of innovative solutions. An advanced greenhouse gas emissions trading system is in the process of being fully launched.

At the same time, it should be recognized that the announced plans for the implementation of green economy remain mostly at the level of declarations and intentions, and the adopted documents are poorly developed from the economic point of view – in particular, necessary investments are not calculated properly and financing sources are not determined. The government invests little in projects on renewable energy sources, energy efficiency and energy saving, and the majority of projects in this area are funded by international and foreign investors. Meanwhile, representatives of traditional energy industry, relying on their monopolistic positions, hide behind the introduction of energy-saving technologies and the installation of waste treatment facilities in order to hinder the development of alternative energy. Paradoxically, in Kazakhstan, environmental protection issues have been transferred to the Ministry of Energy, which is not particularly interested, due to its functional purpose, in promoting green economy, therefore the issue of creating an independent environmental agency in the country is long overdue.

Climate change is a fast-moving reality, which seems impossible to prevent, but it is quite realistic to contain and adapt to its consequences. Kazakhstan has a lot to do to mitigate the effects of climate change. First of all, it is necessary to establish an adequate ground-based hydro-meteorological observation network and conduct long-term climate studies, on the basis of which a national climate database and climate maps should be created, and various scenarios of climate change and response should be developed. This will require the allocation of significant financial resources and the involvement of competent scientific personnel. Moreover, the fulfillment of the commitments

taken by Kazakhstan under the Paris Agreement will require structural changes in the economy. This means that urgent measures in the field of climate change risk management should be integrated both into the country's long-term development strategy and sectoral programs in the form of clear action plans for the transition to a low-carbon development model, an increase in the share of green energy, and climate change adaptation relevant to the UN sustainable development goals.

Primary adaptation work should be carried out in agriculture as the most climate change-sensitive sector of the economy. Priority measures include the use of resource-saving methods of management, the introduction of innovative agricultural technologies, the rational use of water resources, the diversification of crops, etc. To contain climate change, it is necessary to carry out reforestation and increase forested areas, promote the use of environmentally friendly and low-carbon technologies and processes in industry, reduce the resource intensity of production and encourage waste reduction, recycling and reuse. In addition, it is necessary to change approaches to the development of infrastructure of settlements, introduce new standards in construction, implement thermal modernization programs for non-residential and residential buildings (heat insulation, heat account and control), switch to more environmentally friendly models of public transportation and commercial vehicles, and limit the excessive use of private motor vehicles.

In the meantime, it should be recognized that climate change does not recognize national borders and that, despite the differences in climatic conditions on the territory of the Central Asian states, common trends are observed in this area. It is obvious that the efforts of one country are not enough to make progress in combating climate change in the region, which is one of the most vulnerable in the world in terms of global warming. In order to achieve more or less tangible results in this direction, joint actions of all the Central Asian states are necessary, and close interaction should be carried out not only at the official interstate level, but also between their professional, academic, expert and business communities, as well as non-governmental organizations. The building of a regional dialogue on climate change issues will allow to clearly outline goals of such interaction and develop a common vision of a climate-sustainable future, making it possible to exchange information between relevant agencies of the Central Asian countries, in particular, meteorological services. In a region-wide context, it is premature to talk about the development of a consolidated strategy for limiting greenhouse gas emissions and adaptation to climate change, but the parties could explore opportunities for joint action, for example, in obtaining financial and technical assistance from the UN Green Climate Fund and other donor organizations. In addition, the countries could cooperate in raising awareness of their citizens about climate change and green economy, as well as in developing the culture of responsible and efficient consumption of energy, water, goods and food, as well as the culture of separate waste collection, among the population.

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Politics, Foreign Affairs, and Security

- In a statement on the Council of Europe Secretary General's 18th consolidated report on the conflict in Georgia, the EU expressed its deep concern about the deteriorating human rights situation in Abkhazia and South Ossetia. The problematic issues include arbitrary detentions, ethnic discrimination, restricted access to mother tongue education, violation of property rights, etc.
- The Third Committee of the UN General Assembly approved a resolution proposed by Ukraine condemning human rights violations in occupied Crimea. 67 nations supported the document, 87 abstained, and 26 countries, including all Eurasian Economic Union (EEU) member states, voted against.
- During the ASEAN summit in Singapore, Russian President Vladimir Putin and Japanese Prime Minister Shinzo Abe agreed to accelerate peace treaty talks. The two leaders confirmed that the negotiations would be based on the 1956 declaration under which the USSR had pledged to return two of the four disputed islands to Japan.
- During the 80th meeting of the CIS Council of Border Troops' Commanders held in Bishkek, the heads of border guard services of nine CIS member states discussed border security issues and future joint activities. Representatives of other CIS bodies, the CSTO and the SCO also attended the event.
- The State Border Guard Service of Ukraine detained 15 ships for "illegally operating" in Ukrainian waters. According to the service, there are more than 940 foreign vessels that entered the annexed Crimean peninsula's ports. Condemning Kiev's actions, Moscow threatened to take measures to protect Russian ships crossing the Sea of Azov.
- President of Kazakhstan Nursultan Nazarbayev took part in the fourth annual meeting of the Astana Club, which brought together more than 50 leading politicians and experts from 33 countries. The main theme of this year's forum was "On the Way to a Greater Eurasia: How to Build a Common Future?" Results of the international study "Global Risks for Eurasia in 2019" were presented at the event.
- During the eighth session of consular consultations between Kazakhstan and Iran held in Tehran, the parties discussed a wide range of issues of bilateral cooperation, including the protection of rights of their nationals and visa matters. In particular, Iran agreed to issue one-year multiple entry visas for drivers of Kazakh transport companies, with each stay not exceeding 30 days.

Economy, Finance, and Energy

- The Central Asia Investment Forum organized in Beijing by the EBRD and the People's Bank of China brought together more than 500 international and Chinese attendees. The forum offered participants a wide range of discussion panels covering the financial sector, the Belt and Road initiative, agribusiness, infrastructure development, renewable energy, and risk mitigation.
- The Embassy of Kazakhstan to India, together with the Kazakh Invest national company and the Federation of Indian Chambers of Commerce and Industry organized the Kazakhstan-India Investment Forum in New Delhi. Heads of 10 Kazakh leading companies and more than 50 Indian major companies took part in the forum, along with relevant government officials, experts, researchers, and mass media.
- According to the Kazakh Statistics Committee, the volume of Kazakhstan's trade with the EEU member states during January-September 2018 amounted to \$13.98 billion, which is 8.7% higher than in the same period of 2017. The exports equaled \$4.35 billion growing by 12.4%, while the imports reached \$9.63 billion increasing by 7.2%.
- President of Uzbekistan Shavkat Mirziyoyev chaired the meeting held in Nukus to discuss issues of economic development of Karakalpakstan. At the meeting, the decision was made to implement 1,018 investment projects in industry, services and agriculture during 2019-2020. It is planned to spend 11 trillion sums (\$1.329 billion) for this purpose, including \$895 million of direct foreign investments.
- More than 400 officials and businessmen took part in the first Kazakhstan-Uzbekistan Forum of Interregional Cooperation held in Shymkent. As a result of the forum, the parties signed 16 documents aimed at the implementation of joint projects, including the agreement on mutual recognition of visas.
- According to the Kyrgyz National Statistics Committee, the state debt of Kyrgyzstan amounted to about \$4.365 billion as of October 1, 2018. This figure includes the external debt, which reached \$3.764 billion, with China (44.7%) being the main debt holder.
- President of Tajikistan Emomali Rahmon launched the first unit of the Rogun hydropower plant. When completed, the plant built on the Vakhsh River will consist of six units with a total capacity of 3,600 MW allowing Tajikistan to cover its domestic needs and export electricity to other countries. The project is expected to cost about \$3.9 billion.

Society and Culture

- According to some sources, at least 50 inmates were killed during the suppression of a prison riot in the Tajik city of Khujand. The Islamic State claimed responsibility for the unrest in the facility which housed prisoners convicted of religious extremism and terrorism.
- According to Uzbek ambassador to Russia Botirjon Asadov, Uzbekistan drafted its own space program and actively develops international cooperation in this field. Previously, the Russian Roscosmos corporation offered to develop joint projects with Uzbekistan.
- The Kazakh Ministry of Culture and Sport announced that starting December 2018 nationals of about 150 countries would be able to visit Kazakhstan using the simplified electronic visa regime. Initially, e-visas will be available for short-term single-entry business, tourist and private visits at the Astana and Almaty international airports.
- The Russian State Duma adopted a package of laws providing for the introduction of an experimental tax on self-employed people's incomes in the country's four regions – Moscow, the Moscow and Kaluga oblasts, and Tatarstan. The tax rate is set at 4% for sales of goods and provision of services to individuals and at 6% – to individual entrepreneurs and legal entities.
- According to a nationwide poll conducted by the Kiev International Institute of Sociology, 63% of Ukrainian citizens consider Russia to be an aggressor country vis-a-vis Ukraine, while 22% don't share this view. At the same time, 40% of respondents support Ukraine's accession to NATO, with 36% opposing the idea. 47% of respondents welcome the idea of joining the EU, and 11% are in favor of Ukraine's EEU membership.
- According to the Kazakh Statistics Committee, Kazakhstan's population reached 18,334,300 people, as of October 1, 2018, which is a record high in the country's history. In January-September 2018, the population increased by 237,400 people. The urban population is 57.8% (10,597,200), while the rural population is 42.2% (7,737,100).
- The International Organization of Turkic Culture (TURKSOY) and the Central State Museum of Kazakhstan organized an exhibition called "Historical and Cultural Heritage of the Great Steppe" at the Turkish and Islamic Arts Museum in Istanbul. The Golden Man is also on display at the event organized to celebrate the 25th anniversary of TURKSOY.