

Ecological problems of Central Asian countries

Abstract

The current state of the environmental problems of Central Asian countries is investigated. Article shows the concepts improving environmental problems in this region

Keywords: region, ecology, design, Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan

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Introduction

The establishment of Uzbekistan's friendly, mutually beneficial relations with neighbours in the region contributed to the formation of fundamentally new favourable conditions for the development of comprehensive regional cooperation.

In the Central Asian region, with almost 71.3 million people, with a total GDP of \$ 268.2 billion (for 2017), two states are leading - Uzbekistan and Kazakhstan. The Central Asian states are, to varying degrees, open to international and regional trade, the movement of labour and capital, and other forms of cooperation and cooperation.

In Central Asia there are prerequisites and an economic basis for deepening the intra-regional division of labour and regional cooperation. Central Asian countries have something to trade with each other.

The largest share in the volume of regional trade is accounted for by export of trade from Kazakhstan. In the regional trade turnover, the share of Uzbekistan (29.5%) is higher than its share in regional GDP (18.4%) and even surpasses Kazakhstan in terms of the volume of imports of products from the countries of the region.

The shares of Kyrgyzstan and Tajikistan in the regional trade turnover (14.3 and 10%) significantly exceed their shares in the regional GDP (2.9 and 2.7%). These countries are more involved than others in the regional division of labour and are more dependent on regional trade. The least dependence is demonstrated by Turkmenistan with indicators of 4.5% participation in trade turnover and 16% contribution to regional GDP.

Currently, enterprises of the region's countries producing non-primary goods are focused on narrow domestic markets, which does not allow them to introduce modern high-performance technologies to expand production capacities and take advantage of narrow specialization and economies of scale.

The elimination of barriers to trade between the countries of the region, the growth of trade between them will be facilitated by the further removal of obstacles that restrict and complicate mutual trade in financial and banking operations, and the simplification of export-import operations.

The creation of a single economic space in the region will increase the attractiveness of the countries of the region for investors. In addition, competition which will help increase efficiency and competitiveness in the external markets of enterprises will intensify the so-called natural monopolies and state corporations.

One of the promising areas of cooperation among the Central Asian countries may be transport and logistics infrastructure, improving the efficiency of water resources, the production of building materials, the development of oil and gas chemistry and much more.

The main driver of Uzbekistan's export growth in the medium term will be high-value-added products of the textile, agricultural, oil and gas, chemical, leather and shoe industries due to the development of new export-oriented industries through deep processing of the republic's rich raw materials base, as well as relatively new types of tourism services for the republic.

According to preliminary estimates, in 2021, export growth in the main sectors of the economy will be 1.3-2.1 times.

Further improvement of cooperation of the Central Asian Republic is to improve environmental problems.

The environmental problems of Central Asia are diverse. One of the global is the Aral disaster as well as the reduction of biodiversity. Strong land degradation is occurring, water resources are decreasing, and their quality is deteriorating.

A new challenge is climate change. There are more and more hot days, droughts and mudflows. There are challenges worth paying attention to: social - it is becoming increasingly difficult for the population to adapt to such changes; economic - we must spend a lot more resources to get the same amount of crop in the conditions of drought and lack of water resources. The conservation and restoration of nature is economically viable. This is a long journey, but the only sustainable one.

The Central Asian Regional Environmental Centre (CAREC) operates in five areas. The first is related to climate change and energy efficiency. The second is with the environment. The third area is education. Fourth is water cooperation. And the fifth block is health and the environment. In these 5 areas, there are mega-projects in

which CAREC solves environmental problems for 17 years.

One of the projects “Nexus-the relationship of water, energy and food”, funded by the European Union. Here, water is considered as a link between activities in agriculture, in ensuring food security in the energy sector and in the outskirts of the environment. Without water, none of these sectors can exist in our region.

Another project is a water partnership under the CAREC-USAID Smart Waters-Water Education and Collaboration project.

The third CAREC project will be implemented in Uzbekistan. It devotes to informing and involving the population in solving environmental problems. This is a key area of activity of CAREC, as without the involvement of society, environmental problems cannot be resolved.

According to the strategic plan for 2020-2025, CAREC will first find out what countries need at the regional level, and only then formulate a project.

CAREC has a Governing Council, which consists of 2 representatives from each country. One of them represents the public sector, for example, the State Committee of the Republic of Uzbekistan for Ecology and Environmental Protection, the other represents non-governmental organizations in the country.

Within the framework of water projects, CAREC collaborates with various ministries: water management, agriculture, education, and health. CAREC helps and supports government agencies in fulfilling their goals and objectives. But we should not miss the opportunity to strengthen the role of the public in environmental issues.

CAREC is the initiator of the second Central Asian International Environmental Forum (CAMEF) held in Uzbekistan.

Attention was paid to the problems of maintaining biodiversity, the development of protected natural areas, the management of municipal solid waste, renewable energy and energy efficiency, issues of water cooperation, climate change.

CAREC annually holds an open day, during which it informs the general public about its activities. For several years, there has been an online learning platform where anyone interested in environmental issues can take various trainings on environmental issues.

Of particular note is the Central Asian Leadership Program (LAP) on the environment for sustainable development. This is CAREC's flagship initiative. The goal of the program, first of all, is to select people who are leaders in their organizations, as it is impossible to solve the problem without them.

Our region is developing intensively, but at the same time, there is a strong environmental destruction, which requires caution.

Technologically expensive, but at the same time they protect resources better. Their savings should be given priority in all environmental activities. It is necessary to follow the regions where both the environment is preserved and the economy is growing. It is necessary to gradually “put” the economy on a “green” track, so that it is environmental indicators that are at the head: a decrease in emissions, the use of return water, and waste recycling. It is necessary to use renewable energy sources at full capacity.

To develop the economy and improve the living standards of the population, the development of energy is necessary. The need for it

is growing hourly, hundreds of new enterprises are connecting to the network. The subsequent use of solar and wind energy will allow them to efficiently accumulate and store, transmit over networks and not lose. The share of hydropower is also growing, which will subsequently expand.

CAREC should become not only the centres of expertise and knowledge, but also the centre of innovative solutions and expertise. Based on local conditions, economic and political situations, it is possible to solve problems most quickly, sustainably and in the long-term.¹⁻⁵

Focus on environmental projects

In January 2019, the European Union - Central Asia (EU-CA) High-Level Conference was held in Tashkent. It was attended by ministers and diplomats responsible for environmental policy, climate change and water resources in Central Asia, the EU and EU member states.

The State Committee of the Republic of Uzbekistan for Ecology and Environmental Protection noted the formation of a completely new atmosphere of cooperation and the dynamic development of regional cooperation in Central Asia. It was emphasized within the framework of the EU-CA cooperation framework for the development and practical implementation of specific projects and measures in the field of environmental protection, including those aimed at improving the economic situation in the Aral Sea region, supporting the Multi-partner Trust Fund for Human Security for the Aral Sea region, and reducing environmental pollution, conservation of biodiversity.

The Italian Ministry of the Environment, Land and Sea Resources has confirmed its commitment to strengthening full-fledged relations with Central Asia on environmental issues, climate change and water resources. Countries identified priority areas for further cooperation between the EU and Central Asia.

For Central Asian states, transport communications are important. The prosperity of the countries of the region and the economic benefits for neighbouring countries receiving more advantageous logistics routes depend on the success of the development of transit communications. It should be noted the beginning of the implementation of the largest project on the initiative of China “One belt, one road”, designed to build the “Silk Road” using the transit potential of Central Asia.

The next important factor is the economic growth of the countries of the region. In their economy, the share of industrial products and services is increasing. Under these conditions, the growth rate of transport capacities should correspond to the rates of economic growth and trade between countries. Expanded transport-transit interaction contributes to the development of the tourism industry.

The region has significant transport potential for both intra-regional and inter-regional transit traffic. The main transport corridors of Central Asian countries are established with their main trading partners - China and Russia, and through Russia with Europe. An important direction for the development of trade may be the South (Iran, Afghanistan, Pakistan, India).

The creation of a unified network of transport corridors connecting Asia and Europe with the participation of the Central Asian states requires the countries of the region to form an affordable mechanism for the transportation of goods necessary for competitive transit.

For more complete development of transport corridors, the Central Asian countries need to simplify procedures for goods passing through the border, eliminate monopoly in the transportation sector, reduce excise taxes on imports, and simplify visa regimes.

Over the years of independence, Uzbekistan has formed a transport infrastructure that provides access to all neighbouring states. The total length of railways in Uzbekistan is more than seven thousand kilometres.

More than 2500 km of railway tracks were built in the republic, more than 2100 km of the railway section were electrified, more than 1170 km of railway tracks were rehabilitated.

Systematic renewal of the train, modernization of the locomotive fleet, freight and passenger cars are being carried out. In order to create a unified railway network in the republic, an electrified Angren-Pop railway line was built with a length of 124.4 km and the only railway tunnel in Central Asia with a length of 19.1 km.

Of key importance for the entire region is the construction of the first railway in Afghanistan, Hairaton-Mazar-e-Sharif, commissioned in November 2010.

Natural challenges of Central Asia

Central Asia is a water-deficient region and therefore the most vulnerable to climate change. The water resources of the Central Asian basin are formed mainly by two rivers - the Amu Darya and Syr Darya. Over the past 40 years, the volume of water supply in Central Asia has decreased from 8.4 thousand cubic metres up to 2.5 thousand cubic metres per person per year. At the same time, due to the high population growth rate in the region, there is an increase in water consumption. To maintain a minimum level of consumption in Central Asia each year, another 500-700 million cubic metres of water is required.

By 2040, in Uzbekistan, with a decrease in the flow of the rivers of the Amu Darya and Syr Darya basins, the deficit for irrigation can reach 33%. The process of rational use of water can solve the problem of water scarcity.

The main factors contributing to ecosystem degradation in Central Asia are desertification and drought. The well-being of Central Asia largely depends on the natural balance of the zones of formation of the rivers of the mountain ecosystems of the Pamirs, Tien Shan and Altai. High mountain systems trap moisture from the upper atmosphere, carried by air masses mainly from the Atlantic Ocean and serve as giant freshwater accumulators. However, degradation processes are increasing in the mountains of Central Asia - deforestation and erosion, pollution by waste and reduction of pastures.

At present, more than 2/3 of the territory of Central Asia is arid land. In accordance with climate forecasts, a noticeable increase in temperature, intensive melting of glaciers in the long run will lead to an intensification of the desertification process.

According to experts, the rangelands, occupying from 77 to 95% of all agricultural territories in the region, are not properly managed. More than 88% of arable land in Kyrgyzstan and 97% of agricultural land in Tajikistan are subject to erosion.

Ecosystem degradation is also promoted by environmental pollution by technical waste and chemicals in agriculture. Against the background of shrinking water resources and difficult climatic

conditions, the countries of the region are faced with serious challenges in the field of food security. Droughts in Central Asia have a negative impact on the economies of the region, in which the agricultural sector prevails.

According to WHO, the potential impact of desertification is the risk of undernourishment due to reduced food and water odours, access to clean water, and increased respiratory diseases caused by airborne dust.

The forest area in Central Asia has decreased from the middle of the last salting by 4-5 times. Saxaul and floodplain forests were subjected to especially severe anthropogenic stress.

The destruction of ecosystems has led to a significant reduction in biodiversity. On the whole, in Central Asia since the 1990s, the catch of fish from natural reservoirs has decreased by 60%. More than half of the gene pool of the plant and animal world has disappeared in the Aral Sea region, 11 species of fish, 12 species of mammals, 26 species of birds, 11 species of plants have practically disappeared.

Climate change can potentially exacerbate the frequency and magnitude of natural disasters in mountainous and low-lying areas. In this regard, more research is needed to monitor the microclimate conditions in the highlands, and to understand the links between climatic and hydrological interactions. According to CAREC, if the countries of the Central Asian region begin to cooperate on water and ecology, the potential annual gain could be more than \$ 4 billion. Strengthening regional cooperation will solve water and environmental issues.

The territories of the Central Asian states are included in the Aral Sea zone, which today is considered an environmental disaster zone. Environmental degradation in the Aral Sea is the result of chronic and intense pressure on the main river basins, providing fresh water for the sea. Despite the efforts made, it is unlikely that it will be possible to revive the Aral Sea in its original form.

According to official figures, 60% of drinking water in Uzbekistan is taken from underground sources. The level of coverage of centralized water supply services in 2017 reached about 80% in the republic. However, there remain areas where household coverage has access to water supply below 50%, for example, in the Bukhara region. 13% of households drink water from springs, rivers, canals and irrigation ditches, and 6% of the population use imported water.

Given the problems of the water sector, it is necessary to invest heavily in the institutional sphere in order to ensure the effectiveness of the water sector.

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Conflicts of interest

The authors declare there are no conflicts of interest.

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